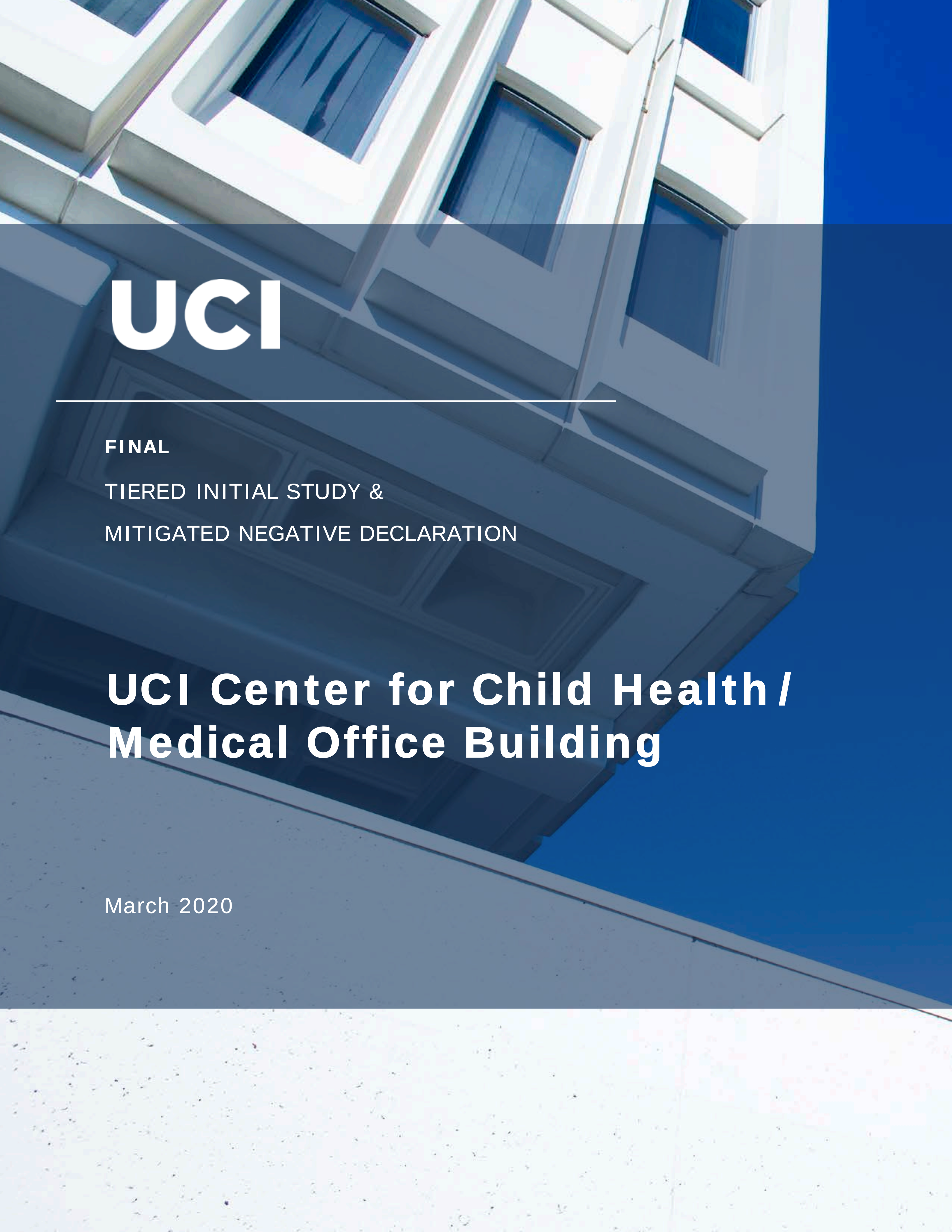

UCI

FINAL

TIERED INITIAL STUDY &
MITIGATED NEGATIVE DECLARATION

UCI Center for Child Health / Medical Office Building

March 2020

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1.0 PROJECT INFORMATION

1.1 Project Title

UCI Center for Child Health/Medical Office Building

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 North Campus near the intersection of Jamboree Road and Birch Street.

1.5 Custodian of the Administrative Record

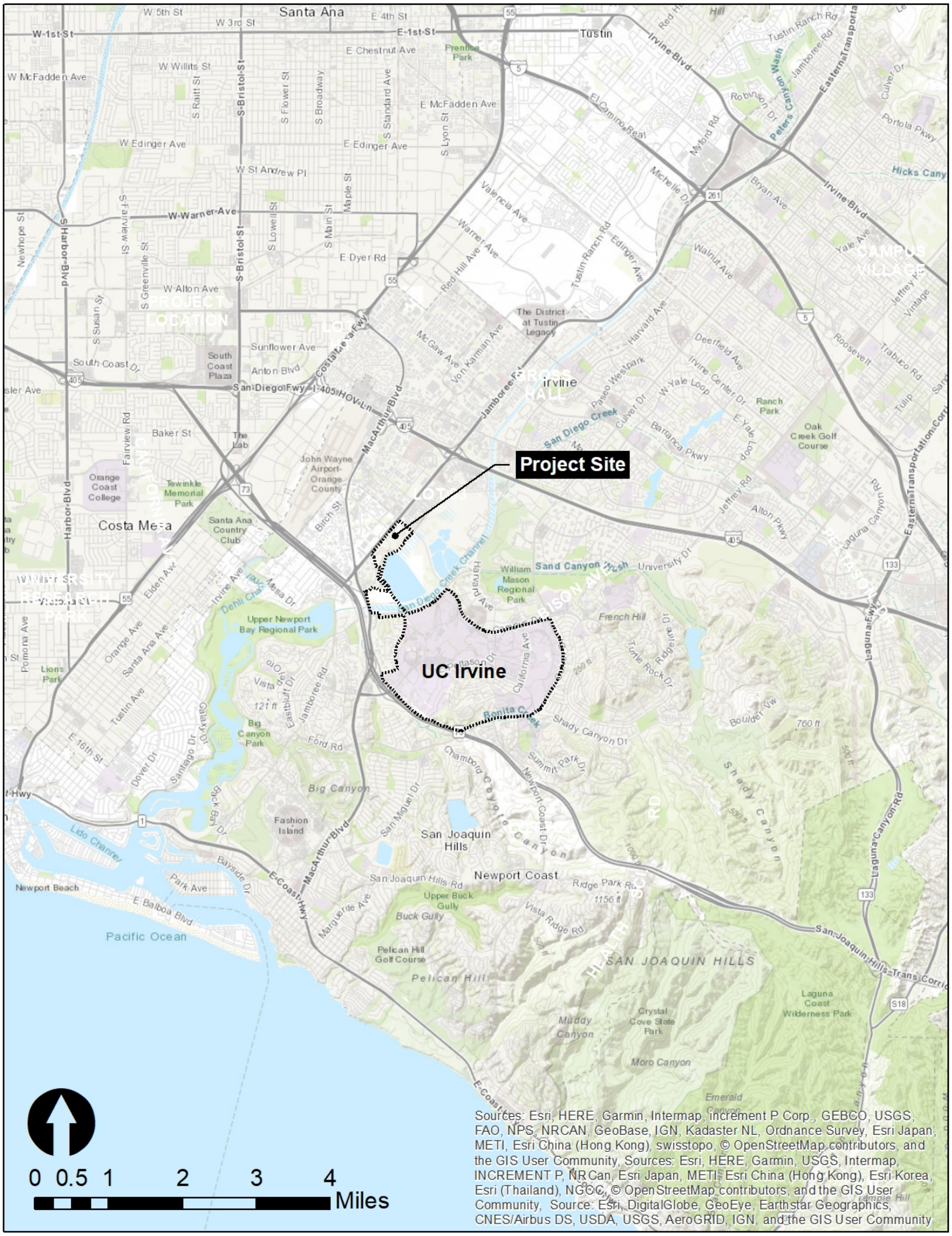
University of California, Irvine
Office of Physical and Environmental Planning
4199 Campus Drive, Suite 380, Irvine, CA 92697-2325

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 approximately 5.5-acre site for the proposed project is located in the North Campus sector of the UCI Campus at the south corner of the Jamboree Road and Birch Street intersection. Surrounding uses include existing UCI Facilities Management and Distribution Services uses to the northeast; Uptown Newport mixed-use development, Harbor Justice Center – Newport Beach, and adjacent retail uses (Jamboree Plaza, Wienerschnitzel, Starbucks, Round Table Pizza, and Wendy's) to the north and northwest across Jamboree Road; and undeveloped University property to the south and southwest. Existing on-site uses include modular buildings, approximately 40 surface parking spaces, and outdoor yard space previously occupied by the Child Development Center, which ceased operations in June 2019 and is currently vacant as of January 2020. The eastern area of the site contains existing UCI service facilities used by UCI Facilities Management and Distribution Services (see Exhibits 2-1, 2-2, and 2-3).

As shown in Exhibit 2-1, the UC San Joaquin Marsh Reserve (Marsh) is located approximately 800 feet to the south of the project site. UCI manages the Marsh for habitat-based research and teaching. As discussed in Section 4.10, Land Use and Planning, the California Coastal Zone is located west of the project site.

2.2 Description of Project

The UCI Center for Child Health/Medical Office Building (proposed project) would construct a new clinical facility to provide comprehensive pediatric and adult medical care in Orange County, particularly focusing on specialty care for children with chronic illnesses. The drivers include:

- The need to improve care for all children in the region, including those living in poverty, exposed to adverse childhood experiences, diagnosed with chronic medical and/or emotional health issues, and neurodevelopmental disorders.
- The need to provide children with chronic diseases, disabilities, and injuries requiring long-term medical care to help reduce repeated and often unnecessary hospitalizations, and multiple and redundant visits to primary care providers.
- The need to focus resources on key challenge areas such as systematic care, including effective rehabilitation and the transition to adult care, by using a multidisciplinary team approach.

The proposed project would demolish the existing on-site facilities that include surface parking, modular buildings, outdoor yard space, and infrastructure previously used by the Child Development Center and UCI Facilities Management (see Table 2-1). Demolition may also include existing prefabricated steel buildings, modular buildings, overhead canopies, and outdoor yard space used by UCI support services. Any UCI support service space displaced by project construction would be replaced within the existing North Campus Corporation Yard or within the UCI Main Campus Corporation Yard adjacent to the existing Parking Lot 16.

Exhibit 2-1
Project Location and Adjacent Land Uses

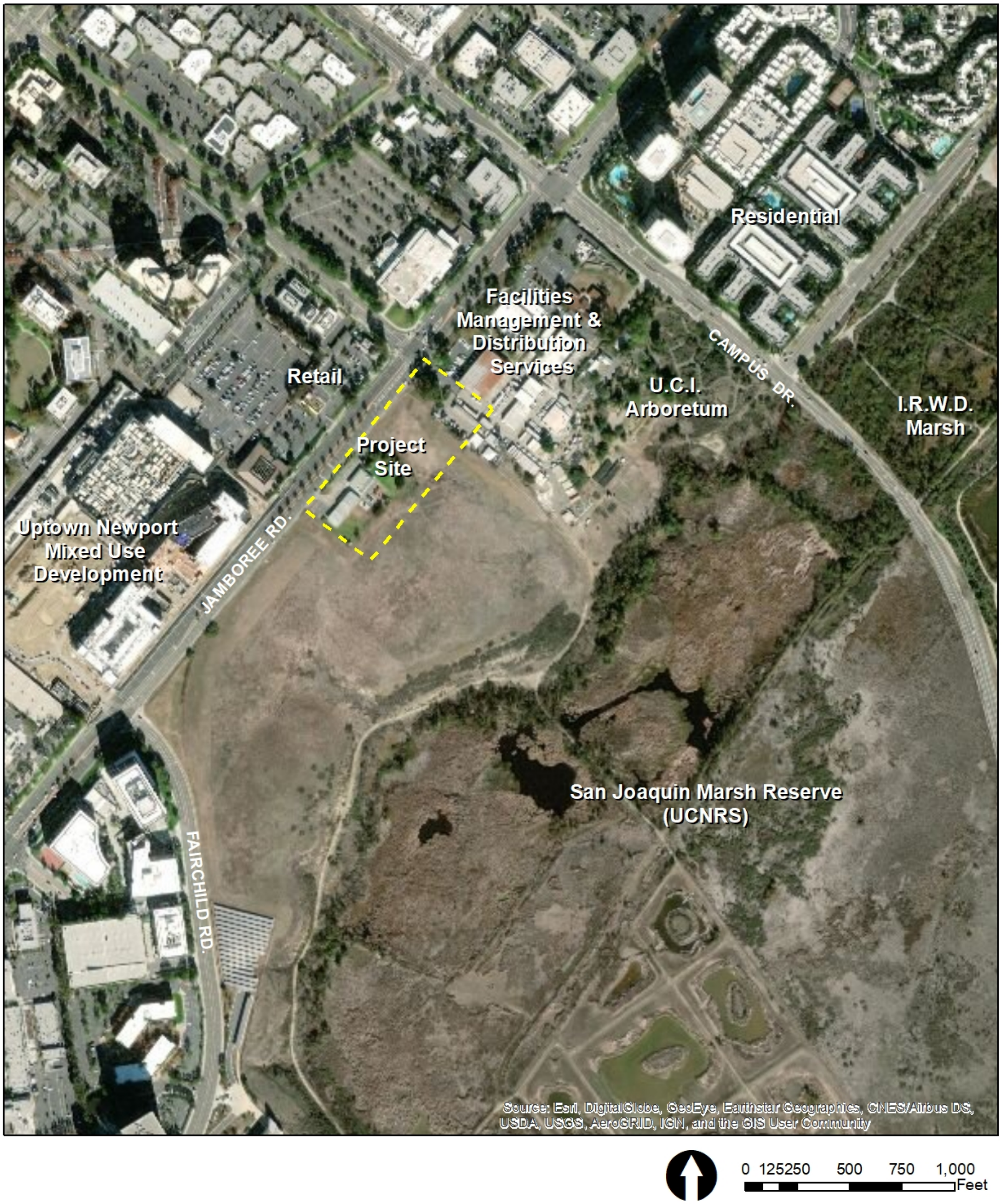
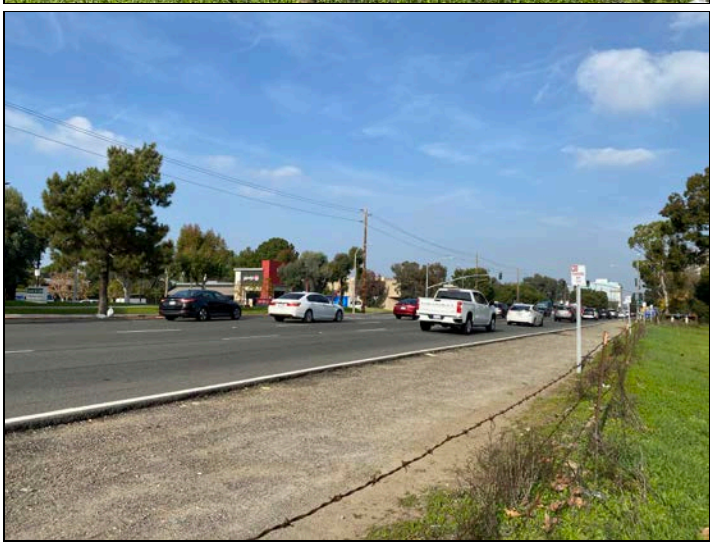
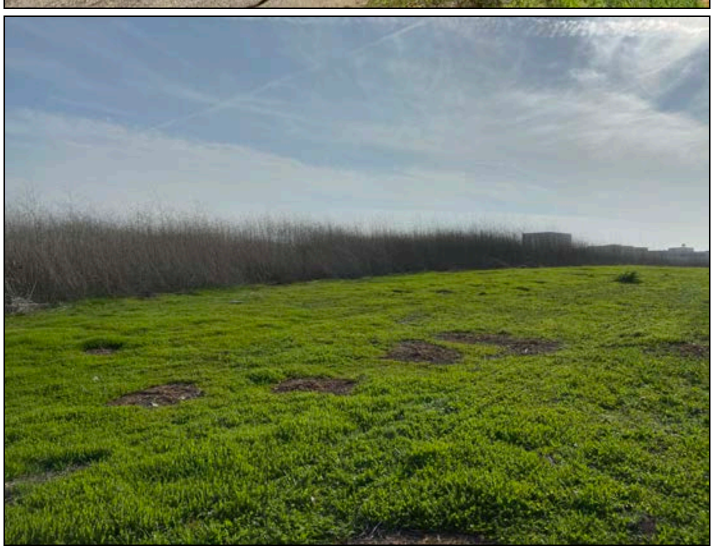


Exhibit 2-2
Existing Project Views

View 1: East corner boundary of the project site looking east toward UCI North Campus uses.



View 2: North corner boundary of the project site looking north toward Jamboree Road and commercial uses.



View 3: South corner boundary of the project site looking southwest toward undeveloped UCI property.

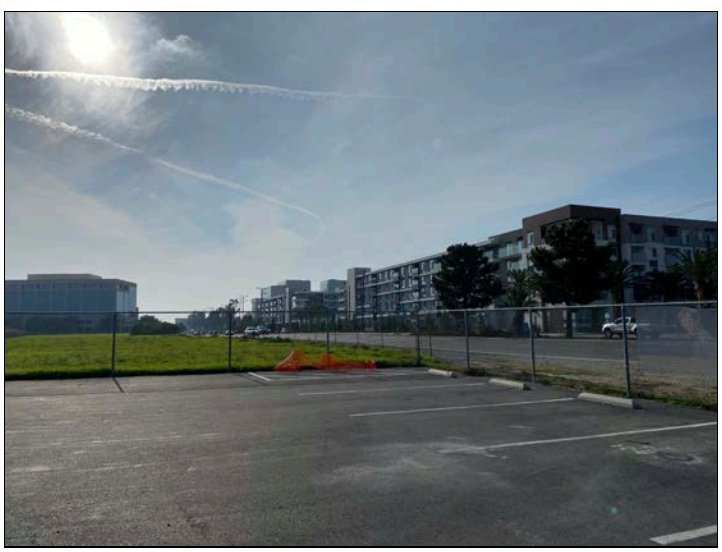
View 4: South corner boundary of the project site looking northwest toward undeveloped UCI property, Jamboree Road, and multi-family residential.

View 5: West corner boundary of the project site looking south toward undeveloped UCI property.

View 6: Northwest boundary of the project site looking southeast toward the project site.

View 7: West corner boundary of the project site looking east toward the project site.

View 8: East corner boundary of the project site looking west toward the project site.



View 9: Northwest boundary of the project site looking west toward Jamboree Road and multi-family residential.

Exhibit 2-3
Conceptual Site Plan

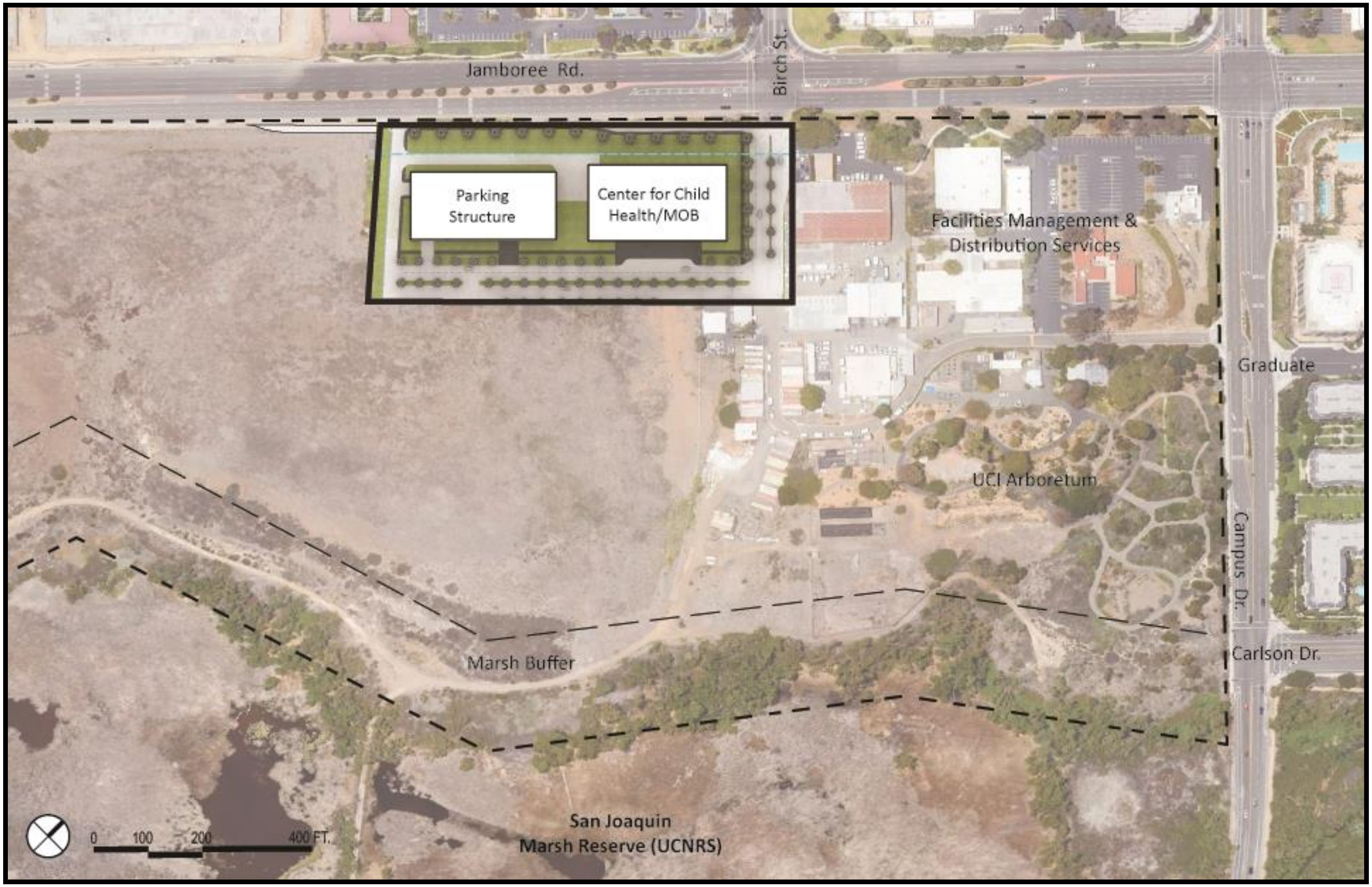


Exhibit 2-4
Conceptual Perspectives


West Perspective
Eye Level from Jamboree Road


Southeast Perspective
Eye Level from North Campus

Table 2-1
Site Demolition Inventory (GSF)

Building Name	GSF	# of Floors	Year Constructed
Child Development Center	6,500	1	1984
Receiving Yard[1]	21,039	1	1965
Recycling Center	2,400	1	1981
TOTAL GSF:	**29,939**		

1. Receiving Yard is an unenclosed outdoor space. No physical structure would be demolished.

The project would construct an approximately 168,000 gross-square-foot medical office building and an associated approximately 800-space, seven-floor parking structure (see Exhibit 2-3). The structures would be five stories with an additional mechanical penthouse, designed and constructed primarily of concrete, brick, or stone masonry consistent with the architectural design guidelines in the UCI Physical Design Framework (see Exhibit 2-4).

As shown in Table 2-2, the proposed project would include approximately 168,000 GSF of clinical space to support pediatric primary care, sub-specialty pediatric care, the UCI Center for Autism, pediatric rehabilitation care, outpatient care, and administrative office space. Although a majority of the structure is shell space, this IS/MND analyzes the full buildout of the structure as a medical office use.

Table 2-2
Center for Child Health Space Breakdown (GSF)

Space Type	GSF	% of Total GSF
Autism Center	12,588	7.5
Breast Center	8,849	5.3
Pediatric Primary Care	7,602	4.5
Pediatric Specialty Care	9,098	5.4
Pre-Op Clinic	3,116	1.9
Primary Care	13,834	8.2
Rehabilitation	2,866	1.7
Urgent Care	9,223	5.5
Shell Space	80,261	47.8
Clinical Diagnostics	3,614	2.2
Support Services	16,950	10.1
Total	**168,000**	**100%**

UCI pediatric primary care and sub-specialty care, Center for Autism, and pediatric rehabilitation care currently operate in leased medical office space in Tustin and Orange. These existing programs would be relocated from their current location into the proposed structure. In order to operate the facility, it is anticipated that approximately 225 full-time staff would be either relocated from existing off-campus UCI Health facilities or newly hired. It is anticipated that approximately 228 daily outpatient visits would occur at full operation of the project.

The proposed project would construct a seven-story parking structure with approximately 800 parking spaces to serve the project, replacing the approximately 40 surface parking spaces that would be demolished. Vehicular access to the project site, including the 800-space parking structure, would be from two existing intersections on Jamboree Road. The first is at the four-way signalized intersection at Jamboree Road and Birch Street, and the second is from the right-in/right-out access approximately 700 feet west of Birch Street, known as the West Access Road. Both intersections would be improved to serve the proposed project. The Birch Street driveway would be improved to four travel lanes plus a left-turn exit pocket, and the West Access Road driveway would be improved to two-lanes.

Proposed roadway improvements within Jamboree Road include two eastbound right-turn deceleration lanes at the Birch Street and West Access Road driveways located in the City of Irvine, construction of a sidewalk northwesterly adjacent to the project site, and restriping of the westbound left-turn pocket to add an additional left-turn lane at the Jamboree Road and Birch Street intersection located in the City of Newport Beach. The proposed project is located outside of the California Coastal Zone, but the segment of Jamboree Road west of the project site, including the West Access Road right-turn deceleration lane, is located within the California Coastal Zone in the City of Irvine. Per the City of Irvine's comment letter dated February 27, 2020, indicated that the West Access Road deceleration lane is not located within the City's certified local coastal program (LCP), but confirmed that the lane would be located within the Coastal Zone and would require permits from both the California Coastal Commission and the City of Irvine. The location of the proposed right-turn pocket currently consists of previously disturbed land, including the existing unpaved roadway shoulder and non-native grass. The site contains no coastal resources or other environmental resources as discussed in Section 4.3, Biological Resources.

Other site improvements would include internal vehicle circulation, patient drop-off, service and loading, emergency vehicle access, pedestrian pathways, 24-hour site lighting, and landscaping. Appropriate acoustical and visual buffers, as determined during the final design stages, would be utilized during project construction to minimize potential project related aesthetic and/or noise impacts to existing sensitive receptors in the project vicinity.

Per Section A, Green Building Design, of the UC Sustainable Practices Policy, the proposed project would meet or exceed LEED Silver equivalency and California Green Building Standards Code (Cal Green). The project would incorporate measures resulting in significant energy savings, construction waste reduction, recycled material use, and water conservation. Such features would include an overall energy efficiency that exceeds California Title 24 criteria by at least 20 percent.

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

2.2.1 Project Phasing and Site Development

Project construction is anticipated to begin in November 2020 and would occur over 22 months with anticipated completion in September 2022. Demolition and grading would occur during the first three months, and construction over the next 19 months.

Grading for the proposed improvements would require cut and fill to create the building pads. The proposed project is anticipated to have approximately 27,103 cubic yards (CY) of excavation, requiring approximately 15,210 CY of exported soil.

2.2.2 Access

Construction staging is proposed to occur on the project site, on the North Campus east of the project site, and at a remote construction laydown area in the UCI West Campus. All laydown areas would avoid existing drainage and vegetation communities as discussed further in Section 4.3, Biological Resources. Haul routes during construction would be along Jamboree Road, with construction site access from the Jamboree Road and Birch Street and the Jamboree Road and West Access Road intersections.

As discussed previously in the Project Description, operational vehicle access to the project site would occur from the two existing intersections, one at Jamboree Road and Birch Street and Jamboree Road and West Access Road. Both intersections would be improved to serve the project.

2.2.3 Utilities

Initial analyses indicate that existing utility systems in the site vicinity have adequate capacity to serve the project. The proposed project would receive water services from the Irvine Ranch Water District (IRWD). Potable water would be connected through an existing 12-inch line located in Jamboree Road, adjacent to the project site. Recycled water service would be provided through an existing 10-inch line in Campus Drive, and sanitary sewer water through an existing 21-inch line in Campus Drive.

To provide on-site electricity, the structures would connect to an existing Southern California Edison 12-kilovolt (kV) line located across Jamboree Road. The connecting line would be routed from the SCE switch to the proposed project via underground ductbanks. Telecommuncations would connect to UCI's existing data network. If any existing connections conflict with the project design, alternative and/or temporary utilities would be provided to all adjacent structures during relocation.

Storm drainage would be collected and treated on site through best management practices (BMPs), then conveyed to the campus storm drain system and to undeveloped property south of the site consistent with existing drainage patterns. Low impact development (LID) features may be implemented in compliance with UCI's MS4 permit to retain stormwater flows to the south of the project site before release into the existing undeveloped property, which would be determined during the final design phase. Through these measures, the quantity of site drainage would remain unchanged post-development and the quality of site drainage would be improved.

2.3 Consistency with the LRDP

The applicable land use plan is the 2007 LRDP and the University is the only agency with land use jurisdiction over projects located on the campus. The project site is designated as Mixed Use – Commercial in the LRDP, which allows for clinical, general office, and research uses. Furthermore, the additional 225 faculty and staff to be hired is within the 2007 LRDP population capacity and the 168,000 GSF proposed for the structure is within the space program identified for the North Campus in the 2007 LRDP. Therefore, the project is consistent with the 2007 LRDP.

Long-term cumulative impacts due to buildout of the 2007 LRDP were previously analyzed in the 2007 LRDP EIR, from which this project-level IS/MND is tiered. As discussed in Section 4.19, Mandatory Findings of Significance, because the proposed project is consistent with the 2007 LRDP, no new or increased severity of impacts were discovered during the preparation of this IS/MND, and all project-level thresholds have no impact, are less than significant, or are reduced to a less than significant level with the incorporation of mitigation, the proposed project would not result in cumulatively considerable impacts not previously addressed in the 2007 LRDP EIR.

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

Lead Agency

University of California

As a public agency principally responsible for approving or carrying out the proposed project, the University of California is the Lead Agency under CEQA and is responsible for reviewing and certifying the adequacy of the IS/MND and approving the proposed project. The Board of Regents of the University of California (The Regents) will consider design and CEQA approval of the proposed project in March 2020.

Responsible Agencies

City of Irvine

The two off-site eastbound, right-turn pockets proposed in Jamboree Road at Birch Street and West Access Road, as described above in Section 2.2, Description of Project, are located within the City of Irvine. Construction of the off-site improvements would require review of the improvement plan, right-of-way acquisition, and permit approval.

City of Newport Beach

The restriping of the westbound left-turn pocket to add an additional left-turn lane at the Jamboree Road and Birch Street intersection, as described above in Section 2.2, Description of Project, is located in the City of Newport Beach. Construction of the off-site improvement would require review of the improvement plan and permit approval.

California Coastal Commission

The eastbound right-turn pocket at the Jamboree Road and West Access Road intersection, as described above in Section 2.2, Description of Project, is located within the California Coastal Zone in the city of Irvine. Construction of the off-site roadway improvement would require review of the improvement plan and either a construction exemption waiver or a coastal development 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.

Signature

7·2·20

Date

Richard Demerjian, Assistant Vice Chancellor

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
Except as provided in Public Resources Code Section 21099, would the project:					
a) Have a substantial adverse effect on a scenic vista?					X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?					X
c) Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?				X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?		X			

Discussion

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

a) Scenic Vista: No Impact

There are no identified scenic vistas surrounding the project site or elsewhere on the UCI campus (LRDP EIR, page 4.1-6). Furthermore, the proposed project is located in the North Campus and is consistent with the land use designation of Mixed Use – Commercial and the existing adjacent developments, which include UCI service facilities to the east and off-campus commercial retail, mixed-use residential, and a County of Orange facility to the north and northwest. Additionally, because the North Campus is designated for commercial, office, research, residential, and clinical space, the construction of a 168,000 GSF clinical building is consistent with both the existing surrounding uses and potential future development. 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 three 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 proposed structure would be approximately five stories constructed primarily of concrete, brick, or stone masonry consistent with the architectural guidelines in the UCI Physical Design Framework. Although areas to the south and southwest of the project site are undeveloped, existing on-campus service facilities are located to the east, such as UCI Facilities Management, along with multi-story commercial retail and mixed use development, such as the Harbor Justice Center – Newport Beach and Uptown Newport, to the north and northwest. Additionally, 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 some 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 partially developed area of the North Campus where the increase in ambient lighting levels would be minimal. A lighting plan would be prepared during the design phase, as required by mitigation measure Aes-2B, which would include a

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

number of design features to reduce impacts from project light sources, such as standardized cutoff lighting fixtures and shielding to minimize light pollution. Furthermore, all building surfaces would be designed in accordance with mitigation measure Aes-2A to reduce glare for passing motorists and pedestrians. Therefore, with implementation of LRDP EIR mitigation measures Aes-2A and Aes-2B, potential impacts due to the creation of light and glare would be reduced to a less than significant level.

Mitigation Measures

LRDP EIR Aes-2A: Prior to project design approval for future projects that implement the 2007 LRDP, UCI shall ensure that the projects include design features to minimize glare impacts. These design features shall include use of non-reflective exterior surfaces and low-reflectance glass (e.g., double or triple glazing glass, high technology glass, low-E glass, or equivalent materials with low reflectivity) on all project surfaces that could produce glare.

LRDP EIR Aes-2B: Prior to approval of construction documents for future projects that implement the 2007 LRDP, UCI shall approve an exterior lighting plan for each project. In accordance with UCI's Campus Standards and Design Criteria for outdoor lighting, the plan shall include, but not be limited to, the following design features:

- Full-cutoff lighting fixtures to direct lighting to the specific location intended for illumination (e.g., roads, walkways, or recreation fields) and to minimize stray light spillover into adjacent residential areas, sensitive biological habitat, and other light-sensitive receptors;

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

- Shielding direct lighting within parking areas, parking structures, or roadways away from adjacent residential areas, sensitive biological habitat, and other light-sensitive receptors through site configuration, grading, lighting design, or barriers such as earthen berms, walls, or landscaping.

4.2 Air Quality

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:					
a) Conflict with or obstruct implementation of the applicable air quality plan?					**X**
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?				**X**	
c) Expose sensitive receptors to substantial pollutant concentrations?				**X**	
d) Result in other emissions, such as those leading to odors affecting a substantial number of people?				**X**	

Discussion

Air quality issues are discussed in Section 4.2 of the 2007 LRDP EIR. A project-specific Air Quality Assessment was prepared by Kimley-Horn and Associates, Inc. and is included as Appendix A of this IS/MND.

a) Air Quality Management Plan Consistency: No Impact

As part of its enforcement responsibilities, the Environmental Protection Agency (EPA) requires each state with nonattainment areas 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 federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

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

The violations to which Consistency Criterion No. 1 refers are CAAQS and NAAQS. As shown in Table 4.2-1 and Table 4.2-2 below, the proposed project would not exceed the short-term construction standards or long-term operational standards and would therefore not violate any air quality standards. Therefore, no impact is 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 would construct a five-story medical office building and an 800-space parking structure at the North Campus and would be consistent with the Mixed-Use Commercial designation in the 2007 LRDP and the goals and policies in the UCI Strategic Plan. The City of Irvine General Plan (General Plan) was based on 2007 LRDP projections and therefore is consistent with SCAQMD's population and job growth projections used to develop the AQMP. The proposed project also supports SCAG RTP/SCS and SCAQMD policies promoting infill development to reduce emissions. Therefore, the proposed project would not exceed the AQMP's assumptions and no impact would occur. No mitigation is required.

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

Construction Emissions

Project construction activities would generate short-term emissions of criteria air pollutants. The criteria pollutants of primary concern within the project area include ozone-precursor pollutants (i.e. ROG and NO_x) and PM_{10} and $PM_{2.5}$. Construction-generated emissions are short term and temporary, lasting only while construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the SCAQMD'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 22 months. The proposed project is anticipated to require approximately 27,103 CY of excavation with 15,210 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 proposed project's predicted maximum daily construction-related emissions are summarized in Table 4.2-1. As shown in Table 4.2-1, all criteria pollutant emissions would remain below their respective thresholds. While impacts would be considered less than significant, the proposed project would be subject to compliance with SCAQMD Rules 402 and 403 to further reduce specific construction-related emissions.

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

Construction Year	Reactive Organic Gases (ROG)	Nitrogen Oxide (NOx)	Carbon Monoxide (CO)	Sulfur Dioxide (SO2)	Coarse Particulate Matter (PM10)	Fine Particulate Matter (PM2.5)
2020	4.87	62.22	35.71	0.10	10.49	5.75
2021	4.59	57.50	34.59	0.10	6.23	3.46
2022	68.95	23.10	23.43	0.06	3.32	1.46
SCAQMD Threshold	75	100	550	150	55	150
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
SCAQMD Rule 403 Fugitive Dust applied. The Rule 403 reduction/credits include the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stock piles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied. No mitigation was applied to construction equipment. Refer to Appendix A for Model Data Outputs.						
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.						

Operational Emissions

The proposed project's operational emissions would be associated with area sources (such as the use of landscape maintenance equipment and architectural coatings), motor vehicle use, energy sources, and stationary (emergency backup generator) sources. Long-term operational emissions attributable to the project are summarized in Table 4.2-2. Note that emissions rates differ from summer to winter because weather factors are dependent on the season and these factors affect pollutant mixing, dispersion, ozone formation, and other factors. As shown in Table 4.2-2, the proposed project's operational emissions would not exceed SCAQMD thresholds for any criteria air pollutants. Therefore, the operational emissions would result in a less than significant long-term regional air quality impact.

Area Source Emissions. Area Source Emissions would be generated due to consumer products, architectural coating, and landscaping that were previously not present on the site. As shown in Table 4.2-2, the project's area source emissions would not exceed SCAQMD thresholds for either the winter or summer seasons. Therefore, impacts due to area source emissions are less than significant.

Energy Source Emissions. Energy source emissions would be generated due to the proposed project's electricity and natural gas usage. The primary uses of electricity and natural gas would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. As shown in Table 4.2-2, the project's energy source emissions would not exceed SCAQMD thresholds for criteria pollutants. As such, the project would not violate any air quality standards or contribute substantially to an existing or projected air quality violation. Therefore, the operational air quality impacts would be less than significant.

Table 4.2-2
Operational Emissions (Maximum Pounds Per Day)

Emission Source	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Summer Emissions						
Area	3.90	0.00	0.10	0.00	0.00	0.00
Energy	0.04	0.35	0.30	0.00	0.03	0.03
Mobile	6.56	23.51	66.75	0.24	21.11	5.76
Stationary	4.79	13.39	12.22	0.02	0.70	0.70
Total	**15.29**	**37.25**	**79.37**	**0.26**	**21.84**	**6.49**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Winter Emissions						
Area	3.90	0.00	0.10	0.00	0.00	0.00
Energy	0.04	0.35	0.30	0.00	0.03	0.03
Mobile	6.45	23.91	65.49	0.23	21.11	5.76
Stationary	4.79	13.39	12.22	0.02	0.70	0.70
Total	**15.18**	**37.65**	**78.11**	**0.25**	**21.84**	**6.49**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.						

Energy Source Emissions. Energy source emissions would be generated due to the proposed project's electricity and natural gas usage. The primary uses of electricity would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. As shown in Table 4.2-2, the project's energy source emissions would not exceed SCAQMD thresholds for criteria pollutants. As such, the project would not violate any air quality standards or contribute substantially to an existing or projected air quality violation. Therefore, the operational air quality impacts would be less than significant.

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

Project-generated vehicle emissions were estimated using CalEEMod, as recommended by the SCAQMD. The project's trip generation estimates were based on traffic data obtained from the project-specific Traffic Study prepared by Stantec (Appendix F). The proposed project would generate approximately 5,846 average daily trips (ADT) (5,531 net ADT). As shown in Table 4.2-2, mobile source emissions would not exceed SCAQMD thresholds for criteria pollutants. Therefore, impacts associated with mobile source emissions would be less than significant.

Stationary Source Emissions. The proposed project would also include stationary emissions associated with a backup generator located in the parking structure. As shown in Table 4.2-2, stationary source emissions would not exceed SCAQMD thresholds for criteria pollutants. Therefore, impacts associated with stationary source emissions would be less than significant.

Cumulative Emissions

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

Because 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 project's construction-related emissions. Therefore, project-related construction emissions, in combination with those from other projects in the area, would not substantially deteriorate the local air quality. The project's construction-related emissions would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

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

As shown in Table 4.2-2, the operational emissions would not exceed SCAQMD thresholds. As a result, the 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 cumulatively considerable net increase of nonattainment criteria pollutants.

Therefore, the proposed project would not 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 and impacts would be less than significant. No mitigation is required.

c) Sensitive Receptors: Less Than Significant Impact

Localized Construction Significance Analysis

The nearest sensitive receptors to the project site are mixed-use residential uses approximately 225 feet (69 meters) to the west. To identify impacts to sensitive receptors, the SCAQMD recommends addressing localized significant 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 in 2008) for guidance. The LST methodology assists lead agencies in analyzing localized impacts from project-specific emissions.

Table 4.2-3
Equipment-Specific Grading Rates

Construction Phase	Equipment Type	Equipment Quantity	Acres Graded per 8-Hour Day	Operating Hours per Day	Acres Graded per Day
Grading	Tractors	2	0.5	8	1.0
	Graders	1	0.5	8	0.5
	Dozers	1	0.5	8	0.5
	Scrapers	2	1.0	8	2.0
				Total Acres Graded per Day	4.0
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.					

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 4.2-3: Equipment-Specific Grading Rates, is used to determine the maximum daily disturbed acreage for comparison to LSTs. The appropriate source receptor area (SRA) for the localized significance thresholds is the Central Orange County Coastal area (SRA 20) as this area includes the project site. LSTs apply to CO, NO_2, PM_{10}, and $PM_{2.5}$. The SCAQMD produced look-up tables for projects that disturb areas less than or equal to 5 acres. Project construction is anticipated to disturb a maximum of 4.0 acres in a single day.

The SCAQMD's methodology states that "off-site mobile emissions from the project should not be included in the emissions compared to LSTs." Therefore, for the construction LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered. The nearest sensitive receptors to the project site are the mixed-use residential uses located approximately 225 feet (69 meters) to the west. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Therefore, as recommended by the SCAQMD, LSTs for receptors located at 50 meters were conservatively utilized in this analysis. Table 4.2-4 presents the results of localized emissions during construction.

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

Construction Activity	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
2020 Demolition	33.20	21.75	2.10	1.61
2020 Site Preparation	42.42	21.51	8.89	5.70
2020 Grading	50.20	31.96	5.39	3.33
2021 Grading	46.40	30.88	5.20	3.16
2021 Trenching and Utilities	0.00	0.00	0.00	0.00
2021 Building Construction	17.43	16.58	0.96	0.90
2022 Building Construction	15.62	16.36	0.81	0.76
2022 Paving	11.12	14.58	0.57	0.52
2022 Architectural Coating	1.41	1.81	0.08	0.08
Maximum Daily Emissions	***50.20***	***31.96***	***8.89***	***5.70***
SCAQMD Localized Screening Threshold (adjusted for 4 acres at 50 meters)	169	1,606	36	10
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**
Emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod), as recommended by the SCAQMD. Worst-case seasonal maximum daily emissions are reported. SCAQMD Rule 403 Fugitive Dust applied for construction emissions. 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; replace ground cover of area disturbed; 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.				

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

Localized Operational Significance Analysis

As noted above, the nearest receptors to the project site are mixed-use residential uses located approximately 225 feet (69 meters) to the west; thus, the LSTs for receptors located at 50 meters for SRA 20 were conservatively utilized in this analysis. In addition, as the project site is approximately 5.5 acres, the five-acre LST threshold was conservatively used. The on-site operational emissions are compared to the LST thresholds in Table 4.2-5, which shows that the maximum daily emissions of on-site pollutants during project operations would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, the proposed project would result in a less than significant impact concerning LSTs during operational activities.

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

Emissions Sources	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
On-Site Emissions (Area, Energy, and Stationary Sources)	13.74	12.62	0.73	0.73
SCAQMD Localized Screening Threshold (5 acres at 50 meters)	190	1,864	11	3
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**
Emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod), as recommended by the SCAQMD. Worst-case seasonal maximum daily emissions are reported.				
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.				

Criteria Pollutant Health Impacts

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

As previously discussed, project emissions would be less than significant and would not exceed SCAQMD thresholds (refer to Table 4.2-1 and Table 4.2-2). Localized effects of on-site project emissions on nearby receptors were also found to be less than significant (refer to Table 4.2-4 and Table 4.2-5). The LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state 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. Ambient air quality standards establish levels of air quality necessary, with an adequate margin of safety, to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Project-related emissions would not exceed the regional thresholds or the LSTs, and therefore would not exceed the ambient air quality standards or cause an increase in the frequency or severity of existing violations of those standards. Therefore, sensitive receptors would not be exposed to criteria pollutant levels exceeding ambient air quality standards.

Carbon Monoxide Hotspots

Intersection Hotspots. An analysis of CO "hot spots" is needed to determine whether the change in the level of service of an intersection due to the project would result in exceedances of the CAAQS or NAAQS. Typically, CO exceedances are caused by vehicular emissions, primarily when vehicles are idling at intersections. Vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars. With turnover of older vehicles, cleaner fuels, and 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 approximately 100,000 ADT, was modeled for CO concentrations. This effort identified a CO concentration high of 4.6 ppm, well below the 35-ppm Federal standard. The project would not produce traffic volumes to generate a CO hot spot in the context of SCAQMD's CO Hotspot Analysis. Since CO hotspots were not experienced at the Wilshire Boulevard and Veteran Avenue intersection accommodating 100,000 ADT, it can be reasonably inferred that CO hotspots would not be experienced at any intersections in the project vicinity resulting from approximately 5,846 ADT (5,531 net ADT) attributable to the project. Therefore, impacts would be less than significant.

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. Approximately 800 parking spaces would be constructed within the parking structure. If the proposed parking structure is designed to be enclosed, it would be required to comply with ventilation requirements of 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 NO_2 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 area. Impacts regarding parking structure CO hotspots would be less than significant.

Construction-Related Diesel Particulate Matter

Project construction would generate diesel particulate matter (DPM) emissions from the use of off-road diesel equipment required. The amount to which the receptors are exposed (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 would dissipate rapidly. Current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. The closest sensitive receptors to the project site are located approximately 225 feet from the project limits, and further from the major project construction areas.

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

Therefore, the proposed project's exposure of sensitive receptors to substantial pollutant concentrations would be less than significant. No mitigation is required.

d) Emission Odors: Less than Significant Impact

The SCAQMD CEQA Air Quality Handbook identifies certain land uses as sources of odors. These land uses include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The proposed project would not include any of these land uses. During construction, some odors (not substantial pollutant concentrations) that may be detected are typical of construction vehicles (e.g. diesel exhaust from grading and construction equipment). These odors are a temporary short-term impact that is typical of construction projects and disperse rapidly. Therefore, the proposed project would not create long-term objectionable odors and impacts would be less than significant. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.3 Biological Resources

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CA Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?					X
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?					X

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?					X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?					X

Discussion

Biological resources issues are discussed in Section 4.3 of the 2007 LRDP EIR. A site-specific Biological Resources Report was prepared by Michael Baker International and is included as Appendix B of this IS/MND.

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

The project-specific Biological Resources Report surveyed the project site, including an additional 100-foot buffer extending past the site boundary extending into the California Coastal Zone located to the west. The project site is located on a graded and partially developed site located in the North Campus. The project site and the 100-foot buffer include only ornamental landscaping and disturbed, nonnative grassland.

The results of the database record searches (CNDDB RareFind 5 and CNPS Online Inventory;

and query of the USFWS IPaC online system) revealed documented occurrences for a total of forty-five (45) special-status plant species and forty-seven (47) special-status wildlife species. However, no special-status plant or wildlife species were observed within the survey area during the April 2019 survey. Based on the literature review and database searches and on-site habitat suitability assessments, the project biologist determined that the survey area does not contain suitable habitat to support special-status plant or wildlife species with a moderate or high potential of occurrence. Therefore, with implementation of mitigation measures BR-1, which would require pre-construction nesting bird surveys, impacts to sensitive species would be reduced to a less than significant level.

b) Riparian Habitat: No Impact

c) Wetlands: No Impact

Due to previous grading and on-site development, the project site contains only ornamental and disturbed grassland as shown in Exhibit 4.3-1. Qualified biologists surveyed the project site on April 11, 2019 and no riparian habitat or wetlands were observed. Therefore, the proposed project would not have a substantial adverse effect on riparian habitat or wetlands and no impact 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 one mile from drainage culverts that were placed under the State Route 73 (SR-73) Toll Road to support movement between the Bonita Canyon Wetland areas, San Joaquin Hills, and the NCCP Reserve System lands on the campus (LRDP EIR, page 4.3-47).

Additionally, as discussed in the Biological Resources Report, due to a lack of suitable habitat throughout the survey area, impacts to wildlife species are not anticipated as a result of the proposed project. Therefore, with implementation of project-specific mitigation measure BR-1, which would require 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 measure BR-1, the proposed project would not conflict with applicable federal, state, or local policies for biological resources. Additionally, the University is the only agency with local land use jurisdiction over the project site. No specific UC policies have been adopted for the project site protecting biological resources. Therefore, the proposed project would not conflict with local policies protecting biological resources and no impact would occur. No mitigation is required.

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

The project site itself is not located within a Habitat Conservation Plan, Natural Community Conservation Plan, or any other habitat conservation plan. As discussed in 4.3(a) above, the proposed project does not conflict with the Orange County NCCP/HCP regarding special-status species. Therefore, no impacts would occur. No mitigation is required.

Mitigation Measures

BR-1: Proposed project activities shall avoid the bird breeding season (typically January through July for raptors and February through August for other avian species), if feasible. If breeding season avoidance is not feasible, a qualified biologist shall conduct a pre-construction nesting bird survey to determine the presence/absence, location, and status of any active nests on or adjacent to the survey area. The extent of the survey buffer area surrounding the site shall be established by the qualified biologist to ensure that direct and indirect effects to nesting birds are avoided. To avoid the destruction of active nests and to protect the reproductive success of birds protected by the MBTA and the CFGC and minimize the potential for project delay, nesting bird surveys shall be performed prior to project commencement.

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

4.4 Cultural Resources

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?					X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		X			
c) Disturb any human remains, including those interred outside of formal cemeteries?				X	

Discussion

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

a) Historical Resources: No Impact

As discussed in Section 2.0, Project Description, the only existing on-site structural uses are the Child Development Center, UCI Recycling Center, and a receiving yard. None of which would be considered an historical resource under Section 15064.5 of the CEQA Guidelines. The entirety of the North Campus was analyzed within the Cultural Resources Study prepared by Michael Baker International (January 2020) for the proposed project. It was determined, using the CEQA Guidelines Section 15064.5(a), that none of the structures located at the North Campus are or can be considered an eligible historic resource as none met any of the four criteria under CEQA. The structures located at the North Campus consist of prefabricated buildings, which were initially developed as temporary space. 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. Four archaeological sites have been discovered and recorded in the North Campus, two of which, CA-ORAa-115-A and CA-ORA-115-B, are located near the project site boundary where shells, mano fragments, metate fragment scrapers, and non-lithic technologies were discovered. Although the site has not been fully recovered, it has been investigated multiple times since its recording in 1963. As such, a certified archaeologist surveyed the project site area on May 29, 2019, but concluded that due to the previous grading of the project site, it is unlikely that the proposed project would impact the resource. However, there is a possibility that archaeological remains could occur beneath the ground surface (LRDP EIR, page 4.4-4). Earth moving activities could possibly uncover previously undetected archaeological remains associated with prehistoric cultures, and a loss of a significant archaeological resource could result if such materials are not properly identified. Therefore, monitoring during grading by a qualified archaeologist through implementation of LRDP EIR mitigation measure Cul-1C would reduce impacts to archaeological resources to a less than significant level.

c) Human Remains: Less than Significant Impact

Human remains may be uncovered during earth moving activities associated with construction of the project. In the event that human remains are discovered during construction, UCI would comply with Section 7050.5 of the California Health and Safety Code and Public Resources Code 5097.98, which requires notification of the County Coroner to determine whether the remains are of forensic interest. If the Coroner, with the aid of a supervising archeologist, determines that the remains appear to be Native American, s/he would contact the Native American Heritage Commission (NAHC) within 24 hours, who would in turn, notify the person they identify as the most likely descendent (MLD) of the human remains. Further actions would be determined by the MLD who has 48 hours after notification of the NAHC to make recommendations regarding the disposition of the remains. Therefore, compliance with the California Health and Safety Code and Public Resources Code would reduce potential impacts to human remains to a less than significant level. No mitigation is required.

Mitigation Measures

LRDP EIR Cul-1C: Prior to land clearing, grading, or similar land development activities for future projects that implement the 2007 LRDP in areas of identified archaeological sensitivity, UCI shall retain a qualified archaeologist (and, if necessary, a culturally affiliated Native American) to monitor these activities. In the event of an unexpected archaeological discovery during grading, the on-site construction supervisor shall redirect work away from the location of the archaeological find. A qualified archaeologist shall oversee the evaluation and recovery of archaeological resources, in accordance with the procedures listed below, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the archaeological find. A record of monitoring activity shall be submitted to UCI each month and at the end of monitoring. If an archaeological discovery is determined to be significant, the archaeologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures:

a. Perform appropriate technical analyses;

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

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

4.5 Energy

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?				X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?					X

Discussion

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

a) Energy Resources: Less than Significant Impact

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

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

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

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

4.6 Geology and Soils

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				**X**	
ii) Strong seismic ground shaking?				**X**	
iii) Seismic-related ground failure, including liquefaction?				**X**	
iv) Landslides				**X**	
b) Result in substantial soil erosion or the loss of topsoil?				**X**	

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?					X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X			

Discussion

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

a) Expose People or Structures to:

i) Fault Rupture: Less than Significant Impact

No active or potentially active earthquake faults have been identified on the UCI campus through the State Alquist-Priolo Earthquake Fault Zoning Act program, but a locally mapped fault trace, known as the “UCI Campus Fault,” traverses the campus. A Restricted Use Zone (RUZ) extending 50 feet beyond both sides of this fault has been established to prevent the construction of new development on the fault in case of rupture (LRDP EIR, pages 4.5-8 through 9). The RUZ does not extend onto the North Campus. Grading, foundation, and building structure elements would be designed to meet or exceed the California Building Code (CBC) seismic safety standards and comply with the UC Seismic Safety Policy. Therefore, due to project site location and compliance with the CBC, impacts due to fault rupture would be less than significant.

ii) Seismic Ground Shaking: Less than Significant Impact

The entire campus, like most of southern California, is located in a seismically active area where strong ground shaking could occur during movements along any one of several faults in the region. An earthquake of magnitude 7.5 on the Richter scale could occur along the Newport-Inglewood Fault, the nearest major fault located approximately 4.5 miles southwest of the campus. Earthquakes along the San Andreas Fault, approximately 35 miles northeast of the campus could generate an 8.0 magnitude level of energy, and movement along the San Jacinto Fault, approximately 30 miles away, could release ground motion energy estimated at 7.5 on the Richter scale (LRDP EIR, page 4.5-2).

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

iii) Liquefaction: Less than Significant Impact

Liquefaction occurs when loosely deposited granular soils with silt and clay content undergoes loss of strength when subjected to strong earthquake-induced ground shaking. The 2007 LRDP EIR indicates that a majority of soils on the UCI campus are characterized as terraced deposits. Additionally, the project-specific Preliminary Geotechnical Data Report indicates only an area south of the project site is possible for liquefaction to occur. However, due to the density of the shallow terrace deposits and the depth to the groundwater table, liquefaction is not likely. 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 graded and disturbed, is located on generally level terrain with minimal sloping, which characterizes a low potential for landslides. Furthermore, the project site is not located in an area considered to be susceptible to seismically induced landslides according to the California Geological Survey.[1] Therefore, impacts due to landslides would be less than significant. No mitigation is required.

b) Soil Erosion: Less than Significant Impact

As noted in the LRDP EIR, earth-disturbing activities associated with project construction that may result in soil erosion would be temporary. The project would comply with the CBC, which regulates excavation and grading activities, and the National Pollutant Discharge Elimination System (NPDES) general permit for construction activities, which requires preparation of an erosion control plan and implementation of construction best management practices (BMPs) to prevent soil erosion. Such BMPs could include, but not limited to, silt fences, watering for dust control, straw-bale check dams, and hydroseeding. The LRDP EIR concluded that with implementation of these routine control measures potential construction-related erosion impacts would be less than significant (LRDP EIR, page 4.5-10).

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

c) Soil Instability: Less than Significant Impact

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

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

d) Expansive Soils: Less than Significant Impact

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

The CBC includes provisions for construction on expansive soils. Proper fill selection, moisture control, and compaction during construction can prevent these soils from causing significant damage. Expansive soils can be treated by removal (typically the upper three feet below finish grade) and replacement with low expansive soils, lime-treatment, and/or moisture conditioning. The geotechnical investigations and soils testing to be conducted as part of the routine final design process would determine the extent of any expansive or compressible soils that occur on the site. Therefore, adherence to the CBC and implementation of the recommendations in the detailed project-specific geotechnical investigation conducted during the design phase would reduce impacts due to expansive soils to a less than significant level. No mitigation is required.

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

All wastewater generated by the proposed project would be conveyed via local sewers directly into the existing public sanitary sewer system maintained by the Irvine Ranch Water District (IRWD). Therefore, the proposed project would not include a sanitary waste disposal system and no impact would occur. No mitigation is required.

f) Paleontological Resources and Geologic Features: Project Impact Adequately Addressed in the EIR

Paleontological investigations conducted for the 1989 LRDP determined that the Topanga Formation geologic units under the campus are considered to be of high paleontological sensitivity for vertebrate and invertebrate fossils. The assessment noted that one of the most unique features on the campus is the micro-paleontological material found along Bonita Canyon Drive, consisting of microscopic fossils of single-celled animals that inhabited the sea floor. The fossils contained in these exposures are of regional and interregional significance because they provide the basis for comparisons between the depositional histories of various parts of the Los Angeles Basin (LRDP EIR, page 4.4-19). Given the geological setting and recognized high sensitivity for vertebrate and invertebrate fossils on the campus, excavation operations, such as trenching and/or tunneling that cut into geologic formations, might expose fossil remains. According to the 2007 LRDP EIR, any project involving excavation into either the Topanga Formation or the terrace deposits could have an adverse effect on paleontological resources. Therefore, implementation of LRDP EIR mitigation measures Cul-4A, Cul-4B, and Cul-4C, which requires monitoring during grading and proper recovery if fossils are found, would reduce impacts to paleontological resources to a less than significant level (LRDP EIR, page 4.4-20).

Mitigation Measures

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

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

LRDP EIR Cul-4C: For significant fossils as determined by mitigation measure Cul-4B, the paleontologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures:

a. The paleontologist shall ensure that all significant fossils collected are cleaned, identified, catalogued, and permanently curated with an appropriate institution with a research interest in the materials (which may include UCI);

b. The paleontologist shall ensure that specialty studies are completed, as appropriate, for any significant fossil collected; and

c. The paleontologist shall ensure that curation of fossils are completed in consultation with UCI. A letter of acceptance from the curation institution shall be submitted to UCI.

4.7 Greenhouse Gas Emissions

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

Discussion

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

a) Greenhouse Gas Emissions: Less than Significant Impact

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

The proposed project's GHG emissions are evaluated consistent with CEQA Guidelines Sections 15183.5, 15064.4(a)(2), and 15064.4(b) by considering whether the project complies with the UCI Climate Action Plan (UCI CAP). This consistency evaluation is the sole basis for determining the significance of the project's GHG-related impacts on the environment. However, for informational purposes, the construction and operational GHG emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod). The primary purpose of quantifying the project's GHG emissions is to satisfy CEQA Guidelines Section 15064.4(a)(1), which calls for a good-faith effort to describe and calculate emissions. However, the significance of the project's GHG emissions impacts is not based on the amount of GHG emissions resulting from the project.

Short-Term Construction Greenhouse Gas Emissions

The proposed project would result in direct greenhouse gas (GHG) emissions from construction. The duration of construction associated with the proposed project is estimated to last up to 22 months and would require approximately 27,103 CY of excavation with 15,210 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.

Table 4.7-1
Construction-Related Greenhouse Gas Emissions

Category	$MTCO_2e$
Total Construction Emissions	798
30-Year Amortized Construction	27
Source: CalEEMod version 2016.3.2. Refer to Appendix C for model outputs.	

As shown in Table 4.7-1, project construction would generate approximately 798 $MTCO_2e$ of GHG emissions. Construction GHG emissions are typically summed and amortized over the project's lifetime (assumed to be 30 years), then added to operational emissions. The amortized project emissions would be 27 $MTCO_2e$ per year. Upon project completion, construction-related GHG emissions would cease.

Long-Term Operational Greenhouse Gas Emissions

Operational or long-term emissions would occur over the project's life. The project's operational GHG emissions would result from direct emissions such as project-generated vehicular traffic, on-site combustion of natural gas, and operation of any landscaping equipment. Operational GHG emissions would also result from indirect sources, such as off-site generation of electrical power, the energy required to convey water to the project site and wastewater from the project site, the emissions associated with solid waste generated from the project site, and any fugitive refrigerants from air conditioning or refrigerators. The project's total operational GHG emissions are summarized in Table 4.7-2. As shown in Table 4.7-2, project operational GHG emissions combined with construction-related GHG emissions would generate approximately 5,309 $MTCO_2e$ annually.

Table 4.7-2
Project Greenhouse Gas Emissions

Emissions Source	$MTCO_2e$ per Year
Construction Amortized Over 30 Years	27
Area Source	0
Energy	1,047
Mobile	3,860
Stationary	58

Waste	228
Water and Wastewater	89
Total	**5,309**
Service Population[1]	*2,766*
Project GHG Efficiency (MTCO$_2$e per Service Population per Year)	*1.92*
GHG Efficiency Target (MTCO$_2$e per Service Population per Year)	*3.0*
Exceeds Threshold?	**No**
1. The service population (employees + patrons) represents the Project's net average daily trips (ADT) (5,531 net ADT) from Table 3-1 (Center for Child Health Estimated Trip Generation Summary) of the *UCI Center for Child Health Traffic Study* (Stantec Inc., December 2019) divided by two (i.e., 5,531/2 = 2,766). This number represents each service population member making one trip to and one trip from the Project site. This is a conservative assumption since each vehicle is assumed to accommodate only one person, whereas many of the vehicles would accommodate more than one person. made by employees and patrons.	
Source: CalEEMod version 2016.3.2. Refer to Appendix C for model outputs.	

GHG Efficiency

Use of an efficiency-based threshold is appropriate for the proposed project because it measures the proposed project's emissions on a per service population basis to determine its overall GHG efficiency relative to California legislation adopted to reduce statewide GHG emissions. Project GHG efficiency is based on GHG emissions divided by the estimated service population. For the purposes of this analysis, the "service population" consists of the total number of project employees + patrons. While patrons visiting the project site would not reside on-site, these visitors would generally live in the surrounding communities and represent a population that is served by the proposed project. As noted in the UCI Center for Child Health Traffic Study (Stantec Inc., December 2019) (Traffic Study), the project would effectively reduce vehicle miles traveled (VMT) because Irvine and Newport Beach residents would travel a reduced distance to the project site in comparison to similar facilities elsewhere. Further, patrons and employees traveling to the project site would comprise a primary source of project-related GHG emissions (approximately 73 percent of total GHG emissions, see Table 4.7-2), and thus, are the most representative service population for GHG emissions. Thus, an efficiency-based threshold based on service population (employees + patrons) is appropriate for the project.

The SCAQMD's post-2020 threshold of 3.0 MTCO$_2$e/SP/year applies to both residential land uses and employment-oriented land uses similar to the proposed project. The 3.0 MTCO$_2$e/SP/year service population metric is based on CARB's 2008 and 2017 Scoping Plans and represents the rates of emissions needed to achieve a fair share of California's emission reduction mandate (i.e., a GHG efficiency level that would meet the state's post-2020 emissions targets). The SCAQMD GHG CEQA Significance Threshold Stakeholder Working Group recommended a service population threshold of 3.0 MTCO$_2$e/SP/year for the year 2035 based on the emissions and population plus employment for land use sectors. The service population efficiency metric was developed to ensure that newer developments were not penalized by introducing "new emissions" and to encourage projects that are highly efficient with respect to GHG emissions.

As shown in Table 4.7-2, project operational GHG emissions, combined with construction-related GHG emissions, would be approximately 5,309 $MTCO_2e$ annually. Based on a service population of 2,766 for the project, the project's GHG efficiency would be 1.92 MTCO2e/SP/year which is below the SCAQMD's post-2020 efficiency threshold of 3.0 $MTCO_2e$/SP/year.

UCI Climate Action Plan and UC Sustainable Practices Policy Consistency Analysis

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

As discussed in the UCI CAP, UCI is making progress to achieve the 2020 and 2025 GHG reduction targets through implementation of sustainable programs that reduce GHG emissions, such as the Transportation Demand Management (TDM) program. The TDM program includes several components, including the "University Pass" transit program; rebates on commuter train passes; incentivized vanpool, carpool, and ridesharing programs; Zipcar car sharing program; "ZotWheels" bike sharing system; deployment of electric vehicle (EV) charging network; deployment of hydrogen fueling station for fuel cell vehicles; deployment of fuel cell bus for campus shuttle system; and a fully electric UCI shuttle fleet that reduce UCI's mobile GHG emissions. In addition to TDM-based GHG reductions, statewide regulatory requirements, as well as improving vehicle technology, fuel types, and fuel efficiency will further reduce UCI's future mobile GHG emissions. Other UCI sustainable efforts/programs such as green building and renewable energy measures have also aided in reducing UCI's carbon footprint in recent years through implementation of the UCI CAP and SPP. Although substantial progress is being made toward meeting the UCI CAP's 2020 and 2025 GHG reduction targets, the UCI CAP acknowledges that achievement of these goals will require participation in off-site carbon abatement actions. These actions may result in local carbon offsets or environmental attributes such as tradable Carbon Offsets or Renewable Energy Certificates (RECs).

The UCI CAP contains existing (2015) baseline and future business-as-usual (BAU) GHG emissions for the UCI campus, including the project site. The future BAU forecasts include an estimate of emissions from future building growth based on the plans and growth strategies outlined in the 2007 Long Range Development Plan (LRDP) and the UCI Strategic Plan (2016) (Strategic Plan). The project consists of a 168,000 GSF medical office building consistent with the LRDP Mixed Use – Commercial designation for the site. The Mixed Use – Commercial designation permits office, research and development, and clinical uses as primary uses for development similar to the proposed project. As such, the project's GHG emissions are accounted for and are consistent with the buildout emissions included in the UCI CAP BAU emissions forecasts. In addition, the project is located in UCI's North Campus and is considered an infill project per CEQA Guidelines Section 21061.3. The project site is located within walking distance (approximately 50 feet) of Orange County Transportation Authority (OCTA) bus route 472, and 0.25-mile of several other OCTA bus routes (i.e., routes 59, 212, 178). In addition, the project would provide on-site bicycle parking and is situated in an urban area near a mix of residential, commercial, office, and institutional uses. As such, employees and patrons would have ample alternative transportation options to and from the project site and would have access to local businesses via walking or bicycling, which would help reduce the project's mobile GHG emissions (comprising approximately 73 percent of total GHG emissions). The project would also be required to comply with the GHG reduction efforts outlined in the UCI CAP and all of UCI's sustainability programs, including the TDM program, green building design, renewable energy, and energy efficiency measures, among others, to reduce its carbon footprint. Therefore, the project would not hinder the ability for UCI to achieve its GHG reduction targets and would not conflict with the UCI CAP.

The project would also be subject to the UC SPP, which includes goals in various areas of sustainable practices including green building design, clean energy, climate protection, sustainable transportation, sustainable building operations for campuses, zero waste, sustainable procurement, sustainable food services, sustainable water systems and sustainability at UC Health. Specific to the project, all new buildings are required to outperform the California Building Code energy-efficiency standards (Title 24) by at least 20 percent or meet whole-building energy performance targets identified in the UC SPP. On-site fossil fuel combustion is prohibited, and buildings are required to achieve U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) "Silver" standards at minimum and strive to achieve LEED "Gold" or higher. The project would not conflict with any of the SPP's sustainable practices, including campus-wide clean energy, energy efficiency, and renewable energy, and sustainable transportation.

As discussed above, the proposed project is consistent with the anticipated planned growth for the site and would be required to comply with the goals, policies, measures, and actions in the UCI CAP and UC SPP. The project would not delay or inhibit UCI's ability to meet the UCI CAP's 2020 and 2025 GHG reduction targets and would not conflict with the UCI CAP. The project demonstrates consistency with UCI CAP goals, measures, and emission reduction targets and would not conflict with any applicable plan, policy, or regulation adopted to reduce GHG emissions, including Title 24, AB 32, and SB 32. Therefore, project impacts would be less than significant. No mitigation is required.

Cumulative Setting and Impacts

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

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

Mitigation Measures

No mitigation measures are required.

4.8 Hazards and Hazardous Materials

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?					X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?					X

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?		X			
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				X	

Discussion

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

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

b) Release of Hazardous Materials: Less than Significant Impact

As discussed in the 2007 LRDP EIR, implementation would include development of facilities that use hazardous materials in clinical uses (page 4.6-25). Also, with an increase in on-campus facilities, expansion of maintenance and cleaning services would be required, which would increase the use, handling, storage, and disposal of products routinely used in building maintenance, some of which may contain hazardous materials. This, in turn, would result in an increase in the amount of hazardous materials that are used, stored, transported, and disposed and could increase the potential for an accident or accidental release of hazardous materials or wastes.

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

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

Temporary, short-term related hazards for the project would include transport, storage, use, and disposal of asphalt, fuels, solvents, paints, thinners, acids, curing compounds, grease, oil, fertilizers, coating materials, and other hazardous substances used during construction. The contractor ensures responsibility, as part of their contract, that hazardous materials and waste are handled, stored, and disposed of in accordance with all applicable Federal, State, and local laws and regulations and routine construction control measures (LRDP EIR, page 4.6-7). Therefore, compliance with Federal, State, and local regulation would reduce potential impacts from the release of hazardous materials to a less than significant level. No mitigation is required.

c) Proximity to Schools: No Impact

There are no schools located within one-quarter mile of the project site. Therefore, the proposed project would not emit large hazardous emissions in proximity to a school and no impact would occur. No mitigation is required.

d) Hazardous Materials Sites: No Impact

The 2007 LRDP EIR concluded that there are no recorded hazardous sites on or within the immediate vicinity of the project site, and according to the UCI Office of Environmental Health and Safety, no other known hazardous materials sites exist on-site (LRDP EIR, page 4.6-32).

As part of the proposed project, an EDR environmental database search was performed on December 3, 2019, which includes numerous regulatory databases. 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 safety and compatibility zones for JWA, which define the surrounding areas that are more likely to be affected if an aircraft-related accident were to occur. The project site is located in a Zone 6 Traffic Pattern Zone, which is the lowest zone category with the likelihood of an airport accident-related occurrence. Per the John Wayne Land Use Plan, medical office buildings are compatible in a Zone 6 designated area.[1] Additionally, as reported in the 2007 LRDP EIR, no accidents related to JWA have occurred near the campus within the past 26 years (page 4.6-33).

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

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

In the event of a road closure, prior to the start of construction, the contractor would comply with LRDP EIR mitigation measure Haz-6A to ensure sufficient notification to the UCI Fire Marshal to allow coordination of emergency services that may be affected (LRDP EIR, page 4.6-34). Lane and road closures within Jamboree Road or Birch Street would also be coordinated with the Cities of Irvine and Newport Beach as part of permitting the off-site roadway improvements. 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

[1] http://www.ocair.com/commissions/aluc/docs/jwa_aelup-april-17-2008.pdf. Accessed January 16, 2020.

Response Plan, potential impacts to emergency response on or surrounding the project site would be reduced to a less than significant impact.

h) Wildland Fires: Less than Significant Impact

The LRDP EIR concluded that areas prone to wildfire within the campus are vegetation communities, such as coastal sage scrub and grassland (4.6-35), which are flashy fuels that can easily ignite during dry conditions. The proposed project site is located in the North Campus and surrounded by urban development along two sides. To the south and southwest is undeveloped land containing disturbed, nonnative grass as discussed in Section 4.3, Biological Resources. However, although the proposed project is located adjacent to open space, the final design would be reviewed by the UC Fire Marshal and would comply with the California Building Code, which includes fire protection. A fire access road would be constructed on site and a fire water line and numerous fire hydrants would be installed throughout the project site. Additionally, the use to be constructed adjacent to the majority of the undeveloped space to the west and southwest is the 800-space parking structure, which would have a limited number of people within it at any given time walking to and from their vehicles. Therefore, the proposed project would not subject people or structures to a significant risk of loss, injury, or death involving wildland fires and impacts would be less than significant. No mitigation is required.

Mitigation Measures

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

4.9 Hydrology and Water Quality

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?		X			
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?					X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:					
i) Result in substantial erosion or siltation on- or off-site;		X			
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;		X			
iii) Create or contribute runoff water which		X			

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or					
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?					X

Discussion

Hydrology and water quality issues are discussed in Section 4.7 of the 2007 LRDP EIR. A site-specific Concept Drainage and Water Quality Technical Memorandum was prepared by Michael Baker International and is included as Appendix D of this this IS/MND.

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 levels through compliance with the conditions of the General Construction Storm Water Permit and LRDP EIR mitigation measures Hyd-2A and 2B. Therefore, impacts due to erosion would be reduced to a less than significant level.

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

The project site is currently partially undeveloped and would be converted to mostly impervious surfaces increasing the rate and amount of runoff. To avoid significant flooding impacts on- or off-site, the proposed storm drain system would be designed in accordance with the drainage criteria set forth in the LRDP mitigation measures Hyd-1A and Hyd-2B. The drainage system would be built to maintain or reduce peak runoff from 25-year and 100-year storm events. Additional hydrological analysis would be conducted as part of the final design process to specify all primary and secondary drainage control facilities required to satisfy flood control criteria, as well as site design, mechanical, structural, and non-structural measures to filter pollutants from site runoff prior to discharge into the existing storm drain networks. Therefore, with implementation of LRDP EIR mitigation measures Hyd-1A and Hyd-2B, impacts to the alteration of the drainage pattern would be reduced to a less than significant level.

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

Storm drainage would be collected and treated on site through best management practices (BMPs), then conveyed to the campus storm drain system and to undeveloped property south of the site consistent with existing drainage patterns. Low impact development (LID) features may be implemented in compliance with UCI's MS4 permit to retain stormwater flows to the south of the project site before release into the existing undeveloped property, which would be determined during the final design phase. Through these measures the quantity of site drainage would remain unchanged post-development and the quality of site drainage would be improved.

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 four 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.

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

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:

- Proper storage, use, and disposal of construction materials.
- Removal of sediment from surface runoff before it leaves the site through the use of silt fences, gravel bags, fiber rolls or other similar measures around the site perimeter.
- Protection of storm drain inlets on-site or downstream of the construction site through the use of gravel bags, fiber rolls, filtration inserts, or other similar measures.
- Stabilization of cleared or graded slopes through the use of plastic sheeting, geotextile fabric, jute matting, tackifiers, hydro-mulching, revegetation (e.g., hydroseeding and/or plantings), or other similar measures.
- Protection or stabilization of stockpiled soils through the use of tarping, plastic sheeting, tackifiers, or other similar measures.
- Prevention of sediment tracked or otherwise transported onto adjacent roadways through use of gravel strips or wash facilities at exit areas (or equivalent measures).
- Removal of sediment tracked or otherwise transported onto adjacent roadways through periodic street sweeping.
- Maintenance of the above-listed sediment control, storm drain inlet protection, slope/stockpile stabilization measures.

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

- All new storm drain inlets and catch basins within the project site shall be marked with prohibitive language and/or graphical icons to discourage illegal dumping per UCI standards.
- Outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system shall be covered and protected by secondary containment.
- Permanent trash container areas shall be enclosed to prevent off-site transport of trash, or drainage from open trash container areas shall be directed to the sanitary sewer system.

- At least one treatment control is required for new parking areas or structures, or for any other new uses identified by UCI as having the potential to generate substantial pollutants. Treatment controls include, but are not limited to, detention basins, infiltration basins, wet ponds or wetlands, bio-swales, filtration devices/inserts at storm drain inlets, hydrodynamic separator systems, increased use of street sweepers, pervious pavement, native California plants and vegetation to minimize water usage, and climate controlled irrigation systems to minimize overflow. Treatment controls shall incorporate volumetric or flow-based design standards to mitigate (infiltrate, filter, or treat) storm water runoff, as appropriate.

4.10 Land Use and Planning

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Physically divide an established community?					X
b) Cause a significant environmental impact with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?					X

Discussion

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

a) Divide an Established Community: No Impact

The proposed project would construct a clinical facility and associated parking structure within the North Campus. Surrounding uses include existing UCI Facilities Management and Distribution Services uses to the northeast; Uptown Newport mixed-use development, Harbor Justice Center – Newport Beach, and adjacent retail uses (Jamboree Plaza, Wienerschnitzel, Starbucks, Round Table Pizza, and Wendy's) to the north and northwest across Jamboree Road; and undeveloped University property to the south and southwest. Existing on-site uses include modular buildings, approximately 40 surface parking spaces, and outdoor yard space previously occupied by the Child Development Center, which ceased operations in June 2019 and is currently vacant as of January 2020. The eastern area of the site contains existing UCI service facilities used by UCI Facilities Management and Distribution Services.

The proposed project would not affect the land use pattern of the surrounding community, either on- or off-campus. No existing bikeways or roadways would be removed as part of the project. Instead, the Birch Street driveway would be improved to four travel lanes with a dedicated left-turn exit pocket, and the driveway to the west of Birch Street would be increased to two lanes. Additional off-site roadway improvements include the addition of dedicated right-turn pockets on Jamboree at both of the proposed project's driveways and a dedicated left-turn pocket at the north corner of the Jamboree Road and Birch Street intersection to enter into the project site.

Additionally, a sidewalk does not currently exist on the south side of Jamboree adjacent to the project site. The proposed project would construct a sidewalk with curb and gutter, which would increase accessibility to the existing Orange County Transportation Authority (OCTA) bus stop located at the south corner of the Jamboree Road and Birch Street intersection, adjacent to the project. New pedestrian walkways and roads would be constructed internally to increase on-site circulation. Therefore, the proposed project would not divide an established community and no impact would occur. No mitigation is required.

b) Conflict with an Applicable Land Use Plan, Policy, or Regulation: No Impact

As discussed in Section 2.0, Project Description, the applicable land use plan is the 2007 LRDP and the University is the only agency with land use jurisdiction over projects located on the campus. The project site is designated as Mixed Use - Commercial in the LRDP, which allows for clinical, office, and research facilities. Furthermore, the project scope of approximately 168,000 GSF is within the total space program identified for the North Campus in the LRDP and analyzed in the LRDP EIR. In addition, the proposed project would comply with the UC Sustainable Practices Policy and the Climate Action Plan (2016 Update). Refer to Section 4.6, Greenhouse Gas Emissions, for a detailed analysis regarding the project's compliance.

As discussed in Section 2.0, Project Description, the project site is located east of the California Coastal Zone, approximately four miles from the Pacific Ocean. However, the proposed roadway improvement to install a right-turn pocket lane in Jamboree Road at the West Access Road is located within the California Coastal Zone in the City of Irvine. As Responsible Agencies, the California Coastal Commission and the City of Irvine would review the roadway improvement plans and approve any required construction permits. As discussed in Section 4.3, Biological Resources, no sensitive biological resources exist immediately west of the project site within the California Coastal Zone as the area consists only of disturbed, nonnative grass. Furthermore, project-related vehicle trips and the proposed roadway improvement would not impact public access to coastal resources.

Therefore, the proposed project would not conflict with the LRDP or any other applicable plan adopted to mitigate environmental effects and no impact would occur. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.11 Noise

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:					
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies?					X
b) Generation of excessive groundborne vibration or groundborne noise levels?		X			
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?					X

Discussion

Noise issues are discussed in Section 4.9 of the 2007 LRDP EIR. A project-specific Noise Assessment was prepared by Kimley-Horn and Associates, Inc. and is included as Appendix E of this IS/MND.

a) Noise Standards: No Impact

Existing Noise Sources

The project site is impacted by various existing noise sources. Mobile sources of noise, especially cars and trucks, are the most common and significant sources of noise near the project site. The primary sources of stationary noise near the project site are those associated with adjacent parking lots and mechanical equipment, and the adjacent UCI service facilities property to the east.

Existing Mobile Noise

Existing roadway noise levels were calculated for the roadway segments in the project vicinity. This task was accomplished using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and existing traffic volumes. The noise prediction model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates used in the FHWA model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation (Caltrans). The Caltrans data indicates that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. The average daily noise levels along roadway segments in proximity to the project site are included in Table 4.11-1.

Table 4.11-1
Existing Traffic Noise

Roadway Segment	ADT	dBA L_{dn}[1]
Jamboree Road		
I-405 SB Ramps to Michelson Drive	79,700	73.3
Michelson Drive to Campus Drive	42,500	70.5
Campus Drive to Birch Street	41,800	70.2
Birch Street to MacArthur Boulevard	42,400	71.4
MacArthur Boulevard to SR-73	35,000	70.4
Michelson Drive		
East of Jamboree Road	33,000	67.8
Campus Drive		
West of Jamboree Road	10,700	63.0
Jamboree Road to Carlson Avenue	16,100	64.8
Carlson Avenue to University Drive	16,900	66.8
East of University Drive	20,900	65.9
Carlson Drive		
Between Michelson Drive and Campus Drive	9,100	63.3

ADT = average daily trips; dBA = A-weighted decibels; L_{dn} = day-night noise level
1. Traffic noise levels are at 100 feet from the roadway centerline.

As indicated in Table 4.11-1, existing traffic noise levels range between 63.0 dBA L_{dn} and 73.3 dBA L_{dn} in the project vicinity, with the highest noise levels occurring along Jamboree Road.

Existing Stationary Noise

The primary sources of stationary noise in the project vicinity are those associated with the operations of nearby residential and commercial uses, and the UCI service facilities property to the east of the site. The noise associated with these sources may represent a single-event noise occurrence, short-term noise, or long-term/continuous noise.

Noise Measurements

To quantify existing ambient noise levels in the project area, three short-term noise measurements were conducted near the project site on December 19, 2019. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the project site. The 10-minute daytime measurements were taken between 1:00 p.m. and 2:00 p.m. The average noise levels and sources of noise measured at each location are listed in Table 4.11-2.

Table 4.11-2
Existing Noise Measurements

Site	Location	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	Time and Date
1	Adjacent to the mixed-use residential use to the west of the Project site along Jamboree Road.	70.7	49.1	79.1	12:59 p.m. to 1:09 p.m.
2	Adjacent to the mixed-use residential use located at the southeastern corner of the Jamboree Road and Campus Drive intersection.	65.2	56.9	73.7	1:21 p.m. to 1:31 p.m.
3	Parking lot in the western portion of the Project site	67.4	48.3	75.6	1:41 p.m. to 1:51 p.m.
Source: Noise measurements taken by Kimley-Horn and Associates on December 19, 2019. See Appendix E for noise measurement results.					

Sensitive Receptors

Noise exposure standards and guidelines for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Residences, hospitals, schools, guest lodging, libraries, and churches are treated as the most sensitive to noise intrusion and therefore have more stringent noise exposure targets than do other uses, such as manufacturing or agricultural uses that are not subject to impacts such as sleep disturbance. Sensitive receptors near the project site are shown in Table 4.11-3.

Table 4.11-3
Sensitive Receptors

Receptor Description	Distance and Direction from the Project
Mixed-Use Residential Dwellings	1,200 feet north, 915 feet northeast, and 225 feet west
Multi-Family Residential Dwellings	950 feet to the northeast
Saddleback Church	1,610 feet north
Newport Church	1,170 feet north
Private outdoor recreational facilities	2,400 feet north

Acoustical Impacts

Although UCI is not subject to local regulations, the City of Irvine and City of Newport Beach's noise standards are relevant to UCI to establish guidelines and evaluating noise impacts that would affect off-campus adjacent noise-sensitive land uses in the City of Irvine and City of Newport Beach.

Construction

Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g. land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. During construction, exterior noise levels could affect the uses surrounding the construction site. Project construction would occur adjacent to existing commercial and institutional uses to the north, UCI service facilities to the north/east, and mixed-use residential uses to the west. The nearest noise-sensitive uses are the mixed-use residential uses located approximately 225 to the west of the project site.

Construction activities would include demolition, site preparation, grading, trenching and utilities, building construction, paving, and architectural coating. Such activities may require dozers, concrete/industrial saws, and excavators during demolition; dozers and tractors during site preparation; trenching equipment during trenching and utilities; graders, dozers, tractors, scrapers, and excavators during grading; cranes, forklifts, generators, tractors, and welders during building construction; pavers, rollers, and paving equipment during paving; and air compressors during architectural coating. Typical operating cycles for these types of construction equipment may involve one-to-two minutes of full power operation followed by three-to-four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical noise levels associated with individual construction equipment are listed in Table 4.11-4.

As indicated in Table 4.11-4, nearby nearest sensitive receptors could be exposed to increased noise levels during construction activities. The nearest sensitive receptors to the project site are the mixed-use residential dwellings located approximately 225 feet to the west of the project construction area in the city of Newport Beach. At this distance, construction noise levels could reach up to 88 dBA based on the equipment required for construction (see Table 4.11-4). Although these receptors would experience increased noise levels during construction activities, neither the City of Irvine nor City of Newport Beach employ construction noise standards for residential uses. Rather, construction activities are permitted within the City of Irvine and City of Newport Beach's allowable construction hours. These permitted hours of construction are included in each City's Noise Ordinance in recognition that construction activities undertaken during daytime hours are a typical part of living in an urban environment and do not cause a significant disruption. Per Irvine Municipal Code Section 6-8-205(A), construction activities and agricultural operations may occur between 7 a.m. and 7 p.m. Mondays through Fridays, and 9 a.m. and 6 p.m. on Saturdays. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays. It is also noted that construction equipment would be equipped with functioning mufflers as mandated by the state, and construction would occur throughout the project site and would not be concentrated or confined in the area directly adjacent to sensitive receptors.

Table 4.11-4
Typical Construction Noise Levels

Equipment	Typical Noise Level (dBA) at 25 feet from Source	Typical Noise Level (dBA) at 50 feet from Source[1]	Typical Noise Level (dBA) at 225 feet from Source[1]
Air Compressor	86	80	68
Backhoe	86	80	67
Compactor	88	82	69
Concrete Mixer	91	85	70
Concrete Pump	88	82	69
Concrete Vibrator	82	76	72
Crane, Derrick	94	88	69
Crane, Mobile	89	83	63
Dozer	91	85	75
Generator	88	82	70
Grader	91	85	72
Impact Wrench	91	85	68
Jack Hammer	94	88	72
Loader	86	80	72
Paver	91	85	75
Pile-driver (Impact)[2]	107	101	72
Pile-driver (Sonic)[2]	101	95	76
Pneumatic Tool	91	85	88
Pump	83	77	83
Roller	91	85	72
Saw	82	76	63
Scraper	91	85	77
Shovel	88	82	85
Truck	90	84	61

Equipment	Typical Noise Level (dBA) at 25 feet from Source	Typical Noise Level (dBA) at 50 feet from Source[1]	Typical Noise Level (dBA) at 225 feet from Source[1]
1. Calculated using the inverse square law formula for sound attenuation: $dBA_2 = dBA_1 + 20Log(d_1/d_2)$ Where: dBA_2 = estimated noise level at receptor; dBA_1 = reference noise level; d_1 = reference distance; d_2 = receptor location distance. 2. Equipment not required for project construction.			

Construction activities may also cause increased noise along site access routes due to movement of equipment and workers. Compliance with the City of Irvine and Newport Beach Municipal Code would minimize impacts from construction noise, as construction would be limited to daytime hours on weekdays and Saturdays. By following these noise standards, project construction activities would result in a less than significant noise impact.

Operations

After completion of construction activities, typical noise associated with the proposed project would include mechanical equipment, parking lot noise, occasional delivery trucks/trash and recycling truck pickups, and mobile traffic noise.

Mechanical Equipment

Mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC] equipment) typically generates noise levels of approximately 52 dBA at 50 feet. Noise has a decay rate due to distance attenuation, which is calculated based on the Inverse Square Law of sound propagation. Based upon the Inverse Square Law, sound levels decrease by six dBA for each doubling of distance from the source. The nearest noise-sensitive use (the mixed-use residential use to the west of the project site located in the city of Newport Beach) would be located as close as 225 feet from the HVAC equipment at the project site. At this distance, mechanical equipment noise would attenuate to approximately 38.9 dBA which is considered “Clearly Compatible” in the City of Newport Beach Land Use Compatibility Guidelines and is below the City of Newport Beach’s most stringent exterior nighttime noise standard of 50 dBA L_{eq} for mixed-use residential uses. In addition, noise from the HVAC equipment would meet the City of Newport Beach City’s acceptable nighttime interior noise standard of 40 dBA L_{eq} for mixed-use residential uses assuming a standard exterior-interior reduction of 20 dB from standard construction practices. It should also be noted that the HVAC equipment would run sporadically throughout the day (when temperatures are warmer) and less frequent during nighttime hours (when temperatures are cooler). Other mechanical equipment (e.g., fire and water pump equipment, emergency generator, etc.) for the project would be located in fully enclosed spaces (e.g., a mechanical penthouse) throughout the site and would be inaudible at off-site uses. Therefore, impacts from mechanical equipment would be less than significant.

Parking Lot Noise

Traffic associated with parking lots is typically not of sufficient volume to exceed community noise standards, which are based on a time-averaged scale such as the CNEL scale. The instantaneous maximum sound levels generated by a car door slamming, engine starting up, and car pass-bys range from 53 to 61 dBA and may be an annoyance to adjacent noise-sensitive receptors. Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Sound levels of speech typically range from 33 dBA at 50 feet for normal speech to 50 dBA at 50 feet for very loud speech.

Parking lot noise would occur within the parking structure and surface parking lot on the project site. As noted above, noise levels from parking lot activities typically range from approximately 53 to 61 dBA at a distance of 50 feet. However, parking lot noise is instantaneous and would be well below the City of Irvine and/or City of Newport Beach's community noise standards when averaged over time. In addition, parking lot noise is currently generated on-site and at the surrounding uses under existing conditions. Therefore, noise impacts from parking lots would be less than significant.

Slow-Moving Trucks (Trash/Recycling Collection and Truck Deliveries)

The proposed project would involve occasional deliveries and weekly trash/recycling pickups from slow-moving trucks during normal daytime hours. Deliveries and trash/recycling pickup at the project site would occur via the two access driveways along Jamboree Road. Low speed truck noise results from a combination of engine, exhaust, and tire noise as well as the intermittent sounds of back-up alarms and releases of compressed air associated with truck air-brakes. Medium-sized delivery trucks and trash collection trucks typically generate noise levels of 75 dBA at distance of 50 feet. The nearest noise-sensitive use, the mixed-use residential to the west, could be located as close as approximately 225 feet from the trash collection area on the project site. At this distance, noise levels from truck deliveries would be approximately 61.9 dBA, which would attenuate to an interior noise level of 41.9 dBA assuming a standard exterior-interior reduction of 20 dB from standard construction practices. As such, noise levels at the nearest sensitive uses from truck delivery and trash/recycling pickups at the project site would not exceed existing ambient noise levels in the project vicinity (i.e., 70.7 dBA L_{eq} at noise measurement location #1, see Table 4.11-2). In addition, delivery trucks/trash and recycling truck pickups would occur during normal daytime hours, and would be of short duration and are not expected to exceed land use compatibility standards when calculated using the hourly L_{eq} metric, or CNEL metric, respectively. Further, trash/recycling pickups and truck deliveries are considered part of the existing noise environment (i.e., truck deliveries and trash collection activities occur at surrounding uses in the immediate project vicinity under existing conditions). Therefore, trash/recycling collection and truck delivery noise would not result in a substantial increase over existing ambient noise levels and impacts would be less than significant.

Off-Site Mobile Noise

Implementation of the proposed project would generate increased traffic volumes along roadway segments in the project vicinity. The project is expected to generate a net of 5,531 average daily trips (ADT) which would result in noise increases on project area roadways. In general, a traffic noise increase of less than three dBA is barely perceptible to people, while a five dBA increase is readily noticeable. Generally, traffic volumes on project area roadways would have to approximately double for the resulting traffic noise levels to increase by 3 dBA.

Traffic noise levels for roadways primarily affected by the project were calculated using the FHWA's Highway Noise Prediction Model (FHWA-RD-77-108). Traffic noise modeling was conducted for conditions with and without the Project and are based on traffic volumes provided in the Traffic Study (Stantec Inc., 2020). As shown in Table 4.11-5, the existing traffic-generated noise levels on project area roadways range between 63.0 dBA L_{dn} and 73.3 dBA L_{dn} at 100 feet from the centerline, with the highest noise levels occurring along Jamboree Road. Under Existing Plus Project conditions, traffic noise levels would increase by a maximum of 0.3 dBA Ldn along Jamboree Road (from Campus Drive to Birch Street). Therefore, the proposed project would not result in a 3.0 dBA noise increase and/or exceed the City of Newport Beach's traffic noise impact criteria. Therefore, traffic noise increases would be imperceptible, and the proposed project would have a less than significant impact on existing traffic noise levels.

Table 4.11-6 shows the traffic noise levels for Buildout Without Project and Buildout Plus Project conditions. As shown in Table 4.11-6, Buildout Without Project traffic-generated noise levels on project area roadways range between 63.3 dBA L_{dn} and 74.1 dBA L_{dn} at 100 feet from the centerline, with the highest noise levels occurring along Jamboree Road. Under Buildout Plus Project conditions, traffic noise would increase by a maximum of 0.3 dBA L_{dn} along Jamboree Road (from MacArthur Boulevard to SR-73). This level is below the perceptible noise level change of 3.0 dBA and would not exceed the City of Newport Beach's traffic noise impact. Therefore, traffic noise increases would be imperceptible, and the proposed project would have a less than significant impact on buildout traffic noise levels.

On-Site Mobile Noise

According the Newport Beach General Plan Noise Element, the project site is located within the 60-to-70 dB CNEL noise contour for traffic noise along Jamboree Road, which is consistent with the 70 dBA CNEL noise limit for clinical facilities identified in the UCI 2007 Long Range Development Plan Final EIR (2007 LRDP EIR). Therefore, a less than significant impact would occur for on-site traffic noise.

Therefore, the proposed project would not result in 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 and no impact would occur. No mitigation is required.

Cumulative Noise Impacts

The project's construction activities would not result in a substantial temporary increase in ambient noise levels. The City of Irvine and City of Newport Beach permit construction activities within the allowed hours outlined in each City's respective Noise Ordinance. There would be periodic, temporary, noise impacts that would cease upon completion of construction activities. The proposed project would contribute to other proximate construction project noise impacts if construction activities were conducted concurrently. However, based on the noise analysis above, the project's construction-related noise impacts would be less than significant following compliance with the local Noise Ordinances. Given that noise dissipates as it travels away from its source, operational noise impacts from on-site activities and other stationary sources would be limited to the project site and vicinity. Therefore, cumulative operational noise impacts from related projects, in conjunction with project specific noise impacts, would not be cumulatively significant.

Table 4.11-5
Existing and Project Traffic Noise

Roadway Segment	Existing		Existing Plus Project		Project Change from Existing Conditions	Significant Impact?
	ADT	dBA L_{dn}[1]	ADT	dBA L_{dn}[1]		
Jamboree Road						
I-405 SB Ramps to Michelson Drive	79,700	73.3	81,100	73.4	0.1	No
Michelson Drive to Campus Drive	42,500	70.5	44,000	70.6	0.2	No
Campus Drive to Birch Street	41,800	70.2	44,900	70.5	0.3	No
Birch Street to MacArthur Boulevard	42,400	71.4	44,600	71.6	0.2	No
MacArthur Boulevard to SR-73	35,000	70.4	36,700	70.6	0.2	No
Michelson Drive						
East of Jamboree Road	33,000	67.8	33,100	67.8	0.0	No
Campus Drive						
West of Jamboree Road	10,700	63.0	11,300	63.3	0.2	No
Jamboree Road to Carlson Avenue	16,100	64.8	16,900	65.1	0.2	No
Carlson Avenue to University Drive	16,900	66.8	17,500	67.0	0.2	No
East of University Drive	20,900	65.9	21,300	65.9	0.1	No
Carlson Drive						
Between Michelson Drive and Campus Drive	9,100	63.3	9,400	63.4	0.1	No

ADT = average daily trips; dBA = A-weighted decibels; L_{dn} = day-night noise level
1. Traffic noise levels are at 100 feet from the roadway centerline.

Source: Based on traffic data provided by Stantec, Inc., 2020.

Table 4.11-6
Buildout Traffic Noise

Roadway Segment	Buildout Without Project		Buildout Plus Project		Project Change from Buildout Without Project Conditions	Significant Impact?
	ADT	dBA L_{dn}[1]	ADT	dBA L_{dn}[1]		
Jamboree Road						
I-405 SB Ramps to Michelson Drive	94,300	74.1	95,100	74.1	0.0	No
Michelson Drive to Campus Drive	54,100	71.5	55,100	71.6	0.1	No
Campus Drive to Birch Street	51,800	71.1	52,700	71.2	0.1	No
Birch Street to Fairchild Road	49,700	72.1	51,600	72.2	0.2	No
Fairchild Road to MacArthur Boulevard	45,700	71.7	46,600	71.8	0.1	No
MacArthur Boulevard to SR-73	35,300	70.4	37,800	70.7	0.3	
Michelson Drive						
West of Jamboree Road	24,100	65.3	24,200	65.4	0.1	No
Jamboree Road to Carlson Avenue	29,700	67.4	29,600	67.5	0.1	
East of Carlson Avenue	30,000	67.3	30,200	67.5	0.2	
Campus Drive						
West of Jamboree Road	16,000	64.8	16,400	64.9	0.1	No
Jamboree Road to Carlson Avenue	26,500	67.0	26,900	67.1	0.1	No
Carlson Avenue to University Drive	30,000	69.3	30,500	69.4	0.0	No
East of University Drive	32,800	67.8	33,100	67.8	-0.1	No
Carlson Drive						
Between Michelson Drive and Campus Drive	9,100	63.3	9,400	63.3	0.0	No

ADT = average daily trips; dBA = A-weighted decibels; L_{dn} = day-night noise level

1. Traffic noise levels are at 100 feet from the roadway centerline.

Source: Based on traffic data provided by Stantec, Inc., 2020.

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

Increases in groundborne vibration levels attributable to the proposed project would be primarily associated with short-term construction-related activities. The Federal Transit Administration (FTA) has published standard vibration velocities for construction equipment operations in their 2018 Transit Noise and Vibration Impact Assessment Manual. The types of construction vibration impacts include human annoyance and building damage.

The Federal Transit Administration (FTA) has published standard vibration velocities for construction equipment operations. In general, the FTA architectural damage criterion for continuous vibrations (i.e., 0.2 in/sec) appears to be conservative. The types of construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. For example, for a building that is constructed with reinforced concrete with no plaster, the FTA guidelines show that a vibration level of up to 0.5 in/sec is considered safe and would not result in any construction vibration damage. This evaluation uses the FTA architectural damage criterion for continuous vibrations at non-engineered timber and masonry buildings of 0.2 inch-per-second peak particle velocity (PPV) and human annoyance criterion of 0.4 inch-per-second PPV in accordance with California Department of Transportation (Caltrans) guidance.

Table 4.11-7 lists vibration levels at 25 feet and 50 feet for typical construction equipment. Groundborne vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. As indicated in Table 4.11-7, based on FTA data, vibration velocities from typical heavy construction equipment operations that would be used during construction range from 0.003 to 0.089 in/sec PPV at 25 feet from the source of activity, which is below the FTA's 0.2 PPV threshold.

Table 4.11-7
Typical Construction Equipment Vibration Levels

Equipment	Peak Particle Velocity at 25 Feet (in/sec)	Peak Particle Velocity at 50 Feet (in/sec)[1]
Large Bulldozer	0.089	0.032
Caisson Drilling	0.089	0.032
Loaded Trucks	0.076	0.027
Jackhammer	0.035	0.012
Small Bulldozer/Tractors	0.003	0.001

1. Calculated using the following formula: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$, where: PPV_{equip} = the peak particle velocity in in/sec of the equipment adjusted for the distance; PPV_{ref} = the reference vibration level in in/sec from Table 7-4 of the Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018; D = the distance from the

equipment to the receiver.

The nearest off-site structure is a UCI maintenance building located approximately 50 feet from the project construction area. As shown in Table 4.11-7, at 50 feet, construction equipment vibration velocities would not exceed 0.089 in/sec PPV, which is below the FTA's 0.2 PPV threshold and Caltrans' 0.4 in/sec PPV threshold for human annoyance. It is also acknowledged that construction activities would occur throughout the project site and would not be concentrated at the point closest to the nearest off-site structure. Therefore, vibration impacts associated with the proposed project would be less than significant. No mitigation is required.

c) Private Airstrips and Public Airport Noise: No Impact

The nearest airport is the John Wayne Airport located approximately 0.78-mile to the northwest of the project site. According to the John Wayne Airport 2018 Annual 60-75 (5 dB intervals) CNEL Noise Contours, the project site is located outside the 60 dBA CNEL noise contour for John Wayne Airport, which is consistent with the 70 dBA CNEL noise limit for clinical facilities identified in the 2007 LRDP EIR. Therefore, the proposed project would not expose people residing or working in the project area to excessive airport- or airstrip-related noise levels and no impact would occur. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.12 Population and Housing

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

Discussion

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

a) Induce Substantial Unplanned Population Growth: Less than Significant Impact

The proposed project, as described in Section 2.0, Project Description, would construct a 168,000 GSF building to house UCI Health clinical uses and an 800-space parking structure. In order to operate the facility, it is anticipated approximately 225 new full-time faculty and staff would be hired, less than 0.5 percent of the existing campus population. UCI Health anticipates approximately 228 visitors per day.

As discussed in Section 4.10, Land Use and Planning, the proposed project is consistent with the 2007 LRDP land use designation of Mixed Use – Commercial at the North Campus, which allows for clinical facilities in addition to other uses associated with off-campus visitors, such as commercial and retail space.

As discussed in the 2007 LRDP and analyzed in the 2007 LRDP EIR, buildout at the North

Campus allows for 950,000 square feet of built space and 435 dwelling units. Currently, there is approximately 106,700 GSF and zero dwelling units on the North Campus. With the demolition of approximately 9,000 GSF of existing on-site space (as discussed in Section 2.0, Project Description) and the construction of the proposed 168,000 GSF clinical facility, there would be approximately 223,700 GSF on the North Campus at project completion, which is well within the 950,000 GSF capacity analyzed in the 2007 LRDP EIR.

As of the Fall 2019 quarter, there are approximately 8,813 faculty and staff[1] on the UCI campus. The addition of the 225 new faculty and staff estimated to be hired would result in a total faculty and staff population of approximately 9,038, which is within the 11,443 faculty and staff capacity analyzed in the 2007 LRDP EIR. Due to the use of the facility, student populations would not be impacted with the implementation of the proposed project. Additionally, campus populations at buildout were analyzed in the LRDP EIR, which found that implementation of the 2007 LRDP would not result in significant impacts due to population growth as it is considered a small portion of planned growth for the region (LRDP EIR, page 4.10-10).

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

b) Displace Existing People or Housing: No Impact

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

Mitigation Measures

No mitigation measures are required.

[1] https://www.oir.uci.edu/files/empl/VIA01NF-all-employees.pdf. Accessed December 14, 2019.

4.13 Public Services

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:					
a) Fire protection?				X	
b) Police protection?				X	
c) Schools?				X	
d) Parks?				X	
e) Other public facilities?				X	

Discussion

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

a) Fire Protection: Less than Significant

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

As discussed in Section 4.11, Population and Housing, the proposed project would hire 225 full-time faculty and staff and would have an anticipated 228 off-campus daily visitors associated with the 168,000 GSF clinical space. However, these increases are within population and building capacities previously analyzed in the 2007 LRDP EIR and would not result in unplanned population growth on the UCI campus. Additionally, due to the negligible increase of population, it would not significantly increase demand for fire services. Furthermore, the project site is located within a five travel minute coverage area by OCFA. In 2016, the average response time to UCI was six minutes and 56 seconds, which is within the standard adopted by OCFA, where a unit should be on-site within seven minutes and 20 seconds for 80 percent of emergency calls.[1] Therefore, the proposed project would not require the need for new fire protection facilities and impacts to services would be less than significant. No mitigation is required.

b) Police Protection: Less than Significant

The UCI Police Department (UCIPD) is located in the Public Services building on the East Campus approximately 1.5 miles southeast of the project site. The UCIPD provides all police services (all patrol, investigation, crime prevention education, and related law enforcement duties) for the campus (LRDP EIR, page 4.11-3).

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

c) Schools: Less than Significant

The Irvine Unified School District (IUSD) provides kindergarten through grade 12 (k-12) public education services for school age children residing on or near the UCI campus. As discussed above and in Section 4.11, Population and Housing, the proposed project would not increase the campus population beyond what was planned for in the 2007 LRDP and analyzed in its EIR. Therefore, the proposed project would not require the need for new off-campus educational facilities and impacts to services would be less than significant. No mitigation is required.

d) Parks: Less than Significant Impact

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

e) Other Public Facilities: Less than Significant

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

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[1] http://www.ocfa.org/Uploads/Orange%20County%20Fire%20Authority%20SOC_FINAL.pdf. Accessed December 23, 2019.

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

Mitigation Measures

No mitigation measures are required.

4.14 Recreation

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X	
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?					X

Discussion

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

a) Physically Deteriorate Existing Facilities: Less than Significant Impact

As discussed in Section 4.11, Population and Housing, the proposed project would not increase faculty, staff, student, or visitor populations beyond what was previously analyzed in the 2007 LRDP EIR and, therefore, would not result in accelerated deterioration of recreational uses on or off-campus. In addition, campus and community populations have access to on-campus recreational facilities, including the Anteater Recreation Center (ARC), Aldrich Park, and Crawford Athletics Complex. The 2007 LRDP EIR assumed that the current level of maintenance of campus recreational facilities would continue and that substantial facility deterioration would not occur (page 4.12-5). Therefore, impacts to existing recreational facilities would be less than significant. No mitigation is required.

b) Construction of Recreational Facilities: No Impact

The proposed project would construct a 168,000 clinical facility and an 800-space parking structure on the project site. No recreational facilities are included in the project scope. Additionally, the proposed project would not directly induce unplanned population growth and would not require the construction of new or expansion of existing recreational facilities. Therefore, no impacts due to construction or expansion of recreational facilities as a result of the project would occur. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.15 Transportation

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Conflict with 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

Transportation and traffic issues are discussed in Section 4.13 of the 2007 LRDP EIR, which is based on the traffic study prepared by Austin-Foust Associates, Inc. (now Stantec Consulting Services, Inc.) in 2007. A project-level study was prepared by Stantec Consulting Services, Inc. and is included as Appendix F.

a) Conflict with a Circulation Plan: No Impact

As discussed in Section 2.0, Project Description, and below in Section 4.15(b), the proposed project would require the installation of two eastbound right-turn pockets on Jamboree Road at the Birch Street and West Access Road driveways in the City of Irvine and restriping of the westbound left-turn pocket to add an additional left-turn lane at the Jamboree Road and Birch Street intersection in the City of Newport Beach. As such, UCI would coordinate with City staff and provide engineering drawings during the design phase of the project to ensure that the lanes adhere to Cities of Irvine and Newport Beach roadway design requirements. The Cities 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 Cities of Irvine and Newport Beach, 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 great 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: Less than Significant Impact

Under the California Environmental Quality Act (CEQA), administrative regulations and guidelines are set forth that explain how to determine whether an activity (i.e., proposed project) is subject to environmental review, the steps to undertake the review, and the required content of the review. 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. Beginning July 1, 2020, updated CEQA guidelines will go into effect statewide that include sections created by Senate Bill 743 (SB 743). Lead agencies have the option to implement the new guidelines immediately; however, the provisions of the updated sections will apply statewide beginning July 1, 2020.

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 vehicle miles traveled (VMT). The final Technical Advisory released by OPR in December 2018 provides guidance on evaluating transportation impacts and VMT and is the guidance on which this VMT analysis is based on. The Technical Advisory recommends new significance thresholds that may constitute a significant transportation impact. The recommended significance thresholds are summarized in Table 4.15-1.

If a significant impact is identified utilizing the aforementioned significance thresholds, mitigation must be identified.

Under OPR's recommendations, lead agencies have the discretion to set or apply their own thresholds of significance or rely on thresholds recommended by other agencies. Because UCI is located within the City of Irvine, significance thresholds set by the City may be appropriate for UCI. However, the City is currently in the process of updating ITAM and has yet to establish a VMT threshold. The Orange County Transportation Authority (OCTA) maintains the Orange County Transportation Analysis Model (OCTAM) and is another resource that could set regional VMT thresholds appropriate for UCI to utilize. However, at this time, OCTA has not formalized any policies or directives regarding VMT analysis. As such, OPR's guidelines state that a qualitative analysis should be conducted when methods do not exist for undertaking a quantitative analysis.

Table 4.15-1
SB 743 Recommended Significance Thresholds

Type	Metric	Threshold
Residential Development	Household VMT per capita	15% less than existing city household VMT per capita or regional household VMT per capita
Office Development	VMT per Employee	15% less than existing regional VMT per employee
Retail Development	Total VMT	If project causes a net increase in total VMT

In order to evaluate the proposed project's potential transportation impacts related to VMT, qualitative significance criteria have been established to evaluate the project's compatibility with the statutory goals for the VMT metric. The following are the VMT metric's three statutory goals as stated in the Technical Advisory:

- The reduction of greenhouse gas emissions
- The development of multimodal transportation networks
- A diversity of land uses

The significance criteria utilized in this analysis is summarized in Table 4.15-2 and takes into consideration the three goals listed above, OPR's Technical Advisory, and California Air Pollution Control Officers Association's (CAPCOA) Comprehensive Report for Quantifying Greenhouse Gas Mitigation Measures. The CAPCOA document provides 54 TDM strategies associated with the reductions of VMT and GHG emissions and is an appropriate resource for this type of analysis.

Table 4.15-2
VMT Screening Criteria

Category	Criteria/Screening	Threshold
Screening Thresholds	The Technical Advisory provides screening thresholds for land use projects. These screening thresholds include: • Trip generation screening – Small Project can be screen out from completing a full VMT analysis. • Map-based screening – Projects that are located in areas with low VMT can be screened out from completing a full VMT analysis. • Proximity to transit – Projects within ½ mile of a major transit stop or a stop located along a high-quality transit corridor reduce vehicle miles traveled and therefore can be screened out from completing a full VMT analysis. • Affordable Residential development – Affordable housing in infill locations can be screened out from completing a full VMT analysis. Evaluate the Project using the screening thresholds.	• If the Project generates less than 110 trips per day, the Project is assumed to have a less than significant impact. • If the Project is in a low VMT area, the Project is assumed to have a less than significant impact. • If the Project is within ½ mile of a high-quality transit stop/corridor, the Project is assumed to have less than significant impact. • If the Project includes affordable units and is located in an infill location, then the Project is assumed to have less than significant impact.
TDM Strategies for the Reduction of Greenhouse Gas Emissions	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. Evaluate if the Project would eliminate or reduce the existing TDM measures.	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.
Multi-modal Transportation	Providing alternative modes of transportation that has high accessibility and connectivity reduces vehicle miles traveled, reduces single occupancy vehicles, and reduces VMT per capita. Identify existing pedestrian, bicycle and transit facilities that provide alternative modes of transportation in place of a single-occupancy vehicle. Evaluate the accessibility and connectivity of pedestrian, bicyclist, and transit facilities around the Project site.	If the Project restricts access or alters a route, this may indicate a significant impact.
Diversity of Land Uses	Interactions between different land uses and interactions between land use and transportation have the potential to reduce VMT. Evaluate the surrounding uses of the Project and the interaction between land use and transportation.	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.

Proximity to Transit	The Technical Advisory states that Projects within ½ mile of a major transit stop or a stop located along a high-quality transit corridor reduce vehicle miles traveled and therefore can be screened out from completing a full VMT analysis. Evaluate the Project's existing and future transit accessibility.	If the Project is within ½ mile of a major transit stop or along a high- quality transit corridor, the Project is assumed to have a less than significant impact. If not, provide an analysis of existing and future transit accessibility.
RTP/SCS Consistency	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. Evaluate if the Project is consistent with the RTP/SCS. If the Project is inconsistent, then the inconsistency should be evaluated for a significant impact on transportation.	If the Project is consistent with the RTP/SCS, then the Project would have less than significant impact. If the Project is inconsistent then the inconsistency should be evaluated for a significant impact on transportation.

Transportation Impact Analysis

Screening Evaluation

Prior to undertaking a detailed VMT study, OPR advises that lead agencies conduct a screening process "to quickly identify when a project should be expected to cause a less than significant impact without conducting a detailed study." OPR suggests that lead agencies may screen out VMT impacts using project size, maps, transit availability, and provision of affordable housing. For this analysis, the proposed project has been evaluated using the same screening process.

Trip Generation Screening

The Technical Guidelines recommends that small projects that generate less than 110 trips per day generally may be assumed to cause a less than significant transportation impact. Trips generated by the proposed project were estimated using trip rates from in the Institute of Traffic Engineers Trip Generation Manual (10th Edition). The Medical Office category (Code 720) was utilized. Table 4.15-3 shows the trip rates and corresponding estimated trip generation for the proposed project, which shows the project would generate approximately 5,846 daily trips, 467 trips during the AM peak hour and 581 trips during the PM peak hour. The Child Development Center currently exists onsite. To account for existing trips that would be removed per the demolition of the Child Development Center, driveway counts that were collected have been incorporated into the trip generation estimates as shown in Table 4.15-3. The net volume of new trips is 5,531 average daily trips (ADT), 409 trips during the AM peak hour, and 576 trips in the PM peak hour. Since the proposed project is estimated to generate more than 110 trips per day, a VMT analysis is required.

Table 4.15-3
Estimated Trip Generation Summary

Land Use	Amount	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	ADT
Trip Rates									
Medical Office Building (Code 720) [1]	TSF		2.17	0.61	2.78	0.97	2.49	3.46	34.8
Existing Child Development Center [2]	TSF		5.23	3.69	8.92	0.15	0.62	0.77	48.5
Trip Generation – Center for Child Health									
Medical Office Building	168	TSF	365	103	467	163	418	581	5,846
Existing Trips									
Existing Child Development Center	-6.5	TSF	-34	-24	-58	-1	-4	-5	-315
Net New Trips									
Net New Trips			331	79	409	162	414	576	5,531

[1] Source: ITE Trip Generation Manual (10th Edition)
[2] Rates calculated from existing driveway counts
ADT = average daily trips ; TSF = thousand square feet

Map-Based Screening

The Technical Advisory recommends that residential and office projects located in areas with low VMT per capita, and that incorporate similar features, will exhibit similarly low VMT per capita, therefore there will be no significant impacts to VMT.

At this time, the City of Irvine has not established a set of VMT guidelines and has not developed a map-based resource for identifying areas in the City with low VMT per capita. Therefore, this screening threshold cannot be used for the proposed project.

Proximity to High Quality Transit

The Technical Advisory suggests that a project can be “screened out” 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.” Based on this definition, the proposed project would not be eligible to be screened out under this threshold.

Affordable Housing

The Technical Advisory suggests 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.

TDM Strategies for the Reduction of Greenhouse Gas

Emissions Analysis

As noted above, one goal of utilizing the VMT metric for evaluation of transportation impacts is to reduce greenhouse gas emissions. TDM measures are important and effective tools to reduce greenhouse gas emissions, increasing vehicle efficiency, and reducing the amount of VMT. Co-benefits to reducing VMT include less vehicle crashes, improved air quality and improved physical and mental health. 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." 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,
- subsidized bus passes (OCTA),
- rebates on train tickets for employees and students who use the train to commute to campus and do not purchase long term parking permits,
- 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)
- Carshare service through Zip Car (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), and
- UCI Medical Campus shuttle route (provides rides to UCI Medical Hospital located outside of the campus).

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 conducted in 2017. The purpose of the survey was to evaluate student commute habits. The survey concludes that 20 percent of student survey respondents commute with only the driver in the vehicle (single occupancy vehicle), 4 percent vanpool or carpool, 28 percent take the campus shuttle or public transportation, less than one percent use a motorcycle or scooter, and 47 percent walk, bicycle, or use other non-motorized means. Overall, this shows that approximately 70 percent of students use more sustainable commuting options. This can be attributed to the several TDM measures listed above.

Additionally, per the South Coast Air Quality Management District's (SCAQMD) annual survey, employees at UCI have an average vehicle ridership of 2.06 based on the 2019 survey. Due to the comprehensive TDM program implemented at the UCI campus, this average vehicle ridership is the highest of any employer great than 3,000 within the SCAQMD area, which includes Orange, Los Angeles, and Riverside Counties.

The proposed project would provide pediatric care facilities. The specific uses included in the project are pediatric primary care, pediatric subspecialty clinic, an autism center, pediatric rehabilitation care, adult/pediatric urgent care, diagnostics and testing, adult primary care, breast center, and administrative office. The proposed project is driven by the need to improve care for children in the region of all socioeconomic circumstances and would attract those currently seeking care further away. Providing such a facility in a currently underserved area should have the effect of reducing VMT because Irvine and Newport Beach residents would travel a reduced distance to reach similar specialty facilities elsewhere. Furthermore, employees of the proposed project would be eligible to utilize the TDM services provided by UCI's Transportation and Distribution Service.

Since the proposed project is not anticipated to eliminate or reduce any existing TDM measures offed by UCI's Transportation and Distribution Service as discussed above, the proposed project would not affect existing TDMs and no impact would occur.

Multimodal Transportation Networks Analysis

Another goal of utilizing the VMT metric for evaluation of transportation impacts 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 signal occupancy vehicle. Multimodal networks are a component of a Complete Street that address the needs of pedestrians, bicyclists, transit riders, and motorists. The development of multimodal features within a development project is a TDM strategy listed by CAPCOA that would reduce VMT and GHG emissions.

OPR also 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, removes, or interferes with pedestrian paths, bicycle paths, or transit stops would have a significant impact on VMT. An existing Class II Bicycle Lane on Campus Drive connects the proposed project site to the main UCI campus. Two-way cycling is permitted on the sidewalk along the west side of Jamboree Road in front of the project site, which can be accessed by a signalized crossing at the Birch Street intersection. On-street marked bicycle lanes are also provided on Carlson Avenue, Michelson Drive, Von Karman Ave, and Bristol Street North. The bike lanes on these streets connect to the City of Irvine's larger bicycle network. The proposed project would not remove any pedestrian or bicycle facilities or transit stops. Rather, the proposed project would enhance transit access by constructing a sidewalk and pedestrian amenities such as lighting, trash receptacles, and benches. The proposed project would also provide landscaping which would enhance the pedestrian experience by providing shade for walking or resting. Through these project design features, accessibility would be increased and would also create a pleasurable experience for pedestrians and bicyclists. Since the proposed project is enhancing the multimodal transportation network, it would have a less than significant impact on VMT based on the multimodal transportation screening threshold.

Diversity of Land Uses

The third goal of the VMT metric is the development of "a diversity of land uses." The Technical Advisory notes that new land use projects alone would not reduce VMT; however, "interactions between land use projects, and also between land use and transportation projects, existing and future, together affect VMT." The proposed project is part of a larger plan, specifically, UCI's LRDP. The 2007 LRDP identified general land use developments to support future campus 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[1]:

- 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.

The 2007 LRDP designates the North Campus area, where the project site is located, as Mixed Used – Commercial. The proposed project would add diversity to the surrounding area and provide a walkable distance to health-oriented services for the future planned development in the North Campus area. Therefore, the proposed project would have a less than significant impact on the diversity of land uses in the area.

Proximity to Transit Analysis

OPR suggests that a project can be “screened out” 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.”

Based on this definition, the proposed project would not be eligible to be “screened out”. Therefore, transit accessibility was evaluated since CAPCOA cites transit accessibility as a measure that reduces VMT and GHG emissions.

The proposed project is anticipated to increase transit ridership. Employees and patients would be able to utilize public bus transit provided by Orange County Transportation Authority (OCTA) to access the site using several different route options.

Directly in front of the project site is a transit stop for OCTA bus route 472. The northbound bus stop is located just south of the Jamboree Road and Birch Street intersection, with the southbound stop located a 500-foot walk north of the site. This route is a peak hour only service connecting the Irvine Business Center with the Tustin Metrolink Station. The route only operates Monday to Friday, with southbound trips originating at the Tustin Metrolink Station in the morning and northbound trips originating from the Irvine Business Center in the evening, making this route ideal for employees commuting by rail. In the morning, the headways range from 13 to 35 minutes apart between 6:09am and 8:34am, with five total services provided linking with specific Metrolink train arrivals at the station. In the evening, five services are provided with headways between 10 and 36 minutes apart, all departing the Irvine Business Center between 3:29pm and 4:48pm.

Located approximately 1,000 feet from the project site is the Campus-Jamboree bus stop, which is accessed by OCTA bus routes 59 and 178. Both routes operate Monday through Friday, and 59 also includes weekend and holiday services. Routes 59 and 178 have headways that range on average from 30 minutes to an hour during the AM (7-9) and PM (4-6) peak hours.

Within a half mile of the project site are approximately nine bus transit stops. In addition to the previously referenced routes, these stops serve routes 57, 76, 212, and 213. These routes generally have between 30 min and 70 min headways during the AM (7-9) and PM (4-6) peak hours. Route 57, which connects Brea with Newport Beach, has express services available approximately every 25 mins from 6:00am to 6:00pm, though the stop is furthest from the site while still within a half mile. Routes 400A and 401B are iShuttle routes which connect the Irvine Business Center with the Tustin Metrolink Station. Unlike route 472, these routes only service both northbound and southbound trips during morning and afternoon periods. The shuttles are timed to coordinate with the Metrolink Train schedule, making them convenient for commuters. Also, use of these routes is free for Metrolink ticket and passholders and OCTA passholders.

The proposed project would not remove any transit stops, though through site improvements the proposed project would improve access to existing stops. Currently, there is no sidewalk on the east side of Jamboree Road, adjacent to the project site. Current bus services make a stop near the Jamboree Road at Birch Street intersections (northbound travel). The project design features include the construction of sidewalks and pedestrian amenities that would increase accessibility to this northbound bus stop. Ridership on bus routes in proximity of the site is likely to increase as a result of the proposed project. No bus stops within a half mile of the project site can be considered a high-quality stop per the definition noted above, however the variety of routes in proximity of the site provide numerous opportunities for employees and clients to access the project site without driving.

Regional Transportation Plan and Sustainable Community Strategies Consistency

Metropolitan Planning Organizations (MPOs) are required to develop a Regional Transportation Plan and Sustainable Community Strategies (RTP/SCS). 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.

For this analysis, if the proposed project is inconsistent with the RTP/SCS, then the inconsistency should be evaluated for a significant impact on transportation.

The UCI campus is located within the Southern California Association of Governments (SCAG) MPO region. In 2016 SCAG’s Regional Council adopted the 2016-2040 RTP/SCS with efforts for the next update in Spring 2020 already underway. According to the SCAG website, SCAG utilizes 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, and if available, the City’s traffic analysis model. The City of Irvine initially adopted its General Plan in December 1973 with a comprehensive updated 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 maintains the Irvine Traffic Analysis Model (ITAM) which incorporates buildout conditions (per General Plan) for the City and is frequently updated as projects go through entitlements. ITAM houses the type of information solicited by SCAG for use in the RTP.

The City of Irvine and UCI have a long-standing cooperation in regard to 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 as well as ITAM and would be the information supplied to SCAG during their Bottom-Up Local Input process.

The proposed project is fully accounted for in the growth allocated by the 2007 LRDP. As mentioned above, coordination has been made between the land use assumptions used in the 2007 LRDP and City of Irvine. Therefore, since the project land use was accounted for in the City's growth forecast, the proposed project would be consistent with the RTP/SCS and would have a less than significant impact on transportation based on the RTP/SCS screening threshold.

Therefore, using OPR's VMT criteria, impacts to VMT with the implementation of the proposed project would be less than significant. 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 Cities of Irvine and Newport Beach'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, on North Campus land east of the project site, and at a remote construction laydown area in the UCI West Campus. Haul routes during construction would be along Jamboree Road, with construction site access from the Jamboree/Birch and the Jamboree/West Access Road intersections. 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 two improved driveways on Jamboree Road at Birch Street and the West Access Road. Existing on-site infrastructure, such as the internal drive aisles and pedestrian walkways, would be aligned allow access to both the clinical facility and the parking structure. A fire road 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
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape, that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:					
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or				X	
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				X	

Discussion

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

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

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

A Cultural Resources Report was prepared by Michael Baker International for the proposed project. As discussed in Section 4.4, Cultural Resources, two archaeological sites, CA-ORAa-115-A and CA-ORA-115-B, are located near the project site boundary where shells, mano fragments, metate fragment scrapers, and non-lithic technologies were discovered. Although the site has not been fully recovered, it has been investigated multiple times since its recording in 1963. As such, a certified archaeologist surveyed the project site area on May 29, 2019 but concluded that due to the previous grading of the project site, it is unlikely that the proposed project would impact the resource. No evidence of any additional sites being eligible for listing on an historical register was uncovered during site surveying. However, earth-moving activities during project construction could uncover cultural resources. With implementation of mitigation measures, Cul-1C, as described in Section 4.4, Cultural Resources, and Cul-4A, as described in Section 4.6, Geology and Soils, which would require retention of an archaeological/paleontological monitor and consultation with a culturally-affiliated Native American, impacts would be less than significant.

In accordance with AB 52, notification letters were mailed to the Gabrieleño Band of Mission Indians – Kizh Nation and Juaneño Band of Mission Indians – Acjachemen Nation on December 11, 2019. UCI received notification from the Gabrieleño Band of Mission Indians and Juaneño Band of Mission Indians – Acjachemen Nation requesting that an affiliated Native American monitor be on-site during ground disturbance activities. UCI has agreed with the request and would have a Native American monitor on-site alongside an archeological/paleontological monitor during earthmoving activities for the project.

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

Mitigation Measures

No mitigation measures are required.

4.17 Utilities and Service Systems

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				**X**	
b) Have sufficient water supplies available to serve the project and reasonably forseeable future development during normal, dry, and multiple dry years?				**X**	
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				**X**	

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				X	
e) Comply with applicable federal, state, and local management and reduction statutes and regulations related to solid waste?					X

Discussion

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

a) Construction of New or Expansion of Existing Water, Wastewater, Electrical, Natural Gas, or Telecommunications Facilities: Less than Significant Impact

As discussed in Section 2.0, Project Description, initial analyses indicate that existing utility systems in the site vicinity have adequate capacity to serve the project. The proposed project would receive water services from the Irvine Ranch Water District (IRWD). Potable water would be connected through an existing 12-inch line located in Jamboree Road, adjacent to the project site. Recycled water service would be provided through an existing 10-inch line in Campus Drive, and sanitary sewer water through an existing 21-inch line in Campus Drive. To provide on-site electricity, the structures would connect to an existing Southern California Edison 12-kilovolt (kV) line located across Jamboree Road. The connecting line would be routed from the SCE switch to the proposed project via underground ductbanks. Telecommunications would connect to UCI's existing data network. If any existing connections conflict with the project design, alternative and/or temporary utilities would be provided to all adjacent structures during relocation.

Construction impacts would occur as part of the general site development phase while utility improvements are installed; however, no alterations to existing main line facilities would be required to provide adequate service to the project site that would require the construction of new off-site utility facilities.

Therefore, construction of these components would not result in the construction of new or expansion of utility facilities and impacts would be less than significant. No mitigation is required.

b) Water Supplies: Less than Significant Impact

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

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

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

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

c) Wastewater Capacity: Less than Significant Impact

The Michaelson Water Recycling Plant (MWRP) currently treats up to 28 million gallons per day (mgd) of wastewater, and an additional upgrade to 33 mgd is scheduled to be completed in 2025. IRWD forecasts a total service area demand for wastewater treatment of 26.11 mgd by 2025, including the projected increase associated with full implementation of the 2007 LRDP. Because the proposed project is consistent with the LRDP EIR as discussed in Section 2.0, Project Description, the MWRP would have sufficient capacity to accommodate the anticipated wastewater generation throughout the IRWD service area, including the proposed project. Therefore, the impact to wastewater treatment capacity would be less than significant (LRDP EIR, pages 4.14-12 through 13). No mitigation is required.

d) Solid Waste: Less than Significant Impact

The Frank R. Bowerman Landfill is permitted to receive a daily maximum of 11,500 tons per day and is expected to close in the year 2053. The Olinda Landfill and Prima Deshecha Landfill also serve the County of Orange, which are utilized if the Frank R. Bowerman Landfill reaches its daily capacity. Olinda Landfill permits 8,000 tons daily with an expected closure in 2030; Prima Deshecha Landfill is scheduled to close in 2067 and permits 4,000 tons daily.

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

e) Solid Waste Regulations: No Impact

The University of California is not subject to Assembly Bill 939 or other local agency regulations pertaining to solid waste management. Nonetheless, the University of California has adopted the Sustainable Practices Policy that requires campuses to undertake aggressive programs to reduce solid waste generation and disposal (LRDP EIR, 4.14-20). This includes voluntary compliance with the State Agency Integrated Waste Management Plan and prioritization of waste and recycling for LEED credits, including a life cycle assessment for reuse of building materials. Furthermore, Section F of the UC Sustainable Practices Policy, Recycling and Waste Management, requires the ultimate goal of zero waste. The campus currently has an 83 percent diversion rate from local landfills that has been achieved through recycling, composting, and reusing. Continued outreach programs, increased sustainable purchasing options, and proper hazardous waste disposal have the campus on track to reach 95 percent, or “zero waste.” The project would not require any unique waste collection or disposal methods or facilities and would not conflict with or obstruct any Federal, State, or local programs to reduce solid waste generation. Therefore, the proposed project would not violate solid waste regulations and no impact would occur. No mitigation is required.

Mitigation Measures

No mitigation measures required.

4.18 Wildfire

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:					
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X	
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X	

Discussion

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

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

The University maintains a campus-wide Emergency Operations Plan (EOP)[1] that establishes policies, procedures, and organizational infrastructure for the campus to address potential emergency scenarios, such as earthquake, active shooter, laboratory fire, cyber threat, public health emergency, hazardous waste spill or release, terrorism, civil disturbance, and wildland fire. The proposed project is consistent with the proposed LRDP mixed use development of the North Campus and is similar to existing clinical uses located in the West Campus. It would not result in additional hazards not previously addressed within the EOP.

When Birch Street would be closed during project construction and any needed lane closures within Jamboree Road during construction of off-site roadway improvements, 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 and City staff, as discussed in Section 4.8, Hazards and Hazardous Materials, to ensure adequate emergency access at all times. Therefore, the proposed project would not substantially impair an adopted emergency response plan and 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 has gradual slopes but is overall relatively flat, previously disturbed, and is surrounded on two sides with urban development. The proposed project site has existing vehicle access, which would be improved through modification of the two existing driveways located at Birch Street and the West Access Road, and a fire access road would be constructed on the project site per recommendations from the UC Fire Marshal. Fire water would be supplied to the project site through the installation of an eight-inch line and hydrants located throughout. The areas southwest and southeast of the project site are currently undeveloped, but as discussed in Section 4.3, Biological Resources, these areas contain only disturbed grass. No native vegetation exists on or adjacent to the project site. Additionally, all site plans are reviewed and approved by the UC Fire Marshal to confirm project compliance with California Building Code Title 24, which includes fire protection.

The California State Board of Forestry and Fire Prevention has identified areas where the State has primary financial responsibility for preventing and suppressing fires, and are referred to as State Responsibility Areas (SRAs).[2] Lands where neither the State nor federal government has any legal responsibility for providing fire protection are referred to as Local Responsibility Areas

[1] https://police.uci.edu/em/EmergencyManagementPlan.pdf. Accessed December 13, 2019.

[2] https://bof.fire.ca.gov/projects-and-programs/state-responsibility-area-viewer/. Accessed December 13, 2019.

(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 (VHFHSZ).[3] The project would not construct additional development in a high fire hazard area and would not hinder regional wildfire suppression efforts. Therefore, exposing project occupants to wildfire would be less than significant. No mitigation is required.

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

As discussed in 4.19(b), the project site is not located in a high wildfire risk area. Additionally, the site is adequately served by existing access roads and utilities connections located in Jamboree Road and Campus Drive. Therefore, the proposed project would not require the installation or maintenance of infrastructure that would exacerbate fire risk and impacts would be less than significant. No mitigation is required.

Mitigation Measures

No mitigation required.

[3] http://egis.fire.ca.gov/FHSZ/. Accessed December 13, 2019.

4.19 Mandatory Findings of Significance

Issues	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				**X**	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present, and probably future projects?)				**X**	

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

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

As discussed under Section 4.1 through 4.18, no significant environmental impacts that are not mitigatable were identified in the responses to questions regarding project effects. The proposed project site does not contain sensitive biological resources and has been previously graded and disturbed; however, project-level mitigation measure BR-1 would require nesting bird surveying prior to the start of construction. There are no known historic resources on site, but in the event that a prehistoric, archaeological, or tribal cultural resource is discovered during grading, compliance with LRDP EIR mitigation measures Cul-1C, Cul-4A, Cul-4B, and Cul-4C and having an on-site tribal cultural resources monitor during earthmoving activities, would reduce impacts to a less than significant level.

b) *Cumulatively Considerable Impacts: Less Than Significant Impact*

Long-term environmental consequences resulting from the cumulative effect of completing development through implementation of the 2007 LRDP were thoroughly evaluated in the 2007 LRDP EIR. As discussed in Section 2.0, Project Description, the project is consistent with the LRDP land use policies, population capacities, and building square footage capacities for the North Campus. 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 thresholds have been determined to be less than significant, no impact, or mitigated to a less than significant level. Additional project-level cumulative impact analyses were prepared for the Air Quality, Greenhouse Gas Emissions, and Noise sections of this IS/MND, which found no new or increased severity of impacts that was not previously analyzed in the 2007 LRDP EIR. 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 not overseen by UCI's Environmental Health and Safety. 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
Center for Child Health
University of California, Irvine

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LIST OF ABBREVIATED TERMS

AQMP	air quality management plan
ADT	average daily traffic
CARB	California Air Resources Board
CAAQS	California Ambient Air Quality Standards
CCAA	California Clean Air Act
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CO	carbon monoxide
cfs/sf	cubic feet per second per square foot
CY	cubic yards
DPM	diesel particulate matter
EHS	Environmental Health and Safety
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
GSF	gross-square-foot
H_2S	hydrogen sulfide
Pb	lead
LST	local significance threshold
LRDP	Long Range Development Plan
$\mu g/m^3$	micrograms per cubic meter
mg/m^3	milligrams per cubic meter
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
O_3	ozone
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppm	parts per million
ROG	reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SRA	source receptor area
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SIP	State Implementation Plan
SO_{4-2}	sulfates
SO_2	sulfur dioxide
TAC	toxic air contaminant
C_2H_3Cl	vinyl chloride
UC	University of California
UCI	University of California, Irvine

1 INTRODUCTION

This report documents the results of an Air Quality Assessment prepared for the University of California Irvine (UCI) Center for Child Health 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 and Setting

The Project is located within the UCI campus, in the City of Irvine (City), and County of Orange (County); see **Exhibit 1: Regional Vicinity**. The approximately 5.5-acre Project site is located within UCI's North Campus along Jamboree Road near the intersection with Campus Drive; see **Exhibit 2: Site Vicinity**. The site is surrounded by commercial and public facilities uses to the north, UCI maintenance and facilities to the east, vacant land and the San Joaquin Marsh Reserve to the south, and mixed-use residential uses to the west. Jamboree Road adjoins the Project site to the north in a northeast-southwest direction. Regional access to the Project site is provided via Interstate 405 (I-405) or State Route 73 (SR-73) located to the north and south, respectively. Local access to the Project site is provided via Jamboree Road and Campus Drive.

1.2 Project Description

The proposed Project would construct an approximately 168,000-gross-square-foot (GSF), five-story medical office building with an additional mechanical penthouse and an 800-space parking structure at UCI's North Campus; refer to **Exhibit 3: Conceptual Site Plan**. The existing on-site approximately 6,500 GSF Child Development Center, approximately 2,400 GSF UCI Recycling Center, and an approximately 21,500 GSF receiving yard would be demolished in order to construct the proposed Project. The UCI Recycling Center would be relocated to existing space on the Main Campus. Additional site improvements would include grading, driveway paving, construction of internal on-site circulation, landscaping, and installation of site utility connections and lighting.

Project Construction and Phasing

Project construction is anticipated to occur over approximately 22 months beginning in November 2020 and ending in September 2022. Grading for the proposed Project would require approximately 27,103 cubic yards (CY) of excavation with 15,210 CY of soil export. Final grading plans would be approved by the UCI Building Official before Grading Permit issuance. All infrastructure (i.e. storm drain, water, wastewater, dry utilities, and street improvements) would be installed during grading. Construction for the Project would occur in one phase. For purposes of this environmental analysis, opening year is conservatively assumed to be 2022.

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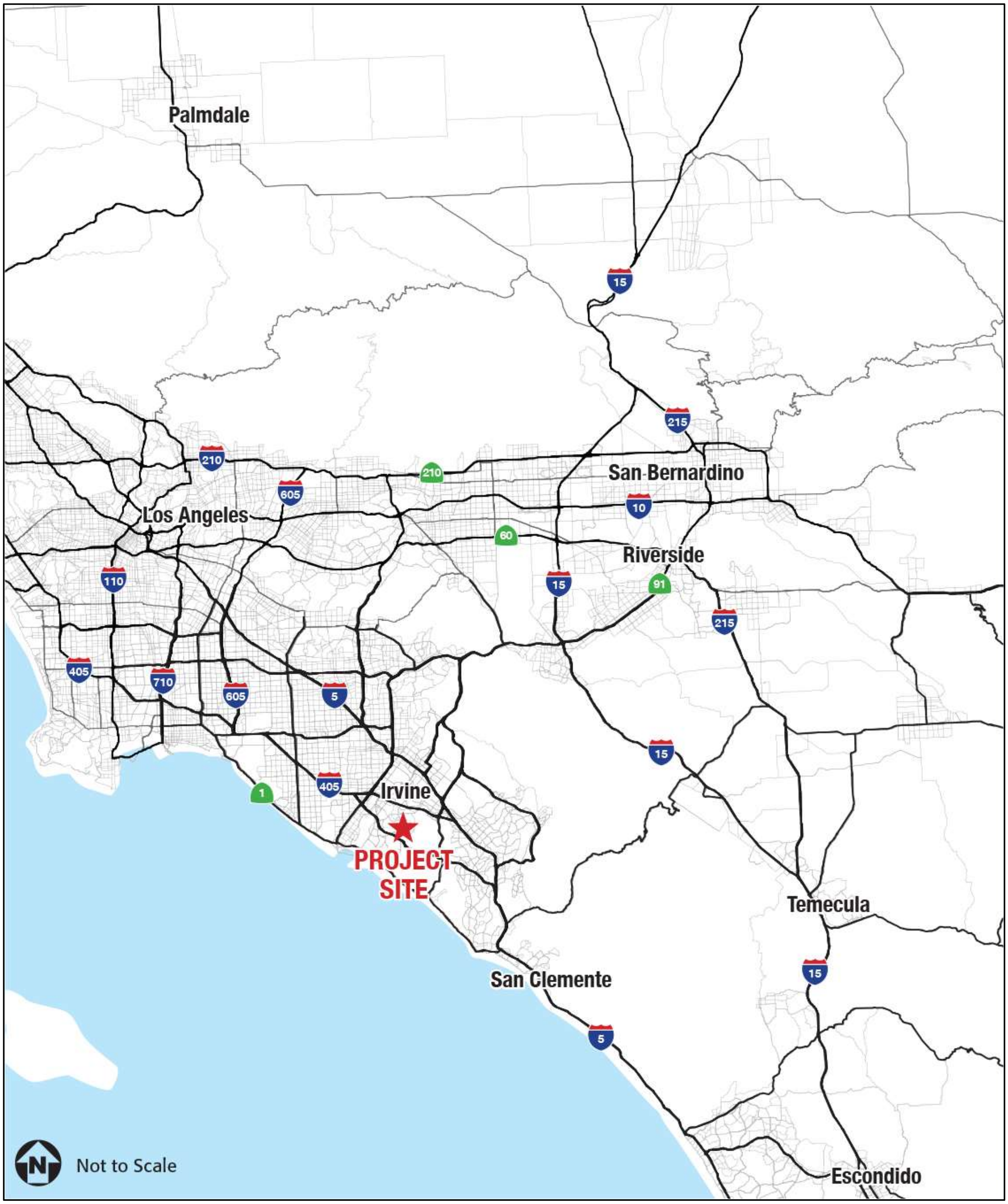
Exhibit 1: Regional Vicinity

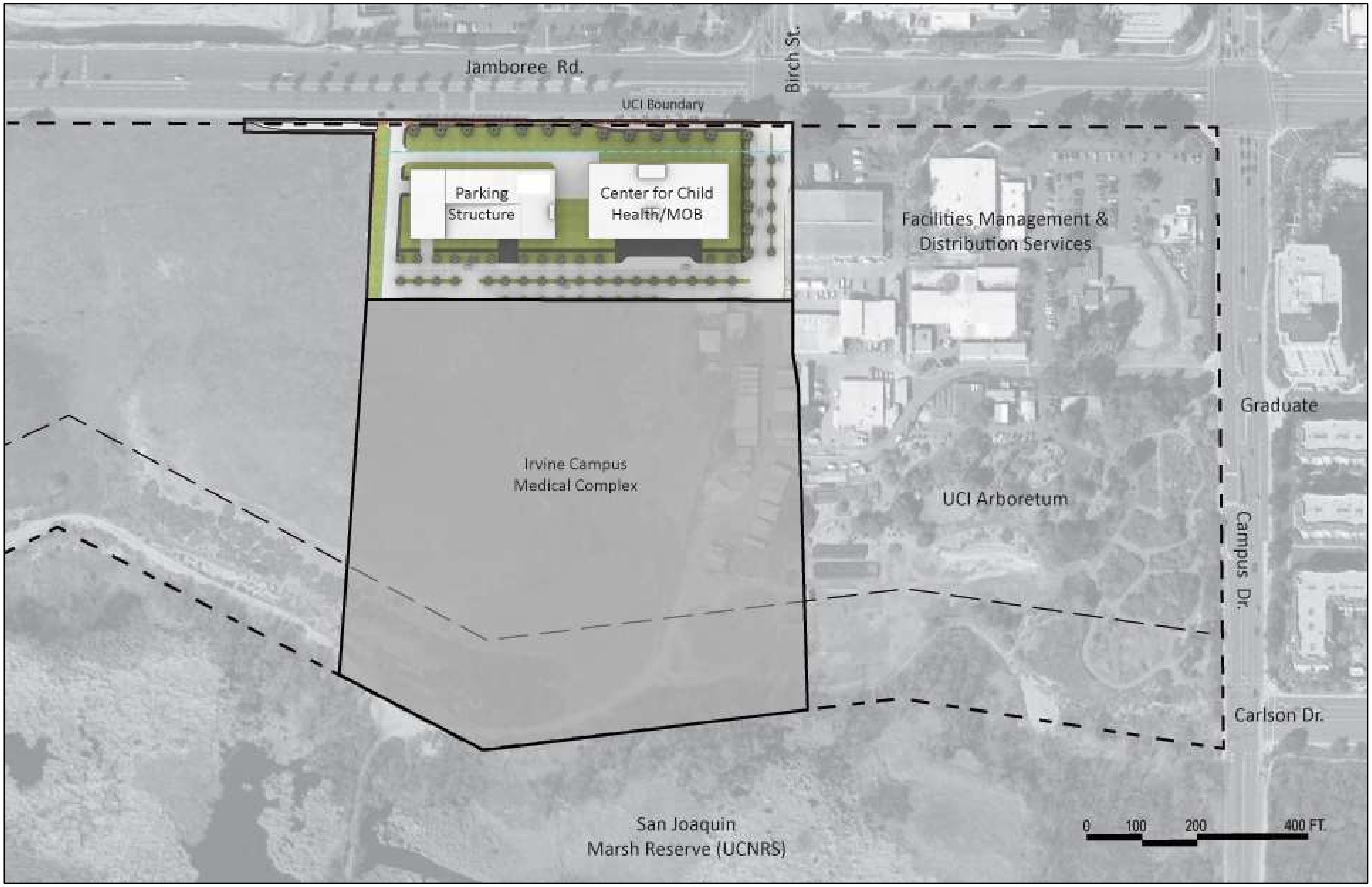


Source: Kimley-Horn and Associates, 2019.

Exhibit 2: Site Vicinity

Source: NearMap, 2019.

Exhibit 3: Conceptual Site Plan



Source: University of California Irvine, 2020.

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

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

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

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

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

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

The mountain ranges to the east affect the diffusion of pollutants by inhibiting the eastward transport of pollutants. The SCAB's air quality generally ranges from fair to poor and is like air quality in most of coastal Southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

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

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

2.2 Air Pollutants of Concern

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

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

Table 1: Air Contaminants and Associated Public Health Concerns

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

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.
Lead (Pb)	Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Due to the phase out of leaded gasoline, metals processing is the major source of lead emissions to the air today. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.	Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children, resulting in learning deficits and lowered IQ.

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

Source: California Air Pollution Control Officers Association, *Health Effects*, www.capcoa.org/health-effects, accessed December 30, 2019.

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.

O_3, NO_2, PM_{10}, and $PM_{2.5}$ are pollutants of concern in the SCAB. The closest air monitoring station to the Project site that monitors ambient concentrations for O_3 and NO_2 is the Costa Mesa – Mesa Verde Drive Monitoring Station (located approximately 5.2 miles northwest of the Project). The closest monitoring station that measures PM_{10}, $PM_{2.5}$, and CO is the Mission Viejo – 26081 Via Pera Monitoring Station (located approximately 10.6 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 (O_3)[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]
Number of Days Standard Exceeded			
CAAQS 1-hour (>0.09 ppm)	13	27	10
NAAQS 8-hour (>0.070 ppm)	0	4	9[2]
Carbon Monoxide (CO)[2]			
1-hour Maximum Concentration (ppm)	1.34	1.40	1.20
Number of Days Standard Exceeded			
NAAQS 1-hour (>35 ppm)	0	0	0
CAAQS 1-hour (>20 ppm)	0	0	0
Nitrogen Dioxide (NO_2)[1]			
1-hour Maximum Concentration (ppm)	59.8	45.3	61.7
Number of Days Standard Exceeded			
NAAQS 1-hour (>100 ppm)	0	–	0
CAAQS 1-hour (>0.18 ppm)	0	0	0
Particulate Matter Less Than 10 Microns (PM_{10})[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
Number of Days Standard Exceeded			
NAAQS 24-hour (>150 μg/m^3)	0	0	0
CAAQS 24-hour (>50 μg/m^3)	–	7	6
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
Number of Days Standard Exceeded			
NAAQS 24-hour (>35 μg/m^3)	0	–	–

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

1. Measurements at Costa Mesa – Mesa Verde Drive Monitoring Station, 2850 Mesa Verde Drive East, Costa Mesa, CA 92626 (CARB# 70112).
2. Measurements at Mission Viejo – 26081 Via Pera Monitoring Station, 26081 Via Pera, Mission Viejo, CA 92691 (CARB# 30002).

Source: Pollutant measurements from the CARB Aerometric Data Analysis and Management system database (https://www.arb.ca.gov/adam), accessed December 30, 2019.

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 mixed-use and multi-family residences and recreational facilities. **Table 3: Sensitive Receptors**, lists the distances and locations of sensitive receptors within the Project vicinity.

Table 3: Sensitive Receptors

Receptor Description	Distance and Direction from the Project[1]
RESIDENTIAL	
Mixed-Use Residential Dwellings	1,200 feet north, 915 feet northeast, and 225 feet west
Multi-Family Residential Dwellings	950 feet to the northeast
RECREATIONAL FACILITIES	
Private outdoor recreational facilities	2,400 feet north
1. Distances were measured using Google Earth 2019.	

3 REGULATORY SETTING

3.1 Federal

Federal Clean Air Act

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

The U.S. Environmental Protection Agency (EPA) can withhold certain transportation funds from states that fail to comply with the FCAA's planning requirements. If a state fails to correct these planning deficiencies within two years of Federal notification, the EPA is required to develop a Federal implementation plan for the identified nonattainment area or areas. The provisions of 40 Code of Federal Regulations Parts 51 and 93 apply in all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan. The EPA has designated enforcement of air pollution control regulations to the individual states. Applicable federal standards are summarized in **Table 4: State and Federal Ambient Air Quality Standards**.

3.2 State of California

California Air Resources Board

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

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

Table 4: State and Federal Ambient Air Quality Standards

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

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

1. California standards for ozone, CO (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), NO_2, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe CO, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e. all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. Measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.
2. National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.070 ppm or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m$_3$. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m^3.
3. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard. NAAQS are set by the EPA at levels determined to be protective of public health with an adequate margin of safety.
4. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. EPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.
5. The national 1-hour ozone standard was revoked by the EPA on June 15, 2005.
6. In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.
7. The 8-hour California ozone standard was approved by the CARB on April 28, 2005 and became effective on May 17, 2006.
8. On June 2, 2010, the EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS however must continue to be used until one year following EPA initial designations of the new 1-hour SO_2 NAAQS.
9. In December 2012, EPA strengthened the annual $PM_{2.5}$ NAAQS from 15.0 to 12.0 µg/m^3. In December 2014, the EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.
10. CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure below which there are no adverse health effects determined.
11. National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

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

3.3 Regional

South Coast Air Quality Management District

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

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

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

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

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

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

Table 5: South Coast Air Basin Attainment Status

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

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

The following SCAQMD rules apply to construction activities associated with the Project:

- **Rule 401 (Visible Emissions)** – A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any 1 hour that is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

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

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

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

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

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

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

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

- **Rule 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 (Average Pounds per Day)

Criteria Air Pollutants	Construction-Related	Operational-Related
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, *South Coast AQMD Air Quality Significance Thresholds,* April 2019.

Localized Carbon Monoxide

In addition to the daily thresholds listed above, the Project would be subject to the ambient air quality standards. 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 State and Federal CO standards (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 standards.

Localized Significance Thresholds

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

Table 7: Local Significance Thresholds for Construction/Operations (Maximum Pounds per Day)

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

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

4.2 Methodology

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

5 POTENTIAL IMPACTS AND MITIGATION

5.1 Air Quality Analysis

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

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

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

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

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 9** 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 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 Project would construct a five-story medical office building at UCI's North Campus and would be consistent with the Mixed-Use Commercial designation in the *2007 Long Range Development Plan*[2] (LRDP) and the goals and policies in the *UCI Strategic Plan*. In addition, the Project would not require a zone change or a *City of Irvine General Plan* (General Plan) amendment and would not cause the SCAQMD's population or job growth projections used to develop the AQMP to be exceeded. The Project also supports SCAG RTP/SCS and SCAQMD policies promoting infill development to reduce emissions. Thus, a less than significant impact would occur, as the Project is also consistent with the second criterion.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 5.2 Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable Federal or State ambient air quality standard?

Construction Emissions

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

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

The duration of construction activities associated with the Project are estimated to last up to 22 months. The Project is anticipated to require approximately 27,103 CY of excavation with 15,210 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. While impacts would be considered less than significant, the Project would be subject to compliance with SCAQMD Rules 402 and 403, described in the Regulatory Setting above, to further reduce specific construction-related emissions.

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

Table 8: Construction-Related Emissions (Maximum Pounds Per Day)[1]						
Construction Year	**Reactive Organic Gases (ROG)**	**Nitrogen Oxide (NO_x)**	**Carbon Monoxide (CO)**	**Sulfur Dioxide (SO_2)**	**Coarse Particulate Matter (PM_{10})**	**Fine Particulate Matter ($PM_{2.5}$)**
2020	4.87	62.22	35.71	0.10	10.49	5.75
2021	4.59	57.50	34.59	0.10	6.23	3.46
2022	68.95	23.10	23.43	0.06	3.32	1.46
SCAQMD Threshold	*75*	*100*	*550*	*150*	*55*	*150*
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

1. SCAQMD Rule 403 Fugitive Dust applied. The Rule 403 reduction/credits include the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stock piles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied. No mitigation was applied to construction equipment. Refer to **Appendix A** for Model Data Outputs.

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

Operational Emissions

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

Table 9: Operational Emissions (Maximum Pounds Per Day)						
Emission Source	**Reactive Organic Gases (ROG)**	**Nitrogen Oxide (NO_x)**	**Carbon Monoxide (CO)**	**Sulfur Dioxide (SO_2)**	**Coarse Particulate Matter (PM_{10})**	**Fine Particulate Matter ($PM_{2.5}$)**
Summer Emissions						
Area	3.90	0.00	0.10	0.00	0.00	0.00
Energy	0.04	0.35	0.30	0.00	0.03	0.03
Mobile	6.56	23.51	66.75	0.24	21.11	5.76
Stationary	4.79	13.39	12.22	0.02	0.70	0.70
Total	**15.29**	**37.25**	**79.37**	**0.26**	**21.84**	**6.49**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Winter Emissions						
Area	3.90	0.00	0.10	0.00	0.00	0.00
Energy	0.04	0.35	0.30	0.00	0.03	0.03
Mobile	6.45	23.91	65.49	0.23	21.11	5.76
Stationary	4.79	13.39	12.22	0.02	0.70	0.70
Total	**15.18**	**37.65**	**78.11**	**0.25**	**21.84**	**6.49**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

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

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

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

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

Project-generated vehicle emissions were estimated using CalEEMod, as recommended by the SCAQMD. The Project's trip generation estimates were obtained from Table 3-1 (Center for Child Health Estimated Trip Generation Summary) from the *UCI Center for Child Health Traffic Study* (Stantec Inc., December 2019) (Traffic Study). The Project would generate approximately 5,846 average daily trips (ADT) (5,531 net ADT). As shown in **Table 9**, mobile source emissions would not exceed SCAQMD thresholds for criteria pollutants. Therefore, impacts associated with mobile source emissions would be less than significant.

Stationary Source Emissions. The proposed Project would also include stationary emissions associated with a backup generator located in the parking structure. As shown in **Table 9**, stationary source emissions would not exceed SCAQMD thresholds for criteria pollutants. Therefore, impacts associated with stationary source emissions would be less than significant.

Cumulative Emissions

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

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

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

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

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

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

Localized Construction Significance Analysis

The nearest sensitive receptors to the Project site are mixed-use residential uses approximately 225 feet (69 meters) to the west. 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 in 2008) for guidance. The LST methodology assists lead agencies in analyzing localized impacts from Project-specific emissions.

Since CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, **Table 10: Equipment-Specific Grading Rates**, is used to determine the maximum daily disturbed acreage for comparison to LSTs. The appropriate SRA for the localized significance thresholds is the Central Orange County Coastal area (SRA 20) as this area includes the Project site. LSTs apply to CO, NO_2, PM_{10}, and $PM_{2.5}$. The SCAQMD produced look-up tables for projects that disturb areas less than or equal to 5 acres. Project construction is anticipated to disturb a maximum of 4.0 acres in a single day.

Table 10: Equipment-Specific Grading Rates					
Construction Phase	**Equipment Type**	**Equipment Quantity**	**Acres Graded per 8-Hour Day**	**Operating Hours per Day**	**Acres Graded per Day**
Grading	Tractors	2	0.5	8	1.0
	Graders	1	0.5	8	0.5
	Dozers	1	0.5	8	0.5
	Scrapers	2	1.0	8	2.0
				Total Acres Graded per Day	**4.0**
Source: CalEEMod version 2016.3.2. Refer to **Appendix A** for model outputs.					

The SCAQMD's methodology states that "off-site mobile emissions from the Project should not be included in the emissions compared to LSTs." Therefore, for the construction LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered. The nearest sensitive receptors to the Project site are the mixed-use residential uses located approximately 225 feet (69 meters) to the west. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Therefore, as recommended by the SCAQMD, LSTs for receptors located at 50 meters were conservatively utilized in this analysis. **Table 11: Localized Significance of Construction Emissions**, presents the results of localized emissions during Project construction.

Table 11: Localized Significance of Construction Emissions (Maximum Pounds Per Day)[1,2]				
Construction Activity	**Nitrogen Oxide (NO_x)**	**Carbon Monoxide (CO)**	**Coarse Particulate Matter (PM_{10})**	**Fine Particulate Matter ($PM_{2.5}$)**
2020 Demolition	33.20	21.75	2.10	1.61
2020 Site Preparation	42.42	21.51	8.89	5.70
2020 Grading	50.20	31.96	5.39	3.33
2021 Grading	46.40	30.88	5.20	3.16
2021 Trenching and Utilities	0.00	0.00	0.00	0.00
2021 Building Construction	17.43	16.58	0.96	0.90
2022 Building Construction	15.62	16.36	0.81	0.76
2022 Paving	11.12	14.58	0.57	0.52
2022 Architectural Coating	1.41	1.81	0.08	0.08
Maximum Daily Emissions	*50.20*	*31.96*	*8.89*	*5.70*
SCAQMD Localized Screening Threshold (adjusted for 4 acres at 50 meters)	169	1,606	36	10
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**

1. Emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod), as recommended by the SCAQMD. Worst-case seasonal maximum daily emissions are reported.
2. SCAQMD Rule 403 Fugitive Dust applied for construction emissions. 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; replace ground cover of area disturbed; 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.

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

Localized Operational Significance Analysis

As noted above, the nearest receptors to the Project site are mixed-use residential uses located approximately 225 feet (69 meters) to the west; thus, the LSTs for receptors located at 50 meters for SRA 20 were conservatively utilized in this analysis. In addition, as the Project site is approximately 5.5 acres, the 5-acre LST threshold was conservatively used.[3] The on-site operational emissions are compared to the LST thresholds in **Table 12: Localized Significance of Operational Emissions**. **Table 12** shows that the maximum daily emissions of on-site pollutants during Project operations would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, the Project would result in a less than significant impact concerning LSTs during operational activities.

Table 12: Localized Significance of Operational Emissions (Maximum Pounds Per Day)[1]

Emissions Sources	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
On-Site Emissions (Area, Energy, and Stationary Sources)	13.74	12.62	0.73	0.73
SCAQMD Localized Screening Threshold (5 acres at 50 meters)	190	1,864	11	3
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**

1. Emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod), as recommended by the SCAQMD. Worst-case seasonal maximum daily emissions are reported.

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

Criteria Pollutant Health Impacts

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

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

[3] The 5-acre LST is conservative as the thresholds increase with project size.

Carbon Monoxide Hotspots

Intersection Hotspots. An analysis of CO "hot spots" is needed to determine whether the change in the level of service of an intersection due to the Project would result in exceedances of the CAAQS or NAAQS. Typically, CO exceedances are caused by vehicular emissions, primarily when vehicles are idling at intersections. Vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars. With turnover of older vehicles, cleaner fuels, and 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 approximately 100,000 ADT, was modeled for CO concentrations. This effort identified a CO concentration high of 4.6 ppm, well below the 35-ppm Federal standard. The Project would not produce traffic volumes to generate a CO hot spot in the context of SCAQMD's *CO Hotspot Analysis*. Since CO hotspots were not experienced at the Wilshire Boulevard and Veteran Avenue intersection accommodating 100,000 ADT, it can be reasonably inferred that CO hotspots would not be experienced at any intersections in the Project vicinity resulting from approximately 5,846 ADT (5,531 net ADT) attributable to the Project. Therefore, impacts would be less than significant.

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. Approximately 800 parking spaces would be constructed within the parking structure. If the proposed parking structure is designed to be enclosed, it would be required to comply with ventilation requirements of 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 NO_2 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 area[4]. Impacts regarding parking structure CO hotspots would be less than significant.

Construction-Related Diesel Particulate Matter

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

The use of diesel-powered construction equipment would be temporary and episodic. The duration of exposure would be short and exhaust from construction equipment would dissipate rapidly. Current models and methodologies for conducting health risk assessments are associated with longer-term

[4] International Code Council, *International Mechanical Code*, *Chapter 4 Ventilation*, 2015. https://codes.iccsafe.org/public/document/IMC2015/chapter-4-ventilation, accessed January 2, 2020.

exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. The closest sensitive receptors to the Project site are located approximately 225 feet from the Project limits, and further from the major Project construction areas.

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

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

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

The SCAQMD *CEQA Air Quality Handbook* identifies certain land uses as sources of odors. These land uses include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Project would not include any of these land uses. During construction, some odors (not substantial pollutant concentrations) that may be detected are typical of construction vehicles (e.g. diesel exhaust from grading and construction equipment). These odors are a temporary short-term impact that is typical of construction projects and disperse rapidly. Therefore, the Project would not create objectionable odors.

Mitigation Measures: No mitigation is required.

Level of Significance: No impact.

6 REFERENCES

1. California Air Pollution Control Officers Association, *Health Effects*, 2018.
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*, accessed December 30, 2019.
4. California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, 2005.
5. California Air Resources Board, *Ambient Air Quality Standards*, May 6, 2016.
6. California Air Resources Board, *Current Air Quality Standards*, 2016.
7. California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, 2000.
8. City of Irvine, *City of Irvine General Plan*, 2015.
9. International Code Council, *International Mechanical Code Chapter 4 Ventilation*, 2015.
10. Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, 2015.
11. Southern California Association of Governments, *2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy*, April 2016.
12. South Coast Air Quality Management District, *Air Quality Management Plan,* 2016.
13. South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993.
14. South Coast Air Quality Management District, *Localized Significance Threshold Methodology*, July 2008.
15. Stantec Inc., *UCI Center for Child Health Traffic Study*, December 17, 2019.
16. University of California, Irvine, *Long Range Development Plan*, 2007.
17. University of California, Irvine, *Strategic Plan*, 2016.
18. United States Environmental Protection Agency, *National Ambient Air Quality Standards Table*, 2016.
19. United States Environmental Protection Agency, *Nonattainment Areas for Criteria Pollutants (Green Book)*, December 2019.
20. United States Environmental Protection Agency, *Policy Assessment for the Review of the Lead National Ambient Air Quality Standards*, 2013.

Appendix A

Air Quality Modeling Data

UCI Center for Child Health

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	168.00	1000sqft	3.86	168,000.00	0
Enclosed Parking with Elevator	800.00	Space	7.20	320,000.00	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	Southern California Edison				
CO2 Intensity (lb/MWhr)	546.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project Characteristics - Adjusted per the SCE 2017 CRSR. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 549-25*0.029-298*0.00617=546.4363 to avoid double counting

Land Use - Land Use types per Project Description. CalEEMod default acreages used.

Construction Phase - Anticipated construction schedule

Demolition -

Grading - Total acres graded = CalEEMod defaults

Vehicle Trips - Net trip generation rate used per Trip Generation Memo.

Energy Use -

Construction Off-road Equipment Mitigation - Per SCAQMD Rules and Regulations

Energy Mitigation - Per 2019 Title 24 standards.

Water Mitigation -

Waste Mitigation - AB 939/341

Stationary Sources - Emergency Generators and Fire Pumps -

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	55	61
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	55	61
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	24.00
tblConstructionPhase	NumDays	300.00	350.00
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	30.00	35.00
tblConstructionPhase	NumDays	10.00	15.00
tblGrading	MaterialExported	0.00	15,210.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	546.44
tblVehicleTrips	ST_TR	8.96	32.92
tblVehicleTrips	SU_TR	1.55	32.92
tblVehicleTrips	WD_TR	36.13	32.92

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.8515	62.0618	35.5985	0.0971	18.2675	2.2136	20.4662	9.9840	2.0380	12.0069	0.0000	9,889.5856	9,889.5856	2.3274	0.0000	9,947.7698
2021	4.5728	57.3675	34.4869	0.0965	9.7184	2.0211	11.7395	3.8786	1.8607	5.7393	0.0000	9,838.3315	9,838.3315	2.3227	0.0000	9,896.3992
2022	68.9322	23.0880	23.6582	0.0655	2.6125	0.8359	3.4484	0.7044	0.7864	1.4908	0.0000	6,588.3728	6,588.3728	0.8138	0.0000	6,608.7166
Maximum	**68.9322**	**62.0618**	**35.5985**	**0.0971**	**18.2675**	**2.2136**	**20.4662**	**9.9840**	**2.0380**	**12.0069**	**0.0000**	**9,889.5856**	**9,889.5856**	**2.3274**	**0.0000**	**9,947.7698**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.8515	62.0618	35.5985	0.0971	8.2783	2.2136	10.4919	3.7301	2.0380	5.7530	0.0000	9,889.5856	9,889.5856	2.3274	0.0000	9,947.7698
2021	4.5728	57.3675	34.4869	0.0965	4.2083	2.0211	6.2294	1.6023	1.8607	3.4630	0.0000	9,838.3315	9,838.3315	2.3227	0.0000	9,896.3992
2022	68.9322	23.0880	23.6582	0.0655	2.4810	0.8359	3.3169	0.6721	0.7864	1.4585	0.0000	6,588.3728	6,588.3728	0.8138	0.0000	6,608.7166
Maximum	**68.9322**	**62.0618**	**35.5985**	**0.0971**	**8.2783**	**2.2136**	**10.4919**	**3.7301**	**2.0380**	**5.7530**	**0.0000**	**9,889.5856**	**9,889.5856**	**2.3274**	**0.0000**	**9,947.7698**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**51.08**	**0.00**	**43.80**	**58.78**	**0.00**	**44.51**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.9000	9.0000e-004	0.0990	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		0.2119	0.2119	5.6000e-004		0.2258
Energy	0.0454	0.4124	0.3465	2.4700e-003		0.0314	0.0314		0.0314	0.0314		494.9299	494.9299	9.4900e-003	9.0700e-003	497.8710
Mobile	7.3640	28.1398	89.2334	0.3374	30.4311	0.2439	30.6751	8.1377	0.2268	8.3645		34,280.9519	34,280.9519	1.3969		34,315.8733
Stationary	4.7919	13.3932	12.2184	0.0230		0.7049	0.7049		0.7049	0.7049		2,451.3812	2,451.3812	0.3437		2,459.9733
Total	**16.1013**	**41.9464**	**101.8972**	**0.3629**	**30.4311**	**0.9805**	**31.4117**	**8.1377**	**0.9634**	**9.1011**		**37,227.4749**	**37,227.4749**	**1.7506**	**9.0700e-003**	**37,273.9435**

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	3.9000	9.0000e-004	0.0990	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		0.2119	0.2119	5.6000e-004		0.2258
Energy	0.0390	0.3543	0.2976	2.1300e-003		0.0269	0.0269		0.0269	0.0269		425.1578	425.1578	8.1500e-003	7.7900e-003	427.6843
Mobile	6.5616	23.5077	66.7470	0.2374	20.9354	0.1771	21.1126	5.5984	0.1646	5.7630		24,134.5984	24,134.5984	1.0340		24,160.4476
Stationary	4.7919	13.3932	12.2184	0.0230		0.7049	0.7049		0.7049	0.7049		2,451.3812	2,451.3812	0.3437		2,459.9733
Total	**15.2925**	**37.2561**	**79.3620**	**0.2626**	**20.9354**	**0.9093**	**21.8448**	**5.5984**	**0.8968**	**6.4952**		**27,011.3492**	**27,011.3492**	**1.3864**	**7.7900e-003**	**27,048.3310**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**5.02**	**11.18**	**22.12**	**27.65**	**31.20**	**7.26**	**30.46**	**31.20**	**6.91**	**28.63**	**0.00**	**27.44**	**27.44**	**20.81**	**14.11**	**27.43**

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	11/1/2020	12/4/2020	5	25	
2	Site Preparation	Site Preparation	12/5/2020	12/25/2020	5	15	
3	Grading	Grading	12/26/2020	2/12/2021	5	35	
4	Trenching and Utilities	Trenching	2/13/2021	2/26/2021	5	10	
5	Building Construction	Building Construction	2/27/2021	7/1/2022	5	350	
6	Paving	Paving	7/2/2022	7/29/2022	5	20	
7	Architectural Coating	Architectural Coating	7/30/2022	9/1/2022	5	24	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 7.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 252,000; Non-Residential Outdoor: 84,000; Striped Parking Area:

<u>OffRoad Equipment</u>

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	138.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	1,504.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Trenching and Utilities			0.00	0.00	14.70	6.90				
Building Construction	9	188.00	80.00	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	38.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1970	0.0000	1.1970	0.1812	0.0000	0.1812			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**1.1970**	**1.6587**	**2.8557**	**0.1812**	**1.5419**	**1.7231**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0417	1.5178	0.3835	4.2300e-003	0.0961	4.9100e-003	0.1010	0.0263	4.7000e-003	0.0310		470.8880	470.8880	0.0488		472.1082
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0576	0.0363	0.4910	1.6400e-003	0.1677	1.1100e-003	0.1688	0.0445	1.0200e-003	0.0455		163.5065	163.5065	3.7300e-003		163.5997
Total	**0.0993**	**1.5542**	**0.8745**	**5.8700e-003**	**0.2638**	**6.0200e-003**	**0.2698**	**0.0708**	**5.7200e-003**	**0.0765**		**634.3945**	**634.3945**	**0.0525**		**635.7080**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4435	0.0000	0.4435	0.0672	0.0000	0.0672			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.4435**	**1.6587**	**2.1022**	**0.0672**	**1.5419**	**1.6090**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0417	1.5178	0.3835	4.2300e-003	0.0917	4.9100e-003	0.0967	0.0252	4.7000e-003	0.0299		470.8880	470.8880	0.0488		472.1082
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0576	0.0363	0.4910	1.6400e-003	0.1589	1.1100e-003	0.1600	0.0423	1.0200e-003	0.0433		163.5065	163.5065	3.7300e-003		163.5997
Total	**0.0993**	**1.5542**	**0.8745**	**5.8700e-003**	**0.2507**	**6.0200e-003**	**0.2567**	**0.0676**	**5.7200e-003**	**0.0733**		**634.3945**	**634.3945**	**0.0525**		**635.7080**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0692	0.0436	0.5892	1.9700e-003	0.2012	1.3300e-003	0.2025	0.0534	1.2300e-003	0.0546		196.2079	196.2079	4.4700e-003		196.3197
Total	**0.0692**	**0.0436**	**0.5892**	**1.9700e-003**	**0.2012**	**1.3300e-003**	**0.2025**	**0.0534**	**1.2300e-003**	**0.0546**		**196.2079**	**196.2079**	**4.4700e-003**		**196.3197**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6936	0.0000	6.6936	3.6793	0.0000	3.6793			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**6.6936**	**2.1974**	**8.8910**	**3.6793**	**2.0216**	**5.7009**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0692	0.0436	0.5892	1.9700e-003	0.1907	1.3300e-003	0.1920	0.0508	1.2300e-003	0.0520		196.2079	196.2079	4.4700e-003		196.3197
Total	**0.0692**	**0.0436**	**0.5892**	**1.9700e-003**	**0.1907**	**1.3300e-003**	**0.1920**	**0.0508**	**1.2300e-003**	**0.0520**		**196.2079**	**196.2079**	**4.4700e-003**		**196.3197**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6733**	**2.1739**	**10.8472**	**3.5965**	**2.0000**	**5.5965**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.3245	11.8158	2.9856	0.0329	5.1512	0.0383	5.1895	1.2856	0.0366	1.3222		3,665.7116	3,665.7116	0.3800		3,675.2111
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0769	0.0484	0.6547	2.1900e-003	0.2236	1.4800e-003	0.2250	0.0593	1.3600e-003	0.0607		218.0087	218.0087	4.9700e-003		218.1330
Total	**0.4014**	**11.8642**	**3.6402**	**0.0351**	**5.3748**	**0.0397**	**5.4145**	**1.3449**	**0.0380**	**1.3828**		**3,883.7203**	**3,883.7203**	**0.3850**		**3,893.3441**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					3.2135	0.0000	3.2135	1.3325	0.0000	1.3325			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.2135**	**2.1739**	**5.3874**	**1.3325**	**2.0000**	**3.3325**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.3245	11.8158	2.9856	0.0329	4.8530	0.0383	4.8912	1.2124	0.0366	1.2490		3,665.7116	3,665.7116	0.3800		3,675.2111
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0769	0.0484	0.6547	2.1900e-003	0.2119	1.4800e-003	0.2134	0.0564	1.3600e-003	0.0578		218.0087	218.0087	4.9700e-003		218.1330
Total	**0.4014**	**11.8642**	**3.6402**	**0.0351**	**5.0648**	**0.0397**	**5.1046**	**1.2688**	**0.0380**	**1.3067**		**3,883.7203**	**3,883.7203**	**0.3850**		**3,893.3441**

3.4 Grading - 2021

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

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	0.3095	10.9240	3.0010	0.0324	0.8215	0.0343	0.8558	0.2228	0.0328	0.2556		3,620.8492	3,620.8492	0.3754		3,630.2343
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	0.0722	0.0437	0.6075	2.1100e-003	0.2236	1.4500e-003	0.2250	0.0593	1.3300e-003	0.0606		210.4388	210.4388	4.5100e-003		210.5515
Total	**0.3817**	**10.9677**	**3.6085**	**0.0345**	**1.0450**	**0.0358**	**1.0808**	**0.2821**	**0.0342**	**0.3163**		**3,831.2880**	**3,831.2880**	**0.3799**		**3,840.7858**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2135	0.0000	3.2135	1.3325	0.0000	1.3325			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**3.2135**	**1.9853**	**5.1988**	**1.3325**	**1.8265**	**3.1590**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

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	0.3095	10.9240	3.0010	0.0324	0.7830	0.0343	0.8173	0.2134	0.0328	0.2462		3,620.8492	3,620.8492	0.3754		3,630.2343
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	0.0722	0.0437	0.6075	2.1100e-003	0.2119	1.4500e-003	0.2133	0.0564	1.3300e-003	0.0578		210.4388	210.4388	4.5100e-003		210.5515
Total	**0.3817**	**10.9677**	**3.6085**	**0.0345**	**0.9949**	**0.0358**	**1.0306**	**0.2698**	**0.0342**	**0.3040**		**3,831.2880**	**3,831.2880**	**0.3799**		**3,840.7858**

3.5 Trenching and Utilities - 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
Vendor					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
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

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
Vendor					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
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2135	7.5051	2.0354	0.0197	0.5111	0.0156	0.5267	0.1471	0.0149	0.1620		2,150.3400	2,150.3400	0.1686		2,154.5554
Worker	0.6786	0.4106	5.7101	0.0198	2.1014	0.0136	2.1150	0.5573	0.0125	0.5698		1,978.1250	1,978.1250	0.0424		1,979.1840
Total	**0.8920**	**7.9157**	**7.7455**	**0.0396**	**2.6125**	**0.0292**	**2.6417**	**0.7044**	**0.0274**	**0.7318**		**4,128.4650**	**4,128.4650**	**0.2110**		**4,133.7394**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2135	7.5051	2.0354	0.0197	0.4892	0.0156	0.5048	0.1417	0.0149	0.1566		2,150.3400	2,150.3400	0.1686		2,154.5554
Worker	0.6786	0.4106	5.7101	0.0198	1.9918	0.0136	2.0054	0.5304	0.0125	0.5429		1,978.1250	1,978.1250	0.0424		1,979.1840
Total	**0.8920**	**7.9157**	**7.7455**	**0.0396**	**2.4810**	**0.0292**	**2.5102**	**0.6721**	**0.0274**	**0.6995**		**4,128.4650**	**4,128.4650**	**0.2110**		**4,133.7394**

3.6 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**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.2007	7.1004	1.9654	0.0195	0.5111	0.0136	0.5247	0.1471	0.0130	0.1601		2,129.2209	2,129.2209	0.1633		2,133.3043
Worker	0.6413	0.3720	5.3294	0.0191	2.1014	0.0133	2.1147	0.5573	0.0123	0.5696		1,904.8183	1,904.8183	0.0385		1,905.7801
Total	**0.8420**	**7.4724**	**7.2948**	**0.0386**	**2.6125**	**0.0269**	**2.6394**	**0.7044**	**0.0253**	**0.7296**		**4,034.0392**	**4,034.0392**	**0.2018**		**4,039.0844**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.2007	7.1004	1.9654	0.0195	0.4892	0.0136	0.5028	0.1417	0.0130	0.1547		2,129.2209	2,129.2209	0.1633		2,133.3043
Worker	0.6413	0.3720	5.3294	0.0191	1.9918	0.0133	2.0051	0.5304	0.0123	0.5427		1,904.8183	1,904.8183	0.0385		1,905.7801
Total	**0.8420**	**7.4724**	**7.2948**	**0.0386**	**2.4810**	**0.0269**	**2.5079**	**0.6721**	**0.0253**	**0.6974**		**4,034.0392**	**4,034.0392**	**0.2018**		**4,039.0844**

3.7 Paving - 2022

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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**

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**

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**

3.8 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	68.5980					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	**68.8025**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1296	0.0752	1.0772	3.8600e-003	0.4248	2.7000e-003	0.4275	0.1127	2.4800e-003	0.1151		385.0165	385.0165	7.7800e-003		385.2109
Total	**0.1296**	**0.0752**	**1.0772**	**3.8600e-003**	**0.4248**	**2.7000e-003**	**0.4275**	**0.1127**	**2.4800e-003**	**0.1151**		**385.0165**	**385.0165**	**7.7800e-003**		**385.2109**

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	68.5980					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	**68.8025**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1296	0.0752	1.0772	3.8600e-003	0.4026	2.7000e-003	0.4053	0.1072	2.4800e-003	0.1097		385.0165	385.0165	7.7800e-003		385.2109
Total	**0.1296**	**0.0752**	**1.0772**	**3.8600e-003**	**0.4026**	**2.7000e-003**	**0.4053**	**0.1072**	**2.4800e-003**	**0.1097**		**385.0165**	**385.0165**	**7.7800e-003**		**385.2109**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive 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	6.5616	23.5077	66.7470	0.2374	20.9354	0.1771	21.1126	5.5984	0.1646	5.7630		24,134.5984	24,134.5984	1.0340		24,160.4476
Unmitigated	7.3640	28.1398	89.2334	0.3374	30.4311	0.2439	30.6751	8.1377	0.2268	8.3645		34,280.9519	34,280.9519	1.3969		34,315.8733

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Medical Office Building	5,530.56	5,530.56	5530.56	14,345,490	9,869,139
Total	5,530.56	5,530.56	5,530.56	14,345,490	9,869,139

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed 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
Medical Office Building	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive 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	0.0390	0.3543	0.2976	2.1300e-003		0.0269	0.0269		0.0269	0.0269		425.1578	425.1578	8.1500e-003	7.7900e-003	427.6843
NaturalGas Unmitigated	0.0454	0.4124	0.3465	2.4700e-003		0.0314	0.0314		0.0314	0.0314		494.9299	494.9299	9.4900e-003	9.0700e-003	497.8710

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					
Enclosed 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
Medical Office Building	4206.9	0.0454	0.4124	0.3465	2.4700e-003		0.0314	0.0314		0.0314	0.0314		494.9299	494.9299	9.4900e-003	9.0700e-003	497.8710
Total		**0.0454**	**0.4124**	**0.3465**	**2.4700e-003**		**0.0314**	**0.0314**		**0.0314**	**0.0314**		**494.9299**	**494.9299**	**9.4900e-003**	**9.0700e-003**	**497.8710**

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					
Enclosed 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
Medical Office Building	3.61384	0.0390	0.3543	0.2976	2.1300e-003		0.0269	0.0269		0.0269	0.0269		425.1578	425.1578	8.1500e-003	7.7900e-003	427.6843
Total		**0.0390**	**0.3543**	**0.2976**	**2.1300e-003**		**0.0269**	**0.0269**		**0.0269**	**0.0269**		**425.1578**	**425.1578**	**8.1500e-003**	**7.7900e-003**	**427.6843**

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	3.9000	9.0000e-004	0.0990	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		0.2119	0.2119	5.6000e-004		0.2258
Unmitigated	3.9000	9.0000e-004	0.0990	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		0.2119	0.2119	5.6000e-004		0.2258

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	0.4511					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.4397					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.2100e-003	9.0000e-004	0.0990	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		0.2119	0.2119	5.6000e-004		0.2258
Total	**3.9000**	**9.0000e-004**	**0.0990**	**1.0000e-005**		**3.5000e-004**	**3.5000e-004**		**3.5000e-004**	**3.5000e-004**		**0.2119**	**0.2119**	**5.6000e-004**		**0.2258**

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	0.4511					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.4397					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.2100e-003	9.0000e-004	0.0990	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		0.2119	0.2119	5.6000e-004		0.2258
Total	**3.9000**	**9.0000e-004**	**0.0990**	**1.0000e-005**		**3.5000e-004**	**3.5000e-004**		**3.5000e-004**	**3.5000e-004**		**0.2119**	**0.2119**	**5.6000e-004**		**0.2258**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

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
Emergency Generator	1	4	200	730	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (600 - 750 HP)	4.7919	13.3932	12.2184	0.0230		0.7049	0.7049		0.7049	0.7049		2,451.3812	2,451.3812	0.3437		2,459.9733
Total	**4.7919**	**13.3932**	**12.2184**	**0.0230**		**0.7049**	**0.7049**		**0.7049**	**0.7049**		**2,451.3812**	**2,451.3812**	**0.3437**		**2,459.9733**

11.0 Vegetation

UCI Center for Child Health

Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	168.00	1000sqft	3.86	168,000.00	0
Enclosed Parking with Elevator	800.00	Space	7.20	320,000.00	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	Southern California Edison				
CO2 Intensity (lb/MWhr)	546.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project Characteristics - Adjusted per the SCE 2017 CRSR. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 549.25*0.929-298*0.00617=546.4362 to avoid double counting

Land Use - Land Use types per Project Description. CalEEMod default acreages used.

Construction Phase - Anticipated construction schedule

Demolition -

Grading - Total acres graded = CalEEMod defaults

Vehicle Trips - Net trip generation rate used per Trip Generation Memo.

Energy Use -

Construction Off-road Equipment Mitigation - Per SCAQMD Rules and Regulations

Energy Mitigation - Per 2019 Title 24 standards.

Water Mitigation -

Waste Mitigation - AB 939/341

Stationary Sources - Emergency Generators and Fire Pumps -

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	55	61
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	55	61
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	24.00
tblConstructionPhase	NumDays	300.00	350.00
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	30.00	35.00
tblConstructionPhase	NumDays	10.00	15.00
tblGrading	MaterialExported	0.00	15,210.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	546.44
tblVehicleTrips	ST_TR	8.96	32.92
tblVehicleTrips	SU_TR	1.55	32.92
tblVehicleTrips	WD_TR	36.13	32.92

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.8695	62.2153	35.7068	0.0965	18.2675	2.2143	20.4662	9.9840	2.0386	12.0069	0.0000	9,822.5626	9,822.5626	2.3361	0.0000	9,880.9661
2021	4.5900	57.5008	34.5894	0.0959	9.7184	2.0217	11.7401	3.8786	1.8613	5.7399	0.0000	9,772.1953	9,772.1953	2.3309	0.0000	9,830.4670
2022	68.9497	23.1031	23.4266	0.0640	2.6125	0.8364	3.4490	0.7044	0.7869	1.4913	0.0000	6,433.9280	6,433.9280	0.8193	0.0000	6,454.4110
Maximum	**68.9497**	**62.2153**	**35.7068**	**0.0965**	**18.2675**	**2.2143**	**20.4662**	**9.9840**	**2.0386**	**12.0069**	**0.0000**	**9,822.5626**	**9,822.5626**	**2.3361**	**0.0000**	**9,880.9661**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.8695	62.2153	35.7068	0.0965	8.2783	2.2143	10.4926	3.7301	2.0386	5.7530	0.0000	9,822.5626	9,822.5626	2.3361	0.0000	9,880.9661
2021	4.5900	57.5008	34.5894	0.0959	4.2083	2.0217	6.2301	1.6023	1.8613	3.4636	0.0000	9,772.1953	9,772.1953	2.3309	0.0000	9,830.4670
2022	68.9497	23.1031	23.4266	0.0640	2.4810	0.8364	3.3174	0.6721	0.7869	1.4590	0.0000	6,433.9280	6,433.9280	0.8193	0.0000	6,454.4110
Maximum	**68.9497**	**62.2153**	**35.7068**	**0.0965**	**8.2783**	**2.2143**	**10.4926**	**3.7301**	**2.0386**	**5.7530**	**0.0000**	**9,822.5626**	**9,822.5626**	**2.3361**	**0.0000**	**9,880.9661**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**51.08**	**0.00**	**43.79**	**58.78**	**0.00**	**44.51**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.9000	9.0000e-004	0.0990	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		0.2119	0.2119	5.6000e-004		0.2258
Energy	0.0454	0.4124	0.3465	2.4700e-003		0.0314	0.0314		0.0314	0.0314		494.9299	494.9299	9.4900e-003	9.0700e-003	497.8710
Mobile	7.2393	28.8073	86.0199	0.3222	30.4311	0.2452	30.6763	8.1377	0.2280	8.3657		32,757.6493	32,757.6493	1.3984		32,792.6098
Stationary	4.7919	13.3932	12.2184	0.0230		0.7049	0.7049		0.7049	0.7049		2,451.3812	2,451.3812	0.3437		2,459.9733
Total	**15.9766**	**42.6138**	**98.6838**	**0.3477**	**30.4311**	**0.9818**	**31.4129**	**8.1377**	**0.9646**	**9.1023**		**35,704.1723**	**35,704.1723**	**1.7522**	**9.0700e-003**	**35,750.6799**

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	3.9000	9.0000e-004	0.0990	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		0.2119	0.2119	5.6000e-004		0.2258
Energy	0.0390	0.3543	0.2976	2.1300e-003		0.0269	0.0269		0.0269	0.0269		425.1578	425.1578	8.1500e-003	7.7900e-003	427.6843
Mobile	6.4530	23.9055	65.4898	0.2266	20.9354	0.1784	21.1138	5.5984	0.1659	5.7643		23,046.8292	23,046.8292	1.0440		23,072.9301
Stationary	4.7919	13.3932	12.2184	0.0230		0.7049	0.7049		0.7049	0.7049		2,451.3812	2,451.3812	0.3437		2,459.9733
Total	**15.1839**	**37.6539**	**78.1048**	**0.2518**	**20.9354**	**0.9106**	**21.8460**	**5.5984**	**0.8980**	**6.4965**		**25,923.5800**	**25,923.5800**	**1.3964**	**7.7900e-003**	**25,960.8135**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**4.96**	**11.64**	**20.85**	**27.59**	**31.20**	**7.25**	**30.46**	**31.20**	**6.90**	**28.63**	**0.00**	**27.39**	**27.39**	**20.30**	**14.11**	**27.38**

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	11/1/2020	12/4/2020	5	25	
2	Site Preparation	Site Preparation	12/5/2020	12/25/2020	5	15	
3	Grading	Grading	12/26/2020	2/12/2021	5	35	
4	Trenching and Utilities	Trenching	2/13/2021	2/26/2021	5	10	
5	Building Construction	Building Construction	2/27/2021	7/1/2022	5	350	
6	Paving	Paving	7/2/2022	7/29/2022	5	20	
7	Architectural Coating	Architectural Coating	7/30/2022	9/1/2022	5	24	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 7.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 252,000; Non-Residential Outdoor: 84,000; Striped Parking Area:

<u>OffRoad Equipment</u>

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	138.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	1,504.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Trenching and Utilities			0.00	0.00	14.70	6.90				
Building Construction	9	188.00	80.00	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	38.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1970	0.0000	1.1970	0.1812	0.0000	0.1812			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.704 9	3,747.7049	1.0580		3,774.153 6
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**1.1970**	**1.6587**	**2.8557**	**0.1812**	**1.5419**	**1.7231**		**3,747.704 9**	**3,747.7049**	**1.0580**		**3,774.153 6**

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	0.0427	1.5369	0.4038	4.1600e-003	0.0961	5.0000e-003	0.1011	0.0263	4.7900e-003	0.0311		463.7793	463.7793	0.0500		465.0286
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0651	0.0399	0.4538	1.5500e-003	0.1677	1.1100e-003	0.1688	0.0445	1.0200e-003	0.0455		154.7432	154.7432	3.5300e-003		154.8314
Total	**0.1079**	**1.5769**	**0.8576**	**5.7100e-003**	**0.2638**	**6.1100e-003**	**0.2699**	**0.0708**	**5.8100e-003**	**0.0766**		**618.5225**	**618.5225**	**0.0535**		**619.8600**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4435	0.0000	0.4435	0.0672	0.0000	0.0672			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.4435**	**1.6587**	**2.1022**	**0.0672**	**1.5419**	**1.6090**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0427	1.5369	0.4038	4.1600e-003	0.0917	5.0000e-003	0.0967	0.0252	4.7900e-003	0.0300		463.7793	463.7793	0.0500		465.0286
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0651	0.0399	0.4538	1.5500e-003	0.1589	1.1100e-003	0.1600	0.0423	1.0200e-003	0.0433		154.7432	154.7432	3.5300e-003		154.8314
Total	**0.1079**	**1.5769**	**0.8576**	**5.7100e-003**	**0.2507**	**6.1100e-003**	**0.2568**	**0.0676**	**5.8100e-003**	**0.0734**		**618.5225**	**618.5225**	**0.0535**		**619.8600**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0782	0.0479	0.5446	1.8600e-003	0.2012	1.3300e-003	0.2025	0.0534	1.2300e-003	0.0546		185.6918	185.6918	4.2400e-003		185.7977
Total	**0.0782**	**0.0479**	**0.5446**	**1.8600e-003**	**0.2012**	**1.3300e-003**	**0.2025**	**0.0534**	**1.2300e-003**	**0.0546**		**185.6918**	**185.6918**	**4.2400e-003**		**185.7977**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6936	0.0000	6.6936	3.6793	0.0000	3.6793			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**6.6936**	**2.1974**	**8.8910**	**3.6793**	**2.0216**	**5.7009**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0782	0.0479	0.5446	1.8600e-003	0.1907	1.3300e-003	0.1920	0.0508	1.2300e-003	0.0520		185.6918	185.6918	4.2400e-003		185.7977
Total	**0.0782**	**0.0479**	**0.5446**	**1.8600e-003**	**0.1907**	**1.3300e-003**	**0.1920**	**0.0508**	**1.2300e-003**	**0.0520**		**185.6918**	**185.6918**	**4.2400e-003**		**185.7977**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6733**	**2.1739**	**10.8472**	**3.5965**	**2.0000**	**5.5965**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3326	11.9646	3.1434	0.0324	5.1512	0.0390	5.1902	1.2856	0.0373	1.3228		3,610.3731	3,610.3731	0.3890		3,620.0985
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0869	0.0532	0.6051	2.0700e-003	0.2236	1.4800e-003	0.2250	0.0593	1.3600e-003	0.0607		206.3242	206.3242	4.7100e-003		206.4419
Total	**0.4194**	**12.0178**	**3.7485**	**0.0345**	**5.3748**	**0.0404**	**5.4152**	**1.3449**	**0.0386**	**1.3835**		**3,816.6974**	**3,816.6974**	**0.3937**		**3,826.5404**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2135	0.0000	3.2135	1.3325	0.0000	1.3325			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.2135**	**2.1739**	**5.3874**	**1.3325**	**2.0000**	**3.3325**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.3326	11.9646	3.1434	0.0324	4.8530	0.0390	4.8919	1.2124	0.0373	1.2496		3,610.3731	3,610.3731	0.3890		3,620.0985
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0869	0.0532	0.6051	2.0700e-003	0.2119	1.4800e-003	0.2134	0.0564	1.3600e-003	0.0578		206.3242	206.3242	4.7100e-003		206.4419
Total	**0.4194**	**12.0178**	**3.7485**	**0.0345**	**5.0648**	**0.0404**	**5.1053**	**1.2688**	**0.0386**	**1.3074**		**3,816.6974**	**3,816.6974**	**0.3937**		**3,826.5404**

3.4 Grading - 2021

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

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	0.3171	11.0530	3.1504	0.0319	0.8215	0.0349	0.8564	0.2228	0.0334	0.2562		3,565.9854	3,565.9854	0.3838		3,575.5805
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	0.0817	0.0480	0.5605	2.0000e-003	0.2236	1.4500e-003	0.2250	0.0593	1.3300e-003	0.0606		199.1664	199.1664	4.2600e-003		199.2731
Total	**0.3988**	**11.1010**	**3.7110**	**0.0339**	**1.0450**	**0.0364**	**1.0814**	**0.2821**	**0.0348**	**0.3169**		**3,765.1519**	**3,765.1519**	**0.3881**		**3,774.8536**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2135	0.0000	3.2135	1.3325	0.0000	1.3325			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**3.2135**	**1.9853**	**5.1988**	**1.3325**	**1.8265**	**3.1590**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.3171	11.0530	3.1504	0.0319	0.7830	0.0349	0.8179	0.2134	0.0334	0.2468		3,565.9854	3,565.9854	0.3838		3,575.5805
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	0.0817	0.0480	0.5605	2.0000e-003	0.2119	1.4500e-003	0.2133	0.0564	1.3300e-003	0.0578		199.1664	199.1664	4.2600e-003		199.2731
Total	**0.3988**	**11.1010**	**3.7110**	**0.0339**	**0.9949**	**0.0364**	**1.0313**	**0.2698**	**0.0348**	**0.3045**		**3,765.1519**	**3,765.1519**	**0.3881**		**3,774.8536**

3.5 Trenching and Utilities - 2021

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling					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
Worker					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**

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
Vendor					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
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.2241	7.4875	2.2330	0.0193	0.5111	0.0162	0.5273	0.1471	0.0155	0.1626		2,097.5120	2,097.5120	0.1769		2,101.9335
Worker	0.7683	0.4512	5.2690	0.0188	2.1014	0.0136	2.1150	0.5573	0.0125	0.5698		1,872.1645	1,872.1645	0.0401		1,873.1668
Total	**0.9923**	**7.9386**	**7.5020**	**0.0380**	**2.6125**	**0.0298**	**2.6423**	**0.7044**	**0.0280**	**0.7324**		**3,969.6765**	**3,969.6765**	**0.2170**		**3,975.1003**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.2241	7.4875	2.2330	0.0193	0.4892	0.0162	0.5054	0.1417	0.0155	0.1572		2,097.5120	2,097.5120	0.1769		2,101.9335
Worker	0.7683	0.4512	5.2690	0.0188	1.9918	0.0136	2.0054	0.5304	0.0125	0.5429		1,872.1645	1,872.1645	0.0401		1,873.1668
Total	**0.9923**	**7.9386**	**7.5020**	**0.0380**	**2.4810**	**0.0298**	**2.5108**	**0.6721**	**0.0280**	**0.7001**		**3,969.6765**	**3,969.6765**	**0.2170**		**3,975.1003**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.2107	7.0788	2.1531	0.0190	0.5111	0.0141	0.5252	0.1471	0.0135	0.1606		2,076.7143	2,076.7143	0.1710		2,080.9892
Worker	0.7279	0.4087	4.9102	0.0181	2.1014	0.0133	2.1147	0.5573	0.0123	0.5696		1,802.8801	1,802.8801	0.0364		1,803.7896
Total	**0.9386**	**7.4875**	**7.0632**	**0.0371**	**2.6125**	**0.0274**	**2.6399**	**0.7044**	**0.0258**	**0.7301**		**3,879.5944**	**3,879.5944**	**0.2074**		**3,884.7788**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.2107	7.0788	2.1531	0.0190	0.4892	0.0141	0.5033	0.1417	0.0135	0.1552		2,076.7143	2,076.7143	0.1710		2,080.9892
Worker	0.7279	0.4087	4.9102	0.0181	1.9918	0.0133	2.0051	0.5304	0.0123	0.5427		1,802.8801	1,802.8801	0.0364		1,803.7896
Total	**0.9386**	**7.4875**	**7.0632**	**0.0371**	**2.4810**	**0.0274**	**2.5084**	**0.6721**	**0.0258**	**0.6979**		**3,879.5944**	**3,879.5944**	**0.2074**		**3,884.7788**

3.7 Paving - 2022

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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**

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**

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**

3.8 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	68.5980					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	**68.8025**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1471	0.0826	0.9925	3.6500e-003	0.4248	2.7000e-003	0.4275	0.1127	2.4800e-003	0.1151		364.4119	364.4119	7.3500e-003		364.5958
Total	**0.1471**	**0.0826**	**0.9925**	**3.6500e-003**	**0.4248**	**2.7000e-003**	**0.4275**	**0.1127**	**2.4800e-003**	**0.1151**		**364.4119**	**364.4119**	**7.3500e-003**		**364.5958**

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	68.5980					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	**68.8025**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1471	0.0826	0.9925	3.6500e-003	0.4026	2.7000e-003	0.4053	0.1072	2.4800e-003	0.1097		364.4119	364.4119	7.3500e-003		364.5958
Total	**0.1471**	**0.0826**	**0.9925**	**3.6500e-003**	**0.4026**	**2.7000e-003**	**0.4053**	**0.1072**	**2.4800e-003**	**0.1097**		**364.4119**	**364.4119**	**7.3500e-003**		**364.5958**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive 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	6.4530	23.9055	65.4898	0.2266	20.9354	0.1784	21.1138	5.5984	0.1659	5.7643		23,046.8292	23,046.8292	1.0440		23,072.9301
Unmitigated	7.2393	28.8073	86.0199	0.3222	30.4311	0.2452	30.6763	8.1377	0.2280	8.3657		32,757.6493	32,757.6493	1.3984		32,792.6098

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Medical Office Building	5,530.56	5,530.56	5530.56	14,345,490	9,869,139
Total	5,530.56	5,530.56	5,530.56	14,345,490	9,869,139

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed 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
Medical Office Building	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive 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	0.0390	0.3543	0.2976	2.1300e-003		0.0269	0.0269		0.0269	0.0269		425.1578	425.1578	8.1500e-003	7.7900e-003	427.6843
NaturalGas Unmitigated	0.0454	0.4124	0.3465	2.4700e-003		0.0314	0.0314		0.0314	0.0314		494.9299	494.9299	9.4900e-003	9.0700e-003	497.8710

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					
Enclosed 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
Medical Office Building	4206.9	0.0454	0.4124	0.3465	2.4700e-003		0.0314	0.0314		0.0314	0.0314		494.9299	494.9299	9.4900e-003	9.0700e-003	497.8710
Total		**0.0454**	**0.4124**	**0.3465**	**2.4700e-003**		**0.0314**	**0.0314**		**0.0314**	**0.0314**		**494.9299**	**494.9299**	**9.4900e-003**	**9.0700e-003**	**497.8710**

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					
Enclosed 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
Medical Office Building	3.61384	0.0390	0.3543	0.2976	2.1300e-003		0.0269	0.0269		0.0269	0.0269		425.1578	425.1578	8.1500e-003	7.7900e-003	427.6843
Total		**0.0390**	**0.3543**	**0.2976**	**2.1300e-003**		**0.0269**	**0.0269**		**0.0269**	**0.0269**		**425.1578**	**425.1578**	**8.1500e-003**	**7.7900e-003**	**427.6843**

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	3.9000	9.0000e-004	0.0990	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		0.2119	0.2119	5.6000e-004		0.2258
Unmitigated	3.9000	9.0000e-004	0.0990	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		0.2119	0.2119	5.6000e-004		0.2258

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	0.4511					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.4397					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.2100e-003	9.0000e-004	0.0990	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		0.2119	0.2119	5.6000e-004		0.2258
Total	**3.9000**	**9.0000e-004**	**0.0990**	**1.0000e-005**		**3.5000e-004**	**3.5000e-004**		**3.5000e-004**	**3.5000e-004**		**0.2119**	**0.2119**	**5.6000e-004**		**0.2258**

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	0.4511					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.4397					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.2100e-003	9.0000e-004	0.0990	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		0.2119	0.2119	5.6000e-004		0.2258
Total	**3.9000**	**9.0000e-004**	**0.0990**	**1.0000e-005**		**3.5000e-004**	**3.5000e-004**		**3.5000e-004**	**3.5000e-004**		**0.2119**	**0.2119**	**5.6000e-004**		**0.2258**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

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
Emergency Generator	1	4	200	730	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (600 - 750 HP)	4.7919	13.3932	12.2184	0.0230		0.7049	0.7049		0.7049	0.7049		2,451.3812	2,451.3812	0.3437		2,459.9733
Total	**4.7919**	**13.3932**	**12.2184**	**0.0230**		**0.7049**	**0.7049**		**0.7049**	**0.7049**		**2,451.3812**	**2,451.3812**	**0.3437**		**2,459.9733**

11.0 Vegetation

APPENDIX B

Biological Resources Report

CENTER FOR CHILD HEALTH PROJECT

University of California, Irvine
Orange County, California

BIOLOGICAL RESOURCES REPORT

Prepared For:

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September 2019
JN 172570

Michael Baker
INTERNATIONAL

CENTER FOR CHILD HEALTH PROJECT

UNIVERSITY OF CALIFORNIA, IRVINE
ORANGE COUNTY, CALIFORNIA

Biological Resources Report

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

Stephen Anderson
Biologist
Natural Resources/Regulatory Permitting

Tom Millington
Senior Biologist
Natural Resources/Regulatory Permitting

September 2019

Executive Summary

On behalf of the University of California, Irvine (UCI), Michael Baker International (Michael Baker) has prepared this Biological Resources Report for the proposed approximately 5.08-acre Center for Child Health Project (project) located at the UCI North Campus, in the City of Irvine, County of Orange, California. The proposed project consists of the construction of a new Center for Child Health facility to replace the old Child Development Center at the same location.

This report was prepared to document all biological resources identified within the survey area (comprised of the permanent footprint, all surrounded by a 100-foot buffer) during a general biological resources survey, which includes a floral and faunal inventory, vegetation/land use mapping, habitat suitability assessments to determine the potential for special-status plant and wildlife species and vegetation communities to occur within the survey area, and an evaluation of jurisdictional aquatic or other hydrological features, if present.

The project site consists of the existing Child Development Center, which includes modular buildings, a paved parking lot, and play lot, all surrounded by a chain link fence. The survey area to the south and east includes undeveloped lands comprised primarily of non-native vegetation (disturbed areas), with ornamental vegetation and Jamboree Road to the north and west, respectively. Construction of the proposed project would result in a permanent loss of approximately 1.90 acres of disturbed areas, approximately 1.15 acres of ornamental vegetation, and approximately 2.03 acres of developed areas. These human-modified areas are not considered biological resources due to a lack of native soils and vegetation.

No special-status plant or wildlife species were observed within the survey area. Based on a 4-quadrangle search of the California Department of Fish and Wildlife California Natural Diversity Database (CNDDB) RareFind 5 and California Native Plant Society 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 all of the forty-five (45) special-status plant species and forty-seven (47) special-status wildlife species known to occur within the vicinity of the survey area are either not expected or have a low potential to occur within or surrounding the project site due to a lack of suitable habitat on-site or the project is outside of the species' known distribution range, for example.

A total of seven (7) special-status vegetation communities were identified within the 4-quadrangle CNDDB search, with none of those present within the survey area. The survey area is not located within any USFWS-designated Critical Habitat. The nearest Critical Habitat is located over 2 miles to the southeast, designated for coastal California gnatcatcher (*Polioptila californica californica*).

Additionally, the survey area is located within and is subject to the requirements and provisions set forth in the Central Subarea of the County of Orange Central and Coastal Subregion Natural

Community Conservation Plan/Habitat Conservation Plan (Orange County NCCP/HCP). The UCI is a participating landowner within the Orange County NCCP/HCP for which development activities and uses that are addressed by the Orange County NCCP/HCP are considered fully mitigated under the Natural Community Conservation Planning Act, Federal Endangered Species Act, and California Endangered Species Act for impacts to habitats occupied by listed and other species "identified" by the Orange County NCCP/HCP and its associated Implementation Agreement. Therefore, this project is exempt from any additional mitigation for impacts to "identified" species and their habitat.

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). No jurisdictional hydrological features were observed within the project site or survey area.

Because the proposed project is relatively small, proposed within an existing development footprint, and surrounded by development and/or previously disturbed lands, it would not have a substantial effect on wildlife movement, and impacts to wildlife corridors are not expected as a result of project implementation. However, project activities conducted within the bird breeding season (typically January through July for raptors and February through August for other avian species) will require pre-construction nesting bird surveys, and the appropriate setbacks if active nests are found.

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LIST OF ACRONYMS AND ABBREVIATIONS

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

Section 1 Introduction

On behalf of the University of California, Irvine (UCI), Michael Baker International (Michael Baker) has prepared this Biological Resources Report for the proposed Center for Child Health Project (project). This report describes the biological resources record searches and literature review, survey methodologies, and results of the general biological resources survey conducted within the survey area to determine the presence or potential occurrence of State-listed and/or Federally-listed as rare, threatened, or endangered, and other special-status plants, animals, and natural vegetation communities.

1.1 PROJECT LOCATION

The proposed project site is located within the UCI North Campus, approximately 0.6 mile northeast of State Route 73 and approximately 1 mile southwest of Interstate 405, in the City of Irvine, Orange County, California (Figure 1, *Regional Vicinity*). Specifically, the survey area is depicted in Section 50 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 project site (existing Child Development Center), inclusive of a 100-foot buffer to address indirect impacts and for flexibility in design, if necessary (Figure 3, *Survey Area*). The survey area is inclusive of and bounded by Jamboree Road to the north and west, and undeveloped (disturbed) areas to the south and east. San Joaquin Marsh is located approximately 700 feet southeast of the project site.

1.2 PROJECT DESCRIPTION

The approximately 5.08-acre proposed project site consists of the construction of a new Center for Child Health within the UCI North Campus.

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

8/29/2019 JN M:\Mdata\172570\GIS\MXD\Center for Child Health Bio\August 2019 Update\Fig 01 Regional Vicinity.mxd RP

Michael Baker INTERNATIONAL

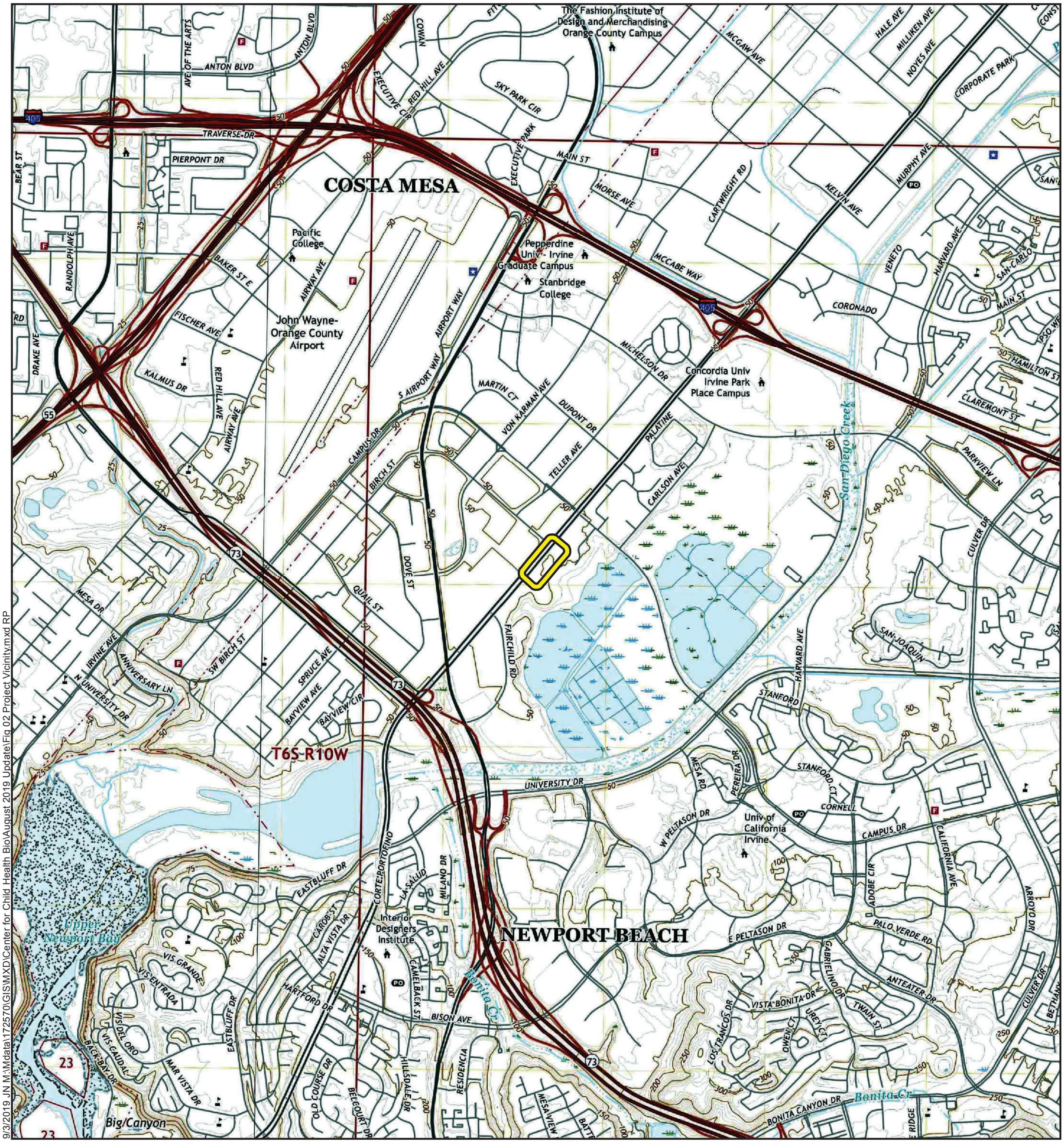
0 2.5 5 Miles

Source: ArcGIS Online, 2018

CENTER FOR CHILD HEALTH PROJECT
BIOLOGICAL RESOURCES REPORT

Regional Vicinity

Figure 1



Legend

Survey Area

Michael Baker INTERNATIONAL

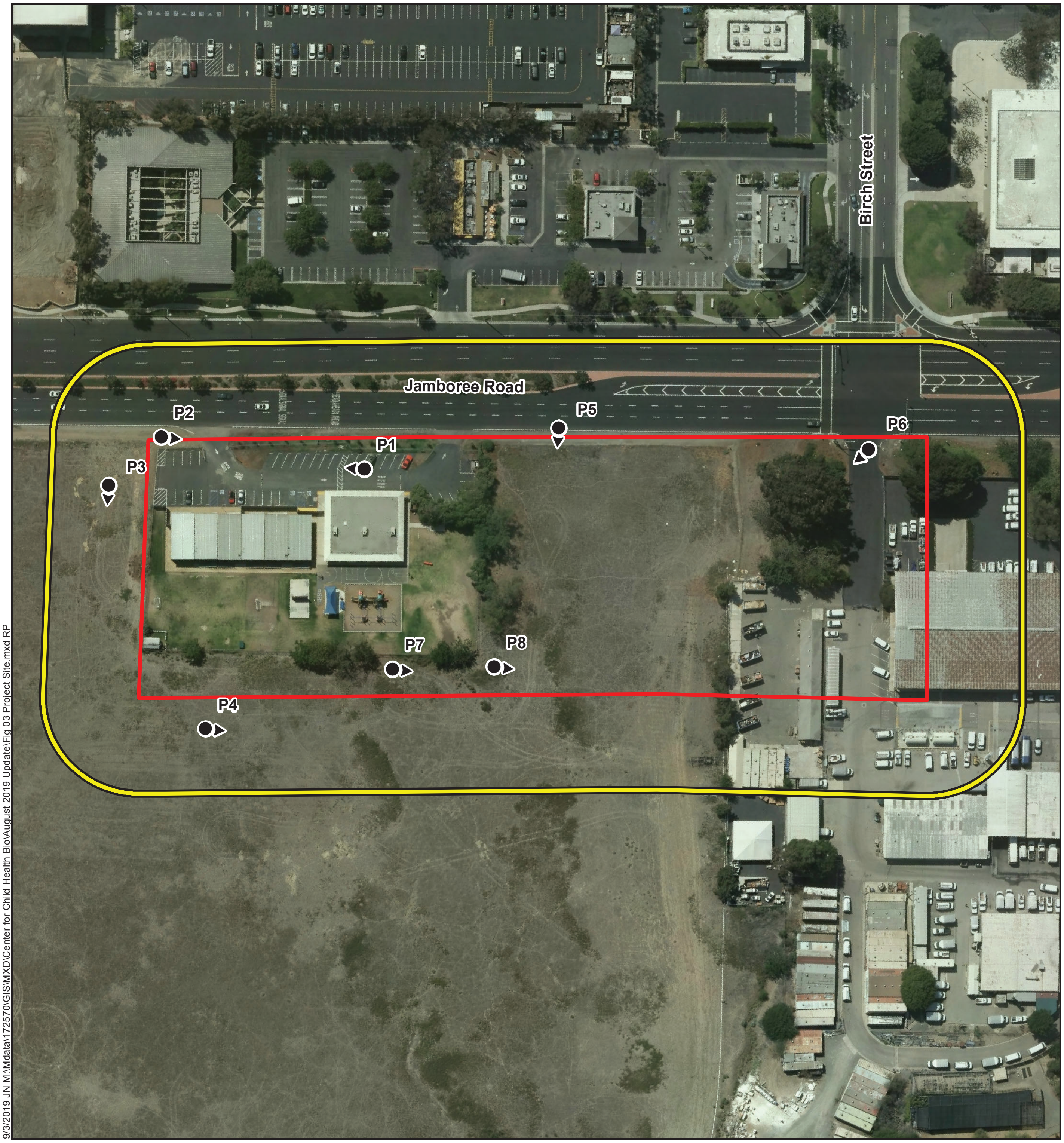
0 0.25 0.5 Miles

Source: USGS 7.5-Minute topographic quadrangle maps: *Tustin, California (2018) and Newport Beach, California (2018)*

CENTER FOR CHILD HEALTH PROJECT
BIOLOGICAL RESOURCES REPORT

Project Vicinity

Figure 2



9/3/2019 JN M:\Mdata\172570\GIS\MXD\Center for Child Health Bio\August 2019 Update\Fig 03 Project Site.mxd RP

Legend

Survey Area

Project Site

Photograph Point and Direction

Michael Baker INTERNATIONAL

0 50 100 Feet

Source: Eagle Aerial, 2014

CENTER FOR CHILD HEALTH PROJECT
BIOLOGICAL RESOURCES REPORT

Project Site

Figure 3

1.3 PURPOSE OF DOCUMENT

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

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

Section 2 Methodology

2.1 LITERATURE REVIEW AND DATABASE SEARCHES

Prior to conducting the field work, Michael Baker researched the environmental setting of the survey area, such as regional and local geography, land use, climate, and watershed. Further, Michael Baker conducted a 4-quadrangle search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) RareFind 5 (CDFW, Biogeographic Data Branch 2019) and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS 2019) 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 2019a). 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 2019a) and the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2019b) were reviewed for the current status designations of rare and endangered plant and wildlife species. Other resources reviewed include the CNPS California Rare Plant Rank (CRPR) System; recent aerial photography (Google Earth Pro 2019); the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) *Soil Survey of the Los Angeles County, California, Southeastern Part* (USDA, NRCS 2019); the National Hydric Soils List (USDA, NRCS 2015); and the USFWS National Wetland Inventory (NWI) (USFWS 2019b).

2.2 GENERAL BIOLOGICAL RESOURCES SURVEYS

Following the database searches, on April 11, 2019, Michael Baker biologists Dan Rosie and Stephen Anderson conducted a general biological resources survey of the entire survey area between the hours of 0730 and 0900, with weather conditions consisting of temperatures ranging from approximately 52 to 58 degrees Fahrenheit (°F), winds approximately 0 to 2 miles per hour, and 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, if present. Representative photographs of the survey area are provided at the end of this report in Appendix A, *Site Photographs*. Figure 3 provides the location and direction from which each photograph was taken.

2.2.1 Vegetation/Land Use Mapping and Plant Species Inventory

Classification of the on-site vegetation communities and other land uses is based on the descriptions provided in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), with modifications to better represent existing conditions in the field using the *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008), an expanded vegetation classification system based on Holland (1986). Plant species nomenclature and taxonomy follow *The Jepson Manual: Vascular Plants of California, second edition* (Baldwin et al. 2012). All plant species encountered were noted and identified at minimum to the lowest possible taxonomic level necessary to determine rarity. For a complete list of plant species observed on-site, refer to Appendix B, *Plant and Wildlife Species Observed List*.

2.2.2 General Wildlife Observations

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

2.3 SURVEY LIMITATIONS

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

The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, review of the CNDDB RareFind 5 and CNPS Online Inventory, and professional expertise. Standard data sources relied upon during the completion of this report, such as the CNDDB, may vary with regard to accuracy and completeness. In particular, the CNDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Michael Baker believes the data sources are reasonably reliable, Michael Baker cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extensive research and analysis.

Section 3 Existing Conditions

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

3.1 ENVIRONMENTAL SETTING

The survey area is located within the Southwestern California region of the California Floristic Province, at the UCI North Campus. The survey area consists of generally flat land consisting of the existing Child Development Center (developed), surrounded by Jamboree Road to the north and west and undeveloped (disturbed) areas to the south and east. No jurisdictional hydrological features were observed within the survey area.

3.1.1 Climate

The survey area, located at the UCI North 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 2019).

3.1.2 Watershed

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

Michael Baker searched the Federal Emergency Management Agency (FEMA) – 100 Year Flood Zones for flood data within the project site (ArcGIS 2019). According to FEMA, the survey area is not located within the 100-year flood zone, rather an Area of Minimal Flood Hazard (Zone X).

It should be noted that the project site is not located within the Coastal Zone regulated by the California Coastal Commission pursuant to the California Coastal Act.

3.2 TOPOGRAPHY AND SOILS

The general area that the project site is situated in is characterized by a relatively flat surface. Surface elevations within the survey area vary between approximately 55 feet above mean sea level (amsl) along the western end of the survey area to approximately 45 feet amsl along the eastern 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 2019). Mapped soils within the project site and survey area consist solely of Alo clay, 9 to 15 percent slopes (Map Unit Symbol: 100) (refer to Figure 4, *USDA Soils*).

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, Alo clay, 9 to 15 percent slopes, is not considered hydric. Soil textures identified on-site were generally consistent with those mapped by the *Soil Survey of the Los Angeles County, California, Southeastern Part* (USDA, NRCS 2019), with the soil texture consisting of clay.

3.3 VEGETATION COMMUNITIES AND OTHER LAND USES

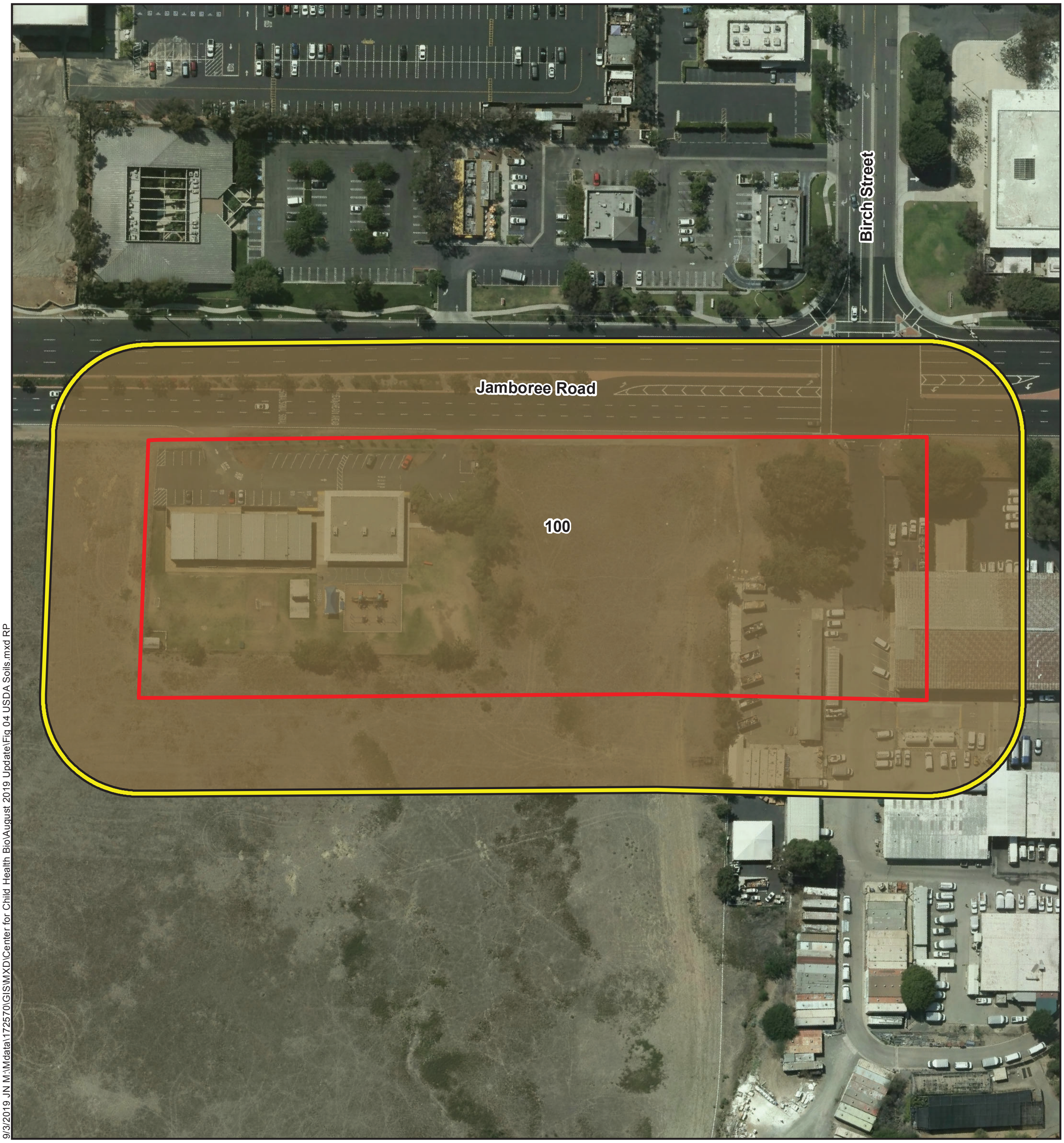
One (1) natural plant community and two (2) other land uses were identified within the survey area during the site visit, with only developed areas within the project site. Vegetation classification was based on Holland (1986), and modifications were made based on Oberbauer et al. (2008). A complete list of plant species observed during the survey is provided in Appendix B. A map that illustrates the extent of each vegetation community/land use is presented as Figure 5, *Vegetation Communities and Land Uses*, with each discussed in detail below.

Disturbed Habitat

Disturbed areas are lands that are frequently and repeatedly disturbed, and thereby dominated by opportunistic, primarily non-native and weedy species that often limit the reestablishment of native vegetation. Dominants within this non-native vegetation community on-site primarily include black mustard (*Brassica nigra*), common fiddleneck (*Amsinckia menziesii*), whitestem filaree (*Erodium moschatum*), London rocket (*Sisymbrium irio*), lesser swine cress (*Lepidium didymum*), and shining pepper grass (*Lepidium nitidum*). Construction of the proposed project would result in a permanent loss of approximately 1.90 acres of disturbed areas.

Ornamental

Ornamental vegetation consists of landscaped, irrigated, and/or maintained trees, shrubs, and ground cover. This vegetation type was primarily mapped along roadways and within and



9/3/2019 JN M:\Mdata\172570\GIS\MXD\Center for Child Health Bio\August 2019 Update\Fig 04 USDA Soils.mxd RP

Legend

Survey Area

Project Site

100 Alo clay, 9 to 15 percent slopes

Michael Baker INTERNATIONAL

0 50 100 Feet

Source: Eagle Aerial, 2014, USDA, 2019

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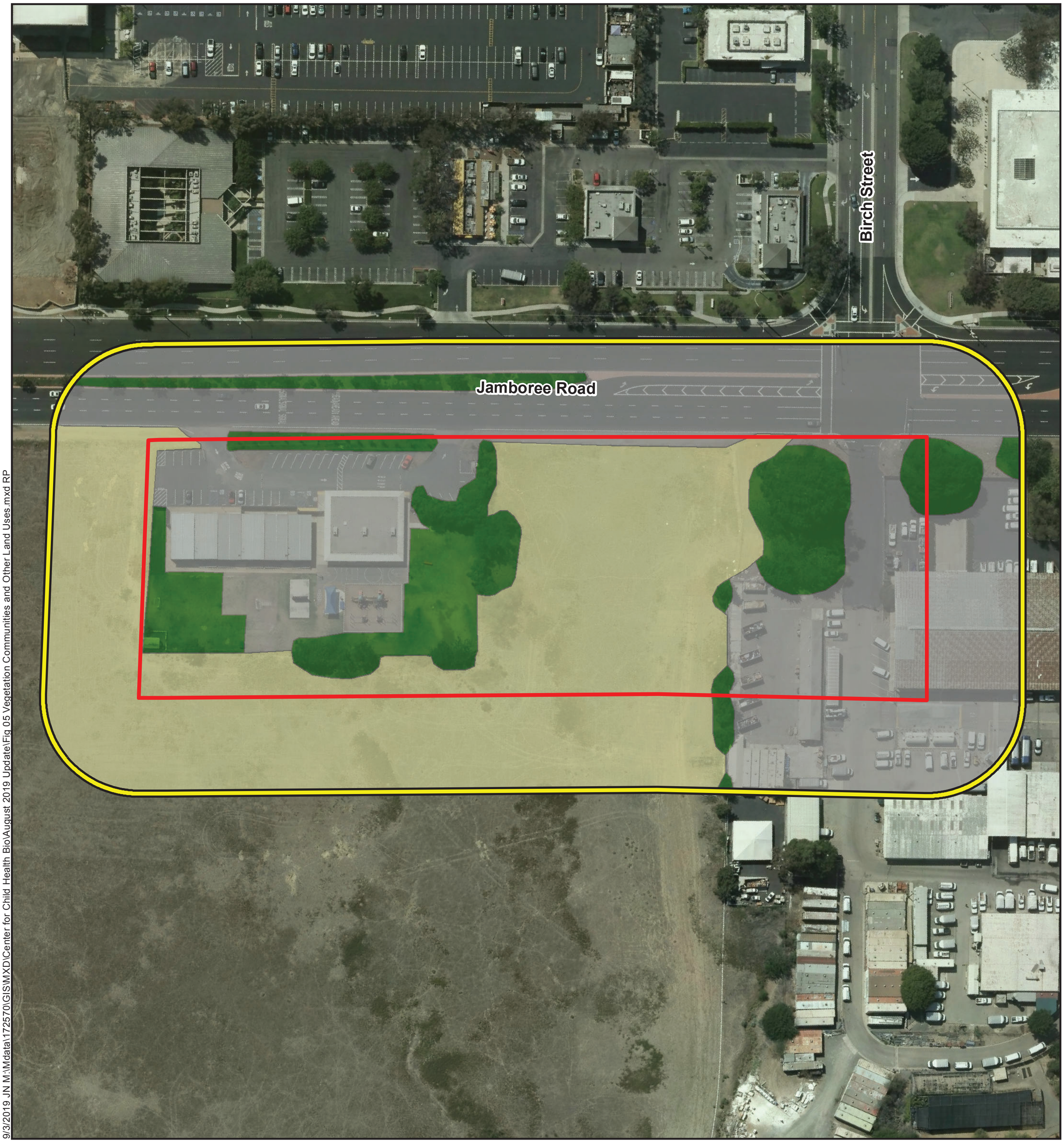
USDA Soils

Figure 4



Legend

- Survey Area
- Project Site
- Ornamental (1.49 acres)
- Disturbed (4.14 acres)
- Developed (5.17 acres)

Michael Baker INTERNATIONAL

0 50 100 Feet

Source: Eagle Aerial, 2014

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Vegetation Communities and Other Land Uses

Figure 5

surrounding the existing footprint. Species present primarily include carrotwood (*Cupaniopsis anacardioides*), Brazilian pepper tree (*Schinus terebinthifolius*), and ornamental grasses. Ornamental vegetation within the project site totals approximately 1.15 acres.

Developed

Developed land within the survey area consists of the paved and developed portions of the survey area, which includes the existing Child Development Center and its associated parking lot and Jamboree Road. Developed areas within the project site total approximately 2.03 acres.

3.4 GENERAL WILDLIFE OBSERVATIONS

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

Section 4 Special-Status Biological Resources

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

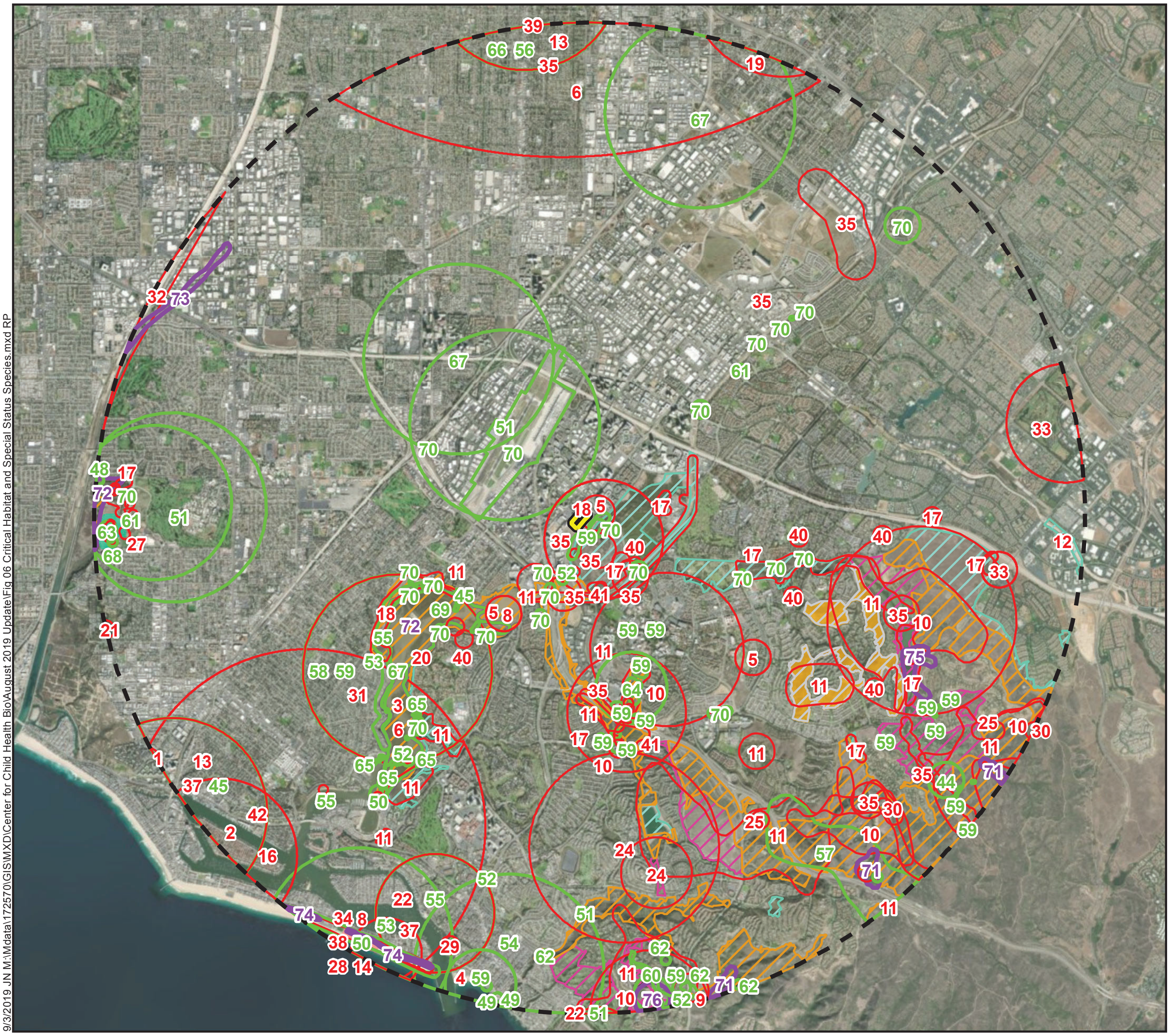
4.1 SPECIAL-STATUS SPECIES

The results of the database record searches (4-quadrangle search of the CNDDB RareFind 5 and CNPS Online Inventory; and query of the USFWS IPaC online system) revealed documented occurrences for a total of forty-five (45) special-status plant species and a total of forty-seven (47) special-status wildlife species. All of the special-status species with documented occurrences in the vicinity of the project were evaluated by Michael Baker as having a "Low" or "Not Expected" potential for occurrence and are therefore not discussed further. Species determined to have a "Moderate" or "High" potential for occurring, and those observed on-site during the survey, warrant a discussion. However, no special-status plant or wildlife species were observed within the survey area during the April 2019 survey. Based on the literature review/database searches and on-site habitat suitability assessments, Michael Baker determined that the survey area does not contain suitable habitat with a moderate or high potential to support special-status plant or wildlife species.

4.1.1 Special-Status Plant Species

No special-status plant species were observed during the survey. Of the forty-five (45) special-status plant species documented within the 4-quadrangle search, none were determined to a have a moderate or high potential to occur within the survey area. 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 is outside of the species' known distribution range.

9/3/2019 JN M:\Mdata\172570\GIS\MXD\Center for Child Health Bio\August 2019 Update\Fig 06 Critical Habitat and Special Status Species.mxd RP



Legend

- Survey Area
- 5-mile Radius Buffer

Special Status Resources

- Animal
- Plant
- Vegetation Community

NCCP/HCP

- Existing Use
- Non-Reserve Open Space
- Reserve
- Special Linkage

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	28	sandy beach tiger beetle	44	Allen's pentachaeta	57	intermediate mariposa-lily	71	Southern Coast Live Oak Riparian Forest
2	bank swallow	15	grasshopper sparrow	29	southern California legless lizard	45	aphanisma	58	Los Angeles sunflower	72	Southern Coastal Salt Marsh
3	Belding's savannah sparrow	16	hoary bat	30	southern California rufous-crowned sparrow	46	California Orcutt grass	59	many-stemmed dudleya	73	Southern Cottonwood Willow Riparian Forest
4	big free-tailed bat	17	least Bell's vireo	31	southern California saltmarsh shrew	47	chaparral ragwort	60	mesa horkelia	74	Southern Foredunes
5	burrowing owl	18	light-footed Ridgway's rail	32	steelhead - southern California DPS	48	chaparral sand-verbena	61	mud nama	75	Southern Sycamore Alder Riparian Woodland
6	California black rail	19	Mexican long-tongued bat	33	tricolored blackbird	49	cliff spurge	62	Nuttall's scrub oak	76	Valley Needlegrass Grassland
7	California horned lark	20	mimic tryonia	34	western beach tiger beetle	50	coast woolly-heads	63	prostrate vernal pool navarretia		
8	California least tern	21	monarch	35	western mastiff bat	51	Coulter's goldfields	64	Robinson's pepper-grass		
9	coast horned lizard	22	orange-throated whiptail	37	western snowy plover	52	Coulter's saltbush	65	salt marsh bird's-beak		
10	coastal cactus wren	23	osprey	38	western tidal-flat tiger beetle	53	Davidson's saltscale	66	salt spring checkerbloom		
11	coastal California gnatcatcher	24	Pacific pocket mouse	39	western yellow-billed cuckoo	54	decumbent goldenbush	67	San Bernardino aster		
12	Cooper's hawk	25	red-diamond rattlesnake	40	white-tailed kite	55	estuary seablite	68	San Diego button-celery		
13	Crotch bumble bee	26	Riverside fairy shrimp	42	yellow rail	56	Gambel's water cress	69	south coast saltscale		
		27	San Diego fairy shrimp	43	yellow warbler			70	southern tarplant		
				41	yellow-breasted chat						

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

Michael Baker INTERNATIONAL

0 1 2 Miles

Source: Esri, USFWS, 2019

Figure 6

4.1.2 Special-Status Wildlife Species

No special-status wildlife species were observed on-site during the survey. Of the forty-seven (47) special-status wildlife species documented within the 4-quadrangle search, none were determined to a have a moderate or high potential to occur within the survey area. All 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.

4.2 SPECIAL-STATUS VEGETATION COMMUNITIES

The CNDDB 4-quadrangle records search revealed a total of seven (7) special-status vegetation communities documented within the vicinity of the project site, none of which are present on-site.

4.3 JURISDICTIONAL HYDROLOGICAL FEATURES

There are no hydrological features subject to regulatory jurisdiction located within the survey area.

4.4 NESTING BIRDS AND WILDLIFE MOVEMENT

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

4.5 CRITICAL HABITAT

The survey area is not located within any USFWS-designated Critical Habitat. The nearest Critical Habitat is located over 2 miles to the southeast, designated for coastal California gnatcatcher.

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 Implementation Agreement (IA) satisfies the State and Federal mitigation requirements for designated development and adequately provides for the conservation and protection of 39 species and their habitats identified in the Orange County NCCP/HCP.

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

4.6.2 City of Irvine Tree Removal Ordinance

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

Section 5 Conclusions and Recommendations

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

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

5.1 SPECIAL-STATUS SPECIES

No special-status plant or wildlife species were observed during the survey. Michael Baker further determined that the survey area does not contain habitat of moderate or high suitability to support special-status plants or wildlife.

5.1.1 Special-Status Plant Species

Federally- and/or State-listed plant species known to occur within region of the survey area are not covered for take albeit when in compliance with the Orange County NCCP/HCP, with the exception of Laguna Beach dudleya (*Dudleya stolonifera*; FT/State-listed as threatened [ST]), which is not expected on-site. Proposed impacts to other Federally- and/or State-listed plant species – such as salt marsh bird's-beak (*Chloropyron maritimum* ssp*. maritimum*; Federally-listed as endangered [FE]/State-listed as endangered [SE]), San Diego button-celery (*Eryngium aristulatum var. parishii*; FE/SE), and Gambel's water cress (*Nasturtium gambelii*; FE/ST) that are not expected to occur on-site – would be subject to "take" only under the provisions of FESA and/or CESA, respectively. Refer to Appendix C, *Special-Status Species Table*.

Proposed impacts to special-status species with a CRPR 1 or 2, requires California Environmental Quality Act (CEQA) disclosure; and although they warrant no legal protection, a lead agency may require mitigation in the form of off-site preservation or translocation, for example, if not covered by the Orange County NCCP/HCP. Impacts to CRPR 3 and 4 species are not considered significant under CEQA and warrant no legal protection but may simply require CEQA disclosure.

Due to a lack of suitable habitat throughout the survey area and the potential for occurrence is low or not expected, impacts to special-status plant species are not expected as a result of the proposed project. Therefore, focused rare plant surveys prior to construction are not recommended. Refer to Appendix C for a list of special-status plant 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 is not expected to directly affect any of the thirty-nine (39) Orange County NCCP/HCP "Target and Identified" Species. The UCI is a participating landowner within the Orange County NCCP/HCP. For participating landowners, development activities and uses that are addressed by the Orange County NCCP/HCP are considered fully mitigated under the Natural Community Conservation Planning Act (NCCP Act), FESA, and CESA for impacts to habitats occupied by listed and other species "identified" by the Orange County NCCP/HCP and its associated IA. Therefore, this project is exempt from any additional mitigation for impacts to "identified" species and their habitat (e.g., coastal California gnatcatcher).

Due to a lack of suitable habitat throughout the survey area and the potential for occurrence is low or not expected, impacts to special-status wildlife species are not expected as a result of the proposed project. Refer to Appendix C for a list of special-status wildlife species known to occur within the vicinity of the survey area, and their potential to occur on-site

5.2 SPECIAL-STATUS VEGETATION COMMUNITIES

Seven (7) natural communities of special concern were identified during the CNDDB records search as potentially occurring within the survey area, none of which are present within the survey area. No impacts to special-status vegetation communities are expected as a result of the proposed project.

5.3 JURISDICTIONAL HYDROLOGICAL FEATURES

No hydrological features subject to jurisdiction of the regulatory agencies were observed within the survey area. Therefore, no impacts to jurisdictional hydrological features are expected as a result of the proposed project.

5.4 NESTING BIRDS AND WILDLIFE MOVEMENT

Due to the location of the proposed project, which is surrounded by previously disturbed and developed land, significant impacts to wildlife corridors are not expected as a result of implementing the proposed project. However, the survey area provides marginal habitat suitable to provide nesting opportunities for various bird species. With the implementation of MM BIO-1, impacts to nesting birds would be less than significant.

Minimization Measures

MM BIO-1: Proposed project activities shall avoid the bird breeding season (typically January through July for raptors and February through August for other avian species), if feasible. If breeding season avoidance is not feasible, a qualified biologist shall conduct a pre-construction nesting bird survey to determine the presence/absence, location, and status of any active nests on or adjacent to the survey area. The extent of the survey buffer area surrounding the site shall be established by the qualified biologist to ensure that direct and indirect effects to nesting birds are avoided. To avoid the destruction of active nests and to protect the reproductive success of birds protected by the MBTA and the CFGC and minimize the potential for project delay, nesting bird surveys shall be performed prior to project commencement.

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

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

5.5 CRITICAL HABITAT

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

5.6 LOCAL POLICIES AND ORDINANCES

5.6.1 Orange County NCCP/HCP

The project site is located within the Coastal Subregion of the Orange County NCCP/HCP. However, the project site is not located within the Reserve System or identified special linkage areas. The nearest designated portion of the Orange County NCCP/HCP Reserve System is located approximately 800 feet southeast (Non-Reserve Open Space associated with the San Joaquin Marsh) of the survey area and is primarily separated by disturbed areas. Implementation of the proposed project is not expected to affect any covered Orange County NCCP/HCP habitats.

5.6.2 City of Irvine Tree Removal Ordinance

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

5.7 CUMULATIVE IMPACTS

The UCI Design & Construction Services is implementing several campus improvements in addition to this project. Cumulative impacts would be limited to projects located on the UCI campus property that is zoned for these developments, all of which is primarily surrounded by urban areas and/or land set aside within the Orange County NCCP/HCP Reserve System. No other projects in the vicinity are known at this time. Therefore, cumulative impacts would be less than significant.

Section 6 References

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Appendix A: Site Photographs

Photograph 1 – View of the existing Child Development Center parking lot, facing southwest.

Photograph 2 – View of the entrance to the Child Development Center along Jamboree Road, facing east.

Photograph 3 – View of disturbed areas at the southwest end of the survey area, facing southeast.

Photograph 4 – View of the southern portion of the survey area, facing northeast.

Photograph 5 – View of disturbed areas at the northwest end of the survey area, facing southeast.

Photograph 6 – View of the ornamental and developed areas in the northern portion of the survey area, facing south.

Photograph 7 – View of disturbed areas at the southeast end of the survey area, facing northeast.

Photograph 8 – View of disturbed areas at the east end of the survey area, facing northeast.

Appendix B: Plant and Wildlife Species Observed List

Scientific Name *	Common Name	Cal-IPC Rating**
Plants		
Ambrosia psilostachya	western ragweed	
Amsinckia menziesii	small flowered fiddleneck	
*Avena fatua**	wild oat	Moderate
*Brassica nigra**	black mustard	Moderate
*Bromus rubens**	red brome	High
*Cupaniopsis anacardioides**	carrotwood	
*Cynara cardunculus**	artichoke thistle	Moderate
*Cynodon dactylon**	Bermuda grass	Moderate
*Erodium cicutarium**	redstem filaree	Limited
*Erodium moschatum**	whitestem filaree	
*Festuca perennis**	Italian rye grass	Moderate
*Helminthotheca echioides**	bristly ox-tongue	Limited
*Hordeum murinum**	foxtail barley	Moderate
*Lactuca serriola**	prickly lettuce	
*Lepidium didymum**	lesser swine cress	
Lepidium nitidum	shining pepper grass	
*Lysimachia arvensis**	scarlet pimpernel	
*Medicago polymorpha**	bur clover	Limited
Melilotus indicus	annual yellow sweetclover	
*Rumex crispus**	curly dock	Limited
*Schinus terebinthifolius**	Brazilian pepper tree	Limited
*Sisymbrium irio**	London rocket	Moderate
Solanum americanum	common nightshade	
*Sonchus asper**	prickly sowthistle	
*Sonchus oleraceus**	common sowthistle	
*Urtica urens**	dwarf nettle	
Birds		
Anas platyrhynchos	mallard	
Calypte anna	Anna's hummingbird	
Cathartes aura	turkey vulture	
Corvus brachyrhynchos	American crow	
Geothlypis trichas	common yellowthroat	
Haemorhous mexicanus	house finch	
Melospiza melodia	song sparrow	
Melozone crissalis	California towhee	
Mimus polyglottos	northern mockingbird	
Myiarchus cinerascens	ash-throated flycatcher	
Pipilo maculatus	spotted towhee	

Scientific Name *	Common Name	Cal-IPC Rating**
Sayornis nigricans	black phoebe	
Sayornis saya	Say's phoebe	
Spinus psaltria	lesser goldfinch	
Thryomanes bewickii	Bewick's wren	
Tyrannus vociferans	Cassin's kingbird	
Zenaida macroura	mourning dove	

* 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.

Appendix C: Special-Status Species Table

Scientific Name **Common Name**	**Status*** Federal / State CRPR *or* G-Rank / S-Rank OC NCCP/HCP?	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Plants			
Abronia maritima **red sand-verbena**	-- / -- 4.2 N	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 from 1932 and over 2.5 miles to the southwest.
Abronia villosa var. *aurita* **chaparral sand-verbena**	-- / -- 1B.1 N	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.	**Not Expected.** Suitable habitat (coastal scrub) is not present within the survey area. Further, the nearest occurrence is over 5 miles to the west.
Aphanisma blitoides **aphanisma**	-- / -- 1B.2 N	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) is not present within the survey area. Further, the nearest occurrence is over 1.5 miles to the west.
Atriplex coulteri **Coulter's saltbush**	-- / -- 1B.2 N	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 in grasslands and coastal bluff habitats) is marginally present within the survey area. The nearest occurrence is less than 1 mile to the south.
Atriplex pacifica **south coast saltscale**	-- / -- 1B.2 N	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 in coastal scrub) is not present within the survey area. Further, the nearest occurrence is from 1932 and approximately 2.5 miles to the southwest.
Atriplex parishii **Parish's brittlescale**	-- / --- 1B.1 N	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 in coastal scrub) is not present within the survey area. Further, the nearest occurrence is from 1881 and over 2 miles to the west.

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Atriplex serenana var. *davidsonii* **Davidson's saltscale**	-- / -- 1B.2 N	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 in coastal scrub) is not present within the survey area. The nearest occurrence is over 0.5 mile to the south.
Calochortus catalinae **Catalina mariposa lily**	-- / -- 4.2 Y	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.	**Not Expected.** Suitable habitat (coastal scrub) is not present within the survey area. Further, the nearest occurrence is over 4 miles to the south.
Calochortus weedii var. *intermedius* **intermediate mariposa-lily**	-- / -- 1B.2 N	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.	**Not Expected.** Suitable habitat (coastal sage scrub) is not present within the survey area. Further, the nearest occurrence is over 6 miles to the southeast.
Camissoniopsis lewisii **Lewis' evening-primrose**	-- / -- 3 N	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.	**Not Expected.** Suitable habitat (clay soils in coastal scrub) is not present within the survey area. Further, the nearest occurrence is less than 2 miles to the southwest.
Centromadia parryi ssp. *australis* **southern tarplant**	-- / -- 1B.1 N	Annual herb. Blooms March through October. Often found in disturbed sites near the coast at marsh edges; also, in alkaline soils, sometimes with saltgrass (*Distichlis spicata*). Sometimes in grasslands and on vernal pool margins. Known elevations range from 0 to 3,200 feet amsl.	**Not Expected.** Suitable habitat (disturbed sites at marsh edges) is not present within the survey area. Further, the nearest occurrence is approximately 1.5 miles to the southwest.

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Chaenactis glabriuscula var. *orcuttiana* **Orcutt's pincushion**	-- / -- 1B.1 N	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 over 9 miles to the south.
Chloropyron maritimum ssp. *maritimum* **salt marsh bird's-beak**	FE / SE 1B.2 N	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.** Although the nearest occurrence is less than 1 mile to the southwest, suitable habitat (marshes, swamps, and coastal dunes) is not present within the survey area.
Cistanthe maritima **seaside cistanthe**	-- / -- 4.2 N	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.	**Not Expected.** Suitable habitat (sandy sites) is not present within the survey area. Further, the nearest occurrence is over 9 miles to the southeast.
Comarostaphylis diversifolia ssp. *diversifolia* **summer holly**	-- / -- 1B.2 N	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 over 11 miles to the southeast.
Convolvulus simulans **small-flowered morning-glory**	-- / -- 4.2 N	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.** Although the nearest occurrence is less than 1 mile to the south, suitable habitat (wet clay, serpentine ridges) is not present within the survey area.
Deinandra paniculata **paniculate tarplant**	-- / -- 4.2 N	Annual herb. Blooms March through November. Found on vernally mesic sites, sometimes vernal pools or surrounding mima mounds, in coastal scrub and valley and foothill grassland. Known elevations range from 55 to 4,070 feet amsl.	**Not Expected.** Suitable habitat (vernally mesic sites) is not present within the survey area. Further, the nearest occurrence is over 6 miles to the southeast.

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Dichondra occidentalis **western dichondra**	-- / -- 4.2 N	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.	**Not Expected.** Suitable habitat (clay soils in coastal scrub) is not present within the survey area. Further, the nearest occurrence is over 4 miles to the south.
Dudleya multicaulis **many-stemmed dudleya**	-- / -- 1B.2 N	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.	**Not Expected.** Suitable habitat (clayey soils in coastal scrub) is not present within the survey area. The nearest occurrence is less than 0.5 mile to the south.
Dudleya stolonifera **Laguna Beach dudleya**	FT / ST 1B.1 Y	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 7 miles to the southeast.
Eryngium aristulatum var. *parishii* **San Diego button-celery**	FE / SE 1B.1 N	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 nearly 5 miles to the west.
Euphorbia misera **cliff spurge**	-- / -- 2B.2 N	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 nearly 5 miles to the south.

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Helianthus nuttallii ssp. *parishii* **Los Angeles sunflower**	-- / -- 1A N	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 from 1933 over 2 miles to the southwest.
Hordeum intercedens **vernal barley**	-- / -- 3.2 N	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 nearly 2 miles to the southeast.
Horkelia cuneata var. *puberula* **mesa horkelia**	-- / -- 1B.1 N	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.	**Not Expected.** Suitable habitat (sandy or gravelly areas within coastal scrub) is not present within the survey area. Further, the nearest occurrence is nearly 5 miles to the south.
Isocoma menziesii var. decumbens **decumbent goldenbush**	-- / -- 1B.2 N	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.	**Not Expected.** Suitable habitat (sandy soils) is not present within the survey area. Further, the nearest occurrence is nearly 3 miles to the southwest and this perennial species would have been detected during the survey.
Juncus acutus ssp. *leopoldii* **southwestern spiny rush**	-- / -- 4.2 N	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.** Although the nearest occurrence is less than 1 mile to the south, suitable habitat (salt marshes) is not present within the survey area and this perennial species would have been detected during the survey.
Lasthenia glabrata ssp. *coulteri* **Coulter's goldfields**	-- / -- 1B.1 N	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.	**Not Expected.** Although the nearest occurrence is just over 1 mile to the northwest, suitable habitat (alkaline soils in marshes) is not present within the survey area.

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Lepidium virginicum var. *robinsonii* **Robinson's pepper-grass**	-- / -- 4.3 N	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.	**Not Expected.** Suitable habitat (dry soils in coastal sage scrub) is not present within the survey area. Further, the nearest occurrence is approximately than 2 miles to the south.
Lycium californicum **California box-thorn**	-- / -- 4.2 N	Shrub. Blooms March through August. Found within coastal bluff scrub and coastal scrub. Known elevations range from 0 to 525 feet amsl.	**Not Expected.** Although the nearest occurrence is less than 0.5 mile to the south, suitable habitat (coastal scrub) is not present within the survey area and this perennial would have been detected during the survey.
Malacothrix saxatilis var. *saxatilis* **cliff aster**	-- / -- 4.2 N	Perennial herb. Blooms March through September. Found within coastal bluff scrub and coastal scrub. Known elevations range from 15 to 100 feet amsl.	**Not Expected.** Suitable habitat (coastal scrub) is not present within the survey area. Further, the nearest occurrence is nearly 7 miles to the southeast.
Nama stenocarpa **mud nama**	-- / -- 2B.2 N	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 nearly 1 mile to the east.
Nasturtium gambelii **Gambel's water cress**	FE / ST 1B.1 N	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 from 1927 and nearly 6 miles to the north.
Navarretia prostrata **prostrate vernal pool navarretia**	-- / -- 1B.1 N	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 in grassland and coastal scrub) is not present within the survey area. Further, the nearest occurrence is nearly 5 miles to the west.

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Nemacaulis denudata var. *denudata* **coast woolly-heads**	-- / -- 1B.2 N	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 3 miles to the southwest.
Orcuttia californica **California Orcutt grass**	FE / SE 1B.1 N	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 nearest occurrence is approximately 5 miles to the west.
Pentachaeta aurea ssp. *allenii* **Allen's pentachaeta**	-- / -- 1B.1 N	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 not present within the survey area. Further, the nearest occurrence is over 4.5 miles to the east.
Phacelia ramosissima var. *austrolitoralis* **south coast branching phacelia**	-- / -- 3.2 N	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.	**Not Expected.** Suitable habitat (sandy/rocky sites in coastal scrub) is not present within the survey area. Further, the nearest occurrence is approximately 1.5 miles to the southwest.
Quercus dumosa **Nuttall's scrub oak**	-- / -- 1B.1 Y	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 not present within the survey area. Further, the nearest occurrence is approximately 4.5 miles to the southwest.
Sagittaria sanfordii **Sandford's arrowhead**	-- / -- 1B.2 N	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 5 miles to the northwest.

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Senecio aphanactis **chaparral ragwort**	-- / -- 2B.2 N	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. Further, the nearest occurrence is approximately 2 miles to the southeast.
Sidalcea neomexicana **salt spring checkerbloom**	-- / -- 2B.2 N	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 6 miles to the north.
Suaeda esteroa **estuary seablite**	-- / -- 1B.2 N	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 southwest.
Symphyotrichum defoliatum **San Bernardino aster**	-- / -- 1B.2 N	Perennial herb (rhizomatous). Blooms July through November. Grows in vernally mesic sites and disturbed areas or near ditches, streams, and springs in meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, and valley and foothill grassland. Known elevations range from 5 to 6,695 feet in elevation amsl.	**Not Expected.** Suitable habitat (vernally mesic sites) is not present within the survey area. Further, the nearest occurrence is approximately 2.5 miles to the southwest.
Verbesina dissita **big-leaved crownbeard**	FT / ST 1B.1 N	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 12 miles to the southeast.

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Invertebrates			
Bombus crotchii **Crotch bumble bee**	-- / -- G3G4 / S1S2 N	Found from coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	**Not Expected.** Food plants (*Eriogonum, Phacelia*) are not present within the survey area. Further, the nearest occurrence is over 5 miles to the southwest.
Branchinecta sandiegonensis **San Diego fairy shrimp**	FE / -- G2 / S2 Y^	Endemic to San Diego and Orange County mesas. Found within small, shallow vernal pools which range in depth from 2-12in and in water temperature from 50-68F.	**Not Expected.** Suitable habitat (vernal pools) is not present within the survey area. Further, the nearest occurrence is approximately 5 miles to the west.
Cicindela gabbii **western tidal-flat tiger beetle**	-- / -- G2G4 / S1 N	Inhabits estuaries and mudflats along the coast of Southern California. Generally found on dark-colored mud in the lower zone; occasionally found on dry saline flats of estuaries.	**Not Expected.** Suitable habitat (estuaries and mudflats) is not present within the survey area. Further, the nearest occurrence is approximately 5.5 miles to the southwest.
Cicindela hirticollis gravida **sandy beach tiger beetle**	-- / -- G5T2 / S2 N	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. Found in clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	**Not Expected.** Suitable habitat (areas adjacent to non-brackish water along the coast) is not present within the survey area. Further, the nearest occurrence is approximately 5 miles to the southwest.
Cicindela latesignata latesignata **western beach tiger beetle**	-- / -- G2G4T1T2 / S1 N	Found in mudflats and beaches in coastal Southern California.	**Not Expected.** Suitable habitat (mudflats and beaches) is not present within the survey area. Further, the nearest occurrence is approximately 5.5 miles to the southwest.

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Coelus globosus **globose dune beetle**	-- / -- G1G2 / S1S2 N	Inhabits foredunes and sand hummocks of coastal sand dune habitat. It burrows beneath the sand surface and is most common beneath dune vegetation. Erratically distributed from Ten Mile Creek in Mendocino County south to Ensenada, Mexico.	**Not Expected.** Suitable habitat (foredunes and sand hummocks) is not present within the survey area. Further, the nearest occurrence is approximately 5.5 miles to the southwest.
Danaus plexippus pop. 1 **monarch - California overwintering population**	-- / -- G4T2T3 / S2S3 N	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 approximately 5 miles to the southwest.
Panoquina errans **wandering skipper**	-- / -- G4G5 / S2 N	Found in Southern California coastal salt marshes, ocean bluffs, and other open areas near the ocean. Requires moist saltgrass for larval development.	**Not Expected.** Suitable habitat (coastal salt marshes and ocean bluffs) is not present within the survey area. Further, the nearest occurrence is over 6 miles to the west.
Streptocephalus woottoni **Riverside fairy shrimp**	FE / -- G1G2 / S1S2 Y^	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. All known habitat lies within annual grasslands, which may be interspersed through chaparral or coastal sage scrub vegetation.	**Not Expected.** Suitable habitat (vernal pools and vernal pool like depressions) is not present within the survey area. Further, the nearest occurrence is approximately 5 miles to the west.

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Tryonia imitator **mimic tryonia (California brackishwater snail)**	-- / -- G2 / S2 N	Inhabits coastal lagoons, estuaries, salt marshes, and where creek mouths that join tidal marshes from Sonoma County south to San Diego County. Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.	**Not Expected.** Suitable habitat (coastal lagoons, estuaries, and salt marshes) is not present within the survey area. Further, the nearest occurrence is approximately 2.5 miles to the southwest.
Fish			
Eucyclogobius newberryi **tidewater goby**	FE / SSC G3 / S3 N	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 12 miles to the southeast.
Oncorhynchus mykiss irideus pop. 10 **steelhead – southern California DPS**	FE / -- G5T1Q / S1 N	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 7 miles to the north.
Amphibians			
Spea hammondii **western spadefoot**	-- / SSC G3 / S3 N	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 5 miles to the east.

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Reptiles			
Anniella stebbinsi **southern California legless lizard**	-- / SSC G3 / S3 N	Locally abundant specimens are found in coastal sand dunes and a variety of interior habitats, including sandy washes and alluvial fans. A large protected population persists in the remnant of the once extensive El Segundo Dunes at Los Angeles International Airport.	**Not Expected.** Suitable breeding habitat (coastal sand dunes, sandy washes, and alluvial fans) is not present within the survey area. Further, the nearest occurrence is approximately 4.5 miles to the south.
Aspidoscelis hyperythra **orange-throated whiptail**	-- / WL G5 / S2S3 Y#	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.** Suitable habitat (edge of intact vegetation and disturbed areas, coastal scrub) is not present within the survey area. However, the nearest occurrence is approximately 4 miles to the south.
Crotalus ruber **red-diamond rattlesnake**	-- / SSC G4 / S3 Y	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 areas in dense vegetation) is not present within the survey area. Further, the nearest occurrence is over 3.5 miles to the southeast.
Emys marmorata **western pond turtle**	-- / SSC G3G4 / S3 N	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 (aquatic sites) is not present within the survey area. Further, the nearest occurrence is approximately 0.2 mile to the south.

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Phrynosoma blainvillii **coast horned lizard**	-- / SSC G3G4 / S3S4 Y	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.** Suitable habitat (coastal sage scrub and annual grassland) is not present within the survey area and primary food source (ants) were not observed. Further, the nearest occurrence is over 5 miles to the southeast.
Birds			
Accipiter cooperii (Nesting) **Cooper's hawk**	-- / WL G5 / S4 N	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.	**Not Expected.** Suitable nesting habitat (tall trees) is not present within the survey area. Further, the nearest occurrence is approximately 5 miles to the east.
Agelaius tricolor (Nesting colony) **tricolored blackbird**	-- / SCE, SSC G2G3 / S1S2 N	Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony. Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California.	**Not Expected.** Suitable nesting habitat (open water, protected nesting substrate) is not present within the survey area. Further, the nearest occurrence is over 4 miles to the east.
Aimophila ruficeps canescens **southern California rufous-crowned sparrow**	-- / WL G5T3 / S3 Y	Frequents relatively steep, often rocky hillsides with grass and forb patches in coastal sage scrub and sparse mixed chaparral habitats.	**Not Expected.** Suitable habitat (rocky hillsides in coastal sage scrub) is not present within the survey area. Further, the nearest occurrence is over 4 miles to the east.
Ammodramus savannarum (Nesting) **grasshopper sparrow**	-- / SSC G5 / S3 N	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 (scattered shrubs) is not present within the survey area. The nearest occurrence is approximately 0.4 mile to the north.

Scientific Name **Common Name**	**Status*** Federal / State CRPR *or* G-Rank / S-Rank OC NCCP/HCP?	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Athene cunicularia (Burrow sites and some wintering sites) **burrowing owl**	-- / SSC G4 / S3 N	Primarily found in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation, but it persists and even thrives in some landscapes highly altered by human activity, such as earthen canals, berms, rock piles, and pipes. Subterranean nester, most often dependent upon burrowing mammals, most notably, the California ground squirrel (*Otospermophilus beecheyi*).	**Not Expected.** Although the nearest occurrence is approximately 0.2 mile to the northeast and suitable nesting and wintering habitat (annual grasslands, low-growing vegetation) is marginally present within the survey area, no suitable burrows or squirrels were observed within the survey area.
Campylorhynchus brunneicapillus sandiegensis (San Diego and Orange Counties only) **coastal cactus wren**	-- / SSC G5T3Q / S3 Y#	From southern Ventura County and southwestern San Bernardino County to northwestern Baja California, occupies coastal sage scrub largely consisting of tall stands of coastal prickly pear (*Opuntia littoralis*) or cholla (*Cylindropuntia* spp.) cacti for nesting and roosting.	**Not Expected.** Suitable habitat (tall stands of cacti) is not present within the survey area. Further, the nearest occurrence is approximately 1.5 miles to the south.
Charadrius alexandrinus nivosus (Nesting) **western snowy plover**	FT / SSC G3T3 / S2S3 N	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 approximately 5 miles to the southwest.
Coccyzus americanus occidentalis (Nesting) **western yellow-billed cuckoo**	FT / SE G5T2T3 / S1 N	Obligate willow-cottonwood riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow (*Salix* spp.), often mixed with cottonwoods (*Populus* spp.), with the lower story dominated by blackberry (*Rubus* spp.), nettles (*Urtica* spp.), and/or wild grape (*Vitis* spp.).	**Not Expected.** Suitable nesting habitat (broad riparian forests) is not present within the survey area. Further, the nearest occurrence is approximately 5.5 miles to the north.

Scientific Name **Common Name**	**Status*** Federal / State CRPR *or* G-Rank / S-Rank OC NCCP/HCP?	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Coturnicops noveboracensis **yellow rail**	-- / SSC G4 / S1S2 N	Occurs in freshwater marshlands. Summer resident in eastern Sierra Nevada in Mono County.	**Not Expected.** Suitable habitat (freshwater marshlands) is not present within the survey area. Further, the nearest occurrence is over 4 miles to the southwest.
Elanus leucurus (Nesting) **white-tailed kite**	-- / FP G5 / S3S4 N	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.	**Not Expected.** Although the nearest occurrence is approximately 0.4 mile to the southeast, suitable nesting habitat (dense-topped trees) is not present within the survey area.
Empidonax traillii extimus (Nesting) **southwestern willow flycatcher**	FE / SE G5T2 / S1 Y^	Occurs in broad riparian woodlands in southern California. Typically requires large areas of willow thickets in broad valleys and canyon bottoms, or around ponds and lakes. These areas typically have standing or running water or are at least moist.	**Not Expected.** Suitable nesting habitat (broad riparian woodlands) is not present within the survey area. Further, there are no documented occurrences within the records search.
Eremophila alpestris actia **California horned lark**	-- / WL G5T4Q / S4 N	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.	**Low.** Suitable habitat (low herbaceous vegetation with widely scattered low shrubs) is marginally present within the survey area. However, the nearest occurrence is approximately 1.5 mile to the south.

Scientific Name **Common Name**	**Status*** Federal / State CRPR *or* G-Rank / S-Rank OC NCCP/HCP?	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Icteria virens (Nesting) **yellow-breasted chat**	-- / SSC G5 / S3 N	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.** Although the nearest occurrence is approximately 0.5 mile to the south, suitable nesting habitat (dense riparian thickets) is not present within the survey area.
Laterallus jamaicensis coturniculus **California black rail**	-- / ST, FP G3G4T1 / S1 N	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Needs water depths of approximately 1 inch that do not fluctuate during the year, and dense upland buffer and marsh vegetation for nesting habitat.	**Not Expected.** Suitable habitat (marshes and wet meadows) is not present within the survey area. Further, the nearest occurrence is approximately 2.5 miles to the southwest.
Pandion haliaetus **osprey**	-- / WL G5 / S4 N	Found along ocean shores, bays, freshwater lakes, and larger streams. Builds large nests in tree-tops within 15 miles of a good fish-producing body of water.	**Not Expected.** Suitable habitat (ocean shores, bays, freshwater lakes, and larger streams) is not present within the survey area. Further, the nearest occurrence is over 2 miles to the southwest.
Passerculus sandwichensis beldingi **Belding's savannah sparrow**	-- / SE G5T3 / S3 N	Inhabits coastal salt marshes, from Santa Barbara south through San Diego County. Nests in pickleweed (*Salicornia* spp.) on and around margins of tidal flats.	**Not Expected.** Suitable habitat (coastal salt marshes) is not present within the survey area. Further, the nearest occurrence is approximately 2.5 miles to the west.
Polioptila californica californica **coastal California gnatcatcher**	FT / SSC G4G5T2Q / S2 Y#	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.	**Low.** There are 35 documented occurrences within the records search. One (1) individual was observed approximately 500 feet southeast of the survey area during the survey. However, suitable habitat (coastal sage scrub) is not present within the survey area.

Scientific Name **Common Name**	**Status*** Federal / State CRPR *or* G-Rank / S-Rank OC NCCP/HCP?	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Rallus obsoletus levipes **light-footed Ridgway's rail**	FE / SE, FP G5T1T2 / S1 N	Found in salt marshes traversed by tidal sloughs, where dense growths of cordgrass (*Spartina foliosa*) and pickleweed dominate for nesting. Requires shallow water and mudflats for foraging on mollusks and crustaceans, with adjacent higher vegetation for cover during high water.	**Not Expected.** Although the nearest occurrence is approximately 800 feet to the east, suitable habitat (salt marshes) is not present within the survey area.
Riparia riparia **bank swallow**	-- / ST G5 / S2 N	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 5 miles to the southwest and is considered extirpated.
Setophaga petechia **yellow warbler**	-- / SSC G5 / S3S4 N	Found in riparian plant associations near water. Also nests in montane shrubbery in open conifer forests in the Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores (*Platanus racemosa*), ash (*Fraxinus* spp.), and alder (*Alnus* spp.).	**Not Expected.** Suitable habitat (riparian areas near water) is not present within the survey area. Further, the nearest occurrence is over 5 miles to the west.
Sternula antillarum browni (Nesting colony) **California least tern**	FE / SE, FP G4T2T3Q / S2 N	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 southwest.

Scientific Name **Common Name**	**Status*** Federal / State CRPR *or* G-Rank / S-Rank OC NCCP/HCP?	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Vireo bellii pusillus (Nesting) **least Bell's vireo**	FE / SE G5T2 / S2 Y^	Primarily occupies riverine riparian habitats that typically feature a dense, stratified canopy and herbaceous wetland understory. Nests within 1 to 2 meters of the ground. Summer resident of Southern California below 2,000 feet amsl.	**Not Expected.** Although there are nearby known occurrences and this species was observed approximately 1,000 feet southeast of the survey area, suitable nesting habitat (riverine riparian habitats with herbaceous wetland understory) is not present within the survey area.
Mammals			
Choeronycteris mexicana **Mexican long-tongued bat**	-- / SSC G4 / S1 N	Occasionally found in San Diego County, which is on the periphery of their range. Feeds on nectar and pollen of night-blooming succulents. Roosts in relatively well-lit caves, and in and around buildings.	**Low.** Suitable roosting habitat (buildings) is marginally present within the survey area. However, the nearest occurrence is approximately 6 miles to the north.
Eumops perotis californicus **western mastiff bat**	-- / SSC G5T4 / S3S4 N	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 not present within the survey area; however, this species is likely to forage in the area. The nearest occurrence is 700 feet to the east.
Lasiurus cinereus **hoary bat**	-- / -- G5 / S4 N	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**Not Expected.** Suitable roosting habitat (medium to large trees) is not present within the survey area. Further, the nearest occurrence is over 5 miles to the southwest.
Nyctinomops macrotis **big free-tailed bat**	-- / -- G5 / S3 N	Found in low-lying arid areas in Southern California. Needs high cliffs on rocky outcrops for roosting sites. Feeds principally on large moths.	**Not Expected.** Suitable roosting habitat (high cliffs on rocky outcrops) is not present within the survey area. Further, the nearest occurrence is approximately 5 miles to the south.

Scientific Name **Common Name**	**Status*** Federal / State CRPR *or* G-Rank / S-Rank OC NCCP/HCP?	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Perognathus longimembris pacificus **Pacific pocket mouse**	FE / SSC G5T1 / S1 Y^	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 not present within the survey area. Further, the nearest occurrence is over 3 miles to the south and this species is only known extant from eight locales.
Sorex ornatus salicornicus **southern California saltmarsh shrew**	-- / SSC G5T1? / S1 N	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 southwest.
Taxidea taxus **American badger**	-- / SSC G5 / S3 N	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 5 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

County of Orange Natural Community Conservation Plan and Habitat Conservation Plan (Orange County NCCP/HCP)

Y/N	Species “take” covered when in compliance with the County NCCP/HCP?
#	Target Species
^	Conditionally Covered Species

G-Rank / S-Rank

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

Infraspecific Taxon Conservation Status Ranks

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

APPENDIX C

Greenhouse Gas Assessment

Greenhouse Gas Emissions Assessment
Center for Child Health
University of California, Irvine

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LIST OF ABBREVIATED TERMS

AB	Assembly Bill
CARB	California Air Resource Board
CCR	California Code of Regulations
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CALGreen	California Green Building Standards
CPUC	California Public Utilities Commission
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CFC	Chlorofluorocarbon
CPP	Clean Power Plan
CAP	Climate Action Plan
CY	cubic yard
COHS	College of Health Sciences
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
FR	Federal Register
GHG	greenhouse gas
GSF	gross-square-foot
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
LEED	Leadership in Energy and Environmental Design
LCFS	Low Carbon Fuel Standard
CH_4	Methane
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
$MTCO_2e$	million tons of carbon dioxide equivalent
NHTSA	National Highway Traffic Safety Administration
NF_3	nitrogen trifluoride
N_2O	nitrous oxide
PFC	Perfluorocarbon
RECs	Renewable Energy Certificates
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_6	sulfur hexafluoride
SPP	Sustainable Practice Policy
TAC	toxic air contaminants
UC	University of California
UCI	University of California, Irvine

1 INTRODUCTION

This report documents the results of a Greenhouse Gas (GHG) Emissions Assessment prepared for the University of California Irvine (UCI) Center for Child Health Project ("Project" or "proposed Project"). The purpose of this GHG Emissions Assessment is to evaluate the potential construction and operational GHG emissions associated with the proposed Project and determine the Project's level of impact on the environment.

1.1 Project Location

The Project is located within the UCI campus, in the City of Irvine (City), and County of Orange (County); see **Exhibit 1: Regional Vicinity**. The approximately 5.5-acre Project site is located within UCI's North Campus along Jamboree Road near the intersection with Campus Drive; see **Exhibit 2: Site Vicinity**. The site is surrounded by commercial and public facilities uses to the north, UCI maintenance and facilities to the east, vacant land and the San Joaquin Marsh Reserve to the south, and mixed-use residential uses to the west. Jamboree Road adjoins the Project site to the north in a northeast-southwest direction. Regional access to the Project site is provided via Interstate 405 (I-405) or State Route 73 (SR-73) located to the north and south, respectively. Local access to the Project site is provided via Jamboree Road and Campus Drive.

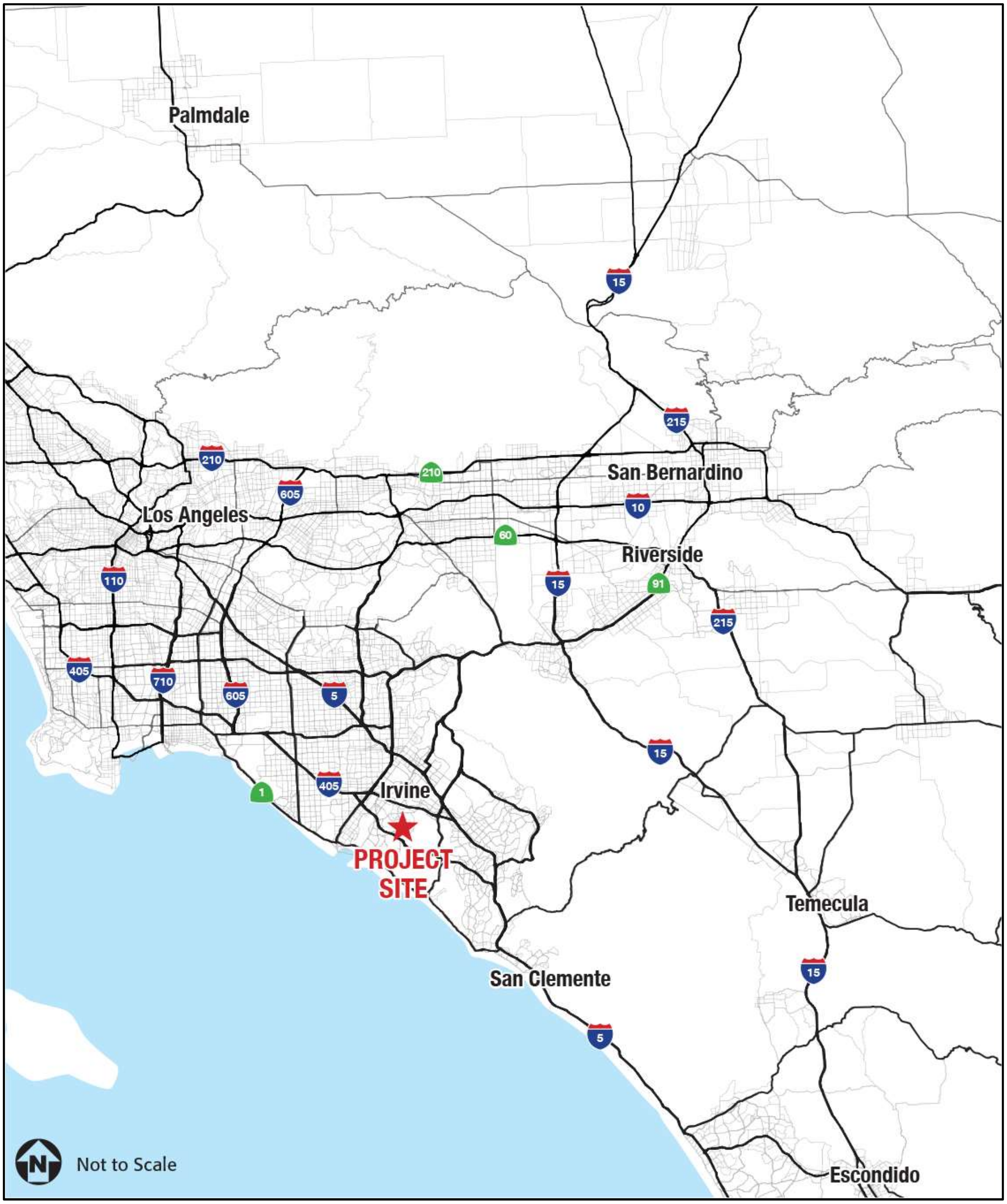
1.2 Project Description

The proposed Project would construct an approximately 168,000-gross-square-foot (GSF), five-story medical office building with an additional mechanical penthouse and an 800-space parking structure at UCI's North Campus; refer to **Exhibit 3: Conceptual Site Plan**. The existing on-site approximately 6,500 GSF Child Development Center, approximately 2,400 GSF UCI Recycling Center, and an approximately 21,500 GSF receiving yard would be demolished in order to construct the proposed Project. The UCI Recycling Center would be relocated to existing space on the Main Campus. Additional site improvements would include grading, driveway paving, construction of internal on-site circulation, landscaping, and installation of site utility connections and lighting.

Project Construction and Phasing

Project construction is anticipated to occur over approximately 22 months beginning in November 2020 and ending in September 2022. Grading for the proposed Project would require approximately 27,103 cubic yards (CY) of excavation with 15,210 CY of soil export. Final grading plans would be approved by the UCI Building Official before Grading Permit issuance. All infrastructure (i.e. storm drain, water, wastewater, dry utilities, and street improvements) would be installed during grading. Construction for the Project would occur in one phase. For purposes of this environmental analysis, opening year is conservatively assumed to be 2022.

Exhibit 1: Regional Vicinity

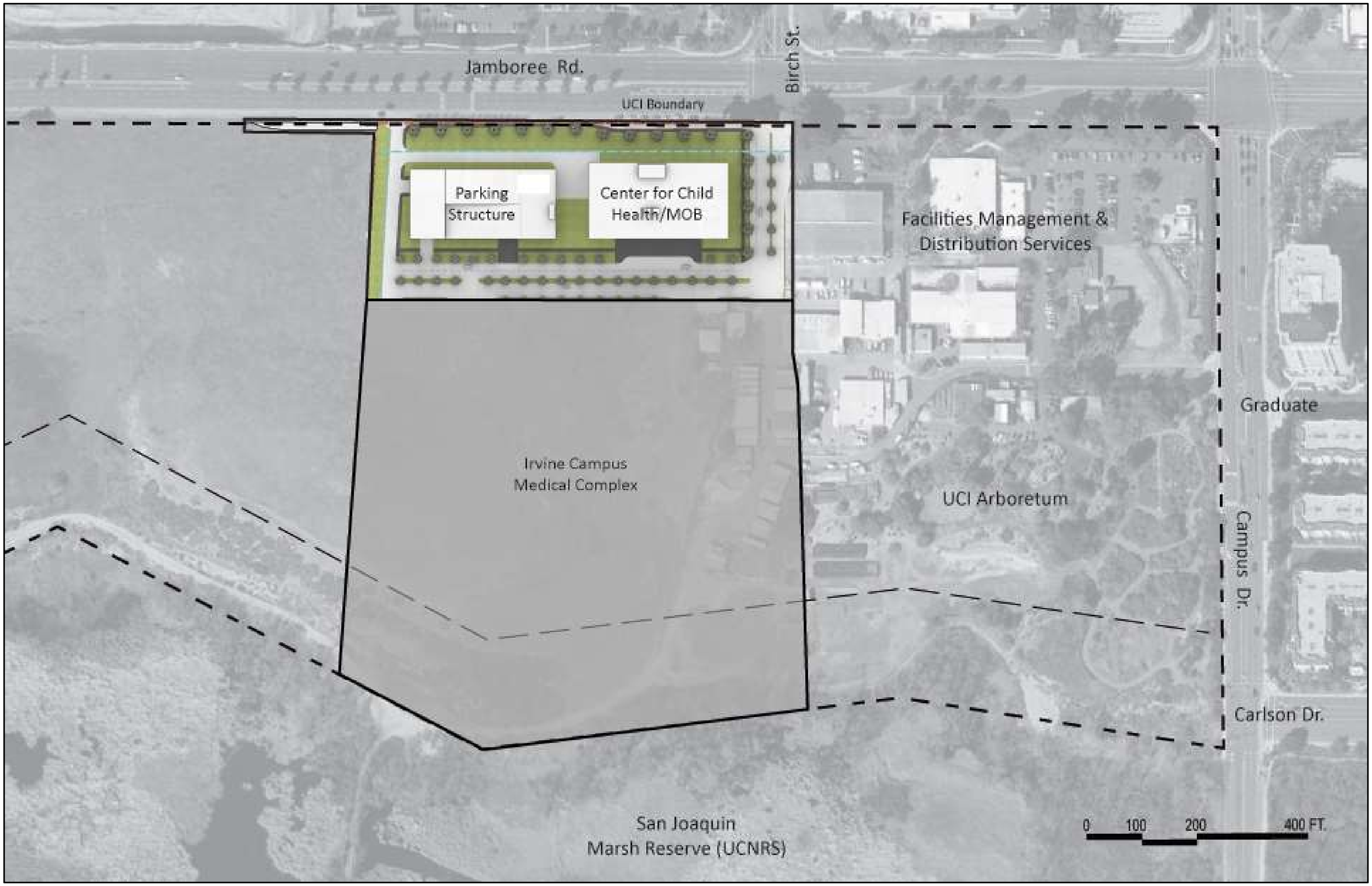


Source: Kimley-Horn and Associates, 2019.

Exhibit 2: Site Vicinity

Source: NearMap, 2019.

Exhibit 3: Site Plan



Source: University of California Irvine, 2020.

2 ENVIRONMENTAL SETTING

2.1 Greenhouse Gases and Climate Change

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

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

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

[1] Intergovernmental Panel on Climate Change, *Carbon and Other Biogeochemical Cycles. In: Climate Change 2013: The Physical Science Basis*, *Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2013. https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_all_final.pdf.

Table 1: Description of Greenhouse Gases

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

Source: Compiled from U.S. EPA, *Overview of Greenhouse Gases*, April 11, 2019 (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's (EPA) authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Federal Clean Air Act (FCAA) and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the EPA finalized an endangerment finding in December 2009. Based on scientific evidence, it found that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing FCAA and the EPA's assessment of the scientific evidence that form the basis for the EPA's regulatory actions.

Federal Vehicle Standards

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

In 2010, an Executive Memorandum was issued directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks. It should be noted that the EPA is currently proposing to freeze the vehicle fuel efficiency standards at their planned 2020 level (37 miles per gallon), canceling any future strengthening (currently 54.5 miles per gallon by 2026).

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

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

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

Clean Power Plan and New Source Performance Standards for Electric Generating Units

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

Presidential Executive Order 13783

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

3.2 State of California

California Air Resources Board

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

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

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

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

CARB Scoping Plan

CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes a framework for the measures that would be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business-as-usual")[2]. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates early actions and additional GHG reduction measures by both CARB and the state's Climate

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

Action Team, identifies additional measures to be pursued as regulations, and outlines the adopted role of a cap-and-trade program[3]. Additional development of these measures and adoption of appropriate regulations occurred through the end of 2013. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent by 2020.
- Developing a California cap-and-trade program that links with other programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions (adopted in 2011).
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets (several sustainable community strategies have been adopted).
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, heavy-duty truck measures, the Low Carbon Fuel Standard (amendments to the Pavley Standard adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (adopted 2009).
- Creating targeted fees, including a public goods charge on water use, fees on gasses with high global warming potential, and a fee to fund the administrative costs of California's long-term commitment to AB 32 implementation.

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

CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan summarizes the most recent science related to climate change, including anticipated impacts to California and the levels of GHG emissions reductions necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32.

[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.

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.

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.

Senate Bill 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.

Assembly Bill 1493 (Pavley Regulations and Fuel Efficiency Standards)

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

Senate Bill 1368 (Emission Performance Standards)

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

[4] California Air Resources Board, *California's 2017 Climate Change Scoping Plan,* https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf, accessed January 2, 2019.

Senate Bill 1078 and X1-2 (Renewable Electricity Standards)

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

Senate Bill 350 (Clean Energy and Pollution Reduction Act of 2015)

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

Assembly Bill 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.

Senate Bill 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.

Senate Bill 100 (California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases)

Signed into Law in September 2018, SB 100 increased California's renewable electricity portfolio from 50 to 60 percent by 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045.

Executive Orders Related to GHG Emissions

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

Executive Order S-3-05

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

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

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

Executive Order S-01-07

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

Executive Order S-13-08

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

Executive Order S-14-08

Issued on November 17, 2008, Executive Order S-14-08 expands the state's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring 33 percent of electricity sold in the state come from renewable energy by 2020. CARB adopted the Renewable Electricity Standard on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly owned electricity retailers.

Executive Order S-21-09

Issued on July 17, 2009, Executive Order S-21-09 directs CARB to adopt regulations to increase California's RPS to 33 percent by 2020. This builds upon SB 1078 (2002), which established the California RPS program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

Executive Order B-30-15

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

Executive Order B-55-18

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

California Regulations and Building Codes

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

Title 20 Appliance Efficiency Regulations

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

Title 24 Building Energy Efficiency Standards

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR Title 24, Part 6), was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 Building Energy Efficiency Standards approved on January 19, 2016 went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and went into effect on January 1, 2020. Under the 2019 standards, homes will use approximately 53 percent less energy and nonresidential buildings will use approximately 30 percent less energy than buildings under the 2016 standards.

Title 24 California Green Building Standards Code

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

3.3 REGIONAL

South Coast Air Quality Management District Thresholds

The South Coast Air Quality Management District (SCAQMD) formed a GHG California Environmental Quality Act (CEQA) Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. As of the last Working Group meeting (Meeting 15) held in September 2010, the SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency.

With the tiered approach, a project is compared with the requirements of each tier sequentially and would not result in a significant impact if it complies with any tier. Tier 1 excludes projects that are specifically exempt from SB 97 from resulting in a significant impact. Tier 2 excludes projects that are consistent with a GHG reduction plan that has a certified final CEQA document and complies with AB 32 GHG reduction goals. Tier 3 excludes projects with annual emissions lower than a screening threshold. The SCAQMD is proposing a screening threshold of 10,000 metric tons of CO_2e ($MTCO_2e$) per year for industrial projects and 3,000 $MTCO_2e$ for non-industrial projects. SCAQMD concluded that projects with emissions less than the screening threshold would not result in a significant cumulative impact.

Tier 4 consists of three decision tree options. Under the Tier 4 first option, SCAQMD initially outlined that a project would be excluded if design features and/or mitigation measures resulted in emissions 30 percent lower than business as usual emissions. However, the Working Group did not provide a recommendation for this approach. The Working Group folded the Tier 4 second option into the third option. Under the Tier 4 third option, a project would be excluded if it was below an efficiency-based threshold of 4.8 $MTCO_2e$ per service population per year or 3.0 $MTCO_2e$/SP/year for projects opening after 2020. Tier 5 would exclude projects that implement offsite mitigation (GHG reduction projects) or purchase offsets to reduce GHG emission impacts to less than the proposed screening level.

GHG efficiency metrics are utilized as thresholds to assess the GHG efficiency of a project on a per capita basis or on a service population basis (the sum of the number of jobs and the number of residents provided by a project) such that a project would allow for consistency with the goals of AB 32 (i.e. 1990 GHG emissions levels by 2020) and SB 32 (40 percent below 1990 levels by 2030). GHG efficiency thresholds can be determined by dividing the GHG emissions inventory goal, by the estimated population and employment. This method allows highly efficient projects with higher mass emissions to meet the overall reduction goals of AB 32 and SB 32, and is appropriate, because the threshold can be applied evenly to all project types (residential or commercial/retail only and mixed use).

Southern California Association of Governments

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

3.4 Local

UC Irvine Climate Action Plan

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

University of California Sustainable Practices Policy

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

4 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 Thresholds and 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. CEQA Guidelines Section 15183.5 allows lead agencies to analyze the impacts associated with GHG emissions at a programmatic level in plan-level documents such as the CAP, so that project-level environmental documents may tier from the programmatic review. Thus, the CAP is used to determine whether the Project will have a less than significant contribution to cumulative GHG emissions (i.e., the Project's incremental contribution to cumulative GHG effects is not cumulatively considerable), pursuant to CEQA Guidelines Sections 15064(h)(3), 15064.4(a)(2), 15064.4(b), 15130(d), and 15183(b).

4.2 Methodology

The Project's GHG emissions are evaluated consistent with CEQA Guidelines Sections 15183.5, 15064.4(a)(2), and 15064.4(b) by considering whether the Project complies with the CAP. This consistency evaluation is the sole basis for determining the significance of the Project's GHG-related impacts on the environment. Notwithstanding, for informational purposes, the Project's construction and operational emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod) and are compared to the SCAQMD's post-2020 threshold of 3.0 $MTCO_2e$/SP/year. The primary purpose of quantifying the Project's GHG emissions is to satisfy CEQA Guidelines Section 15064.4(a)(1), which calls for a good-faith effort to describe and calculate emissions. However, the significance of the Project's GHG emissions impacts is not based on the amount of GHG emissions resulting from the Project.

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

5 POTENTIAL IMPACTS AND MITIGATION

5.1 Greenhouse Gas Emissions and Plan Compliance

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

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?

Short-Term Construction Greenhouse Gas Emissions

The Project would result in direct GHG emissions from construction. The duration of construction associated with the Project is estimated to last up to 22 months. The Project would require approximately 27,103 CY of excavation with 15,210 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 Project are included in **Table 2: Construction-Related Greenhouse Gas Emissions**.

Table 2: Construction-Related Greenhouse Gas Emissions	
Category	**$MTCO_2e$**
Total Construction Emissions	798
30-Year Amortized Construction	27
Source: CalEEMod version 2016.3.2. Refer to **Appendix A** for model outputs.	

As shown in **Table 2**, Project construction would generate approximately 798 $MTCO_2e$ of GHG emissions. Construction GHG emissions are typically summed and amortized over the Project's lifetime (assumed to be 30 years), then added to operational emissions.[5] The amortized Project emissions would be 27 $MTCO_2e$ per year. Upon Project completion, construction-related GHG emissions would cease.

Long-Term Operational Greenhouse Gas Emissions

Operational or long-term emissions would occur over the Project's life. The Project's operational GHG emissions would result from direct emissions such as Project-generated vehicular traffic, on-site combustion of natural gas, and operation of any landscaping equipment. Operational GHG emissions would also result from indirect sources, such as off-site generation of electrical power, the energy required to convey water to the Project site and wastewater from the Project site, the emissions associated with solid waste generated from the Project site, and any fugitive refrigerants from air conditioning or refrigerators. The Project's total operational GHG emissions are summarized in **Table 3: Project Greenhouse Gas Emissions**. As shown in **Table 3**, Project operational GHG emissions combined with construction-related GHG emissions would generate approximately 5,309 $MTCO_2e$ annually.

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

Table 3: Project Greenhouse Gas Emissions

Emissions Source	$MTCO_2e$ per Year
Construction Amortized Over 30 Years	27
Area Source	0
Energy	1,047
Mobile	3,860
Stationary	58
Waste	228
Water and Wastewater	89
Total	**5,309**
Service Population[1]	*2,766*
Project GHG Efficiency ($MTCO_2e$ per Service Population per Year)	*1.92*
GHG Efficiency Target ($MTCO_2e$ per Service Population per Year)	*3.0*
Exceeds Threshold?	**No**

1. The service population (employees + patrons) represents the Project's net average daily trips (ADT) (5,531 net ADT) from Table 3-1 (Center for Child Health Estimated Trip Generation Summary) of the *UCI Center for Child Health Traffic Study* (Stantec Inc., December 2019) divided by two (i.e., 5,531/2 = 2,766). This number represents each service population member making one trip to and one trip from the Project site. This is a conservative assumption since each vehicle is assumed to accommodate only one person, whereas many of the vehicles would accommodate more than one person. made by employees and patrons.

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

GHG Efficiency

Use of an efficiency-based threshold is appropriate for the proposed Project because it measures the proposed Project's emissions on a per service population basis to determine its overall GHG efficiency relative to California legislation adopted to reduce statewide GHG emissions. Project GHG efficiency is based on GHG emissions divided by the estimated service population. For the purposes of this analysis, the "service population" consists of the total number of Project employees + patrons. While patrons visiting the Project site would not reside on-site, these visitors would generally live in the surrounding communities and represent a population that is served by the proposed Project. As noted in the *UCI Center for Child Health Traffic Study* (Stantec Inc., December 2019) (Traffic Study), the Project would effectively reduce vehicle miles traveled (VMT) because Irvine and Newport Beach residents would travel a reduced distance to the Project site in comparison to similar facilities elsewhere. Further, patrons and employees traveling to the Project site would comprise a primary source of Project-related GHG emissions (approximately 73 percent of total GHG emissions, see **Table 3**), and thus, are the most representative service population for GHG emissions. Thus, an efficiency-based threshold based on service population (employees + patrons) is appropriate for the Project.

The SCAQMD's post-2020 threshold of 3.0 $MTCO_2e$/SP/year applies to both residential land uses and employment-oriented land uses similar to the proposed Project. The 3.0 $MTCO_2e$/SP/year service population metric is based on CARB's 2008 and 2017 Scoping Plans and represents the rates of emissions needed to achieve a fair share of California's emission reduction mandate (i.e., a GHG efficiency level that would meet the state's post-2020 emissions targets). The SCAQMD GHG CEQA Significance Threshold

Stakeholder Working Group[6] recommended a service population threshold of 3.0 $MTCO_2e$/SP/year for the year 2035 based on the emissions and population plus employment for land use sectors. The service population efficiency metric was developed to ensure that newer developments were not penalized by introducing "new emissions" and to encourage projects that are highly efficient with respect to GHG emissions.

As shown in **Table 3**, Project operational GHG emissions, combined with construction-related GHG emissions, would be approximately 5,309 $MTCO_2e$ annually. Based on a service population of 2,766[7] for the Project, the Project's GHG efficiency would be 1.92 $MTCO_2e$/SP/year which is below the SCAQMD's post-2020 efficiency threshold of 3.0 $MTCO_2e$/SP/year.

UCI Climate Action Plan and UC Sustainable Practices Policy Consistency Analysis

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

As discussed in the CAP, UCI is making progress to achieve the 2020 and 2025 GHG reduction targets through implementation of sustainable programs that reduce VMT and GHG emissions, such as UCI's Sustainable Transportation Program. The Sustainable Transportation Program includes several Transportation Demand Management (TDM) components, including the "University Pass" transit program; rebates on commuter train passes; incentivized vanpool, carpool, and ridesharing programs; Zipcar car sharing program; "ZotWheels" bike sharing system; deployment of electric vehicle (EV) charging network; deployment of hydrogen fueling station for fuel cell vehicles; deployment of fuel cell bus for campus shuttle system; and a fully electric UCI shuttle fleet that reduce UCI's mobile GHG emissions. In addition to TDM-based GHG reductions, statewide regulatory requirements, as well as improving vehicle technology, fuel types, and fuel efficiency will further reduce UCI's future mobile GHG emissions.

Other UCI sustainable efforts/programs such as green building and renewable energy measures have also aided in reducing UCI's carbon footprint in recent years through implementation of the CAP and SPP. Although substantial progress is being made toward meeting the CAP's 2020 and 2025 GHG reduction targets, the CAP acknowledges that achievement of these goals will require participation in off-site carbon abatement actions. These actions may result in local carbon offsets or environmental attributes such as tradable Carbon Offsets or Renewable Energy Certificates (RECs).

[6] South Coast Air Quality Management District, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group Meeting 15*, September 28, 2010.

[7] The service population (employees + patrons) represents the Project's net ADT (5,531 net ADT) from the Traffic Study (Stantec Inc., December 2019) divided by two (i.e., 5,531/2 = 2,766). This number represents each service population member making one trip to and one trip from the Project site. This is a conservative assumption since each vehicle is assumed to accommodate only one person, whereas many of the vehicles would accommodate more than one person. made by employees and patrons

The CAP contains existing (2015) baseline and future business-as-usual (BAU) GHG emissions for the UCI campus, including the Project site. The future BAU forecasts include an estimate of emissions from future building growth based on the plans and growth strategies outlined in the *2007 Long Range Development Plan* (LRDP) and the *UCI Strategic Plan* (2016) (Strategic Plan). The Project consists of a 168,000 GSF medical office building consistent with the LRDP Mixed-Use Commercial designation for the site. The Mixed-Use Commercial designation permits office, research and development, and clinical uses as primary uses for development similar to the proposed Project. As such, the Project's GHG emissions are accounted for and are consistent with the buildout emissions included in the CAP BAU emissions forecasts. In addition, the Project is located in UCI's North Campus and is considered an infill project per CEQA Guidelines Section 21061.3. The Project site is located within walking distance (approximately 50 feet) of an Orange County Transportation Authority (OCTA) bus stop for route 472, and 0.25-mile of several other OCTA bus stops (i.e., for routes 59, 212, and 178). Project design features include the construction of sidewalks and pedestrian amenities that would increase accessibility to the adjacent bus stops. According to the Traffic Study, ridership on bus routes in proximity of the Project site is likely to increase as a result of the Project.

The Project would also provide on-site bicycle parking and is situated in an urban area near a mix of residential, commercial, office, and institutional uses. As such, employees and patrons would have ample alternative transportation options to access the Project site and would have access to local businesses via walking or bicycling, which would help reduce the Project's mobile GHG emissions (comprising approximately 73 percent of total GHG emissions). The Project would also be required to comply with the GHG reduction efforts outlined in the CAP and all of UCI's sustainability programs, including the TDM program, green building design, renewable energy, and energy efficiency measures, among others, to reduce its carbon footprint. Therefore, the Project would not hinder the ability for UCI to achieve its GHG reduction targets and would not conflict with the CAP.

The Project would also be subject to the SPP, which includes goals in various areas of sustainable practices including green building design, clean energy, climate protection, sustainable transportation, sustainable building operations for campuses, zero waste, sustainable procurement, sustainable food services, sustainable water systems and sustainability at UC Health. Specific to the Project, all new buildings are required to outperform the California Building Code energy-efficiency standards (Title 24) by at least 20 percent or meet whole-building energy performance targets identified in the SPP. On-site fossil fuel combustion is prohibited, and buildings are required to achieve U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) "Silver" standards at minimum and strive to achieve LEED "Gold" or higher. The Project would not conflict with any of the SPP's sustainable practices, including campus-wide clean energy, energy efficiency, and renewable energy, and sustainable transportation.

Conclusion

As discussed above, the proposed Project is consistent with the anticipated planned growth for the site and would be required to comply with the goals, policies, measures, and actions in the CAP and SPP. The Project would not delay or inhibit UCI's ability to meet the CAP's 2020 and 2025 GHG reduction targets and would not conflict with the CAP. The Project demonstrates consistency with CAP goals, measures, and emission reduction targets and would not conflict with any applicable plan, policy, or regulation adopted to reduce GHG emissions, including Title 24, AB 32, and SB 32. Therefore, Project impacts would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

5.2 Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

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

Cumulative Impacts and Mitigation Measures

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

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

6 REFERENCES

1. California Air Resources Board, *California's 2017 Climate Change Scoping Plan,* 2017.
2. Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, 2007.
3. Intergovernmental Panel on Climate Change, *Climate Change 2013: The Physical Science Basis, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2013.
4. National Research Council, *Advancing the Science of Climate Change*, 2010.
5. Southern California Association of Governments, *2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy*, April 2016.
6. South Coast Air Quality Management District, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13*, 2009.
7. Stantec Inc., *UCI Center for Child Health Traffic Study*, December 17, 2019.
8. University of California, Irvine, *Climate Action Plan*, 2016.
9. University of California, Irvine, *Long Range Development Plan*, 2007.
10. University of California, Irvine, *Strategic Plan*, 2016.
11. University of California, *Policy of Sustainable Practices*, 2018.
12. U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017*, 2019.
13. U.S. EPA, *Methane and Nitrous Oxide Emission from Natural Sources*, April 2010.
14. U.S. EPA, *Overview of Greenhouse Gases*, April 11, 2019.

Appendix A

Greenhouse Gas Emissions Data

UCI Center for Child Health

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	168.00	1000sqft	3.86	168,000.00	0
Enclosed Parking with Elevator	800.00	Space	7.20	320,000.00	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 Southern California Edison

CO2 Intensity (lb/MWhr) 546.44

CH4 Intensity (lb/MWhr) 0.029

N2O Intensity (lb/MWhr) 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project Characteristics - Adjusted per the SCE 2017 CRSR. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 549-25*0.029-298*0.00617=546.4362 to avoid double counting.

Land Use - Land Use types per Project Description. CalEEMod default acreages used.

Construction Phase - Anticipated construction schedule

Demolition -

Grading - Total acres graded = CalEEMod defaults

Vehicle Trips - Net trip generation rate used per Trip Generation Memo.

Energy Use -

Construction Off-road Equipment Mitigation - Per SCAQMD Rules and Regulations

Energy Mitigation - Per 2019 Title 24 standards.

Water Mitigation -

Waste Mitigation - AB 939/341

Stationary Sources - Emergency Generators and Fire Pumps -

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	55	61
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	55	61
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	24.00
tblConstructionPhase	NumDays	300.00	350.00
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	30.00	35.00
tblConstructionPhase	NumDays	10.00	15.00
tblGrading	MaterialExported	0.00	15,210.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	546.44
tblVehicleTrips	ST_TR	8.96	32.92
tblVehicleTrips	SU_TR	1.55	32.92
tblVehicleTrips	WD_TR	36.13	32.92

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0835	0.8785	0.5194	1.0500e-003	0.2242	0.0417	0.2659	0.0923	0.0386	0.1309	0.0000	93.8272	93.8272	0.0250	0.0000	94.4513
2021	0.3798	3.7014	3.1874	8.7000e-003	0.4381	0.1400	0.5781	0.1369	0.1310	0.2679	0.0000	794.7454	794.7454	0.1154	0.0000	797.6313
2022	1.0054	1.6400	1.7087	4.5200e-003	0.1735	0.0611	0.2346	0.0468	0.0574	0.1042	0.0000	411.2498	411.2498	0.0549	0.0000	412.6218
Maximum	**1.0054**	**3.7014**	**3.1874**	**8.7000e-003**	**0.4381**	**0.1400**	**0.5781**	**0.1369**	**0.1310**	**0.2679**	**0.0000**	**794.7454**	**794.7454**	**0.1154**	**0.0000**	**797.6313**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0835	0.8785	0.5194	1.0500e-003	0.0918	0.0417	0.1335	0.0364	0.0386	0.0750	0.0000	93.8271	93.8271	0.0250	0.0000	94.4512
2021	0.3798	3.7014	3.1874	8.7000e-003	0.3352	0.1400	0.4752	0.0978	0.1310	0.2288	0.0000	794.7450	794.7450	0.1154	0.0000	797.6309
2022	1.0054	1.6400	1.7087	4.5200e-003	0.1648	0.0611	0.2259	0.0447	0.0574	0.1021	0.0000	411.2496	411.2496	0.0549	0.0000	412.6216
Maximum	**1.0054**	**3.7014**	**3.1874**	**8.7000e-003**	**0.3352**	**0.1400**	**0.4752**	**0.0978**	**0.1310**	**0.2288**	**0.0000**	**794.7450**	**794.7450**	**0.1154**	**0.0000**	**797.6309**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	29.19	0.00	22.62	35.18	0.00	19.30	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	11-1-2020	1-31-2021	1.6447	1.6447
2	2-1-2021	4-30-2021	0.9007	0.9007
3	5-1-2021	7-31-2021	0.9246	0.9246
4	8-1-2021	10-31-2021	0.9260	0.9260
5	11-1-2021	1-31-2022	0.9008	0.9008
6	2-1-2022	4-30-2022	0.8172	0.8172
7	5-1-2022	7-31-2022	0.7410	0.7410
8	8-1-2022	9-30-2022	0.8048	0.8048
		Highest	1.6447	1.6447

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	0.7112	1.1000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0240	0.0240	6.0000e-005	0.0000	0.0256
Energy	8.2800e-003	0.0753	0.0632	4.5000e-004		5.7200e-003	5.7200e-003		5.7200e-003	5.7200e-003	0.0000	1,129.2829	1,129.2829	0.0572	0.0130	1,134.5864
Mobile	1.2754	5.3296	15.8334	0.0594	5.4410	0.0444	5.4855	1.4571	0.0413	1.4985	0.0000	5,476.3624	5,476.3624	0.2298	0.0000	5,482.1084
Stationary	0.1198	0.3348	0.3055	5.8000e-004		0.0176	0.0176		0.0176	0.0176	0.0000	55.5964	55.5964	7.7900e-003	0.0000	55.7913
Waste						0.0000	0.0000		0.0000	0.0000	368.3068	0.0000	368.3068	21.7663	0.0000	912.4645
Water						0.0000	0.0000		0.0000	0.0000	6.6879	79.0932	85.7811	0.6911	0.0171	108.1512
Total	**2.1147**	**5.7399**	**16.2144**	**0.0604**	**5.4410**	**0.0678**	**5.5089**	**1.4571**	**0.0647**	**1.5218**	**374.9947**	**6,740.3589**	**7,115.3537**	**22.7523**	**0.0301**	**7,693.1274**

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	0.7112	1.1000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0240	0.0240	6.0000e-005	0.0000	0.0256
Energy	7.1100e-003	0.0647	0.0543	3.9000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	1,041.6747	1,041.6747	0.0529	0.0120	1,046.5598
Mobile	1.1313	4.4188	12.0017	0.0418	3.7432	0.0323	3.7755	1.0025	0.0300	1.0325	0.0000	3,855.5742	3,855.5742	0.1710	0.0000	3,859.8498
Stationary	0.1198	0.3348	0.3055	5.8000e-004		0.0176	0.0176		0.0176	0.0176	0.0000	55.5964	55.5964	7.7900e-003	0.0000	55.7913
Waste						0.0000	0.0000		0.0000	0.0000	92.0767	0.0000	92.0767	5.4416	0.0000	228.1161
Water						0.0000	0.0000		0.0000	0.0000	5.3504	65.4860	70.8364	0.5530	0.0137	88.7426
Total	**1.9694**	**4.8184**	**12.3738**	**0.0428**	**3.7432**	**0.0549**	**3.7981**	**1.0025**	**0.0526**	**1.0551**	**97.4271**	**5,018.3553**	**5,115.7824**	**6.2264**	**0.0257**	**5,279.0851**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**6.87**	**16.05**	**23.69**	**29.23**	**31.20**	**19.11**	**31.05**	**31.20**	**18.72**	**30.67**	**74.02**	**25.55**	**28.10**	**72.63**	**14.76**	**31.38**

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	11/1/2020	12/4/2020	5	25	
2	Site Preparation	Site Preparation	12/5/2020	12/25/2020	5	15	
3	Grading	Grading	12/26/2020	2/12/2021	5	35	
4	Trenching and Utilities	Trenching	2/13/2021	2/26/2021	5	10	
5	Building Construction	Building Construction	2/27/2021	7/1/2022	5	350	
6	Paving	Paving	7/2/2022	7/29/2022	5	20	
7	Architectural Coating	Architectural Coating	7/30/2022	9/1/2022	5	24	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 7.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 252,000; Non-Residential Outdoor: 84,000; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	138.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	1,504.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Trenching and Utilities			0.00	0.00	14.70	6.90				
Building Construction	9	188.00	80.00	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	38.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0150	0.0000	0.0150	2.2700e-003	0.0000	2.2700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0414	0.4150	0.2719	4.9000e-004		0.0207	0.0207		0.0193	0.0193	0.0000	42.4983	42.4983	0.0120	0.0000	42.7982
Total	**0.0414**	**0.4150**	**0.2719**	**4.9000e-004**	**0.0150**	**0.0207**	**0.0357**	**2.2700e-003**	**0.0193**	**0.0215**	**0.0000**	**42.4983**	**42.4983**	**0.0120**	**0.0000**	**42.7982**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3000e-004	0.0196	4.9100e-003	5.0000e-005	1.1800e-003	6.0000e-005	1.2400e-003	3.2000e-004	6.0000e-005	3.8000e-004	0.0000	5.3059	5.3059	5.6000e-004	0.0000	5.3199
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	7.3000e-004	5.1000e-004	5.8100e-003	2.0000e-005	2.0600e-003	1.0000e-005	2.0700e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.7816	1.7816	4.0000e-005	0.0000	1.7826
Total	**1.2600e-003**	**0.0201**	**0.0107**	**7.0000e-005**	**3.2400e-003**	**7.0000e-005**	**3.3100e-003**	**8.7000e-004**	**7.0000e-005**	**9.4000e-004**	**0.0000**	**7.0875**	**7.0875**	**6.0000e-004**	**0.0000**	**7.1025**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					5.5400e-003	0.0000	5.5400e-003	8.4000e-004	0.0000	8.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0414	0.4150	0.2719	4.9000e-004		0.0207	0.0207		0.0193	0.0193	0.0000	42.4982	42.4982	0.0120	0.0000	42.7981
Total	**0.0414**	**0.4150**	**0.2719**	**4.9000e-004**	**5.5400e-003**	**0.0207**	**0.0263**	**8.4000e-004**	**0.0193**	**0.0201**	**0.0000**	**42.4982**	**42.4982**	**0.0120**	**0.0000**	**42.7981**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	5.3000e-004	0.0196	4.9100e-003	5.0000e-005	1.1300e-003	6.0000e-005	1.1900e-003	3.1000e-004	6.0000e-005	3.7000e-004	0.0000	5.3059	5.3059	5.6000e-004	0.0000	5.3199
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	7.3000e-004	5.1000e-004	5.8100e-003	2.0000e-005	1.9500e-003	1.0000e-005	1.9700e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.7816	1.7816	4.0000e-005	0.0000	1.7826
Total	**1.2600e-003**	**0.0201**	**0.0107**	**7.0000e-005**	**3.0800e-003**	**7.0000e-005**	**3.1600e-003**	**8.3000e-004**	**7.0000e-005**	**9.0000e-004**	**0.0000**	**7.0875**	**7.0875**	**6.0000e-004**	**0.0000**	**7.1025**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1355	0.0000	0.1355	0.0745	0.0000	0.0745	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.3181	0.1614	2.9000e-004		0.0165	0.0165		0.0152	0.0152	0.0000	25.0730	25.0730	8.1100e-003	0.0000	25.2757
Total	**0.0306**	**0.3181**	**0.1614**	**2.9000e-004**	**0.1355**	**0.0165**	**0.1520**	**0.0745**	**0.0152**	**0.0896**	**0.0000**	**25.0730**	**25.0730**	**8.1100e-003**	**0.0000**	**25.2757**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.7000e-004	4.1800e-003	1.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.2827	1.2827	3.0000e-005	0.0000	1.2835
Total	**5.3000e-004**	**3.7000e-004**	**4.1800e-003**	**1.0000e-005**	**1.4800e-003**	**1.0000e-005**	**1.4900e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.2827**	**1.2827**	**3.0000e-005**	**0.0000**	**1.2835**

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					0.0502	0.0000	0.0502	0.0276	0.0000	0.0276	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.3181	0.1614	2.9000e-004		0.0165	0.0165		0.0152	0.0152	0.0000	25.0730	25.0730	8.1100e-003	0.0000	25.2757
Total	**0.0306**	**0.3181**	**0.1614**	**2.9000e-004**	**0.0502**	**0.0165**	**0.0667**	**0.0276**	**0.0152**	**0.0428**	**0.0000**	**25.0730**	**25.0730**	**8.1100e-003**	**0.0000**	**25.2757**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.7000e-004	4.1800e-003	1.0000e-005	1.4000e-003	1.0000e-005	1.4100e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.2827	1.2827	3.0000e-005	0.0000	1.2835
Total	**5.3000e-004**	**3.7000e-004**	**4.1800e-003**	**1.0000e-005**	**1.4000e-003**	**1.0000e-005**	**1.4100e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.2827**	**1.2827**	**3.0000e-005**	**0.0000**	**1.2835**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0584	0.0000	0.0584	0.0116	0.0000	0.0116	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9000e-003	0.1004	0.0639	1.2000e-004		4.3500e-003	4.3500e-003		4.0000e-003	4.0000e-003	0.0000	10.8969	10.8969	3.5200e-003	0.0000	10.9850
Total	**8.9000e-003**	**0.1004**	**0.0639**	**1.2000e-004**	**0.0584**	**4.3500e-003**	**0.0628**	**0.0116**	**4.0000e-003**	**0.0156**	**0.0000**	**10.8969**	**10.8969**	**3.5200e-003**	**0.0000**	**10.9850**

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	6.6000e-004	0.0244	6.1100e-003	7.0000e-005	0.0101	8.0000e-005	0.0102	2.5200e-003	7.0000e-005	2.5900e-003	0.0000	6.6088	6.6088	7.0000e-004	0.0000	6.6262
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	1.2400e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3801	0.3801	1.0000e-005	0.0000	0.3803
Total	**8.2000e-004**	**0.0245**	**7.3500e-003**	**7.0000e-005**	**0.0105**	**8.0000e-005**	**0.0106**	**2.6400e-003**	**7.0000e-005**	**2.7100e-003**	**0.0000**	**6.9889**	**6.9889**	**7.1000e-004**	**0.0000**	**7.0065**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					0.0217	0.0000	0.0217	4.3100e-003	0.0000	4.3100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9000e-003	0.1004	0.0639	1.2000e-004		4.3500e-003	4.3500e-003		4.0000e-003	4.0000e-003	0.0000	10.8969	10.8969	3.5200e-003	0.0000	10.9850
Total	**8.9000e-003**	**0.1004**	**0.0639**	**1.2000e-004**	**0.0217**	**4.3500e-003**	**0.0260**	**4.3100e-003**	**4.0000e-003**	**8.3100e-003**	**0.0000**	**10.8969**	**10.8969**	**3.5200e-003**	**0.0000**	**10.9850**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	6.6000e-004	0.0244	6.1100e-003	7.0000e-005	9.5100e-003	8.0000e-005	9.5900e-003	2.3800e-003	7.0000e-005	2.4500e-003	0.0000	6.6088	6.6088	7.0000e-004	0.0000	6.6262
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	1.2400e-003	0.0000	4.2000e-004	0.0000	4.2000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3801	0.3801	1.0000e-005	0.0000	0.3803
Total	**8.2000e-004**	**0.0245**	**7.3500e-003**	**7.0000e-005**	**9.9300e-003**	**8.0000e-005**	**0.0100**	**2.4900e-003**	**7.0000e-005**	**2.5600e-003**	**0.0000**	**6.9889**	**6.9889**	**7.1000e-004**	**0.0000**	**7.0065**

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					0.1397	0.0000	0.1397	0.0563	0.0000	0.0563	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0650	0.7192	0.4786	9.6000e-004		0.0308	0.0308		0.0283	0.0283	0.0000	84.4672	84.4672	0.0273	0.0000	85.1502
Total	**0.0650**	**0.7192**	**0.4786**	**9.6000e-004**	**0.1397**	**0.0308**	**0.1705**	**0.0563**	**0.0283**	**0.0846**	**0.0000**	**84.4672**	**84.4672**	**0.0273**	**0.0000**	**85.1502**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.8500e-003	0.1746	0.0475	5.0000e-004	0.0125	5.4000e-004	0.0131	3.4000e-003	5.1000e-004	3.9200e-003	0.0000	50.5901	50.5901	5.3300e-003	0.0000	50.7233
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	1.1400e-003	7.6000e-004	8.9100e-003	3.0000e-005	3.4000e-003	2.0000e-005	3.4300e-003	9.0000e-004	2.0000e-005	9.2000e-004	0.0000	2.8433	2.8433	6.0000e-005	0.0000	2.8448
Total	**5.9900e-003**	**0.1754**	**0.0564**	**5.3000e-004**	**0.0159**	**5.6000e-004**	**0.0165**	**4.3000e-003**	**5.3000e-004**	**4.8400e-003**	**0.0000**	**53.4334**	**53.4334**	**5.3900e-003**	**0.0000**	**53.5681**

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					0.0518	0.0000	0.0518	0.0209	0.0000	0.0209	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0650	0.7192	0.4786	9.6000e-004		0.0308	0.0308		0.0283	0.0283	0.0000	84.4671	84.4671	0.0273	0.0000	85.1501
Total	**0.0650**	**0.7192**	**0.4786**	**9.6000e-004**	**0.0518**	**0.0308**	**0.0825**	**0.0209**	**0.0283**	**0.0492**	**0.0000**	**84.4671**	**84.4671**	**0.0273**	**0.0000**	**85.1501**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.8500e-003	0.1746	0.0475	5.0000e-004	0.0119	5.4000e-004	0.0125	3.2600e-003	5.1000e-004	3.7700e-003	0.0000	50.5901	50.5901	5.3300e-003	0.0000	50.7233
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	1.1400e-003	7.6000e-004	8.9100e-003	3.0000e-005	3.2300e-003	2.0000e-005	3.2500e-003	8.6000e-004	2.0000e-005	8.8000e-004	0.0000	2.8433	2.8433	6.0000e-005	0.0000	2.8448
Total	**5.9900e-003**	**0.1754**	**0.0564**	**5.3000e-004**	**0.0152**	**5.6000e-004**	**0.0157**	**4.1200e-003**	**5.3000e-004**	**4.6500e-003**	**0.0000**	**53.4334**	**53.4334**	**5.3900e-003**	**0.0000**	**53.5681**

3.5 Trenching and Utilities - 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
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
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
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**

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
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
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
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**

3.6 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	0.2091	1.9175	1.8233	2.9600e-003		0.1055	0.1055		0.0991	0.0991	0.0000	254.8010	254.8010	0.0615	0.0000	256.3378
Total	**0.2091**	**1.9175**	**1.8233**	**2.9600e-003**		**0.1055**	**0.1055**		**0.0991**	**0.0991**	**0.0000**	**254.8010**	**254.8010**	**0.0615**	**0.0000**	**256.3378**

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	0.0240	0.8384	0.2350	2.1500e-003	0.0554	1.7400e-003	0.0571	0.0160	1.6700e-003	0.0176	0.0000	212.3691	212.3691	0.0172	0.0000	212.7988
Worker	0.0758	0.0509	0.5941	2.1000e-003	0.2270	1.5000e-003	0.2285	0.0603	1.3800e-003	0.0617	0.0000	189.6748	189.6748	4.0600e-003	0.0000	189.7763
Total	**0.0998**	**0.8893**	**0.8291**	**4.2500e-003**	**0.2824**	**3.2400e-003**	**0.2857**	**0.0763**	**3.0500e-003**	**0.0793**	**0.0000**	**402.0438**	**402.0438**	**0.0213**	**0.0000**	**402.5751**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.2091	1.9175	1.8233	2.9600e-003		0.1055	0.1055		0.0991	0.0991	0.0000	254.8007	254.8007	0.0615	0.0000	256.3375
Total	**0.2091**	**1.9175**	**1.8233**	**2.9600e-003**		**0.1055**	**0.1055**		**0.0991**	**0.0991**	**0.0000**	**254.8007**	**254.8007**	**0.0615**	**0.0000**	**256.3375**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	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	0.0240	0.8384	0.2350	2.1500e-003	0.0530	1.7400e-003	0.0548	0.0154	1.6700e-003	0.0171	0.0000	212.3691	212.3691	0.0172	0.0000	212.7988
Worker	0.0758	0.0509	0.5941	2.1000e-003	0.2152	1.5000e-003	0.2167	0.0574	1.3800e-003	0.0588	0.0000	189.6748	189.6748	4.0600e-003	0.0000	189.7763
Total	**0.0998**	**0.8893**	**0.8291**	**4.2500e-003**	**0.2683**	**3.2400e-003**	**0.2715**	**0.0728**	**3.0500e-003**	**0.0758**	**0.0000**	**402.0438**	**402.0438**	**0.0213**	**0.0000**	**402.5751**

3.6 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	0.1109	1.0150	1.0636	1.7500e-003		0.0526	0.0526		0.0495	0.0495	0.0000	150.6214	150.6214	0.0361	0.0000	151.5235
Total	**0.1109**	**1.0150**	**1.0636**	**1.7500e-003**		**0.0526**	**0.0526**		**0.0495**	**0.0495**	**0.0000**	**150.6214**	**150.6214**	**0.0361**	**0.0000**	**151.5235**

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	0.0133	0.4682	0.1340	1.2600e-003	0.0327	9.0000e-004	0.0336	9.4400e-003	8.6000e-004	0.0103	0.0000	124.2534	124.2534	9.8300e-003	0.0000	124.4992
Worker	0.0424	0.0273	0.3273	1.1900e-003	0.1342	8.7000e-004	0.1350	0.0356	8.0000e-004	0.0364	0.0000	107.9311	107.9311	2.1800e-003	0.0000	107.9856
Total	**0.0557**	**0.4955**	**0.4612**	**2.4500e-003**	**0.1669**	**1.7700e-003**	**0.1687**	**0.0451**	**1.6600e-003**	**0.0467**	**0.0000**	**232.1845**	**232.1845**	**0.0120**	**0.0000**	**232.4848**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.1109	1.0150	1.0636	1.7500e-003		0.0526	0.0526		0.0495	0.0495	0.0000	150.6212	150.6212	0.0361	0.0000	151.5233
Total	**0.1109**	**1.0150**	**1.0636**	**1.7500e-003**		**0.0526**	**0.0526**		**0.0495**	**0.0495**	**0.0000**	**150.6212**	**150.6212**	**0.0361**	**0.0000**	**151.5233**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	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	0.0133	0.4682	0.1340	1.2600e-003	0.0313	9.0000e-004	0.0322	9.1000e-003	8.6000e-004	9.9600e-003	0.0000	124.2534	124.2534	9.8300e-003	0.0000	124.4992
Worker	0.0424	0.0273	0.3273	1.1900e-003	0.1272	8.7000e-004	0.1280	0.0339	8.0000e-004	0.0347	0.0000	107.9311	107.9311	2.1800e-003	0.0000	107.9856
Total	**0.0557**	**0.4955**	**0.4612**	**2.4500e-003**	**0.1585**	**1.7700e-003**	**0.1603**	**0.0430**	**1.6600e-003**	**0.0447**	**0.0000**	**232.1845**	**232.1845**	**0.0120**	**0.0000**	**232.4848**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1113**	**0.1458**	**2.3000e-004**		**5.6800e-003**	**5.6800e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**20.0276**	**20.0276**	**6.4800e-003**	**0.0000**	**20.1895**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.3000e-004	4.0200e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3249	1.3249	3.0000e-005	0.0000	1.3255
Total	**5.2000e-004**	**3.3000e-004**	**4.0200e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.3249**	**1.3249**	**3.0000e-005**	**0.0000**	**1.3255**

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	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1113**	**0.1458**	**2.3000e-004**		**5.6800e-003**	**5.6800e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**20.0275**	**20.0275**	**6.4800e-003**	**0.0000**	**20.1895**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.3000e-004	4.0200e-003	1.0000e-005	1.5600e-003	1.0000e-005	1.5700e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3249	1.3249	3.0000e-005	0.0000	1.3255
Total	**5.2000e-004**	**3.3000e-004**	**4.0200e-003**	**1.0000e-005**	**1.5600e-003**	**1.0000e-005**	**1.5700e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3249**	**1.3249**	**3.0000e-005**	**0.0000**	**1.3255**

3.8 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	0.8232					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4500e-003	0.0169	0.0218	4.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	3.0639	3.0639	2.0000e-004	0.0000	3.0689
Total	**0.8256**	**0.0169**	**0.0218**	**4.0000e-005**		**9.8000e-004**	**9.8000e-004**		**9.8000e-004**	**9.8000e-004**	**0.0000**	**3.0639**	**3.0639**	**2.0000e-004**	**0.0000**	**3.0689**

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	1.5800e-003	1.0200e-003	0.0122	4.0000e-005	5.0100e-003	3.0000e-005	5.0400e-003	1.3300e-003	3.0000e-005	1.3600e-003	0.0000	4.0275	4.0275	8.0000e-005	0.0000	4.0296
Total	**1.5800e-003**	**1.0200e-003**	**0.0122**	**4.0000e-005**	**5.0100e-003**	**3.0000e-005**	**5.0400e-003**	**1.3300e-003**	**3.0000e-005**	**1.3600e-003**	**0.0000**	**4.0275**	**4.0275**	**8.0000e-005**	**0.0000**	**4.0296**

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	0.8232					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4500e-003	0.0169	0.0218	4.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	3.0639	3.0639	2.0000e-004	0.0000	3.0689
Total	**0.8256**	**0.0169**	**0.0218**	**4.0000e-005**		**9.8000e-004**	**9.8000e-004**		**9.8000e-004**	**9.8000e-004**	**0.0000**	**3.0639**	**3.0639**	**2.0000e-004**	**0.0000**	**3.0689**

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	1.5800e-003	1.0200e-003	0.0122	4.0000e-005	4.7500e-003	3.0000e-005	4.7800e-003	1.2700e-003	3.0000e-005	1.3000e-003	0.0000	4.0275	4.0275	8.0000e-005	0.0000	4.0296
Total	**1.5800e-003**	**1.0200e-003**	**0.0122**	**4.0000e-005**	**4.7500e-003**	**3.0000e-005**	**4.7800e-003**	**1.2700e-003**	**3.0000e-005**	**1.3000e-003**	**0.0000**	**4.0275**	**4.0275**	**8.0000e-005**	**0.0000**	**4.0296**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Mitigated	1.1313	4.4188	12.0017	0.0418	3.7432	0.0323	3.7755	1.0025	0.0300	1.0325	0.0000	3,855.5742	3,855.5742	0.1710	0.0000	3,859.8498
Unmitigated	1.2754	5.3296	15.8334	0.0594	5.4410	0.0444	5.4855	1.4571	0.0413	1.4985	0.0000	5,476.3624	5,476.3624	0.2298	0.0000	5,482.1084

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Medical Office Building	5,530.56	5,530.56	5530.56	14,345,490	9,869,139
Total	5,530.56	5,530.56	5,530.56	14,345,490	9,869,139

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed 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
Medical Office Building	0.561378	0.043284	0.209473	0.111826	0.015545	0.005795	0.025829	0.017125	0.001747	0.001542	0.004926	0.000594	0.000934

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	971.2850	971.2850	0.0516	0.0107	975.7518
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,047.3417	1,047.3417	0.0556	0.0115	1,052.1583
NaturalGas Mitigated	7.1100e-003	0.0647	0.0543	3.9000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	70.3896	70.3896	1.3500e-003	1.2900e-003	70.8079
NaturalGas Unmitigated	8.2800e-003	0.0753	0.0632	4.5000e-004		5.7200e-003	5.7200e-003		5.7200e-003	5.7200e-003	0.0000	81.9412	81.9412	1.5700e-003	1.5000e-003	82.4281

5.2 Energy by Land Use - NaturalGas

Unmitigated

Land Use	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
	kBTU/yr	tons/yr										MT/yr					
Enclosed 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	0.0000
Medical Office Building	1.53552e+006	8.2800e-003	0.0753	0.0632	4.5000e-004		5.7200e-003	5.7200e-003		5.7200e-003	5.7200e-003	0.0000	81.9412	81.9412	1.5700e-003	1.5000e-003	82.4281
Total		**8.2800e-003**	**0.0753**	**0.0632**	**4.5000e-004**		**5.7200e-003**	**5.7200e-003**		**5.7200e-003**	**5.7200e-003**	**0.0000**	**81.9412**	**81.9412**	**1.5700e-003**	**1.5000e-003**	**82.4281**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed 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	0.0000
Medical Office Building	1.31905e+006	7.1100e-003	0.0647	0.0543	3.9000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	70.3896	70.3896	1.3500e-003	1.2900e-003	70.8079
Total		**7.1100e-003**	**0.0647**	**0.0543**	**3.9000e-004**		**4.9100e-003**	**4.9100e-003**		**4.9100e-003**	**4.9100e-003**	**0.0000**	**70.3896**	**70.3896**	**1.3500e-003**	**1.2900e-003**	**70.8079**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	1.8752e+006	464.7890	0.0247	5.1000e-003	466.9265
Medical Office Building	2.35032e+006	582.5527	0.0309	6.4000e-003	585.2318
Total		**1,047.3417**	**0.0556**	**0.0115**	**1,052.1583**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	1.68704e+006	418.1515	0.0222	4.5900e-003	420.0745
Medical Office Building	2.23163e+006	553.1336	0.0294	6.0700e-003	555.6774
Total		**971.2850**	**0.0516**	**0.0107**	**975.7518**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7112	1.1000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0240	0.0240	6.0000e-005	0.0000	0.0256
Unmitigated	0.7112	1.1000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0240	0.0240	6.0000e-005	0.0000	0.0256

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0823					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6278					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1500e-003	1.1000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0240	0.0240	6.0000e-005	0.0000	0.0256
Total	**0.7112**	**1.1000e-004**	**0.0124**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0240**	**0.0240**	**6.0000e-005**	**0.0000**	**0.0256**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0823					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6278					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1500e-003	1.1000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0240	0.0240	6.0000e-005	0.0000	0.0256
Total	**0.7112**	**1.1000e-004**	**0.0124**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0240**	**0.0240**	**6.0000e-005**	**0.0000**	**0.0256**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	70.8364	0.5530	0.0137	88.7426
Unmitigated	85.7811	0.6911	0.0171	108.1512

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	21.0807 / 4.01538	85.7811	0.6911	0.0171	108.1512
Total		**85.7811**	**0.6911**	**0.0171**	**108.1512**

Mitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	16.8646 / 4.01538	70.8364	0.5530	0.0137	88.7426
Total		**70.8364**	**0.5530**	**0.0137**	**88.7426**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	92.0767	5.4416	0.0000	228.1161
Unmitigated	368.3068	21.7663	0.0000	912.4645

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	1814.4	368.3068	21.7663	0.0000	912.4645
Total		**368.3068**	**21.7663**	**0.0000**	**912.4645**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	453.6	92.0767	5.4416	0.0000	228.1161
Total		**92.0767**	**5.4416**	**0.0000**	**228.1161**

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
Emergency Generator	1	4	200	730	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (600 - 750 HP)	0.1198	0.3348	0.3055	5.8000e-004		0.0176	0.0176		0.0176	0.0176	0.0000	55.5964	55.5964	7.7900e-003	0.0000	55.7913
Total	**0.1198**	**0.3348**	**0.3055**	**5.8000e-004**		**0.0176**	**0.0176**		**0.0176**	**0.0176**	**0.0000**	**55.5964**	**55.5964**	**7.7900e-003**	**0.0000**	**55.7913**

11.0 Vegetation

APPENDIX D

Concept Drainage and Water Quality Memorandum

MEMORANDUM

To: **Ms. Lindsey Hashimoto** **JN:** 172570
Senior Manager
University of California, Irvine
Environmental Planning & Sustainability
4199 Campus Drive, Suite 380
Irvine, California 92697

From: David Jaffe, PhD, P.E., D.WRE
Rebecca Kinney, P.E.
Rianne Okamoto, EIT

Date: December 19, 2019

Subject: UCI Center for Child Health Project Concept Drainage and Water Quality Technical Memorandum

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This memorandum provides recommendations for Low Impact Development (LID) for the proposed Child Health Center.

Introduction:
University of California, Irvine (UCI) contracted Michael Baker International (Michael Baker) to complete professional environmental services for the proposed Center for Child Health. This proposal request included biological, cultural resources compliance services and a preliminary drainage study. The preliminary drainage study includes an analysis of the site drainage and recommended Best Management Practices (BMP) configurations that have the potential to meet City and County drainage requirements and UCI water quality requirements.

Existing Condition:
The existing drainage patterns are shown on Figure 1. The area drains towards southeast towards San Juaquin Marsh.

Land Use and Soils:
The existing condition land use is commercial with some undeveloped areas draining into the project site, see Figure 2. The soil type is D and consists of clay. The soil has a low slow infiltration rate which means it has a high runoff potential. Appendix A contains the soil survey from United States Geological Survey (USGS).

Proposed Condition:
For the purposes of this study it was assumed the site continued to drain south toward the San Juaquin Marsh because there are no existing storm drains to tie into. See Figure 3 for proposed drainage.

Land Use and Soils:
The proposed condition contains a center for child health. Land use was determined using the provided site plan. Figure 4 shows the assumed land uses for the proposed project site. The soil type is D for the project site per USGS soil survey.

Drainage:
The County requires that the proposed condition peak discharge values not exceed the existing condition values. Expected value (50% confidence interval) discharges are used for calculating the incremental increase in peak discharges for purposes of implementing development mitigation requirements. A hydrology study would be required to evaluate the discharges of the 100-, 50-, 25-, 10-, 5-, and 2-year expected value storm events to determine the increase from the proposed site. Detention basins should be implemented to detain the storm flows and to meet the existing discharge values. Because there are no existing storm drains to tie into on streets around the site it is recommended to direct flows to a basin and discharge to the marsh. A small detention basin on the site should be implemented if the site cannot be integrated into a potential future development.

Modeling Approach:
The hydrology models were run with Rational Method using the AES software RATSCx 2013 for Orange County. The Rational Method is an empirical computation procedure for developing a peak discharge for watersheds less than 640 acres and storms of a given recurrence interval. The Rational Method assumes that the rainfall intensity is uniformly distributed over the drainage area at a uniform rate throughout the duration of the storm. This assumption generally applies for areas less than 640 acres. The Rational Method equation assumes that the peak flowrate is directly proportional to the drainage area, rainfall intensity, and a loss coefficient related to land use and soil type. The hydrology parameters required for the analysis include: rainfall, topography, hydrologic soil types, and land use. The hydrology was performed for the 2-yr expected value storm event.

Hydrology Results:
The results of the hydrology analysis are shown below, and the detailed outputs are included in Appendix B. As shown in the Table 1, the proposed condition increases the area and the discharge compared to the existing condition.

Table 1: Rational Method Results for 2-Year Storm Event

Subwatershed	Existing Area (acres)	Existing 2- yr Peak Discharge (cfs)	Proposed Area (acres)	Proposed Peak Discharge (cfs)
A	3.5	1.74	6.9	3.3

Water Quality Considerations:
This project is within the Santa Ana Region (NOC) jurisdiction and is considered a priority project because the redevelopment will create more than 5,000 square feet of impervious surface. The site is tributary to San Juaquin Marsh which drains to Lower San Diego Creek. San Diego Creek then drains to Newport Bay before reaching the Pacific Ocean.

LID BMPs:

The project site is composed of redevelopment, it was assumed the minimum area to be made available for LID BMPs is 10 percent of the site. This area has been included in the proposed land use as turf. Design runoff volume was computed using the Equation III.1 from the Orange County Technical Guidance Document (OCTGD) shown below.

$$V = C \times d \times A \times 43560\ sf/ac \times 1/12\ in/ft$$

Where:

V = runoff volume during the design storm event, cu-ft
C = runoff coefficient = (0.75 × imp + 0.15)
imp = impervious fraction of drainage area (ranges from 0 to 1)
d = storm depth (inches)
A = tributary area (acres)

Based on Figure XVI-1 of the Technical Guidance Document the rainfall depth is 0.75 inches. The percent impervious for the proposed conditions are in Table 2.

Table 2: Proposed Project Site Percent Impervious

Land Use	Approximate Area (ac)	Percent Impervious
Commercial	5.8	90%
Open Brush, Poor	0.9	0%
Turf	0.3	0%
Total Area	**6.9**	**76%**

The design capture volume for the proposed condition is approximately 13,330 cu-ft. Because of the soil type, infiltration methods cannot be considered to manage runoff so BMPs must be designed to achieve the maximum feasible evapotranspiration, which is the next best tiered BMP per the OCTGD. BMP tiers can be found in the TGD. Green, brown or blue roofs are recommended to increase evapotranspiration and evaporation. Bioretention basins with underdrains and stormwater planter boxes with underdrains in a distributed system are recommended as biofiltration BMPs if the roof BMP options cannot treat 100% of the design capture volume. Picture 1 is an example of a potential BMP. The hydrology analysis assumed the landscaped areas in the site plan were bioretention planter boxes. If the design capture volume cannot be achieved through the planters alone a detention basin might need to be added and the water rerouted to the north-eastern area where water quality space has been reserved.

Picture 1: Bioretention planters

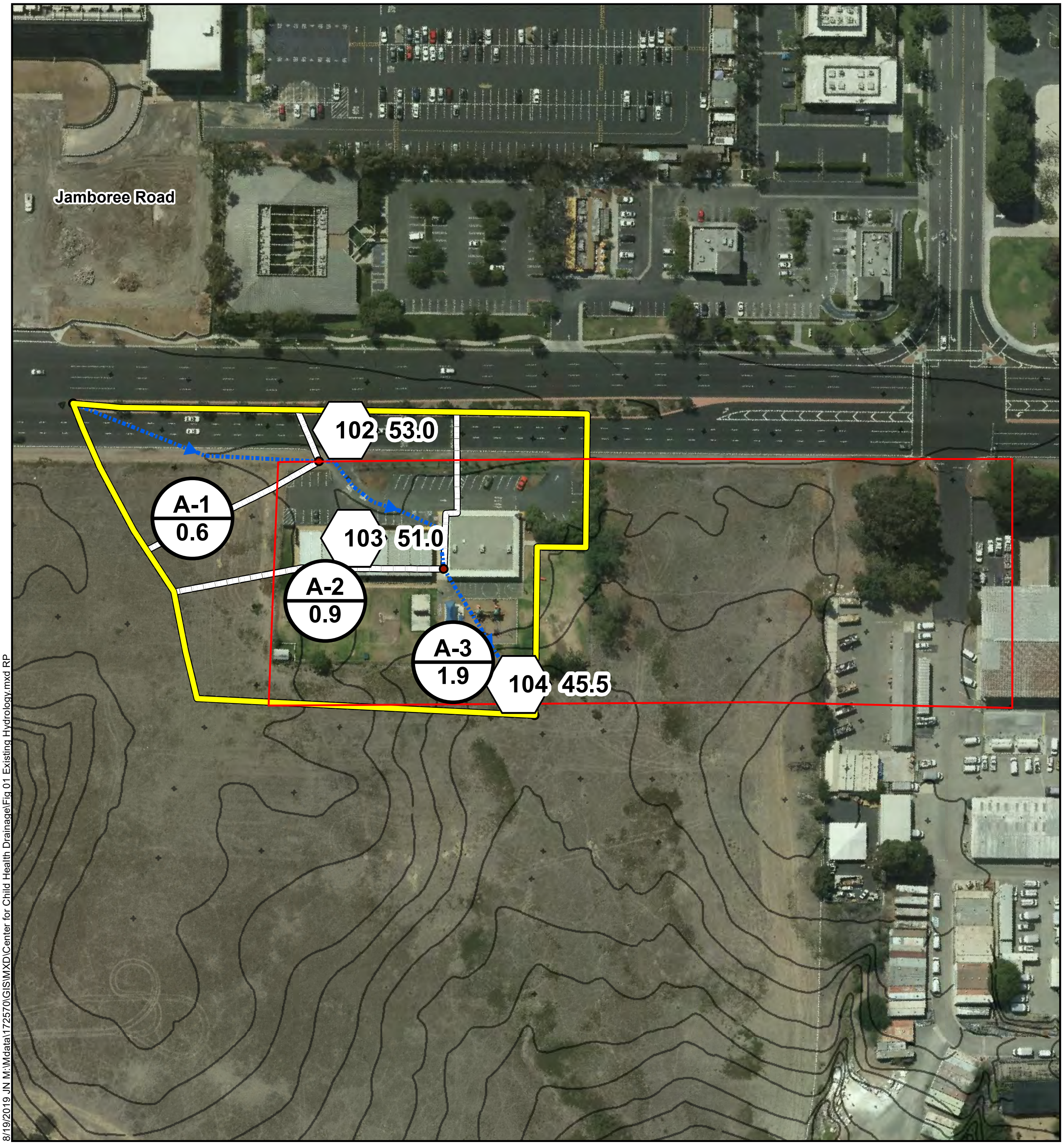
Hydromodification:

Lower San Diego Creek is an earthen channel and the proposed facility increases the site's 2-yr runoff discharge by more than 5 percent. Onsite hydromodification controls will need to be implemented to reduce the post development runoff for the two-year frequency storm to less than the predevelopment condition and increase the time of concentration of post-development runoff for the two-year storm event so it is longer than predevelopment condition. The design runoff discharge was determined by calculating the 2-yr expected value (EV) using the modified rational method described in the Orange County Hydrology Manual. As seen in Table 1 above the watershed does have an increase in runoff in the proposed condition. The proposed condition excess discharge will need to be detained onsite and discharged incrementally to meet the hydromodification requirement through an above ground or below ground detention system. The distributed BMP system recommended for the LID BMPs may also provide some or all the hydromodification mitigation needed.

Design Recommendations:

The proposed project should include the following:

1. Maximize feasible evapotranspiration with green, brown or red roofs, and planter boxes.
2. Incorporate LID biofiltration BMPs like stormwater planter boxes with underdrains throughout the project site to treat and retain water to meet OCTGD's LID requirements.
3. Reserve space on site for a flood control basin if the sites drainage cannot be integrated into a potential future development.



8/19/2019 JN M:\Mdata\172570\GIS\MXD\Center for Child Health Drainage\Fig 01 Existing Hydrology.mxd RP

Legend

- Project Site
- Topography
- Existing Flowpath
- Subwatershed
- Existing Subarea
- B-1 / 1.9 Subarea/Area
- 103 46.0 Node/Elevation

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0 50 100 Feet

Source: Eagle Aerial, 2014

CENTER FOR CHILD HEALTH PROJECT
DRAINAGE AND WATER STUDY REPORT

Existing Condition Hydrology Map

Figure 1

Legend

- Project Site
- Topography
- Commercial
- Open Brush
- Public Park
- Turf
- Woodland, Fair

0 50 100 Feet

Source: Eagle Aerial, 2014

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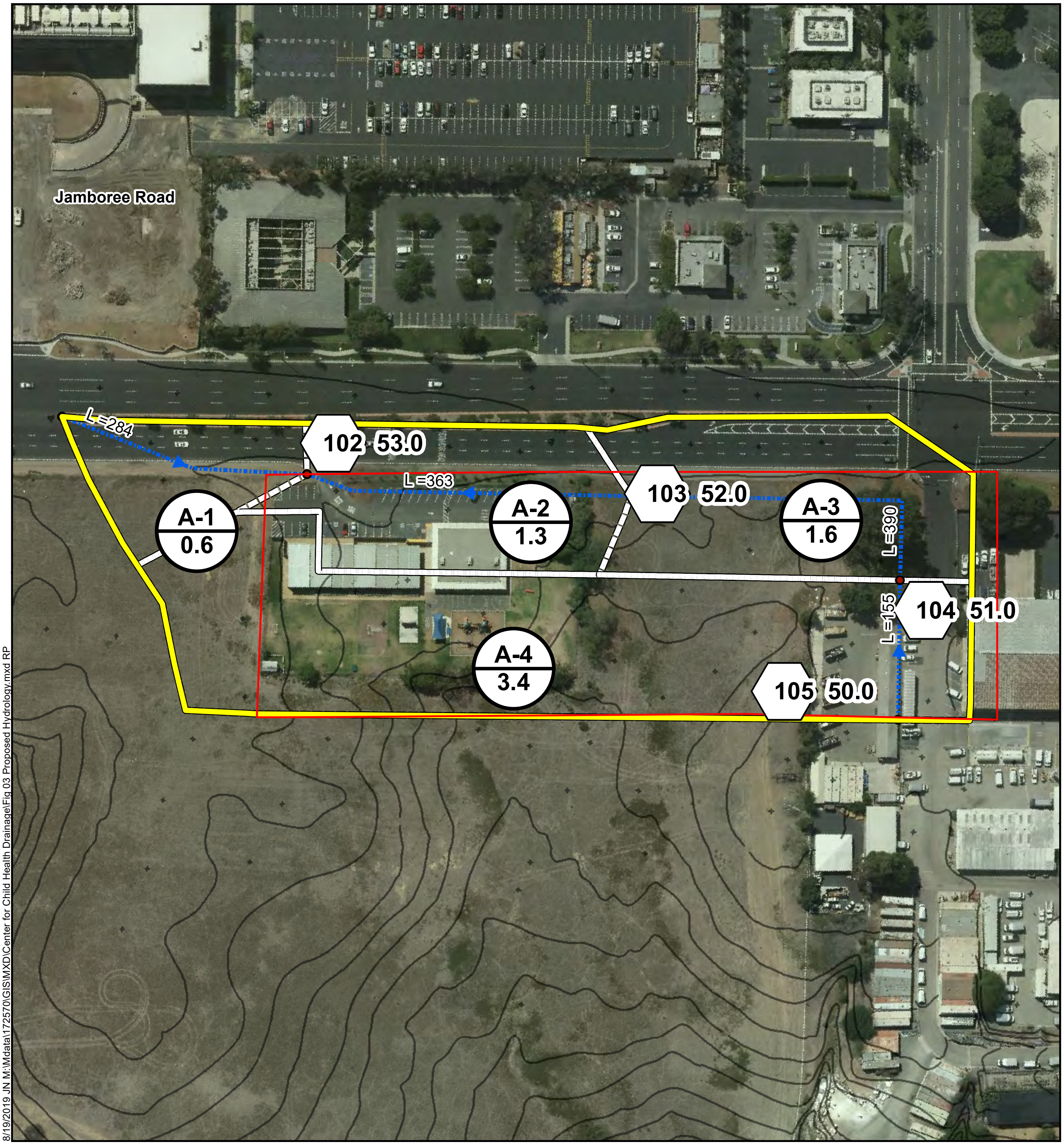
DRAINAGE AND WATER STUDY REPORT

Existing Condition Land Use Map

Figure 2



8/19/2019 JN M:\Mdata\172570\GIS\MXD\Center for Child Health Drainage\Fig 03 Proposed Hydrology.mxd RP

Legend

Project Site
Topography
Proposed Flowpath
Proposed Subarea
Proposed_Subwatershed
103 46.0 Node/Elevation
B-1 1.9 Subarea/Area

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0 50 100 Feet

Source: Eagle Aerial, 2014

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DRAINAGE AND WATER STUDY REPORT

Proposed Condition Hydrology Map

Figure 3

Legend

- Project Site
- Topography
- Commercial
- Open Brush
- Public Park
- Turf
- Woodland, Fair

0 50 100 Feet

Source: Eagle Aerial, 2014

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Proposed Condition Land Use Map

Figure 4

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DRAINAGE AND WATER STUDY REPORT

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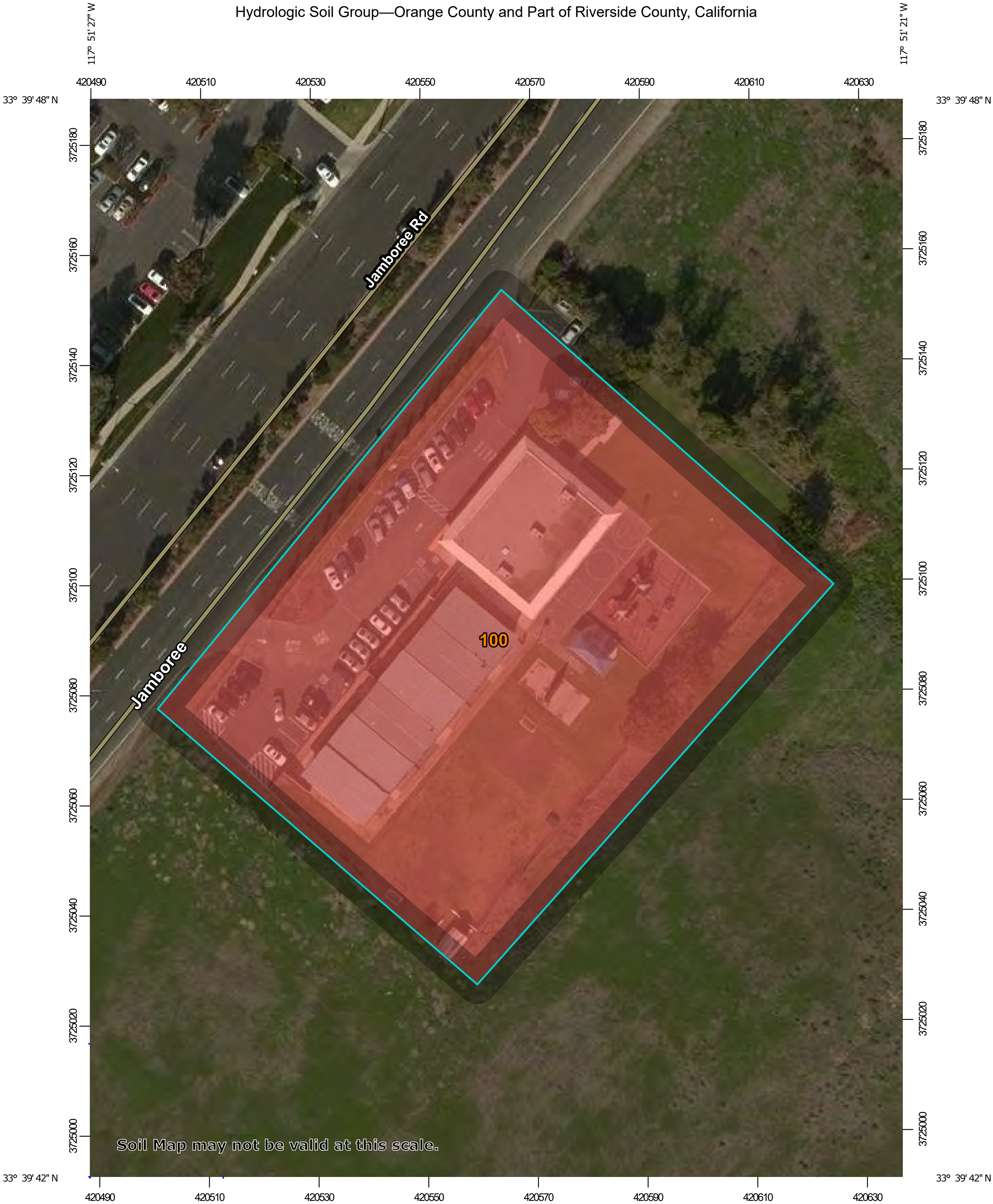
TECHNICAL APPENDIX A

USGS Web Soil Survey



Map Scale: 1:956 if printed on A portrait (8.5" x 11") sheet.

Meters: 0, 10, 20, 40, 60

Feet: 0, 45, 90, 180, 270

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orange County and Part of Riverside County, California
Survey Area Data: Version 12, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 3, 2015—Jan 17, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
100	Alo clay, 9 to 15 percent slopes	D	1.9	100.0%
Totals for Area of Interest			**1.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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TECHNICAL APPENDIX B

Hydrology Models

```
____________________________________________________________________________
****************************************************************************
             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
             (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
          (c) Copyright 1983-2016 Advanced Engineering Software (aes)
             Ver. 23.0  Release Date: 07/01/2016  License ID 1264

                           Analysis prepared by:







 ************************** DESCRIPTION OF STUDY **************************
* UCI CHILD CENTER SUBWATERSHED A                                          *
* RATIONAL METHOD HYDROLOGY MODEL                                          *
* 2-YR EV JULY 2019 ROKAMOTO                                               *
 **************************************************************************

  FILE NAME: EHCA02EV.DAT
  TIME/DATE OF STUDY: 06:58 07/03/2019
============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =    2.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *USER-DEFINED TABLED RAINFALL USED*
  NUMBER OF [TIME,INTENSITY] DATA PAIRS = 14
   1)    5.00;  1.600
   2)   10.00;  1.060
   3)   15.00;  0.840
   4)   20.00;  0.720
   5)   25.00;  0.630
   6)   30.00;  0.560
   7)   40.00;  0.480
   8)   50.00;  0.420
   9)   60.00;  0.366
  10)   90.00;  0.300
  11)  120.00;  0.246
  12)  180.00;  0.190
  13)  360.00;  0.136
  14) 1200.00;  0.080
  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.  (FT)     (FT)     SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150
  2   32.0     27.0    0.020/0.020/ ---    0.67    2.00 0.0312 0.167 0.0150
  3   13.0      8.0    0.020/0.020/ ---    0.33    1.00 0.0312 0.125 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
```



```
    1. Relative Flow-Depth =  1.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   284.00
  ELEVATION DATA: UPSTREAM(FEET) =     55.00  DOWNSTREAM(FEET) =     53.00

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    7.846
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.293
  SUBAREA Tc AND LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                 -        0.30      0.60     0.100     0    7.85
  NATURAL POOR COVER
  "OPEN BRUSH"               -        0.40      0.60     1.000     0   13.55
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.60
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.614
  SUBAREA RUNOFF(CFS) =      0.58
  TOTAL AREA(ACRES) =      0.70   PEAK FLOW RATE(CFS) =      0.58

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  3 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =   53.00  DOWNSTREAM ELEVATION(FEET) =   51.00
  STREET LENGTH(FEET) =   203.00   CURB HEIGHT(INCHES) =  4.0
  STREET HALFWIDTH(FEET) = 13.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   8.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.92
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.23
    HALFSTREET FLOOD WIDTH(FEET) =    4.70
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    1.50
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.35
  STREET FLOW TRAVEL TIME(MIN.) =    2.25   Tc(MIN.) =   10.10
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.056
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
```

```
  USER-DEFINED              -        0.60      0.60     0.100     -
  USER-DEFINED              -        0.20      0.60     1.000     -
  USER-DEFINED              -        0.10      0.60     0.850     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.60
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.383
  SUBAREA AREA(ACRES) =    0.90      SUBAREA RUNOFF(CFS) =    0.67
  EFFECTIVE AREA(ACRES) =      1.60    AREA-AVERAGED Fm(INCH/HR) =  0.29
  AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.48
  TOTAL AREA(ACRES) =       1.6       PEAK FLOW RATE(CFS) =      1.10

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.24   HALFSTREET FLOOD WIDTH(FEET) =   5.17
  FLOW VELOCITY(FEET/SEC.) =  1.57   DEPTH*VELOCITY(FT*FT/SEC.) =   0.38
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    102.00 =     487.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    103.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =     51.00  DOWNSTREAM(FEET) =     45.50
  CHANNEL LENGTH THRU SUBAREA(FEET) =   190.00   CHANNEL SLOPE =  0.0289
  CHANNEL BASE(FEET) =   85.00   "Z" FACTOR =   0.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   0.10
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.861
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE           GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED              -        0.90      0.60     0.100     -
  USER-DEFINED              -        0.60      0.60     1.000     -
  USER-DEFINED              -        0.40      0.60     0.850     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.60
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.542
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      1.57
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   0.72
  AVERAGE FLOW DEPTH(FEET) =   0.03   TRAVEL TIME(MIN.) =   4.42
  Tc(MIN.) =   14.52
  SUBAREA AREA(ACRES) =     1.90       SUBAREA RUNOFF(CFS) =    0.92
  EFFECTIVE AREA(ACRES) =      3.50     AREA-AVERAGED Fm(INCH/HR) =   0.31
  AREA-AVERAGED Fp(INCH/HR) =   0.60  AREA-AVERAGED Ap =   0.52
  TOTAL AREA(ACRES) =       3.5        PEAK FLOW RATE(CFS) =      1.74

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.03   FLOW VELOCITY(FEET/SEC.) =   0.74
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    103.00 =     677.00 FEET.
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =       3.5  TC(MIN.) =     14.52
  EFFECTIVE AREA(ACRES) =      3.50  AREA-AVERAGED Fm(INCH/HR)=  0.31
  AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap = 0.516
  PEAK FLOW RATE(CFS)   =      1.74
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
****************************************************************************
            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
           (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
        (c) Copyright 1983-2013 Advanced Engineering Software (aes)
            Ver. 20.0  Release Date: 06/01/2013  License ID 1264

                          Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* UCI CHILD CENTER SUBWATERSHED A                                          *
* RATIONAL METHOD HYDROLOGY MODEL                                          *
* 2-YR EV DECEMBER 2019 ROKAMOTO                                           *
 ************************************************************************

  FILE NAME: PCCA02EV.DAT
  TIME/DATE OF STUDY: 12:00 12/19/2019
============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =    2.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *USER-DEFINED TABLED RAINFALL USED*
  NUMBER OF [TIME,INTENSITY] DATA PAIRS = 14
   1)    5.00;  1.600
   2)   10.00;  1.060
   3)   15.00;  0.840
   4)   20.00;  0.720
   5)   25.00;  0.630
   6)   30.00;  0.560
   7)   40.00;  0.480
   8)   50.00;  0.420
   9)   60.00;  0.366
  10)   90.00;  0.300
  11)  120.00;  0.246
  12)  180.00;  0.190
  13)  360.00;  0.136
  14) 1200.00;  0.080
  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150
  2   32.0     27.0    0.020/0.020/ ---    0.67    2.00 0.0312 0.167 0.0150
  3   13.0      8.0    0.020/0.020/ ---    0.33    1.00 0.0312 0.125 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
```



```
    1. Relative Flow-Depth =  1.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   284.00
  ELEVATION DATA: UPSTREAM(FEET) =     55.00  DOWNSTREAM(FEET) =     53.00

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    7.846
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.293
  SUBAREA Tc AND LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                 -        0.30      0.60     0.100     0    7.85
  NATURAL POOR COVER
  "OPEN BRUSH"               -        0.30      0.60     1.000     0   13.55
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.60
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.550
  SUBAREA RUNOFF(CFS) =      0.52
  TOTAL AREA(ACRES) =      0.60   PEAK FLOW RATE(CFS) =      0.52

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  3 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =   53.00  DOWNSTREAM ELEVATION(FEET) =   52.00
  STREET LENGTH(FEET) =   363.00   CURB HEIGHT(INCHES) =  4.0
  STREET HALFWIDTH(FEET) = 13.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   8.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.00
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.27
    HALFSTREET FLOOD WIDTH(FEET) =    6.67
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    0.94
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.25
  STREET FLOW TRAVEL TIME(MIN.) =    6.42   Tc(MIN.) =   14.26
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.872
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
```

```
  USER-DEFINED               -        1.30      0.60     0.100     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.60
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.100
  SUBAREA AREA(ACRES) =    1.30      SUBAREA RUNOFF(CFS) =    0.95
  EFFECTIVE AREA(ACRES) =      1.90    AREA-AVERAGED Fm(INCH/HR) =  0.15
  AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.24
  TOTAL AREA(ACRES) =       1.9       PEAK FLOW RATE(CFS) =      1.24

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.28   HALFSTREET FLOOD WIDTH(FEET) =   7.42
  FLOW VELOCITY(FEET/SEC.) =  0.98   DEPTH*VELOCITY(FT*FT/SEC.) =   0.28
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    102.00 =     647.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    103.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  3 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =   52.00  DOWNSTREAM ELEVATION(FEET) =   51.00
  STREET LENGTH(FEET) =   390.00   CURB HEIGHT(INCHES) =  4.0
  STREET HALFWIDTH(FEET) = 13.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   8.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      1.64
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.31
    HALFSTREET FLOOD WIDTH(FEET) =    8.55
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    1.01
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.31
  STREET FLOW TRAVEL TIME(MIN.) =   6.46   Tc(MIN.) =   20.72
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.707
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -        1.30      0.60     0.100     -
  USER-DEFINED               -        0.30      0.60     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.60
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.269
  SUBAREA AREA(ACRES) =    1.60      SUBAREA RUNOFF(CFS) =    0.79
  EFFECTIVE AREA(ACRES) =      3.50    AREA-AVERAGED Fm(INCH/HR) =  0.15
  AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.25
  TOTAL AREA(ACRES) =       3.5       PEAK FLOW RATE(CFS) =      1.75

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.31   HALFSTREET FLOOD WIDTH(FEET) =   8.73
  FLOW VELOCITY(FEET/SEC.) =  1.03   DEPTH*VELOCITY(FT*FT/SEC.) =   0.32
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    103.00 =    1037.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    104.00 TO NODE    105.00 IS CODE =  62
----------------------------------------------------------------------------
```



```
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  3 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =   51.00  DOWNSTREAM ELEVATION(FEET) =   50.00
  STREET LENGTH(FEET) =   155.00   CURB HEIGHT(INCHES) =  4.0
  STREET HALFWIDTH(FEET) = 13.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   8.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      2.57
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.31
    HALFSTREET FLOOD WIDTH(FEET) =    8.45
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    1.61
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.49
  STREET FLOW TRAVEL TIME(MIN.) =   1.60   Tc(MIN.) =   22.32
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.678
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -        2.90      0.60     0.100     -
  USER-DEFINED               -        0.50      0.60     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.60
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.232
  SUBAREA AREA(ACRES) =    3.40      SUBAREA RUNOFF(CFS) =    1.65
  EFFECTIVE AREA(ACRES) =      6.90    AREA-AVERAGED Fm(INCH/HR) =  0.15
  AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.24
  TOTAL AREA(ACRES) =       6.9       PEAK FLOW RATE(CFS) =      3.30

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.32   HALFSTREET FLOOD WIDTH(FEET) =   9.39
  FLOW VELOCITY(FEET/SEC.) =  1.71   DEPTH*VELOCITY(FT*FT/SEC.) =   0.55
  *NOTE: INITIAL SUBAREA NOMOGRAPH WITH SUBAREA PARAMETERS,
         AND L =  155.0 FT WITH ELEVATION-DROP =   1.0 FT, IS    4.1 CFS,
         WHICH EXCEEDS THE TOP-OF-CURB STREET CAPACITY AT NODE    105.00
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    105.00 =    1192.00 FEET.
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =       6.9  TC(MIN.) =     22.32
  EFFECTIVE AREA(ACRES) =      6.90  AREA-AVERAGED Fm(INCH/HR)=  0.15
  AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap = 0.243
  PEAK FLOW RATE(CFS)   =      3.30
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

APPENDIX E

Acoustical Assessment

Acoustical Assessment
Center for Child Health
University of California, Irvine

Prepared by:

Kimley-Horn and Associates, Inc.
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Orange, California 92868
Contact: Mr. Ryan Chiene
714.705.1343

January 2020

TABLE OF CONTENTS

EXHIBITS

APPENDICES

LIST OF ABBREVIATED TERMS

ADT	average daily traffic
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CNEL	community equivalent noise level
CY	cubic yards
dB	decibel
dBA	A-weighted sound level
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
ft	foot/feet
FTA	Federal Transit Administration
GSF	gross-square-foot
HVAC	heating ventilation and air conditioning
Hz	hertz
IMC	Irvine Municipal Code
in/sec	inches per second
L_{dn}	day-night noise level
L_{eq}	equivalent noise level
L_{max}	maximum noise level
L_{min}	minimum noise level
LRDP	Long Range Development Plan
µPa	micropascals
mph	miles per hour
NBMC	Newport Beach Municipal Code
PPV	peak particle velocity
RMS	root mean square
UCI	University of California, Irvine

1 INTRODUCTION

This report documents the results of an Acoustical Assessment prepared for the University of California (UCI) Center for Child Health ("Project" or "proposed Project"). The purpose of this Acoustical Assessment is to evaluate the potential operational noise levels associated with the proposed Project and determine the level of impact the Project would have on the environment.

1.1 Project Location

The Project is located within the UCI campus, in the City of Irvine (City), and County of Orange (County); see **Exhibit 1: Regional Vicinity**. The approximately 5.5-acre Project site is located within UCI's North Campus along Jamboree Road near the intersection with Campus Drive; see **Exhibit 2: Site Vicinity**. The site is surrounded by commercial and public facilities uses to the north, UCI maintenance and facilities to the east, vacant land and the San Joaquin Marsh Reserve to the south, and mixed-use residential uses to the west. Jamboree Road adjoins the Project site to the north in a northeast-southwest direction. Regional access to the Project site is provided via Interstate 405 (I-405) or State Route 73 (SR-73) located to the north and south, respectively. Local access to the Project site is provided via Jamboree Road and Campus Drive.

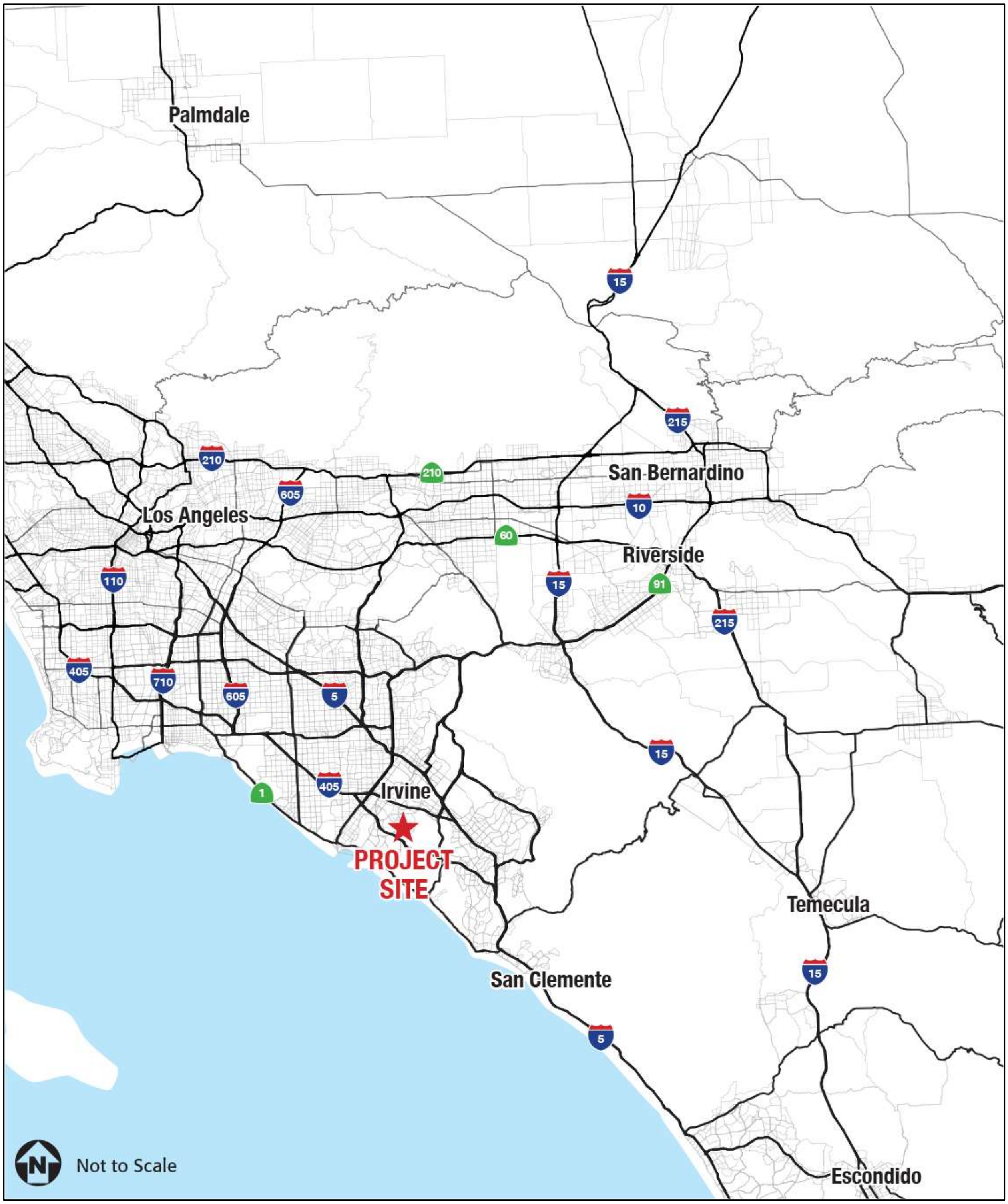
1.2 Project Description

The proposed Project would construct an approximately 168,000-gross-square-foot (GSF), five-story medical office building with an additional mechanical penthouse and an 800-space parking structure at UCI's North Campus; refer to **Exhibit 3: Conceptual Site Plan**. The existing on-site approximately 6,500 GSF Child Development Center, approximately 2,400 GSF UCI Recycling Center, and an approximately 21,500 GSF receiving yard would be demolished in order to construct the proposed Project. The UCI Recycling Center would be relocated to existing space on the Main Campus. Additional site improvements would include grading, driveway paving, construction of internal on-site circulation, landscaping, and installation of site utility connections and lighting.

Project Construction and Phasing

Project construction is anticipated to occur over approximately 22 months beginning in November 2020 and ending in September 2022. Grading for the proposed Project would require approximately 27,103 cubic yards (CY) of excavation with 15,210 CY of soil export. Final grading plans would be approved by the UCI Building Official before Grading Permit issuance. All infrastructure (i.e. storm drain, water, wastewater, dry utilities, and street improvements) would be installed during grading. Construction for the Project would occur in one phase. For purposes of this environmental analysis, opening year is conservatively assumed to be 2022.

Exhibit 1: Regional Vicinity

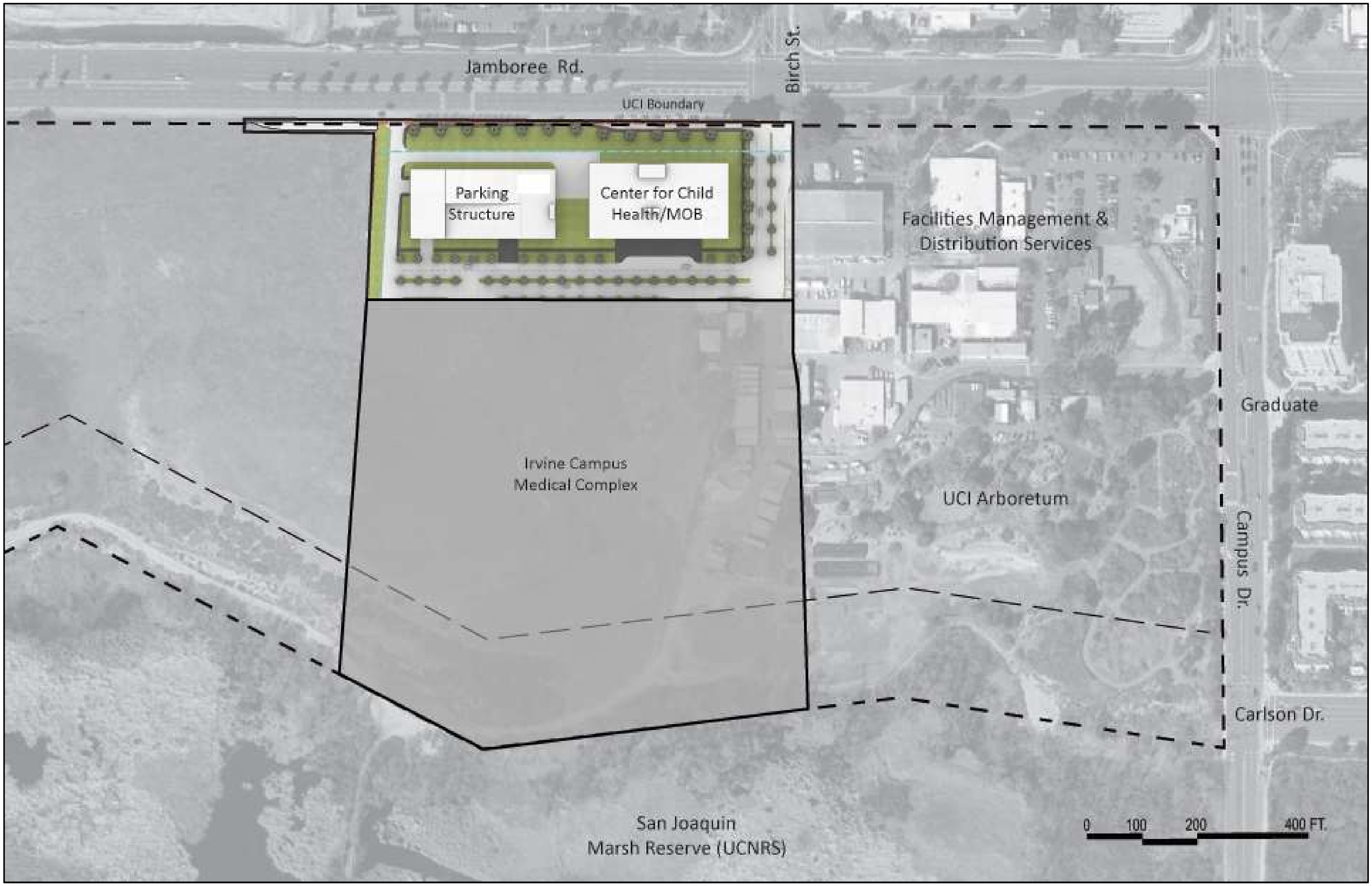


Source: Kimley-Horn and Associates, 2019.

Exhibit 2: Site Vicinity

Source: Nearmap, 2019.

Exhibit 3: Conceptual Site Plan



Source: University of California Irvine, 2020.

2 ACOUSTIC FUNDAMENTALS

2.1 Sound and Environmental Noise

Acoustics is the science of sound. Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a medium (e.g. air) to the human ear. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second, or hertz (Hz).

Noise is defined as loud, unexpected, or annoying sound. In acoustics, the fundamental model consists of a noise source, a receptor, and the propagation path between the two. The loudness of the noise source, obstructions, or atmospheric factors affecting the propagation path, determine the perceived sound level and noise characteristics at the receptor. Acoustics deal primarily with the propagation and control of sound. A typical noise environment consists of a base of steady background noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These sources can vary from an occasional aircraft or train passing by to continuous noise from traffic on a major highway. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a large range of numbers. To avoid this, the decibel (dB) scale was devised. The dB scale uses the hearing threshold of 20 micropascals (μPa) as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The dB scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels correspond closely to human perception of relative loudness. **Table 1: Typical Noise Levels**, provides typical noise levels.

Table 1: Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	– 110 –	Rock Band
Jet fly-over at 1,000 feet		
	– 100 –	
Gas lawnmower at 3 feet		
	– 90 –	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	– 80 –	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	**– 70 –**	Vacuum cleaner at 10 feet
Commercial area		Normal Speech at 3 feet
Heavy traffic at 300 feet	**– 60 –**	
		Large business office
Quiet urban daytime	**– 50 –**	Dishwasher in next room
Quiet urban nighttime	**– 40 –**	Theater, large conference room (background)
Quiet suburban nighttime		
	– 30 –	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	– 20 –	
		Broadcast/recording studio
	– 10 –	
Lowest threshold of human hearing	**– 0 –**	Lowest threshold of human hearing

Source: California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

Noise Descriptors

The dB scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The equivalent noise level (L_{eq}) is the average noise level averaged over the measurement period, while the day-night noise level (L_{dn}) and Community Equivalent Noise Level (CNEL) are measures of energy average during a 24-hour period, with dB weighted sound levels from 7:00 p.m. to 7:00 a.m. Most commonly, environmental sounds are described in terms of an average level (L_{eq}) that has the same acoustical energy as the summation of all the time-varying events. Each is applicable to this analysis and defined in **Table 2: Definitions of Acoustical Terms**.

Table 2: Definitions of Acoustical Terms

Term	Definitions
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in µPa (or 20 micronewtons per square meter), where 1 pascals is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in dB as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g. 20 µPa). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level (dBA)	The sound pressure level in dB as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level (L_{eq})	The average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
Maximum Noise Level (L_{max}) Minimum Noise Level (L_{min})	The maximum and minimum dBA during the measurement period.
Exceeded Noise Levels (L_{01}, L_{10}, L_{50}, L_{90})	The dBA values that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day-Night Noise Level (L_{dn})	A 24-hour average L_{eq} with a 10 dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity at nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
Community Noise Equivalent Level (CNEL)	A 24-hour average L_{eq} with a 5 dBA weighting during the hours of 7:00 a.m. to 10:00 a.m. and a 10 dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

The A-weighted decibel (dBA) sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be used. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source.

A-Weighted Decibels

The perceived loudness of sounds is dependent on many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable and can be approximated by dBA values. There is a strong correlation between dBA and the way the human ear perceives sound. For this reason, the dBA has become the standard tool of environmental noise assessment. All noise levels reported in this document are in terms of dBA, but are expressed as dB, unless otherwise noted.

Addition of Decibels

The dB scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic dB is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound and twice as loud as a 60 dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions. Under the dB scale, three sources of equal loudness together would produce an increase of 5 dBA.

Sound Propagation and Attenuation

Sound spreads (propagates uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics. No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. For line sources, an overall attenuation rate of 3 dB per doubling of distance is assumed.

Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The way older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in dBA, the following relationships should be noted:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A minimum 5 dBA is required before any noticeable change in community response would be expected. A 5-dBA increase is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Effects of Noise on People

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise, but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise. The Occupational Safety and Health Administration has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over 8 hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. A noise level of about 55 dBA L_{dn} is the threshold at which a substantial percentage of people begin to report annoyance[1].

[1] Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues*, 1992.

3 REGULATORY SETTING

To limit population exposure to physically or psychologically damaging as well as intrusive noise levels, the Federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

3.1 State of California

California Government Code

California Government Code Section 65302(f) mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of “normally acceptable”, “conditionally acceptable”, “normally unacceptable”, and “clearly unacceptable” noise levels for various land use types. Single-family homes are “normally acceptable” in exterior noise environments up to 60 CNEL and “conditionally acceptable” up to 70 CNEL. Multiple-family residential uses are “normally acceptable” up to 65 CNEL and “conditionally acceptable” up to 70 CNEL. Schools, libraries, and churches are “normally acceptable” up to 70 CNEL, as are office buildings and business, commercial, and professional uses.

Title 24 – Building Code

The State’s noise insulation standards are codified in the California Code of Regulations, Title 24: Part 1, Building Standards Administrative Code, and Part 2, California Building Code. These noise standards are applied to new construction in California for interior noise compatibility from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 65 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new multi-family residential buildings, the acceptable interior noise limit for new construction is 45 dBA CNEL.

3.2 Local

Although UCI is not subject to municipal regulations, the City of Irvine and City of Newport Beach’s noise standards are relevant to UCI to establish guidelines and evaluating noise impacts. City regulations are relevant for addressing UCI development projects that would affect adjacent noise-sensitive land uses in the City of Irvine and City of Newport Beach.

City of Irvine

City of Irvine General Plan

The California Government Code requires that a noise element be included in the general plan of each county and city in the state. The *City of Irvine General Plan* (Irvine General Plan) *Noise Element* (Irvine Noise Element) identifies sources of noise and provide objectives and policies that ensure that noise from various sources does not create an unacceptable noise environment. Since the campus is located in the

City of Irvine, the City of Irvine's land use compatibility noise standards are relevant to UCI in establishing guidelines and evaluating impacts. The Irvine Noise Element sets forth general community noise and land use compatibility guidelines, as shown in **Table 3: City of Irvine Land Use Compatibility Guidelines**. Sound levels up to 65 dBA CNEL are normally compatible for single-family residential, transient lodging, and park uses. Sound levels up to 60 dBA CNEL are normally compatible for institutional uses such as hospitals, churches, libraries, and schools.

Table 3: City of Irvine Land Use Compatibility Guidelines

Land Use Category	Uses	Energy Average (CNEL)							
		≤	55	60	65	70	75	80 ≥	≤
Residential[3]	Single-Family, Multiple-Family	A	A	B	B	C	D	D	A
	Mobile Home	A	A	B	C	C	D	D	A
Commercial Regional Family	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D	A
Commercial Regional Community	Commercial retail, Bank, Restaurant, Movie theater	A	A	A	A	B	B	C	A
Commercial Community Industrial & Institutional	Office building, Research & development Professional office, City office building	A	A	A	B	B	C	D	A
Commercial Recreation Institutional General	Amphitheater, Concert Hall, Auditorium, Meeting Hall	B	B	C	C	D	D	D	B
Commercial Recreation	Children's amusement park, Miniature golf, Go-cart track, Health club, Equestrian center	A	A	A	B	B	D	D	A
Commercial Community Industrial General	Automobile Service station, Auto dealer, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B	A
Institutional General	Hospital, Church, Library, School classrooms	A	A	B	C	C	D	D	A
Open Space	Parks	A	A	A	B	C	D	D	A
	Golf courses, Nature centers, Cemeteries, Wildlife reserves, Wildlife habitat	A	A	A	A	B	C	C	A
Agricultural	Agriculture	A	A	A	A	A	A	A	A

Notes:
Zone A **(Clearly Compatible):** Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
Zone B **(Normally Compatible):** New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.
Zone C: **Normally Incompatibl**e: New construction or development should normally be discouraged. If new construction or development does proceed, a detailed analysis or noise reduction requirements must be made and needed noise insulation features must be included in the design.
Zone D **(Clearly Incompatible):** New construction or development should generally not be undertaken.
Source: City of Irvine*, City of Irvine General Plan*, Supp. No. 9, July 2015.

Objectives and Policies from the Irvine Noise Element that are relevant to the Project are as follows:

Objective F-1: Mobile Noise. Ensure that City residents are not exposed to mobile noise levels in excess of the CNEL Interior and Exterior Noise Standards (Table F-1), and Single Event Noise Standard.

Policy (c): Ensure that all proposed development projects are compatible with the existing and projected noise level by using the Land Use Noise Compatibility Matrix (Table F-2).

Policy (f): Require noise studies to identify all the mitigation measures necessary to reduce noise levels to meet the CNEL standard (Table F-1) and Single Event Noise Standard.

Objective F-2: Stationary Noise. Ensure that City residents are not exposed to stationary noise levels in excess of the City Noise Ordinance standards.

Policy (a): Require any new construction to meet the City Noise Ordinance standards as a condition of building permit approval.

Objective F-3: Noise Abatement. Achieve maximum efficiency in noise abatement efforts through intergovernmental coordination and public information programs.

Policy (a): Coordinate efforts to reduce noise impacts with appropriate public and government agencies.

City of Irvine Noise Ordinance

Interior and Exterior Noise Standards

The City of Irvine Noise Ordinance (Title 6, Division 8, Chapter 2, Section 6-8-204 of the Irvine Municipal Code [IMC]) also provides exterior and interior noise limit thresholds for certain periods of time. **Table 4: City of Irvine Noise Ordinance Limits**, presents noise standards published in Section 6-8-204 of the City of Irvine Noise Ordinance.

Construction Noise

IMC Section 6-8-205(A) indicates that construction activities may occur between 7:00 a.m. and 7:00 p.m. Mondays through Fridays, and 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the Chief Building Official or his or her authorized representative. Trucks, vehicles, and equipment that are making, or are involved with, material deliveries, loading, transfer of materials, equipment service, maintenance of any devices or appurtenances for (or within) any construction project in the City, shall not be operated or driven on City streets outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the City. Any waiver granted shall take into consideration the potential impact upon the community. No construction activity would be permitted outside of these hours, except in emergencies including maintenance work on the City rights-of-way that might be required.

Table 4: City of Irvine Noise Ordinance Limits

Noise Zone	Exterior or Interior?	Time Period	Noise Levels (dBA) for a Period Not Exceeding				
			30 min	15 min	5 min	1 min	0 (anytime)
I: All hospitals, libraries, churches, schools, and residential properties	Exterior	7:00 a.m. – 10:00 p.m.	55	60	65[1]	70	75
		10:00 a.m. – 7:00 a.m.	50	55	60	65[1]	70
	Interior	7:00 a.m. – 10:00 p.m.	-	-	55	60	65
		10:00 a.m. – 7:00 a.m.	-	-	45	50	55
II: All professional office and public institutional properties.	Exterior	Any time	55	60	65	70	75
	Interior	Any time	-	-	55	60	65
III: All commercial properties excluding professional office properties.	Exterior	Any time	60	65	70	75	80
	Interior	Any time	-	-	55	60	65
IV: All industrial properties.	Exterior	Any time	70	75	80	85	90
	Interior	Any time	-	-	55	60	65

Notes:
1. This standard does not apply to multi-family residence private balconies. Multi-family developments with balconies that do not meet the 65 CNEL are required to provide occupancy disclosure notice to all future tenants regarding potential noise impacts.
2. It shall be unlawful for any person at any location within the City to create any noise or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person which causes the noise level when measured on any property within designated noise zones either within or without the City to exceed the applicable noise standard.
3. Each of the noise standards specified above shall be reduced by five dBA for impact, or predominant tone noise or for noises consisting of speech or music.
4. In the event that the noise source and the affected property are within different noise zones, the noise standards of the affected property shall apply.

Source: City of Irvine, *City of Irvine Municipal Code*, codified through Ordinance No. 19-05, enacted August 13, 2019.

City of Newport Beach

City of Newport Beach General Plan

The *City of Newport General Plan* (Newport Beach General Plan) *Noise Element* (Newport Beach Noise Element) is a tool for including noise control in the planning process in order to maintain compatible land use with environmental noise levels. The Newport Beach Noise Element is the guiding document for the City of Newport Beach's noise policy and is designed to protect residents and businesses from excessive and persistent noise intrusions. The Newport Beach Noise Element sets forth general community noise and land use compatibility guidelines, as shown in **Table 5: City of Newport Beach Land Use Compatibility Guidelines**.

Table 5: City of Newport Beach Land Use Compatibility Guidelines

Land Use Category	Uses	Energy Average (CNEL)						
		≤ 55	55-60	60-65	65-70	70-75	75-80	≥ 80
Residential	Single-Family, Two Family, Multiple Family	A	A	B	C	C	D	D
Residential	Mixed Use	A	A	A	C	C	C	D
Residential	Mobile Home	A	A	B	C	C	D	D
Commercial Regional, District	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D
Commercial Regional, Village District, Special	Commercial Retail, Bank, Restaurant, Movie Theatre	A	A	A	A	B	B	C
Commercial Industrial Institutional	Office Building, Research and Development, Professional Offices, City Office Building	A	A	A	B	B	C	D
Commercial		B	B	C	C	D	D	D

Table 5: City of Newport Beach Land Use Compatibility Guidelines								
Land Use Category	**Uses**	**Energy Average (CNEL)**						
		< 55	**55-60**	**60-65**	**65-70**	**70-75**	**75-80**	**> 80**
Recreational Institutional Civic Center	Amphitheatre, Concert Hall Auditorium, Meeting Hall							
Commercial Recreation	Children's Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	A	A	A	B	B	D	D
Commercial General, Special Industrial, Institutional	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B
Institutional	Hospital, Church, Library, Schools' Classroom	A	A	B	C	C	D	D
Open Space	Parks	A	A	A	B	C	D	D
Open Space	Golf Course, Cemeteries, Nature Centers Wildlife Reserves, Wildlife Habitat	A	A	A	A	B	C	C
Agriculture	Agriculture	A	A	A	A	A	A	A

Notes:
Zone A: Clearly Compatible - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
Zone B: Normally Compatible - New construction or development should be undertaken only after detailed analysis of the noise reduction requirements and are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.
Zone C: Normally Incompatible - New construction or development should normally be discouraged. If new construction or development does proceed, a detailed analysis or noise reduction requirements must be made and needed noise insulation features included in the design.
Zone D: Clearly Incompatible - New construction or development should generally not be undertaken.
Source: City of Newport Beach*, City of Newport Beach General Plan*, July 25, 2006.

Goals and Policies from the Newport Beach Noise Element that are relevant to the Project are as follows:

Goal N 1: Noise Compatibility – Minimized land use conflicts between various noise sources and other human activities.

Policy N 1.1: Noise Compatibility of New Development.

Require that all proposed projects are compatible with the noise environment through use of Table N2, and enforce the interior and exterior noise standards shown in Table N3.

Policy N 1.2: Noise Exposure Verification for New Development

Applicants for proposed projects that require environmental review and are, located in areas projected to be exposed to a CNEL of 60 dBA and higher, as shown on Figure N4, Figure N5, and Figure N6 may conduct a field survey, noise measurements or other modeling in a manner acceptable to the City to provide evidence that the depicted noise contours do not adequately account for local noise exposure circumstances due to such factors as, topography, variation in traffic speeds, and other applicable conditions. These findings shall be used to determine the level of exterior or interior, noise attenuation needed to attain an acceptable noise exposure level and the feasibility of such mitigation when other planning considerations are taken into account.

Policy N 1.8: Significant Noise Impacts

Require the employment of noise mitigation measures for existing sensitive uses when a significant noise impact is identified. A significant noise impact occurs when there is an increase in the ambient CNEL produced by new development impacting existing sensitive uses. The CNEL increase is shown in the table below (**Table 6: Newport Beach Significant Noise Impact Criteria**).

Table 6: Newport Beach Significant Noise Impact Criteria

CNEL (dBA)	dBA Increase
55-60	3
60-65	2
65-70	1
70-75	1
Over 75	Any increase is considered significant

CNEL: 24-hour community noise equivalent level; dBA: A-weighted decibel.
Source: City of Newport Beach*, City of Newport Beach General Plan*, July 25, 2006.

City of Newport Beach Noise Ordinance

Interior and Exterior Noise Standards

The City of Newport Beach has numerous ordinances and enforcement practices that apply to intrusive noise and that guide new construction. Newport Beach's comprehensive noise ordinance sets forth maximum ambient noise levels for different land use zoning classifications, hours of operation for construction activities, standards for determining when noise is deemed to be a disturbance, and legal remedies for violations. Newport Beach Municipal Code (NBMC) Section 10.26.025 (Exterior Noise Standards) and 10.26.030 (Interior Noise Standards) provide maximum exterior and interior noise levels, respectively. **Table 7: Newport Beach Allowable Exterior Noise Levels** provides maximum exterior noise levels, and **Table 8: Newport Beach Allowable Interior Noise Levels** provides maximum interior noise levels for various uses throughout the City of Newport Beach. If the ambient noise level exceeds the resulting standard, the ambient shall be the standard.

Table 7: Newport Beach Allowable Exterior Noise Levels

Noise Zone	Type of Land Use	Allowable Exterior Noise Level (L_{eq})	
		7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.
I	Single-, two-or multiple-family residential	55 dBA	50 dBA
II	Commercial	65 dBA	60 dBA
III	Residential portions of mixed-use properties	60 dBA	50 dBA
IV	Industrial or manufacturing	70 dBA	70 dBA

Source: City of Newport Beach, *Newport Beach Municipal Code*, codified through Ordinance 2019-19, passed November 19, 2019.

Table 8: Newport Beach Allowable Interior Noise Levels

Noise Zone	Type of Land Use	Allowable Interior Noise Level (L_{eq})	
		7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.
I	Single-, two-or multiple-family residential	45	40
III	Residential portions of mixed-use properties	45	40

Source: City of Newport Beach, *Newport Beach Municipal Code*, codified through Ordinance 2019-19, passed November 19, 2019.

Heating, Ventilation, and Air Conditioning Units

NBMC Section 10.26.045 (Heating, Venting and Air Conditioning – Special Provisions) specifies that new permits for HVAC equipment in or adjacent to residential areas shall be issued only where installations can be shown by computation, based on the sound rating of the proposed equipment, not to exceed an A-weighted sound pressure level of 50 dBA, or not to exceed an A-weighted sound pressure level of 55 dBA and be installed with a timing device that will deactivate the equipment during the hours of 10:00 p.m. to 7:00 a.m.

Construction Noise

The City of Newport Beach recognizes that the control of construction noise is difficult and therefore provides exemptions for construction noise. NBMC Section 10.26.035D (Exemptions) exempts noise sources associated with construction, repair, remodeling, demolition, or grading of any real property from the Noise Ordinance standards (**Table 7** and **Table 8**). These activities are subject to the provisions of NBMC Chapter 10.28, which prohibits construction activities that generate loud noise that disturbs, or could disturb, a person of normal sensitivity who works or resides in the vicinity except during weekdays between the hours of 7:00 a.m. to 6:30 p.m., and Saturdays between the hours of 8:00 a.m. to 6:00 p.m. Construction is not allowed on Sundays or any federal holiday.

4 EXISTING CONDITIONS

4.1 Existing Noise Sources

The Project site is impacted by various noise sources. Mobile sources of noise, especially cars and trucks, are the most common and significant sources of noise near the Project site. The primary sources of stationary noise near the Project site are those associated with adjacent parking lots and mechanical equipment, and the adjacent UCI maintenance and facilities property to the east.

Existing Mobile Noise

Existing roadway noise levels were calculated for the roadway segments in the Project vicinity. This task was accomplished using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and existing traffic volumes from the *UCI Center for Child Health Supplemental Level of Service Analysis* (Stantec Inc., December 2019) (LOS Analysis). The noise prediction model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (also referred to as energy rates) used in the FHWA model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation (Caltrans). The Caltrans data indicates that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. The average daily noise levels along roadway segments in proximity to the Project site are included in **Table 9: Existing Traffic Noise**.

Table 9: Existing Traffic Noise

Roadway Segment	ADT	dBA L_{dn}[1]
Jamboree Road		
I-405 SB Ramps to Michelson Drive	79,700	73.3
Michelson Drive to Campus Drive	42,500	70.5
Campus Drive to Birch Street	41,800	70.2
Birch Street to MacArthur Boulevard	42,400	71.4
MacArthur Boulevard to SR-73	35,000	70.4
Michelson Drive		
East of Jamboree Road	33,000	67.8
Campus Drive		
West of Jamboree Road	10,700	63.0
Jamboree Road to Carlson Avenue	16,100	64.8
Carlson Avenue to University Drive	16,900	66.8
East of University Drive	20,900	65.9
Carlson Drive		
Between Michelson Drive and Campus Drive	9,100	63.3

ADT = average daily trips; dBA = A-weighted decibels; L_{dn} = day-night noise level
1. Traffic noise levels are at 100 feet from the roadway centerline.

Source: Based on traffic data provided by Stantec, Inc., December 2019. Refer to **Appendix A** for traffic noise modeling assumptions and results.

As indicated in **Table 9**, existing traffic noise levels range between 63.0 dBA L_{dn} and 73.3 dBA L_{dn} in the Project vicinity, with the highest noise levels occurring along Jamboree Road.

Existing Stationary Noise

The primary sources of stationary noise in the Project vicinity are those associated with the operations of nearby residential and commercial uses, and the UCI maintenance and facilities property to the east of the site. The noise associated with these sources may represent a single-event noise occurrence, short-term noise, or long-term/continuous noise.

4.2 Noise Measurements

To quantify existing ambient noise levels in the Project area, Kimley-Horn conducted three short-term noise measurements near the Project site on December 19, 2019; see **Appendix A: Noise Data**. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the Project site. The 10-minute daytime measurements were taken between 1:00 p.m. and 2:00 p.m. The average noise levels and sources of noise measured at each location are listed in **Table 10: Existing Noise Measurements** and shown on **Exhibit 4: Noise Measurement Locations.**

Table 10: Existing Noise Measurements

Site	Location	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	Time and Date
1	Adjacent to the mixed-use residential use to the west of the Project site along Jamboree Road.	70.7	49.1	79.1	12:59 p.m. to 1:09 p.m.
2	Adjacent to the mixed-use residential use located at the southeastern corner of the Jamboree Road and Campus Drive intersection.	65.2	56.9	73.7	1:21 p.m. to 1:31 p.m.
3	Parking lot in the western portion of the Project site	67.4	48.3	75.6	1:41 p.m. to 1:51 p.m.

Source: Noise measurements taken by Kimley-Horn and Associates on December 19, 2019. See **Appendix A** for noise measurement results.

4.3 Sensitive Receptors

Noise exposure standards and guidelines for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Residences, hospitals, schools, guest lodging, libraries, and churches are treated as the most sensitive to noise intrusion and therefore have more stringent noise exposure targets than do other uses, such as manufacturing or agricultural uses that are not subject to impacts such as sleep disturbance. Sensitive receptors near the Project site are shown in **Table 11: Sensitive Receptors**.

Table 11: Sensitive Receptors

Receptor Description	Distance and Direction from the Project[1]
RESIDENTIAL	
Mixed-Use Residential Dwellings	1,200 feet north, 915 feet northeast, and 225 feet west
Multi-Family Residential Dwellings	950 feet to the northeast
RELIGIOUS INSTITUTIONS	
Saddleback Church	1,610 feet north
Newport Church	1,170 feet north
RECREATIONAL FACILITIES	
Private outdoor recreational facilities	2,400 feet north

1. Distances were measured using Google Earth 2019.

Exhibit 4: Noise Measurement Locations

Source: NearMap, 2019.

5 SIGNIFICANCE CRITERIA AND METHODOLOGY

5.1 CEQA Thresholds

Based upon the criteria derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project normally would have a significant effect on the environment if it would:

- Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generate excessive ground borne vibration or ground borne noise levels; and
- 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, expose people residing or working in the Project area to excessive noise levels.

5.2 Significance Criteria

Significance of Changes in Traffic Noise Levels

An off-site traffic noise impact typically occurs when there is a discernable increase in traffic and the resulting noise level exceeds an established noise standard. In community noise considerations, changes in noise levels greater than 3 dB are often identified as substantial, while changes less than 1 dB will not be discernible to local residents. In the range of 1 to 3 dB, residents who are very sensitive to noise may perceive a slight change. In laboratory testing situations, humans are able to detect noise level changes of slightly less than 1 dB. However, this is based on a direct, immediate comparison of two sound levels. Community noise exposures occur over a long period of time and changes in noise levels occur over years (rather than the immediate comparison made in a laboratory situation). Therefore, the level at which changes in community noise levels become discernible is likely to be some value greater than 1 dB, and 3 dB is the most commonly accepted discernable difference. A 5 dB change is generally recognized as a clearly discernable difference.

<u>City of Irvine</u>

As traffic noise levels at sensitive uses likely approach or exceed the applicable City of Irvine land use compatibility standards shown in **Table 3**, a 3 dB increase as a result of the Project is generally used as the increase threshold for the Project.[2] Thus, the Project would result in a significant noise impact when a permanent increase in ambient noise levels of 3 dB occur upon Project implementation and the resulting noise level exceeds the applicable City of Irvine exterior standard at a noise sensitive use.

<u>City of Newport Beach</u>

In accordance with the City of Newport Beach's traffic noise impact criteria, a significant traffic noise impact occurs when there is an increase in the ambient CNEL produced by new development impacting

[2] For modeled roadway segments in the City of Irvine.

existing sensitive uses; refer to **Table 6**. As such, the Project would result in a significant noise impact if traffic noise levels exceed the criteria outlined in **Table 6** at uses in the City of Newport Beach.

Stationary Source Noise Levels

Stationary noise impacts typically occur when noise levels exceed the City of Irvine or City of Newport Beach Noise Ordinance standards shown in **Table 4**, **Table 7**, and/or **Table 8.**

5.3 Methodology

This analysis of noise impacts is based on noise prediction calculations and empirical observations. Construction noise levels were based on typical noise levels generated by construction equipment published by the Federal Transit Administration (FTA). Reference noise levels are used to estimate operational noise levels at nearby sensitive receptors based on a standard noise attenuation rate of 6 dB per doubling of distance (line-of-sight method of sound attenuation for point sources of noise). Noise level estimates do not account for the presence of intervening structures or topography, which may reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative, reasonable worst-case estimate of actual temporary construction noise.

Groundborne vibration levels associated with construction-related activities for the Project were evaluated utilizing typical groundborne vibration levels associated with construction equipment, obtained from data published by the FTA for construction equipment. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, considering the distance from construction activities to nearby land uses and typically applied criteria for structural damage and human annoyance.

6 POTENTIAL IMPACTS AND MITIGATION

6.1 Acoustical Impacts

Threshold 6.1 Would the Project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g. land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. During construction, exterior noise levels could affect the uses surrounding the construction site. Project construction would occur adjacent to existing commercial and institutional uses to the north, UCI maintenance and facilities to the north/east, and mixed-use residential uses to the west. The nearest noise-sensitive uses are the mixed-use residential uses located approximately 225 to the west of the Project site.

Construction activities would include demolition, site preparation, grading, trenching and utilities, building construction, paving, and architectural coating. Such activities may require dozers, concrete/industrial saws, and excavators during demolition; dozers and tractors during site preparation; trenching equipment during trenching and utilities; graders, dozers, tractors, scrapers, and excavators during grading; cranes, forklifts, generators, tractors, and welders during building construction; pavers, rollers, and paving equipment during paving; and air compressors during architectural coating. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical noise levels associated with individual construction equipment are listed in **Table 12: Typical Construction Noise Levels.**

As indicated in **Table 12**, nearby sensitive receptors could be exposed to increased noise levels during Project construction activities. The nearest sensitive receptors to the Project site are the mixed-use residential dwellings located approximately 225 feet to the west of the Project construction area.[3] At this distance, construction noise levels could reach up to 88 dBA based on the equipment required for Project construction (see **Table 12**). Although these receptors would experience increased noise levels during Project construction activities, neither the City of Irvine or City of Newport Beach employ construction noise standards for residential uses. Rather, construction activities are permitted within the City of Irvine and City of Newport Beach’s allowable construction hours. These permitted hours of construction are included in each City’s Noise Ordinance in recognition that construction activities undertaken during daytime hours are a typical part of living in an urban environment and do not cause a significant disruption. It is also noted that Project construction equipment would be equipped with functioning

[3] The mixed-use residential dwellings to the west of the Project site are located within the City of Newport Beach.

mufflers as mandated by the state, and construction would occur throughout the Project site and would not be concentrated or confined in the area directly adjacent to sensitive receptors.

Table 12: Typical Construction Noise Levels

Equipment	Typical Noise Level (dBA) at 25 feet from Source	Typical Noise Level (dBA) at 50 feet from Source[1]	Typical Noise Level (dBA) at 225 feet from Source[1]
Air Compressor	86	80	68
Backhoe	86	80	67
Compactor	88	82	69
Concrete Mixer	91	85	70
Concrete Pump	88	82	69
Concrete Vibrator	82	76	72
Crane, Derrick	94	88	69
Crane, Mobile	89	83	63
Dozer	91	85	75
Generator	88	82	70
Grader	91	85	72
Impact Wrench	91	85	68
Jack Hammer	94	88	72
Loader	86	80	72
Paver	91	85	75
Pile-driver (Impact)[2]	107	101	72
Pile-driver (Sonic)[2]	101	95	76
Pneumatic Tool	91	85	88
Pump	83	77	83
Roller	91	85	72
Saw	82	76	63
Scraper	91	85	77
Shovel	88	82	85
Truck	90	84	61

1. Calculated using the inverse square law formula for sound attenuation: $dBA_2 = dBA_1 + 20Log(d_1/d_2)$
Where: dBA_2 = estimated noise level at receptor; dBA_1 = reference noise level; d_1 = reference distance; d_2 = receptor location distance.
2. Equipment not required for Project construction.

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

Construction activities may also cause increased noise along site access routes due to movement of equipment and workers. Compliance with the IMC and NBMC would minimize impacts from construction noise, as construction would be limited to daytime hours on weekdays and Saturdays. By following these noise standards, Project construction activities would result in a less than significant noise impact.

Operations

After completion of construction activities, typical noise associated with the proposed Project would include mechanical equipment, parking lot noise, occasional delivery trucks/trash and recycling truck pickups, and mobile traffic noise.

Mechanical Equipment

Mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC] equipment) typically generates noise levels of approximately 52 dBA at 50 feet.[4] Noise has a decay rate due to distance attenuation, which is calculated based on the Inverse Square Law of sound propagation. Based upon the Inverse Square Law, sound levels decrease by 6 dBA for each doubling of distance from the source.[5] The nearest noise-sensitive use (a mixed-use residential use to the west of the Project site) would be located as close as 225 feet from the HVAC equipment at the Project site. At this distance, mechanical equipment noise would attenuate to approximately 38.9 dBA which is considered "Clearly Compatible" in the City of Newport Beach Land Use Compatibility Guidelines (see **Table 5**) and is below the City of Newport Beach's most stringent exterior nighttime noise standard of 50 dBA L_{eq} for mixed-use residential uses (see **Table 7**). In addition, noise from the HVAC equipment would meet the City of Newport Beach City's acceptable nighttime interior noise standard of 40 dBA L_{eq} for mixed-use residential uses assuming a standard exterior-interior reduction of 20 dB from standard construction practices. It should also be noted that the HVAC equipment would run sporadically throughout the day (when temperatures are warmer) and less frequent during nighttime hours (when temperatures are cooler). Other mechanical equipment (e.g., fire and water pump equipment, emergency generator, etc.) for the Project would be located in fully enclosed spaces (e.g., a mechanical penthouse) throughout the Project site and would be inaudible at off-site uses. Therefore, impacts from mechanical equipment would be less than significant.

Parking Lot Noise

Traffic associated with parking lots is typically not of sufficient volume to exceed community noise standards, which are based on a time-averaged scale such as the CNEL scale. The instantaneous maximum sound levels generated by a car door slamming, engine starting up, and car pass-bys range from 53 to 61 dBA[6] and may be an annoyance to adjacent noise-sensitive receptors. Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Sound levels of speech typically range from 33 dBA at 50 feet for normal speech to 50 dBA at 50 feet for very loud speech.[7]

Parking lot noise would occur within the parking structure and surface parking lot on the Project site. As noted above, noise levels from parking lot activities typically range from approximately 53 to 61 dBA at a distance of 50 feet. However, parking lot noise is instantaneous and would be well below the City of Irvine and/or City of Newport Beach's community noise standards when averaged over time. In addition, parking lot noise is currently generated on-site and at the surrounding uses under existing conditions. Therefore, noise impacts from parking lots would be less than significant.

Slow-Moving Trucks (Trash/Recycling Collection and Truck Deliveries)

The proposed Project would involve occasional deliveries and weekly trash/recycling pickups from slow-moving trucks during normal daytime hours. Deliveries and trash/recycling pickup at the Project site would occur via the access driveways along Jamboree Road. Low speed truck noise results from a combination of engine, exhaust, and tire noise as well as the intermittent sounds of back-up alarms and

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[4] Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values*, June 26, 2015.

[5] Cyril M. Harris, *Noise Control in Buildings*, 1994.

[6] Kariel, H. G., *Noise in Rural Recreational Environments*, Canadian Acoustics 19(5), 3-10, 1991.

[7] Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values*, June 26, 2015.

releases of compressed air associated with truck air-brakes. Medium-sized delivery trucks and trash collection trucks typically generate noise levels of 75 dBA at distance of 50 feet.[8] The nearest noise-sensitive use (a mixed-use residential use to the west) could be located as close as approximately 225 feet from the trash collection area on the Project site. At this distance, noise levels from truck deliveries would be approximately 61.9 dBA, which would attenuate to an interior noise level of 41.9 dBA assuming a standard exterior-interior reduction of 20 dB from standard construction practices. As such, noise levels at the nearest sensitive uses from truck delivery and trash/recycling pickups at the Project site would not exceed existing ambient noise levels in the Project vicinity (i.e., 70.7 dBA L_{eq} at noise measurement location #1, see **Table 10**). In addition, delivery trucks/trash and recycling truck pickups would occur during normal daytime hours (e.g., between 7:00 a.m. and 10:00 p.m.), and would be of short duration and are not expected to exceed land use compatibility standards when calculated using the hourly L_{eq} metric, or CNEL metric, respectively. Further, trash/recycling pickups and truck deliveries are considered part of the existing noise environment (i.e., truck deliveries and trash collection activities occur at surrounding uses in the immediate Project vicinity under existing conditions). Thus, trash/recycling collection and truck delivery noise would not result in a substantial increase over existing ambient noise levels and impacts would be less than significant in this regard.

Off-Site Mobile Noise

Implementation of the Project would generate increased traffic volumes along roadway segments in the Project vicinity. The Project is expected to generate a net of 5,531 average daily trips (ADT)[9] which would result in noise increases on Project area roadways. In general, a traffic noise increase of less than 3 dBA is barely perceptible to people, while a 5-dBA increase is readily noticeable.[10] Generally, traffic volumes on Project area roadways would have to approximately double for the resulting traffic noise levels to increase by 3 dBA.

Traffic noise levels for roadways primarily affected by the Project were calculated using the FHWA's Highway Noise Prediction Model (FHWA-RD-77-108). Traffic noise modeling was conducted for conditions with and without the Project and are based on traffic volumes provided in the LOS Analysis. As shown in **Table 13: Existing and Project Traffic Noise**, the existing traffic-generated noise levels on Project area roadways range between 63.0 dBA L_{dn} and 73.3 dBA L_{dn} at 100 feet from the centerline, with the highest noise levels occurring along Jamboree Road. Under Existing Plus Project conditions, traffic noise levels would increase by a maximum of 0.3 dBA L_{dn} along Jamboree Road (from Campus Drive to Birch Street). As such, the Project would not result in a 3.0 dBA noise increase and/or exceed the City of Newport Beach's traffic noise impact criteria in **Table 6**. Therefore, traffic noise increases would be imperceptible, and the Project would have a less than significant impact on existing traffic noise levels.

Table 14: Buildout Traffic Noise*,* shows the traffic noise levels for Buildout Without Project and Buildout Plus Project conditions. As shown in **Table 14**, Buildout Without Project traffic-generated noise levels on Project area roadways range between 63.3 dBA L_{dn} and 74.1 dBA L_{dn} at 100 feet from the centerline, with the highest noise levels occurring along Jamboree Road. Under Buildout Plus Project conditions, traffic noise would increase by a maximum of 0.3 dBA L_{dn} along Jamboree Road (from MacArthur Boulevard to SR-73). This level is below the perceptible noise level change of 3.0 dBA and would not exceed the City of

[8] Ibid.

[9] Stantec Inc., *UCI Center for Child Health Traffic Study*, Table 3-1, December 17, 2019.

[10] California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

Table 13: Existing and Project Traffic Noise

Roadway Segment	Existing		Existing Plus Project		Project Change from Existing Conditions	Significant Impact?
	ADT	dBA L_{dn}[1]	ADT	dBA L_{dn}[1]		
Jamboree Road						
I-405 SB Ramps to Michelson Drive	79,700	73.3	81,100	73.4	0.1	No
Michelson Drive to Campus Drive	42,500	70.5	44,000	70.6	0.2	No
Campus Drive to Birch Street	41,800	70.2	44,900	70.5	0.3	No
Birch Street to MacArthur Boulevard	42,400	71.4	44,600	71.6	0.2	No
MacArthur Boulevard to SR-73	35,000	70.4	36,700	70.6	0.2	No
Michelson Drive						
East of Jamboree Road	33,000	67.8	33,100	67.8	0.0	No
Campus Drive						
West of Jamboree Road	10,700	63.0	11,300	63.3	0.2	No
Jamboree Road to Carlson Avenue	16,100	64.8	16,900	65.1	0.2	No
Carlson Avenue to University Drive	16,900	66.8	17,500	67.0	0.2	No
East of University Drive	20,900	65.9	21,300	65.9	0.1	No
Carlson Drive						
Between Michelson Drive and Campus Drive	9,100	63.3	9,400	63.4	0.1	No

ADT = average daily trips; dBA = A-weighted decibels; L_{dn} = day-night noise level
1. Traffic noise levels are at 100 feet from the roadway centerline.

Source: Based on traffic data provided by Stantec, Inc., December 2019. Refer to **Appendix A** for traffic noise modeling assumptions and results.

Table 14: Buildout Traffic Noise

Roadway Segment	Buildout Without Project		Buildout Plus Project		Project Change from Buildout Without Project Conditions	Significant Impact?
	ADT	dBA L_{dn}[1]	ADT	dBA L_{dn}[1]		
Jamboree Road						
I-405 SB Ramps to Michelson Drive	94,300	74.1	95,100	74.1	0.0	No
Michelson Drive to Campus Drive	54,100	71.5	55,100	71.6	0.1	No
Campus Drive to Birch Street	51,800	71.1	52,700	71.2	0.1	No
Birch Street to Fairchild Road	49,700	72.1	51,600	72.2	0.2	No
Fairchild Road to MacArthur Boulevard	45,700	71.7	46,600	71.8	0.1	No
MacArthur Boulevard to SR-73	35,300	70.4	37,800	70.7	0.3	
Michelson Drive						
West of Jamboree Road	24,100	65.3	24,200	65.4	0.1	No
Jamboree Road to Carlson Avenue	29,700	67.4	29,600	67.5	0.1	
East of Carlson Avenue	30,000	67.3	30,200	67.5	0.2	
Campus Drive						
West of Jamboree Road	16,000	64.8	16,400	64.9	0.1	No
Jamboree Road to Carlson Avenue	26,500	67.0	26,900	67.1	0.1	No
Carlson Avenue to University Drive	30,000	69.3	30,500	69.4	0.0	No
East of University Drive	32,800	67.8	33,100	67.8	-0.1	No
Carlson Drive						
Between Michelson Drive and Campus Drive	9,100	63.3	9,400	63.3	0.0	No

ADT = average daily trips; dBA = A-weighted decibels; L_{dn} = day-night noise level
1. Traffic noise levels are at 100 feet from the roadway centerline.

Source: Based on traffic data provided by Stantec, Inc., December 2019. Refer to **Appendix A** for traffic noise modeling assumptions and results.

Newport Beach's traffic noise impact criteria in **Table 6**. Therefore, traffic noise increases would be imperceptible, and the Project would have a less than significant impact on buildout traffic noise levels.

<u>On-Site Mobile Noise</u>

According to the Newport Beach General Plan Noise Element, the Project site is located within the 60-70 dB CNEL noise contour for traffic noise along Jamboree Road, which is consistent with the 70 dBA CNEL noise limit for clinical facilities identified in the *UCI 2007 Long Range Development Plan Final EIR* (2007 LRDP EIR).[11] Therefore, a less than significant impact would occur for on-site traffic noise.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 6.2 Would the Project generate excessive groundborne vibration or groundborne noise levels?

Increases in groundborne vibration levels attributable to the proposed Project would be primarily associated with short-term construction-related activities. The Federal Transit Administration (FTA) has published standard vibration velocities for construction equipment operations in their 2018 *Transit Noise and Vibration Impact Assessment Manual*. The types of construction vibration impacts include human annoyance and building damage.

The Federal Transit Administration (FTA) has published standard vibration velocities for construction equipment operations. In general, the FTA architectural damage criterion for continuous vibrations (i.e., 0.2 in/sec) appears to be conservative. The types of construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. For example, for a building that is constructed with reinforced concrete with no plaster, the FTA guidelines show that a vibration level of up to 0.5 in/sec is considered safe and would not result in any construction vibration damage. This evaluation uses the FTA architectural damage criterion for continuous vibrations at non-engineered timber and masonry buildings of 0.2 inch-per-second peak particle velocity (PPV) and human annoyance criterion of 0.4 inch-per-second PPV in accordance with California Department of Transportation (Caltrans) guidance.[12]

Table 15: Typical Construction Equipment Vibration Levels, lists vibration levels at 25 feet and 50 feet for typical construction equipment. Groundborne vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. As indicated in **Table 15**, based on FTA data, vibration velocities from typical heavy construction equipment operations that would

[11] University of California, Irvine, *2007 Long Range Development Plan Final Environmental Impact Report*, Mitigation Measure Noi-1A, page 4.9-29.
[12] California Department of Transportation, *Transportation and Construction Vibration Guidance Manual, Table 20*, September 2013.

be used during Project construction range from 0.003 to 0.089 in/sec PPV at 25 feet from the source of activity, which is below the FTA's 0.2 PPV threshold.

The nearest off-site structure is a UCI maintenance building located approximately 50 feet from the Project construction area. As shown in **Table 15**, at 50 feet, construction equipment vibration velocities would not exceed 0.089 in/sec PPV, which is below the FTA's 0.2 PPV threshold and Caltrans' 0.4 in/sec PPV threshold for human annoyance. It is also acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to the nearest off-site structure. Therefore, vibration impacts associated with the proposed Project would be less than significant.

Table 15: Typical Construction Equipment Vibration Levels

Equipment	Peak Particle Velocity at 25 Feet (in/sec)	Peak Particle Velocity at 50 Feet (in/sec)[1]
Large Bulldozer	0.089	0.032
Caisson Drilling	0.089	0.032
Loaded Trucks	0.076	0.027
Jackhammer	0.035	0.012
Small Bulldozer/Tractors	0.003	0.001

1. Calculated using the following formula: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$, where: PPV_{equip} = the peak particle velocity in in/sec of the equipment adjusted for the distance; PPV_{ref} = the reference vibration level in in/sec from Table 7-4 of the Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018; D = the distance from the equipment to the receiver.

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 6.3 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?

The nearest airport is the John Wayne Airport located approximately 0.78-mile to the northwest of the Project site. According to the *John Wayne Airport 2018 Annual 60-75 (5 dB intervals) CNEL Noise Contours*, the Project site is located outside the 60 dBA CNEL noise contour for John Wayne Airport, which is consistent with the 70 dBA CNEL noise limit for clinical facilities identified in the 2007 LRDP EIR.[13] Therefore, the Project would not expose people residing or working in the Project area to excessive airport- or airstrip-related noise levels and no mitigation is required.

[13] University of California, Irvine, *2007 Long Range Development Plan Final Environmental Impact Report*, Mitigation Measure Noi-1A, page 4.9-29.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

6.2 Cumulative Noise Impacts

The Project's construction activities would not result in a substantial temporary increase in ambient noise levels. The City of Irvine and City of Newport Beach permit construction activities within the allowed hours outlined in each City's respective Noise Ordinance. There would be periodic, temporary, noise impacts that would cease upon completion of construction activities. The Project would contribute to other proximate construction project noise impacts if construction activities were conducted concurrently. However, based on the noise analysis above, the Project's construction-related noise impacts would be less than significant following compliance with the IMC and NBMC. Given that noise dissipates as it travels away from its source, operational noise impacts from on-site activities and other stationary sources would be limited to the Project site and vicinity. Thus, cumulative operational noise impacts from related projects, in conjunction with Project specific noise impacts, would not be cumulatively significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

7 REFERENCES

1. California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.
2. California Department of Transportation, *Transportation and Construction Vibration Guidance Manual,* September 2013
3. City of Irvine, *City of Irvine General Plan*, 2015.
4. City of Irvine, *City of Irvine Municipal Code*, codified through Ordinance No. 19-12, enacted August 13, 2019.
5. City of Newport Beach*, City of Newport Beach General Plan*, July 25, 2006.
6. City of Newport Beach, *Newport Beach Municipal Code*, codified through Ordinance 2019-19, passed November 19, 2019.
7. County of Orange, *Airport Environs Land Use Plan for John Wayne Airport*, April 17, 2008.
8. County of Orange, *John Wayne Airport 2018 Annual 60-75 (5 dB intervals) CNEL Noise Contours*, 2018.
9. Cyril M. Harris, *Noise Control in Buildings*, 1994.
10. Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values,* June 26, 2015.
11. Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues*, August 1992.
12. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.
13. Kariel, H. G., *Noise in Rural Recreational Environments*, Canadian Acoustics 19(5), 3-10, 1991.
14. Stantec Inc., *UCI Center for Child Health Level of Service Analysis*, December 17, 2019.
15. Stantec Inc., *UCI Center for Child Health Traffic Study*, December 17, 2019.
16. University of California, Irvine, *2007 Long Range Development Plan Final Environmental Impact Report*, November 2007.
17. University of California, Irvine, *Long Range Development Plan*, 2007.

Appendix A

Noise Data

Noise Measurement Field Data

Project:	UCI Child Development Center	**Job Number:**	194105105
Site No.:	1	**Date:**	12/19/2019
Analyst:	Prathna Maharaj	**Time:**	12:59 PM - 1:09 PM
Location:	4301 Jamboree Rd		
Noise Sources:	Traffic on Jamboree Road		
Comments:	none		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
70.7	49.1	79.1	99.4

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	64
Wind (mph):	5.6 mph
Sky:	Clear
Bar. Pressure:	30.01" Hg
Humidity:	34%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	UCI____.001	Computer's File Name	SLM_0005586_UCI_____001.00.ldbin
Meter	LxT SE		
Firmware	2.402		
User	Ryan Chiene	Location	
Description	UCI Child Development Center		
Note			

Start Time	2019-12-19 12:59:23	Duration	0:10:00.0		
End Time	2019-12-19 13:09:23	Run Time	0:10:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	70.7 dB		
LAE	98.5 dB	SEA	--- dB
EA	789.8 μPa²h		
LZ_{peak}	99.4 dB	2019-12-19 13:06:52	
LAS_{max}	79.1 dB	2019-12-19 13:01:02	
LAS_{min}	49.1 dB	2019-12-19 13:06:08	
LA_{eq}	70.7 dB		
LC_{eq}	76.6 dB	LC_{eq} - LA_{eq}	5.9 dB
LAI_{eq}	71.8 dB	LAI_{eq} - LA_{eq}	1.1 dB

Exceedances	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight	
	70.7 dB	70.7 dB	0.0 dB	
	LDEN	LDay	LEve	LNight
	70.7 dB	70.7 dB	--- dB	--- dB

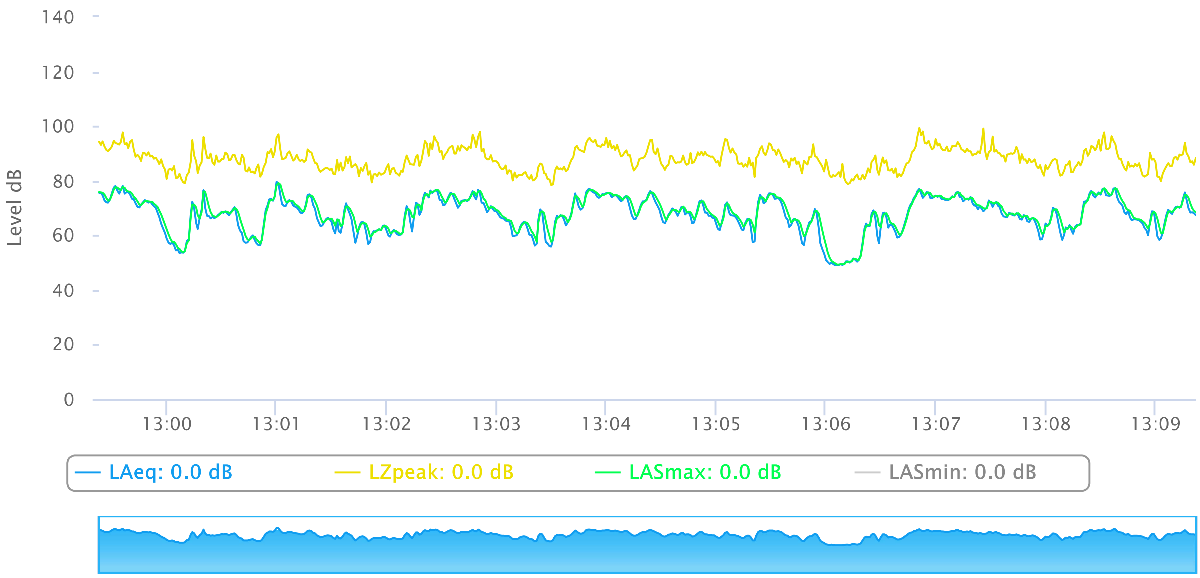
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	70.7 dB		76.6 dB		--- dB	
$Ls_{(max)}$	79.1 dB	2019-12-19 13:01:02	--- dB		--- dB	
$LS_{(min)}$	49.1 dB	2019-12-19 13:06:08	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		99.4 dB	2019-12-19 13:06:52

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	75.7 dB
LAS 10.0	74.9 dB
LAS 33.3	71.2 dB
LAS 50.0	68.3 dB
LAS 66.6	65.6 dB
LAS 90.0	60.0 dB

Time History



Noise Measurement Field Data

Project:	UCI Child Development Center	**Job Number:**	194105105
Site No.:	2	**Date:**	12/19/2019
Analyst:	Prathna Maharaj	**Time:**	1:21 PM - 1:31 PM
Location:	Intersection of Jamboree Rd and Campus Dr		
Noise Sources:	Airplanes overhead		
Comments:	none		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
65.2	56.9	73.7	97.8

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	64
Wind (mph):	5.6 mph
Sky:	Clear
Bar. Pressure:	30.01" Hg
Humidity:	34%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	UCI____.002	Computer's File Name	SLM_0005586_UCI_____002.00.ldbin
Meter	LxT SE		
Firmware	2.402		
User	Ryan Chiene	Location	
Description	UCI Child Development Center		
Note			

Start Time	2019-12-19 13:21:00	Duration	0:10:00.0		
End Time	2019-12-19 13:31:00	Run Time	0:10:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	65.2 dB		
LAE	93.0 dB	SEA	--- dB
EA	221.3 µPa²h		
LZ_{peak}	97.8 dB	2019-12-19 13:30:56	
LAS_{max}	73.7 dB	2019-12-19 13:25:32	
LAS_{min}	56.9 dB	2019-12-19 13:22:44	
LA_{eq}	65.2 dB		
LC_{eq}	75.4 dB	LC_{eq} - LA_{eq}	10.2 dB
LAI_{eq}	66.8 dB	LAI_{eq} - LA_{eq}	1.6 dB

Exceedances

Exceedances		Count	Duration
LAS >	85.0 dB	0	0:00:00.0
LAS >	115.0 dB	0	0:00:00.0
LZpeak >	135.0 dB	0	0:00:00.0
LZpeak >	137.0 dB	0	0:00:00.0
LZpeak >	140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
65.2 dB	65.2 dB	0.0 dB	

LDEN	LDay	LEve	LNight
65.2 dB	65.2 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	65.2 dB		75.4 dB		--- dB	
$Ls_{(max)}$	73.7 dB	2019-12-19 13:25:32	--- dB		--- dB	
$LS_{(min)}$	56.9 dB	2019-12-19 13:22:44	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		97.8 dB	2019-12-19 13:30:56

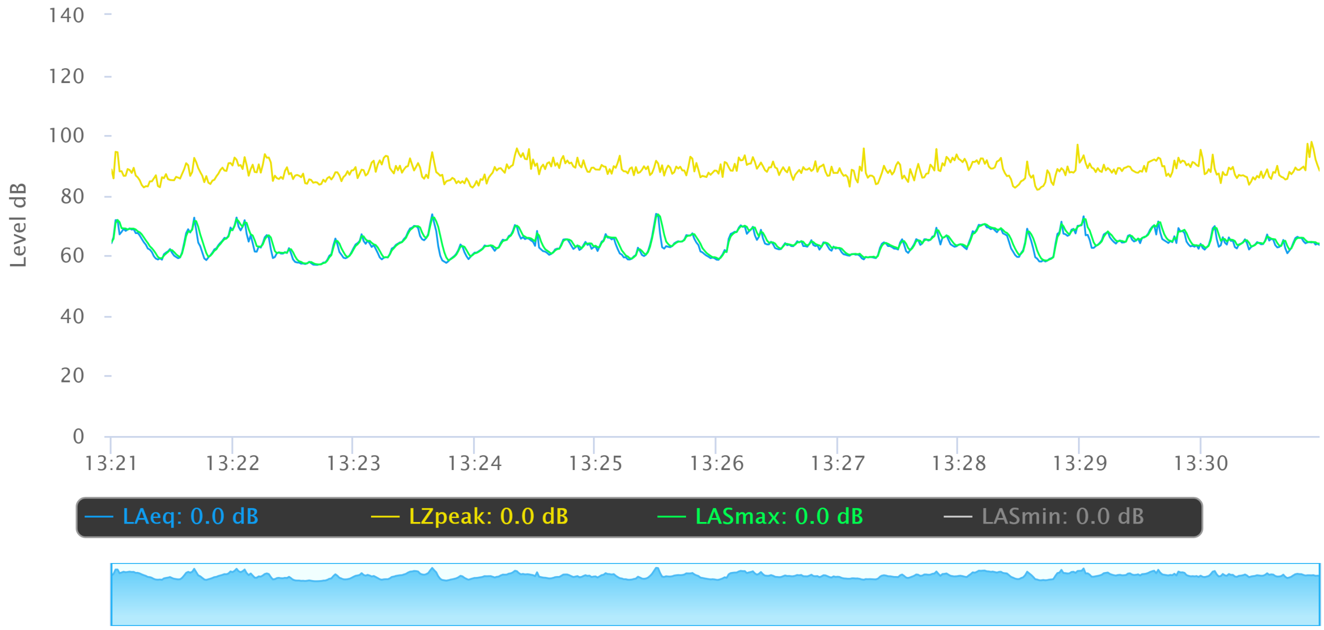
Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	69.6 dB
LAS 10.0	68.5 dB
LAS 33.3	65.2 dB
LAS 50.0	63.9 dB
LAS 66.6	62.7 dB
LAS 90.0	59.5 dB

Time History



Noise Measurement Field Data

Project:	UCI Child Development Center	**Job Number:**	194105105
Site No.:	3	**Date:**	12/19/2019
Analyst:	Prathna Maharaj	**Time:**	1:41 PM - 1:51 PM
Location:	Existing UCI Child Development Center		
Noise Sources:	Airplanes overhead		
Comments:	none		

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
67.4	48.3	75.9	98.2

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	64
Wind (mph):	5.6 mph
Sky:	Clear
Bar. Pressure:	30.01" Hg
Humidity:	34%

Photo:

Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	UCI____.003	Computer's File Name	SLM_0005586_UCI_____003.00.ldbin
Meter	LxT SE		
Firmware	2.402		
User	Ryan Chiene	Location	
Description	UCI Child Development Center		
Note			

Start Time	2019-12-19 13:41:19	Duration	0:10:00.0		
End Time	2019-12-19 13:51:19	Run Time	0:10:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	67.4 dB		
LAE	95.2 dB	SEA	--- dB
EA	370.4 μPa²h		
LZ_{peak}	98.2 dB	2019-12-19 13:41:40	
LAS_{max}	75.9 dB	2019-12-19 13:44:48	
LAS_{min}	48.3 dB	2019-12-19 13:43:21	
LA_{eq}	67.4 dB		
LC_{eq}	74.1 dB	LC_{eq} - LA_{eq}	6.7 dB
LAI_{eq}	68.4 dB	LAI_{eq} - LA_{eq}	1.0 dB

Exceedances	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight	
	67.4 dB	67.4 dB	0.0 dB	
	LDEN	LDay	LEve	LNight
	67.4 dB	67.4 dB	--- dB	--- dB

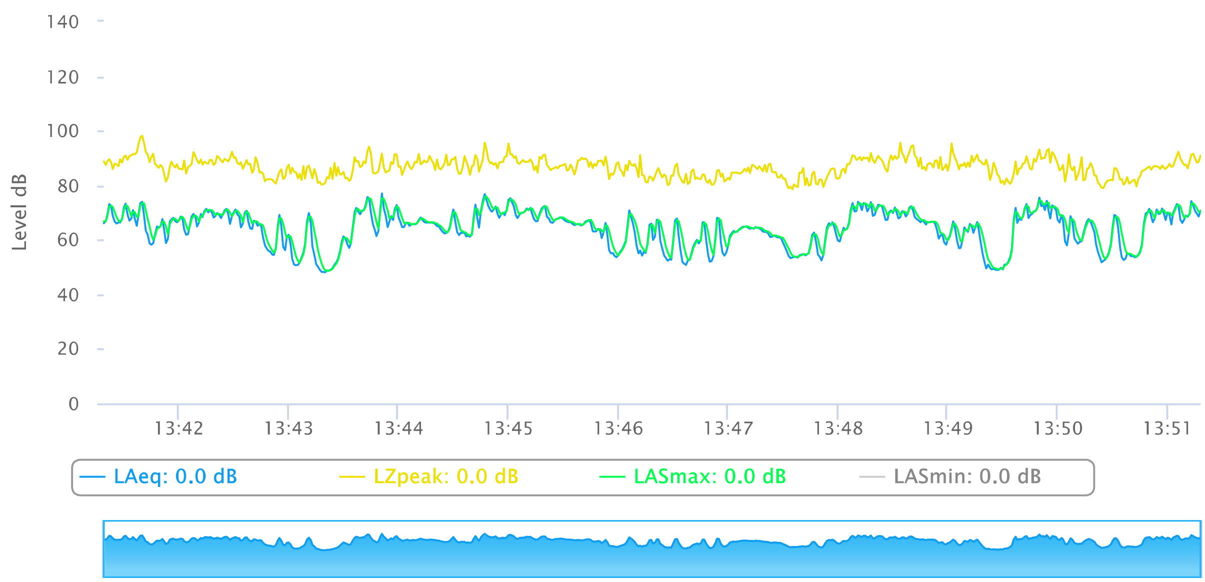
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	67.4 dB		74.1 dB		--- dB	
$Ls_{(max)}$	75.9 dB	2019-12-19 13:44:48	--- dB		--- dB	
$LS_{(min)}$	48.3 dB	2019-12-19 13:43:21	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		98.2 dB	2019-12-19 13:41:40

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	72.4 dB
LAS 10.0	71.2 dB
LAS 33.3	67.9 dB
LAS 50.0	65.7 dB
LAS 66.6	62.8 dB
LAS 90.0	54.5 dB

Time History



FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: UCI Center for Child Health
Project Number:
Scenario: Existing
Ldn/CNEL: Ldn

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

									Vehicle Mix		Distance from Centerline of Roadway				
				Median	ADT	Speed	Alpha	Medium	Heavy	Ldn at		Distance to Contour			
#	**Roadway**	**Segment**	**Lanes**	**Width**	**Volume**	**(mph)**	**Factor**	**Trucks**	**Trucks**	**100 Feet**	**70 Ldn**	**65 Ldn**	**60 Ldn**	**55 Ldn**	
1	Jamboreed Road	I-405 SB Rampos to Michelson Drive	10	0	79,700	50	0	2.0%	1.0%	73.3	215	680	2,151	6,802	
2	Jamboreed Road	Michelson Drive to Campus Drive	8	16	42,500	50	0	2.0%	1.0%	70.5	111	353	1,115	3,525	
3	Jamboreed Road	Campus Drive to Birch Street	6	24	41,800	50	0	2.0%	1.0%	70.2	105	331	1,046	3,308	
4	Jamboreed Road	Birch Street to MacArthur Boulevard	7	24	42,400	55	0	2.0%	1.0%	71.4	138	435	1,377	4,354	
5	Jamboreed Road	MacArthur Boulevard to SR-73	6	24	35,000	55	0	2.0%	1.0%	70.4	110	347	1,099	3,474	
6	Michelson Drive	East of Jamboree Road	5	0	33,000	45	0	2.0%	1.0%	67.8	61	191	605	1,914	
7	Campus Drive	West of Jamboree Road	6	5	10,700	45	0	2.0%	1.0%	63.0	-	64	201	637	
8	Campus Drive	Jamboree Road to Carlson Avenue	5	20	16,100	45	0	2.0%	1.0%	64.8	-	96	305	964	
9	Campus Drive	Carlson Avenue to University Drive	2	0	16,900	55	0	2.0%	1.0%	66.8	48	153	482	1,525	
10	Campus Drive	East of University Drive	4	15	20,900	45	0	2.0%	1.0%	65.9	-	122	385	1,217	
11	Carlson Avenue	Between Michelson Drive and Campus Drive	4	7	9,100	50	0	2.0%	1.0%	63.3	-	67	212	669	

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: UCI Center for Child Health
Project Number:
Scenario: Existing Plus Project
Ldn/CNEL: Ldn

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix		Distance from Centerline of Roadway				
				Median	ADT	Speed	Alpha	Medium	Heavy	Ldn at	Distance to Contour			
#	**Roadway**	**Segment**	**Lanes**	**Width**	**Volume**	**(mph)**	**Factor**	**Trucks**	**Trucks**	**100 Feet**	**70 Ldn**	**65 Ldn**	**60 Ldn**	**55 Ldn**
1	Jamboreed Road	I-405 SB Rampos to Michelson Drive	10	0	81,100	50	0	2.0%	1.0%	73.4	219	692	2,189	6,922
2	Jamboreed Road	Michelson Drive to Campus Drive	8	16	44,000	50	0	2.0%	1.0%	70.6	115	365	1,154	3,649
3	Jamboreed Road	Campus Drive to Birch Street	6	24	44,900	50	0	2.0%	1.0%	70.5	112	355	1,124	3,553
4	Jamboreed Road	Birch Street to MacArthur Boulevard	7	24	44,600	55	0	2.0%	1.0%	71.6	145	458	1,448	4,580
5	Jamboreed Road	MacArthur Boulevard to SR-73	6	24	36,700	55	0	2.0%	1.0%	70.6	115	364	1,152	3,643
6	Michelson Drive	East of Jamboree Road	5	0	33,100	45	0	2.0%	1.0%	67.8	61	192	607	1,919
7	Campus Drive	West of Jamboree Road	6	5	11,300	45	0	2.0%	1.0%	63.3	-	67	213	673
8	Campus Drive	Jamboree Road to Carlson Avenue	5	20	16,900	45	0	2.0%	1.0%	65.1	-	101	320	1,012
9	Campus Drive	Carlson Avenue to University Drive	2	0	17,500	55	0	2.0%	1.0%	67.0	50	158	499	1,579
10	Campus Drive	East of University Drive	4	15	21,300	45	0	2.0%	1.0%	65.9	-	124	392	1,240
11	Carlson Avenue	Between Michelson Drive and Campus Drive	4	7	9,400	50	0	2.0%	1.0%	63.4	-	69	219	691

WA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

ject Name:	UCI Center for Child Health
ject Number:	
enario:	Horizon Year
n/CNEL:	Ldn

umed 24-Hour Traffic Distribution:	Day	Evening	Night
al ADT Volumes	77.70%	12.70%	9.60%
dium-Duty Trucks	87.43%	5.05%	7.52%
avy-Duty Trucks	89.10%	2.84%	8.06%

							Vehicle Mix		**Distance from Centerline of Roadway**				
			Median	**ADT**	**Speed**	**Alpha**	**Medium**	**Heavy**	**Ldn at**	**Distance to Contour**			
Roadway	**Segment**	**Lanes**	**Width**	**Volume**	**(mph)**	**Factor**	**Trucks**	**Trucks**	**100 Feet**	**70 Ldn**	**65 Ldn**	**60 Ldn**	**55 Ldn**
Jamboreed Road	I-405 SB Rampos to Michelson Drive	10	0	94,300	50	0	2.0%	1.0%	74.1	255	805	2,545	8,048
Jamboreed Road	Michelson Drive to Campus Drive	8	16	54,100	50	0	2.0%	1.0%	71.5	142	449	1,419	4,487
Jamboreed Road	Campus Drive to Birch Street	6	24	51,800	50	0	2.0%	1.0%	71.1	130	410	1,296	4,100
Jamboreed Road	Birch Street to Fairchild Road	7	24	49,700	55	0	2.0%	1.0%	72.1	161	510	1,614	5,104
Jamboreed Road	Fairchild Road to MacArthur Boulevard	7	24	45,700	55	0	2.0%	1.0%	71.7	148	468	1,480	4,679
Jamboreed Road	MacArthur Boulevard to SR-73	6	24	35,300	55	0	2.0%	1.0%	70.4	111	350	1,108	3,504
Michelson Drive	West of Jamboree Road	6	0	24,100	40	0	2.0%	1.0%	65.3	-	109	345	1,092
Michelson Drive	Jamboree Road to Carlson Avenue	7	0	29,700	45	0	2.0%	1.0%	67.4	-	179	565	1,787
Michelson Drive	East of Carlson Avenue	5	12	30,000	45	0	2.0%	1.0%	67.3	-	177	558	1,765
Campus Drive	West of Jamboree Road	6	5	16,000	45	0	2.0%	1.0%	64.8	-	95	301	952
Campus Drive	Jamboree Road to Carlson Avenue	5	20	26,500	45	0	2.0%	1.0%	67.0	-	159	502	1,586
Campus Drive	Carlson Avenue to University Drive	2	0	30,000	55	0	2.0%	1.0%	69.3	86	271	856	2,707
Campus Drive	East of University Drive	4	15	32,800	45	0	2.0%	1.0%	67.8	60	191	604	1,909
Carlson Avenue	Between Michelson Drive and Campus Drive	4	7	9,100	50	0	2.0%	1.0%	63.3	-	67	212	669

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: UCI Center for Child Health
Project Number:
Scenario: Horizon Year Plus Project
Ldn/CNEL: Ldn

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix		Distance from Centerline of Roadway				
				Median	ADT	Speed	Alpha	Medium	Heavy	Ldn at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 Ldn	65 Ldn	60 Ldn	55 Ldn
1	Jamboreed Road	I-405 SB Rampos to Michelson Drive	10	0	95,100	50	0	2.0%	1.0%	74.1	257	812	2,567	8,117
2	Jamboreed Road	Michelson Drive to Campus Drive	8	16	55,100	50	0	2.0%	1.0%	71.6	145	457	1,445	4,570
3	Jamboreed Road	Campus Drive to Birch Street	6	24	52,700	50	0	2.0%	1.0%	71.2	132	417	1,319	4,171
4	Jamboreed Road	Birch Street to Fairchild Road	7	24	51,600	55	0	2.0%	1.0%	72.2	168	530	1,676	5,299
5	Jamboreed Road	Fairchild Road to MacArthur Boulevard	7	24	46,600	55	0	2.0%	1.0%	71.8	151	479	1,513	4,786
6	Jamboreed Road	MacArthur Boulevard to SR-73	6	24	37,800	55	0	2.0%	1.0%	70.7	119	375	1,187	3,752
7	Michelson Drive	West of Jamboree Road	6	0	24,200	40	0	2.0%	1.0%	65.4	-	110	347	1,098
8	Michelson Drive	Jamboree Road to Carlson Avenue	7	0	29,600	45	0	2.0%	1.0%	67.5	-	179	565	1,786
9	Michelson Drive	East of Carlson Avenue	5	12	30,200	45	0	2.0%	1.0%	67.5	56	178	564	1,782
10	Campus Drive	West of Jamboree Road	6	5	16,400	45	0	2.0%	1.0%	64.9	-	98	309	976
11	Campus Drive	Jamboree Road to Carlson Avenue	5	20	26,900	45	0	2.0%	1.0%	67.1	-	161	509	1,610
12	Campus Drive	Carlson Avenue to University Drive	2	0	30,500	55	0	2.0%	1.0%	69.4	87	275	870	2,752
13	Campus Drive	East of University Drive	4	15	33,100	45	0	2.0%	1.0%	67.8	61	192	609	1,924
14	Carlson Avenue	Between Michelson Drive and Campus Drive	4	7	9,400	50	0	2.0%	1.0%	63.3	-	69	218	690

APPENDIX F

Traffic Study

UCI Center for Child Health Traffic Study

University of California, Irvine

March 2, 2020

Prepared for:

UC Irvine Physical and Environmental Planning

Prepared by:

Stantec Consulting Service Inc.

This document entitled UCI Center for Child Health Traffic Study 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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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has performed a traffic impact analysis for the proposed UCI Center for Child Health (Project). The purpose of this study is to determine significant impacts related to traffic on the surrounding transportation system with the implementation of the proposed Project. This analysis was prepared in support of the Project's Initial Study/Mitigated Negative Declaration (IS/MND) in accordance with CEQA and focuses on vehicle miles traveled (VMT) as the primary metric for identifying significant impacts.

1.1 PROJECT DESCRIPTION

The Project site is located south of the intersection of Birch Street and Jamboree Road in UCI's North Campus, as shown in **Figure 1-1**. The Figure also shows the location of the North Campus in relation to the main UCI campus.

A portion of the approximately 4-acre site is currently occupied by UCI's Child Development Center and UCI service facilities used by UCI Facilities Management and Distribution services including a recycling center and receiving facility. The proposed project would construct an approximately 168,000-gross-square-foot (GSF), five-story medical office building with an additional mechanical penthouse and an 800-space parking structure at UCI's North Campus. The existing on-site approximately 6,500 GSF Child Development Center, approximately 2,400 GSF UCI Recycling Center, and an approximately 21,500 GSF receiving yard would be demolished in order to construct the proposed project. The UCI Recycling Center would be relocated to existing space on the Main Campus. Additional site improvements would include grading, driveway paving, construction of internal on-site circulation, landscaping, and installation of site utility connections and lighting. Birch Street, south of the existing signalized intersection at Jamboree Road, will be improved to four travel lanes and a left-turn exit pocket. 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 proposed Center for Child Health site is located in UCI's North Campus. The North campus is designated as Mixed Use - Commercial in the LRDP. The Mixed Use - Commercial category allows for the following uses:

- office,
- research and development,
- academic activities,
- commercial and retail space,
- conference facilities,
- residential facilities, and
- clinical uses.

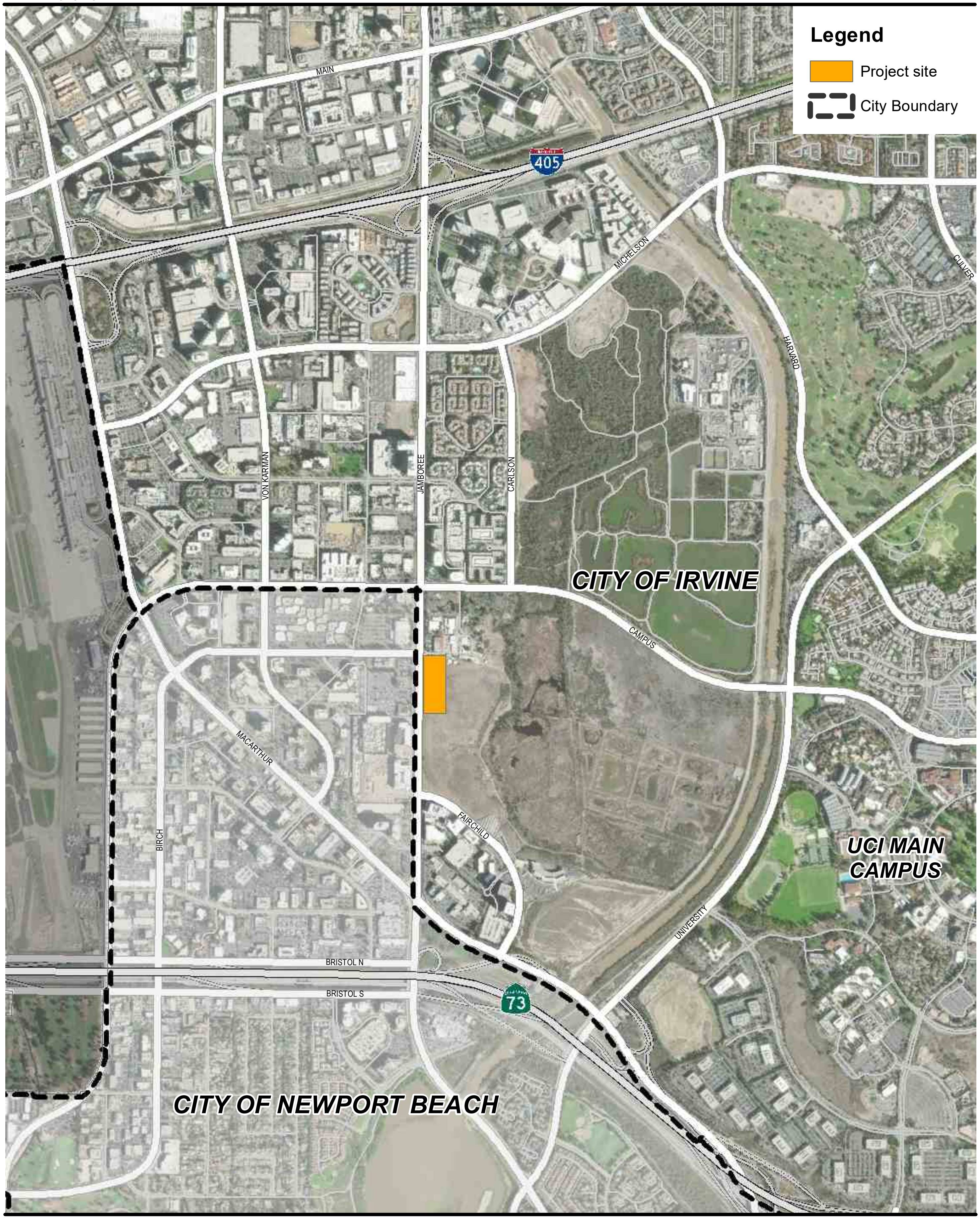

Figure 1-1
Project Location

v:\2042\active\2042539110\drawing\exhibit_files\siteplan.dwg

Figure 1-2

Proposed Project Site Plan

1.3

Since the Project's use is consistent with the North Campus land use designation, the Project is consistent with the 2007 LRDP.

Table 1-1 compares the North Campus land use assumptions from the 2007 LRDP Traffic Study to the most current assumptions for the North Campus.

Table 1-1 UCI North Campus Land Use Summary

Land Use Category	Unit	2007 LRDP Traffic Study	Proposed North Campus
Mixed Use Commercial: Apartment	DU	435	435
Mixed Use Commercial: Research and Development	TSF	475	116
Mixed Use Commercial: Office	TSF	475	116
Mixed Use Commercial: Clinical	TSF	--	550
Mixed Use Commercial: Clinical (Proposed Project)	TSF	--	168
Parking	SPA	210	2400
Total	DU	435	435
	TSF	950	950
	SPA	210	2400
DU= Dwelling Unit; TSF = Thousand Square Feet; SPA = Spaces			

As shown in **Table 1-1**, the implementation of the proposed Project does not increase the total amount of development that was planned in the LRDP for the North Campus area with the exception of providing additional parking spaces to accommodate anticipated parking demand. Therefore, the Project is consistent with the approved 2007 LRDP.

1.2 PROJECT ACCESS

Access to the Project site will be made from two intersections on Jamboree Boulevard. The first is at an existing four-way signalized intersection at Jamboree and Birch Street, and the second is from an existing right-in/right-out access approximately 700 feet west of Birch Street.

Both intersections would be improved to serve the Project. The Birch Street driveway would be improved to four travel lanes plus a left-turn exit pocket and the West Access Road driveway improved to two-lanes and relocated approximately 25 feet to the south of its existing location. **Figure 1-3** shows the existing driveway configuration and the proposed site access lane configurations and intersection controls.

Figure 1-3

Site Access - Lane Configurations and Intersection Control

1.5

1.3 EXISTING ROADWAY SYSTEM

The UCI campus is located in the southwest portion of the City of Irvine and is adjacent to the City of Newport Beach. The Project site is located along Jamboree Road, adjacent to the Jamboree Road and Birch Street intersection.

Jamboree Road is classified as a Major Highway for the portion near the Project site in both the City of Irvine Circulation Element and the City of Newport Beach Circulation Element. Jamboree Road ranges from six travel lanes to eight travel lanes with a raised median. In the immediate vicinity of the Project site, Jamboree road is six travel lanes from Campus Drive to Birch Street (three in the southbound direction and three in the northbound direction). From Birch Street to Fairchild Road, Jamboree Road is seven travel lanes (four lanes in the southbound direction and 3 lanes in the northbound direction). The speed limit on Jamboree Road ranges from 50 mph to 55 mph. An on-street bicycle lane is provided north of the Main Street intersection, as well as the stretch between MacArthur Boulevard and Fairchild Road. No on-street parking is permitted.

Campus Drive is classified as a Primary Highway between University Drive and Culver Drive in the City of Irvine's Circulation Element and transitions to a Secondary Highway between University Drive and MacArthur Boulevard in both Cities' Circulation Element. The speed limit near the Project site is 45 mph. The Primary Highway portion provides four travel lanes with a raised median. From University Drive to Carlson Avenue there are two undivided travel lanes, and between Carlson Avenue and north of Jamboree Road, Campus Drive is a four lane divided roadway. Bike lanes are provided from Turtle Rock Road (east of the UCI campus) to Jamboree Road (west of the UCI campus). West of Jamboree Road, there is a short bike lane on the northerly side of Campus Drive in between Teller and Bardeen. On-street parking is not permitted near the Project site.

Birch Street near the Project site is a four-lane divided arterial with a two-way left-turn lane in the median. Birch Street is designated as a Secondary Arterial in the City of Newport Beach Circulation Element. The posted speed limit in 45 mph. There are no existing bicycle facilities and on-street parking is no permitted near the Project site. Birch Street terminates into a driveway serving the existing UCI service facilities.

1.4 EXISTING TRANSIT AND ACTIVE TRANSPORTATION

The Project site is located adjacent to the Jamboree Road and Birch Street intersection where there is a transit stop for OCTA bus route 472. The pedestrian crossing facilities at the intersection provide access to the southbound route stop, and the sidewalk (cycling permitted) on the west side of Jamboree Road. OCTA operates seven bus routes which access stops within a half-mile of the project site, several of which provide connections to the Tustin Metrolink station. Further details on transit connections to the Project are provided in Section 3.6.

An existing Class II bicycle lane on Campus Drive connects the Project site to the main UCI campus. Two-way cycling is permitted on the sidewalk along the west side of Jamboree Road in front of the Project site, which can be accessed by a signalized crossing at the Birch Street intersection. The bike lanes on the streets noted above connect to the City of Irvine's bicycle network. A detailed description of existing cycling facilities is provided in Section 3.3.

2.0 TRANSPORTATION IMPACT ANALYSIS METHODOLODY

Under the California Environmental Quality Act (CEQA), administrative regulations and guidelines are set forth that explain how to determine whether an activity (i.e., proposed project) is subject to environmental review, the steps to undertake the review, and the required content of the review. 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. Beginning July 1, 2020, updated CEQA guidelines will go into effect statewide that include sections created by Senate Bill 743 (SB 743). Local agencies have the option to implement the new guidelines immediately; however, the provisions of the updated sections will apply statewide beginning July 1, 2020.

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 vehicle miles traveled (VMT). The final Technical Advisory released by OPR in December 2018 provides guidance on evaluating transportation impacts and VMT and is the guidance on which this VMT analysis is based on. The Technical Advisory recommends new significance thresholds that may constitute a significant transportation impact. The recommended significance thresholds are summarized in **Table 2-1.**

Table 2-1 SB 743 Recommended Significance Thresholds

Type:	Metric:	Threshold:
Residential development	Household VMT per capita	15% less than existing city household VMT per capita or regional household VMT per capita
Office development	VMT per employee	15% less than existing regional VMT per employee
Retail development	Total VMT	If project causes a net increase in total VMT
Other project types	To be determined by lead agency through consideration of the purposes of the legislation (i.e., reductions to GHG, VMT per capita, and automobile trip generation)	
Source: Technical Advisory On Evaluating Transportation Impacts on CEQA, California's Office of Planning and Research, December 2018.		

If a significant impact is identified utilizing the aforementioned significance thresholds, mitigation must be identified.

Under OPR's recommendations, lead agencies have the discretion to set or apply their own thresholds of significance or rely on thresholds recommended by other agencies. At this time, UCI has not adopted a formal methodology or significance criteria for VMT analysis. Since UCI is located within the City of Irvine, significance thresholds set by the City may be appropriate for UCI. However, the City is currently in the process of updating ITAM and has yet to establish a VMT threshold. The Orange County Transportation Authority (OCTA) maintains the Orange County Transportation Analysis Model (OCTAM) and is another resource that could set regional VMT thresholds appropriate for UCI to utilize. However, at this time, OCTA has not formalized any policies or directives regarding VMT analysis. As such, OPR's guidelines state that a qualitative analysis should be conducted when methods do not exist for undertaking a quantitative analysis.

In order to evaluate the Project's potential transportation impacts related to VMT, qualitative significance criteria have been established to evaluate the Project's compatibility with the statutory goals for the VMT metric. The following are the VMT metric's three statutory goals as stated in the Technical Advisory:

1. The reduction of greenhouse gas emissions
2. The development of multimodal transportation networks
3. A diversity of land uses

The significance criteria utilized in this analysis is summarized in **Table 2-2** and takes into consideration the three goals listed above, OPR's Technical Advisory, and California Air Pollution Control Officers Association's (CAPCOA) Comprehensive Report for Quantifying Greenhouse Gas Mitigation Measures. The CAPCOA document provides 54 TDM strategies associated with the reductions of VMT and GHG emissions and is an appropriate resource for this type of analysis.

Table 2-2 VMT Significance Criteria

Category	Criteria/Screening	Threshold
1. Screening Thresholds	The Technical Advisory provides screening thresholds for land use projects. These screening thresholds include: 1. Trip generation screening – Small Project can be screen out from completing a full VMT analysis. 2. Map-based screening – Projects that are located in areas with low VMT can be screened out from completing a full VMT analysis. 3. Proximity to transit – Projects within ½ mile of a major transit stop or a stop located along a high-quality transit corridor reduce vehicle miles traveled and therefore can be screened out from completing a full VMT analysis. 4. Affordable Residential development – Affordable housing in infill locations can be screened out from completing a full VMT analysis. Evaluate the Project using the screening thresholds.	1. If the Project generates less than 110 trips per day, the Project is assumed to have a less than significant impact. 2. If the Project is in a low VMT area, the Project is assumed to have a less than significant impact. 3. If the Project is within ½ mile of a high-quality transit stop/corridor, the Project is assumed to have less than significant impact. 4. If the Project includes affordable units and is located in an infill location, then the Project is assumed to have less than significant impact.
2. TDM Strategies for the reduction of greenhouse gas emissions	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. Evaluate if the Project would eliminate or reduce the existing TDM measures.	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.
3. Multi-modal transportation	Providing alternative modes of transportation that has high accessibility and connectivity reduces vehicle miles traveled, reduces single occupancy vehicles, and reduces VMT per capita. Identify existing pedestrian, bicycle and transit facilities that provide alternative modes of transportation in place of a single-occupancy vehicle. Evaluate the accessibility and connectivity of pedestrian, bicyclist, and transit facilities around the Project site.	If the Project restricts access or alters a route, this may indicate a significant impact.
4. Diversity of land uses	Interactions between different land uses and interactions between land use and transportation have the potential to reduce VMT. Evaluate the surrounding uses of the Project and the interaction between land use and transportation.	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.
5. Proximity to transit	The Technical Advisory states that Projects within ½ mile of a major transit stop or a stop located along a high-quality transit corridor reduce vehicle miles traveled and therefore can be screened out from completing a full VMT analysis. Evaluate the Project’s existing and future transit accessibility.	If the Project is within ½ mile of a major transit stop or along a high-quality transit corridor, the Project is assumed to have a less than significant impact. If not, provide an analysis of existing and future transit accessibility.
6. RTP/SCS Consistency	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. Evaluate if the Project is consistent with the RTP/SCS. If the Project is inconsistent, then the inconsistency should be evaluated for a significant impact on transportation.	If the Project is consistent with the RTP/SCS, then the Project would have less than significant impact. If the Project is inconsistent then the inconsistency should be evaluated for a significant impact on transportation.

3.0 TRANSPORTATION IMPACT ANALYSIS

3.1 SCREENING EVALUATION

Prior to undertaking a detailed VMT study, OPR advises that lead agencies conduct a screening process "to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study". OPR suggests that lead agencies may screen out VMT impacts using project size, maps, transit availability and provision of affordable housing. For this analysis the Project has been evaluated using the same screening process.

3.1.1 Trip Generation Screening

The Technical Guidelines recommends that small projects that generate less than 110 trips per day generally may be assumed to cause a less-than significant transportation impact.

Trips generated by the proposed Project were estimated using trip rates from in the Institute of Traffic Engineers Trip Generation Manual (10th Edition). The Medical Office category (Code 720) was utilized. **Table 3-1** shows the trip rates and corresponding estimated trip generation for the proposed Project.

As shown in **Table 3-1** the Project would generate approximately 5,846 daily trips, 467 trips during the AM peak hour and 581 trips during the PM peak hour. As previously mentioned, the site currently has an existing 6 TSF facility. To account for existing trips that would be removed per the removal of the existing facility, driveway counts were collected have been incorporated into the trip generation estimates as shown in **Table 3-1**. The net volume of new trips is 5,531 average daily trips (ADT), 409 trips during the AM peak hour, and 576 trips in the PM peak hour. Since the propped Project is estimated to generate more than 110 trips per day, a VMT analysis is required.

Table 3-1 Center for Child Health Estimated Trip Generation Summary

			AM Peak Hour			PM Peak Hour			
Land Use	**Amount**	**Units**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**ADT**
Trip Rates									
Medical Office Building (Code 720) [1]	TSF		2.17	0.61	2.78	0.97	2.49	3.46	34.8
Existing Child Behavior Facilities [2]	TSF		5.23	3.69	8.92	0.15	0.62	0.77	48.5
Trip Generation – Center for Child Health									
Medical Office Building	168	TSF	365	103	467	163	418	581	5,846
Existing Trips									
Existing Child Behavior Facilities	-6.5	TSF	-34	-24	-58	-1	-4	-5	-315
Net New Trips									
Net New Trips			331	79	409	162	414	576	5,531

[1] Source: ITE Trip Generation Manual (10th Edition)
[2] Rates calculated from existing driveway counts
ADT = average daily trips ; TSF = thousand square feet

3.1.2 Map-Based Screening

The Technical Advisory recommends that residential and office projects that locate in areas with low VMT per capita, and that incorporate similar features, will exhibit similarly low VMT per capita, therefore there will be no significant impacts to VMT.

At this time, the City of Irvine has not established a set of VMT guidelines and has not developed a map-based resource for identifying areas in the City with low VMT per capita. Therefore, this screening threshold cannot be used for the proposed Project.

3.1.3 Proximity to High Quality Transit

The Technical Advisory suggests that a project can be "screened out" 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". Based on this definition, the proposed Project would not be eligible to be "screened out" under this threshold.

3.1.4 Affordable Housing

The Technical Advisory suggests 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 TDM STRATEGIES FOR THE REDUCTION OF GREENHOUSE GAS EMISSIONS ANALYSIS

As noted above, one goal of utilizing the VMT metric for evaluation of transportation impacts is to reduce greenhouse gas emissions. TDM measures are important and effective tools to reduce greenhouse gas emissions, increasing vehicle efficiency and reducing the amount of VMT. Co-benefits to reducing VMT include less vehicle crashes, improved air quality and improved physical and mental health. 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 2.06 (based on 2019 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. 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 3,000 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 the prestigious designation as a Platinum Bicycle Friendly University by the League of American Bicyclists. The campus boasts over 6,000 bike parking spaces; significant investment in bikeway infrastructure including repair stands and a bike shop; bicycle education for campus affiliates of all bicycling levels offered quarterly; and major bi-annual bike education festivals to encourage safe and legal riding, and a successful bike ambassador program.

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 conducted in 2017. The purpose of the survey was to evaluate student commute habits. The survey concludes that 20 percent of student survey respondents commute with only the driver in the vehicle (single occupancy vehicle), 4 percent vanpool or carpool, 28 percent take the campus shuttle or public transportation, less than one percent use a motorcycle or scooter, and 47 percent walk, bicycle, or use other non-motorized means. Overall, this shows that approximately 70 percent of students use more sustainable commuting options. This can be attributed to the several TDM measures listed above.

The Project will provide pediatric care facilities. The specific uses included in the Project are pediatric primary care, pediatric subspecialty clinic, an autism center, pediatric rehabilitation care, adult/pediatric urgent care, diagnostics and testing, adult primary care, breast center and administrative office. The proposed Project is driven by the need to improve care for children in the region of all socioeconomic circumstances and will attract those currently seeking care further away. Providing such a facility in a currently underserved area should have the effect of reducing VMT because Irvine and Newport Beach residents would travel a reduced distance in comparison to similar facilities elsewhere. Furthermore, employees of the Center for Child Health would be eligible to utilize the TDM services provided by the Transportation and Distribution Service.

Since the Project is not anticipated to eliminate or reduce any existing TDM measures offed by UCI's Transportation and Distribution Service (discussed above), the Project is assumed to have a less than significant impact on TDM services.

3.3 MULTIMODAL TRANSPORTATION NETWORKS ANALYSIS

Another goal of utilizing the VMT metric for evaluation of transportation impacts 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 signal occupancy vehicle. Multimodal networks are a component of a Complete Street that address the needs of pedestrians, bicyclists, transit riders and motorists. The development of multimodal features within a development project is a TDM strategy listed by CAPCOA that would reduce VMT and GHG emissions. OPR also 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, removes, or interferes with pedestrian paths, bicycle paths, or transit stops would have a significant impact on VMT.

An existing Class II Bicycle Lane on Campus Drive connects the Project site to the main UCI campus. Two-way cycling is permitted on the sidewalk along the west side of Jamboree Road in front of the Project site, which can be accessed by a signalized crossing at the Birch Street intersection. On-street marked bicycle lanes are also provided on Carlson Avenue, Michelson Drive, Von Karman Ave and Bristol Street North. The bike lanes on the streets noted above connect to the City of Irvine's larger bicycle network (See **Figure 3-1**).

The Project would not remove any pedestrian or bicycle facilities, or transit stops. Rather, the Project will enhance transit access as described in Section 3.5 and construct sidewalks and pedestrian amenities such as lighting, trash receptacles, benches. The Project will also provide landscaping which will enhance the pedestrian experience by providing shade for walking or resting. Through these project design features, accessibility will be increased and will also create a pleasurable experience for pedestrians and bicyclists. Since the Project is enhancing the multimodal transportation network, it would have less than significant impact on VMT based on the multimodal transportation screening threshold.

3.4 DIVERSITY OF LAND USES

The third goal of the VMT metric is the development of "a diversity of land uses". The 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 Project is part of a larger plan, specifically, UCI's Long Range Development Plan. The 2007 LRDP identified general land use developments to support future campus 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[1]:

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.

As shown in the previously referenced Table 1-1, the 2007 LRDP designates the North Campus area, where the Project site is located, as Mixed-Used Commercial. The proposed Project would add diversity to the surrounding area and provide a walkable distance to health-oriented services for the future planned residential development in the North Campus area. Therefore, the Project would have a less than significant impact on the diversity of land uses in the area.

3.5 PROXIMITY TO TRANSIT ANALYSIS

OPR suggests that a project can be “screened out” 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”.

Based on this definition, the proposed Project would not be eligible to be “screened out”. Therefore, transit accessibility was evaluated since CAPCOA cites transit accessibility as a measure that reduces VMT and GHG emissions.

The Project is anticipated to increase transit ridership. Employees and patients of the Center would be able to utilize public bus transit provided by Orange County Transportation Authority (OCTA) to access the site using several different route options.

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[1] 2007 Long Range Development Plan, A Framework to Guide Physical Development at the University of California, Irvine, Through 2025-2026, November 2007.

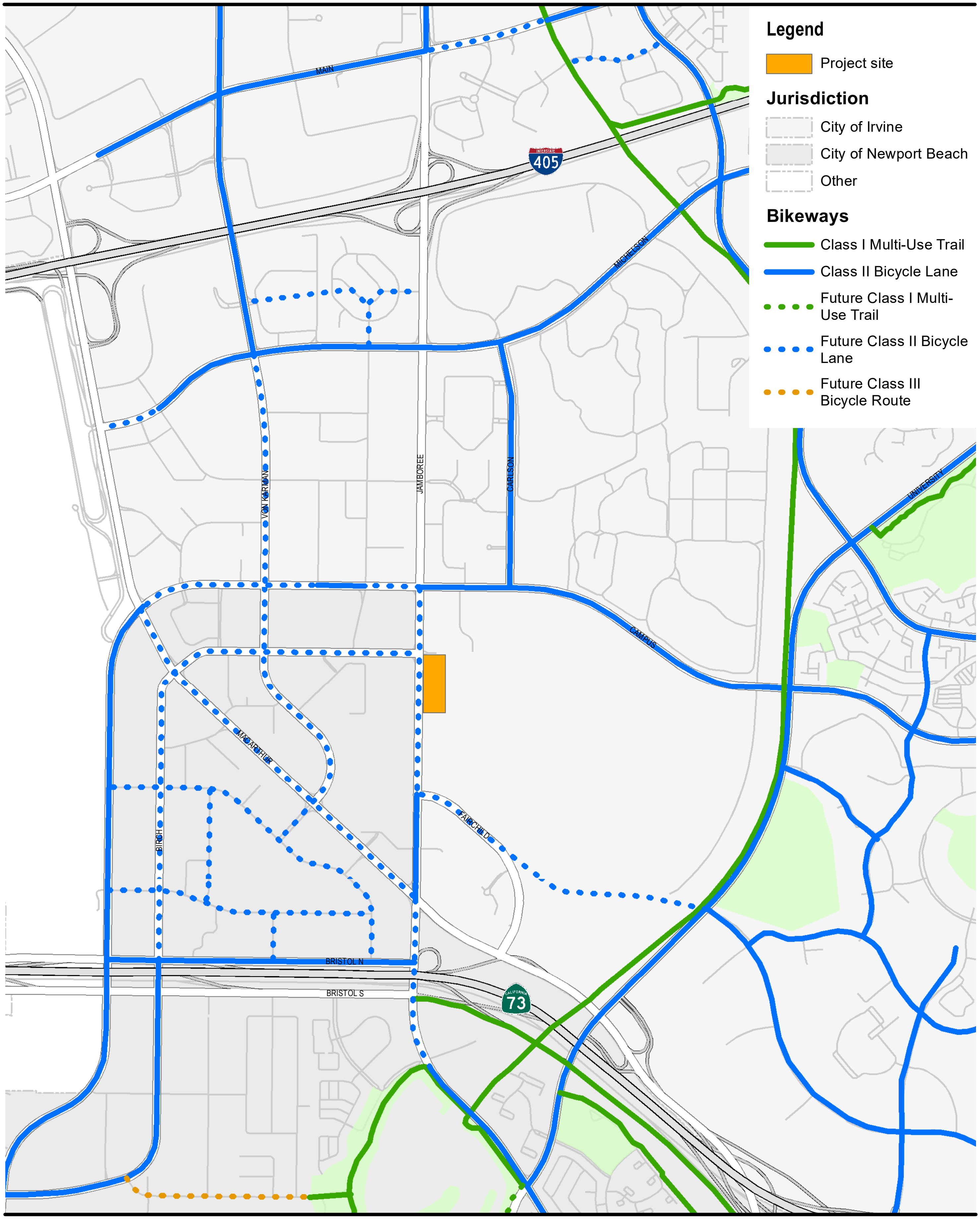


Figure 3-1
City of Irvine & City of Newport Beach Bicycle Networks

Figure 3-2 illustrates the transit services located near the Project site. Directly in front of the Project site is a transit stop for OCTA bus route 472. The northbound bus stop is located just south of the Jamboree Road and Birch Street intersection, with the southbound stop located a 500-foot walk north of the site. This route is a peak hour only service connecting the Irvine Business Center with the Tustin Metrolink Station. The route only operates Monday to Friday, with southbound trips originating at the Tustin Metrolink Station in the morning and northbound trips originating from the Irvine Business Center in the evening, making this route ideal for employees commuting by rail. In the morning, the headways range from 13 to 35 minutes apart between 6:09am and 8:34am, with five total services provided linking with specific Metrolink train arrivals at the station. In the evening, five services are provided with headways between 10 and 36 minutes apart, all departing the Irvine Business Center between 3:29pm and 4:48pm.

Located approximately 1,000 feet from the project site is the Campus-Jamboree bus stop, which is accessed by OCTA bus routes 59 and 178. Both routes operate Monday through Friday, and 59 also includes weekend and holiday services. Routes 59 and 178 have headways that range on average from 30 minutes to an hour during the AM (7-9) and PM (4-6) peak hours.

Within a half mile of the Project site are approximately 9 bus transit stops. In addition to the previously referenced routes, these stops serve routes 57, 76, 212 and 213. These routes generally have between 30 min and 70 min headways during the AM (7-9) and PM (4-6) peak hours. Route 57, which connects Brea with Newport Beach, has express services available approximately every 25 mins from 6:00am to 6:00pm, though the stop is furthest from the site while still within a half mile.

Routes 400A and 401B are iShuttle routes which connect the Irvine Business Center with the Tustin Metrolink Station. Unlike route 472, these routes only service both northbound and southbound trips morning and afternoon periods. The shuttles are timed to coordinate with the Metrolink Train schedule, making them convenient for commuters. Also, use of these routes is free for Metrolink ticket and passholders and OCTA passholders.

The Project would not remove any transit stops, though through site improvements the Project will improve access to existing stops. Currently, there is no sidewalk on the east side of Jamboree Road, adjacent to the Project site. Current bus services make a stop near the Jamboree Road at Birch Street intersections (northbound travel). The Project design features include the construction of sidewalks and pedestrian amenities that would increase accessibility to this northbound bus stop. Ridership on bus routes in proximity of the site is likely to increase as a result of the Project. No bus stops within a half mile of the Project site can be considered a high-quality stop per the definition noted above, however the variety of routes in proximity of the site provide numerous opportunities for employees and clients to access the Project site without driving.

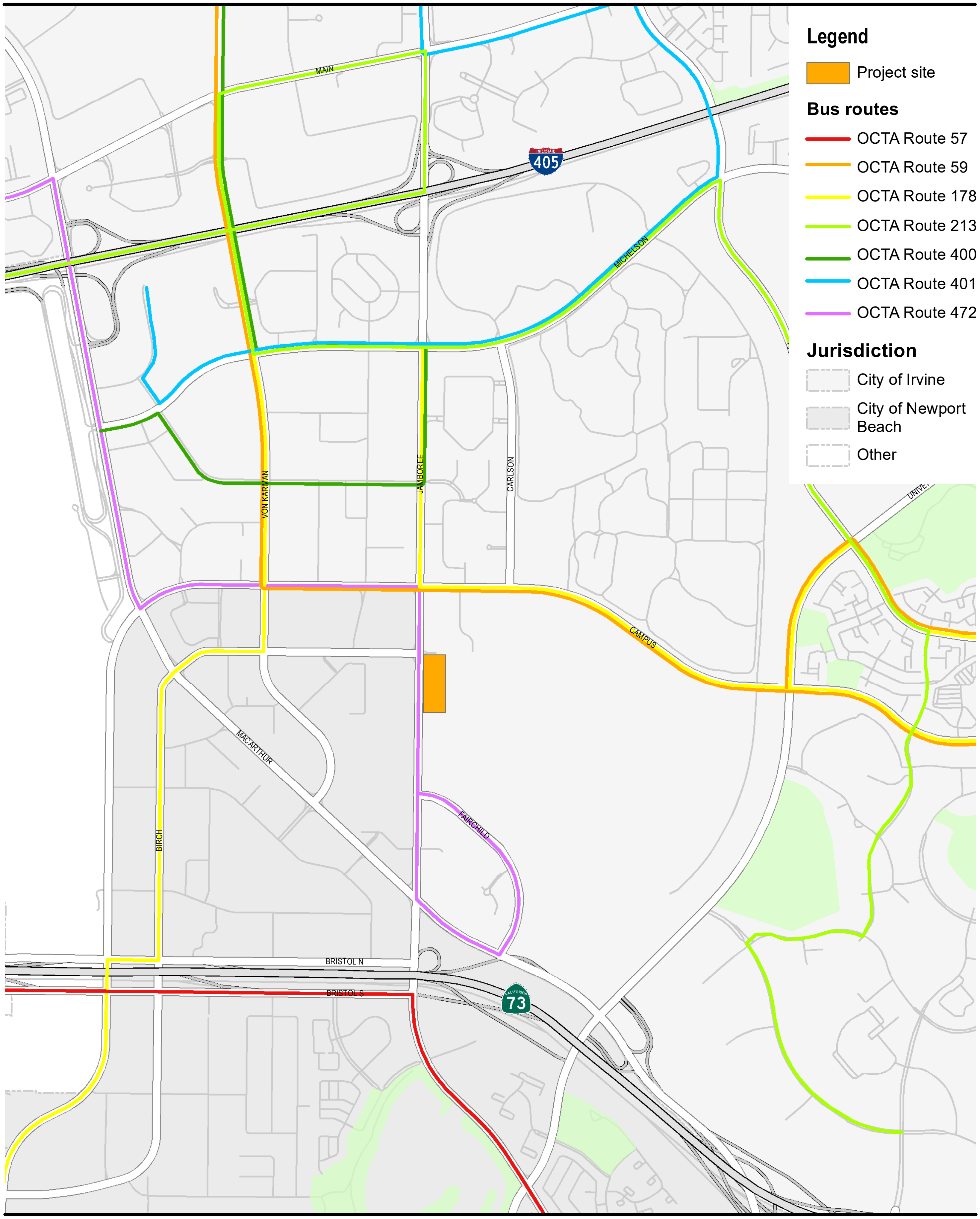


Figure 3-2
OCTA Transit Routes

3.6 REGIONAL TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITY STRATEGIES CONSISTENCY

Metropolitan Planning Organizations (MPOs) are required to develop a Regional Transportation Plan and Sustainable Community Strategies (RTP/SCS). 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. For this analysis, if the proposed Project is inconsistent with the RTP/SCS, then the inconsistency should be evaluated for a significant impact on transportation.

The UCI campus is located within the Southern California Association of Governments (SCAG) MPO region. In 2016 SCAG's Regional Council adopted the 2016-2040 RTP/SCS with efforts for the next update in Spring 2020 already underway. According to the SCAG website, SCAG utilizes 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, and if available, the City's traffic analysis model.

The City of Irvine initially adopted its General Plan in December 1973 with a comprehensive updated in 2000. Since then, the City has been growing and is now in the process of Phase 1 of their comprehensive General Plan Update. The City maintains the Irvine Traffic Analysis Model (ITAM) which incorporates buildout conditions (per General Plan) for the City and is frequently updated as projects go through entitlements. ITAM houses the type of information solicited by SCAG for use in the RTP.

The City of Irvine and UCI have a long-standing cooperation in regard to 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 as well as ITAM and would be the information supplied to SCAG during their Bottom-Up Local Input process.

The Center for Child Health development is fully accounted for in the growth allocated by the 2007 LRDP. As mentioned above, coordination has been made between the land use assumptions used in the 2007 LRDP and City of Irvine. Therefore, since the Project land use was accounted for in the City's growth forecast, the Project would be consistent with the RTP/SCS and would have a less than significant impact on transportation based on the RTP/SCS screening threshold.

4.0 REFERENCES

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

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

3. City of Newport Beach General Plan Transportation Study Appendices (Part 2 of 2), Urban Crossroads, March 22, 2006.

4. Quantifying Greenhouse Gas Mitigation Measures A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association, August 2010.

5. Sustainable Transportation Webpage, UCI transportation and Distribution Services, https://www.parking.uci.edu/AT/incentives/ , last accessed June 2019.

6. Technical Advisory On Evaluating Transportation Impacts on CEQA, California's Office of Planning and Research, December 2018.

7. OP 16: Student Commute Modal Split, University of California, Irvine, The Sustainability Tracking, Assessment and Rating System, https://reports.aashe.org/institutions/university-of-california-irvine-ca/report/2018-03-28/OP/transportation/OP-16/ , last accessed June 2019.

8. OP 17: Employee Commute Modal Split, University of California, Irvine, The Sustainability Tracking, Assessment and Rating System, https://reports.aashe.org/institutions/university-of-california-irvine-ca/report/2018-03-28/OP/transportation/OP-17/ , last accessed June 2019.

9. City of Irvine's 2015 Active Transportation Plan, City of Irvine, April 2015.

10. OC Bus Book, Orange County Transportation Authority, February 2019.

APPENDIX G

Supplemental Level of Service Traffic Analysis

With the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018, vehicle miles traveled (VMT) was adopted as the standard to analyze transportation impacts. Therefore, this Supplemental Level of Service (LOS) Traffic Analysis is for informational purposes only as LOS is no longer considered an impact under CEQA.

Stantec

Memo

To:	Lindsey Hashimoto UCI Physical and Environmental Planning	From:	Maria Morris and Daryl Zerfass Stantec
File:	2042539110	Date:	January 27, 2020

Reference: Center for Child Health Supplemental LOS Traffic Analysis

Stantec Consulting Services Inc. (Stantec) has performed a supplemental level of service (LOS) traffic analysis for the proposed UCI Center for Child Health (Project). A vehicle miles travelled (VMT) analysis has been prepared (in a separate report) in support of the Project's environmental document per CEQA guidelines. The LOS analysis presented in this memorandum is for information purposes only. The purpose of this analysis is to determine roadway and intersection LOS related to traffic on the surrounding transportation system with the implementation of the proposed Project. This analysis focuses on LOS as the metric for evaluating roadways per City of Irvine, City of Newport Beach and Congestion Management Program requirements.

A portion of the approximately 4-acre site is currently occupied by UCI's Child Development Center and UCI service facilities used by UCI Facilities Management and Distribution services including a recycling center and receiving facility. The Project would construct an approximately 168,000-gross-square-foot (GSF), five-story medical office building with an additional mechanical penthouse and an 800-space parking structure at UCI's North Campus. The existing on-site approximately 6,500 GSF Child Development Center, approximately 2,400 GSF UCI Recycling Center, and an approximately 21,500 GSF receiving yard would be demolished in order to construct the Project. The UCI Recycling Center would be relocated to existing space on the Main Campus. Additional site improvements would include grading, driveway paving, construction of internal on-site circulation, landscaping, and installation of site utility connections and lighting.

Study Area and Methodology

The study area was defined by identifying how many Project trips would distribute to the adjacent roads and determining the limits of where Project peak hour become negligible. Intersections that are anticipated to have more than 50 peak hour trips were selected for peak hour analysis. The study area limits were determined based on the above-mentioned guidance, which is consistent with the Irvine Traffic Analysis Guidelines. Three of the study intersections are monitored intersections under the Orange County CMP. A map of the study area intersections is shown in the attached **Figure 1**.

The following scenarios are evaluated for the proposed Project:

1. Existing Conditions
2. Existing Plus Project Conditions
3. Buildout Approved No Project – Irvine Intersections
4. Buildout Approved With Project – Irvine Intersections
5. General Plan Buildout No Project – Newport Beach Intersections
6. General Plan Buildout With Project – Newport Beach Intersections

Existing traffic counts were collected in November 2019 for roadway segments and intersections in the study area. The current version of the Irvine Transportation Analysis Model (ITAM) Version 15, was used to distribute Project trips onto the existing circulation network. Land use corresponding to the proposed Project was inputted into the ITAM land use database to derive the Project's distribution. The overall distribution of project traffic is based on the Project site location in relation to the surrounding uses while taking into account the Project access, existing traffic flow patterns and engineering judgement. The resulting Project volumes were then added to the existing traffic counts to derive existing with-Project conditions.

To derive future forecast volumes for a cumulative setting for study area locations within the City of Irvine, Buildout Approved version of ITAM was utilized. The Project's land use was input in the Buildout Approved scenario land use database and the model was run to derive with Project conditions. The output from the with Project run was compared to volumes without the proposed Project to identify undesirable changes.

For the intersections in the City of Newport Beach, future forecast volumes were obtained from the City's General Plan. The volumes represent a Post-2035 buildout of the city, as described in the General Plan. Project trips that utilize trip distribution patterns from ITAM was added to identify project related operating conditions.

Analysis Criteria

The traffic analysis for the Project uses a set of criteria for evaluating intersection capacity to determine roadway operating conditions with the Project. In traffic analysis, roadway evaluation is based on two primary measures. The first is "capacity," which establishes the vehicle carrying ability of a road segment, and the second is "volume." The volume-to-capacity (V/C) ratio corresponds with a level of service (LOS). Traffic LOS is designated A through F, with LOS A representing free flow conditions, and LOS F representing severe traffic congestion. A description of the ICU ranges and corresponding LOS is provided in **Table 1.**

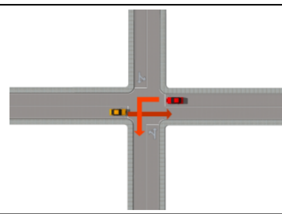
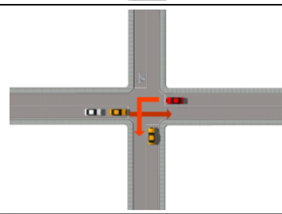
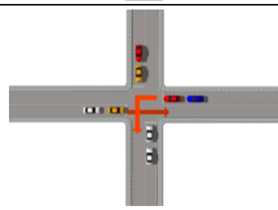
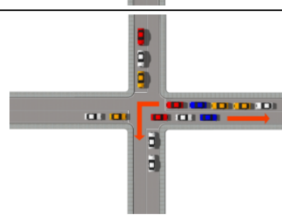
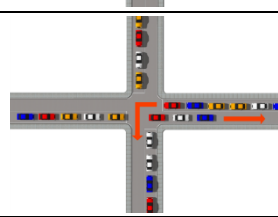
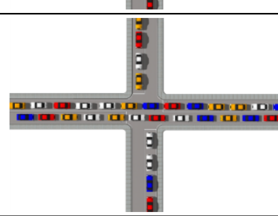
Average daily traffic (ADT) volumes are presented for roadway links in the study area. As required by the City of Irvine, an arterial roadway segment volume to capacity (V/C) ratio analysis was conducted for mid-block segments in the City of Irvine. Changes to traffic conditions as a result of Project traffic are identified using the City of Irvine's criteria.

The traffic analysis also analyzes the AM and PM peak hour volumes for study area intersections. Peak hour volumes and capacities are compared by means of intersection capacity utilization (ICU) values for intersections. Certain LOS values are deemed acceptable by the various governing jurisdictions within the traffic analysis study area and increases in the ICU which cause or contribute to the LOS being undesirable are defined as an adverse change. For intersections within the City of Irvine LOS D is the desirable LOS, except for intersections in Planning Area 36, which is LOS E is the desirable LOS. For intersections in the City of Newport Beach, LOS D is the desirable LOS. For intersections in the City of Irvine, when the Project worsens the LOS to an undesirable LOS or if the intersection is already at an undesirable LOS, ICU increases of 0.02 are identified. For intersections in the City of Newport Beach, when Project traffic at an intersection with an ICU at an undesirable LOS, increases of the ICU by 0.01 are identified.

The Project site is located in the County of Orange. Therefore, the proposed Project shall comply with requirements to evaluate intersections and arterials monitored by the Orange County CMP program. This report includes a supporting CMP Monitoring Checklist. Any CMP facility identified as being affected by the proposed Project is analyzed consistent with the CMP procedures. LOS "E" is the performance standard for CMP intersections.

The performance criteria used in this analysis is summarized in **Table 2**.

Table 1 Intersection Level of Service Ranges (ICU)

Level of Service (LOS)		Intersection Capacity Utilization (ICU)
A		0.00 – 0.60
B		0.61 – 0.70
C		0.71 – 0.80
D		0.81 – 0.90
E		0.91 – 1.00
F		Above 1.00

* HCM methodology used for stop-controlled intersections
Sources: Highway Capacity Manual 6th Edition, Transportation Research Board, National Research Council
Orange County Congestion Management Program

Table 2 Performance Criteria

I. Arterial Roads (City of Irvine V/C Analysis)

V/C Calculation Methodology

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

City of Irvine

Major Arterial	8 lanes	72,000
Major Arterial	6 lanes	54,000
Primary Arterial	4 lanes	32,000
Secondary Arterial	4 lanes	28,000
Commuter*	2 lanes	18,000
Commuter	2 lanes	13,000

* Applies to Harvard Avenue between Michelson Drive and University Drive and Campus Drive between Carlson Avenue and University Drive at two lanes.

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

Performance Standard

City of Irvine

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

All other arterials: Level of Service “D” (peak hour V/C less than or equal to 0.90).

Improvement Requirement

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

II. Intersections

V/C Calculation Methodology

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

City of Irvine

Saturation Flow Rate: 1,700 vehicles/hour/lane
Clearance Interval: .05
Right-Turn-On-Red Utilization Factor*: .75
* “De-facto” right-turn lane is assumed in the ICU calculation if 19 feet from edge to outside of through-lane exists and parking is prohibited during peak periods.

City of Newport Beach

Saturation Flow Rate: 1,600 vehicles/hour/lane
Clearance Interval: .00
Right-Turn-On-Red Utilization Factor*: .00
* “De-facto” right-turn lane is assumed in the ICU calculation if 19 feet from edge to outside of through-lane exists and parking is prohibited during peak periods.

HCM Delay Methodology

Level of service based on peak hour average intersection delay and calculated using the following assumptions:

Ideal Flow Rate: 1,900 vehicles/hour/lane
Peak Hour Factor: measured PHF at stop-controlled intersections
Percent Heavy Vehicles: 2%

Table 2 Performance Criteria (Continued)

Performance Standard

Per the City of Irvine adopted performance criteria, undesirable traffic changes occur at an intersection if either of the following two conditions is met:

1) A location is at acceptable Level of Service (LOS) in the baseline condition and the project causes the location to become deficient; or
2) A location is deficient in the baseline condition and the project causes the location to further deteriorate by at least 2 percent.

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

Improvement Requirement

For UCI intersections: For stop-controlled intersections operating greater than the performance standard, the intersection is evaluated further for possible improvement with a traffic signal, or geometric improvements to improve operations.
For signalized intersections operating greater than the performance standard, the intersection is evaluated further for possible improvements to improve operations.

For City of Irvine and City of Newport Beach Intersections: For ICU greater than the acceptable level of service, improvement of the project contribution is required to bring intersection back to acceptable level of service where the deficiency is caused by the project or to no project conditions or better for locations where the project adds to a deficient condition by .02 or greater for locations in the City of Irvine and.01 or greater for locations in the City of Newport Beach.

Project Trip Generation

Trips generated by the proposed Project were estimated using trip rates from in the Institute of Traffic Engineers Trip Generation Manual (10th Edition). The Medical Office category (Code 720) was utilized. **Table 3** shows the trip rates and corresponding estimated trip generation for the proposed Project. As shown in Error! Not a valid bookmark self-reference.the Project would generate approximately 5,846 daily trips, 467 trips during the AM peak hour and 581 trips during the PM peak hour. As previously mentioned, the site currently has an existing 6 TSF facility. To account for existing trips that would be removed per the removal of the existing facility, driveway counts were collected have been incorporated into the trip generation estimates as shown in **Table 3**. The net new trips is 5,531 daily trips, 409 trips during the AM peak hour and 576 trips in the PM peak hour.

Table 3 Center for Child Health Estimated Trip Generation Summary

			AM Peak Hour			PM Peak Hour			
Land Use	**Amount**	**Units**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**ADT**
Trip Rates									
Medical Office Building (Code 720)	TSF		2.17	0.61	2.78	0.97	2.49	3.46	34.8
Existing Child Behavior Facilities	TSF		5.23	3.69	8.92	0.15	0.62	0.77	48.5
Trip Generation – Center for Child Health									
Proposed Medical Office Building	168	TSF	365	103	467	163	418	581	5,846
Existing Trips									
Existing Child Behavior Facilities (to be removed)	-6.5	TSF	-34	-24	-58	-1	-4	-5	-315
Net New Trips			331	79	409	162	414	576	5,531
Source: ITE Trip Generation Manual (10th Edition) ADT = average daily trips; TSF = thousand square feet									

The trip distribution was determined using ITAM. Approximately 96 percent of the trips generated by the Project would use Jamboree Road and 4 percent of trips would use Birch Street for access to and from the Center for Child Health. Approximately 40 percent of trips are oriented south on Jamboree Road and 56 percent are oriented north. An illustration of the general distribution of trips for the proposed Project is shown in the attached **Figure 2**.

Existing Conditions

Existing conditions were evaluated using traffic counts that were collected for the study area. An illustration of existing ADT volumes is shown in the attached **Figure 3** and the corresponding V/C ratios are shown in the attached **Figure 4**. Peak hour volumes are shown in the attached **Figure 5** and **Figure 6.**

Per City of Irvine requirements, **Table 4** summarizes the results of the ADT V/C analysis for Existing conditions. As shown, the following four mid-block segments currently are at an unacceptable LOS.

146. Jamboree Road between Main Street and I-405 NB Ramps (LOS F)
147. Jamboree Road between Michelson Drive and I-405 SB Ramps (LOS F)
167. Carlson Avenue between Campus Drive and Michelson Drive (LOS F)
879. Campus Drive between Carlson Avenue and University Drive (LOS E)

Table 4 Arterial Roadway V/C Summary – Existing

Link Location Number	Roadway	Segment	Lanes	Capacity	Existing ADT (000s)	Existing V/C Ratio	Count Date
146	Jamboree Rd.	b/w Main St. and I-405 NB Ramps	8M	72,000	80,000	1.11	11/12/2019
147	Jamboree Rd.	b/w Michelson Dr. and I-405 SB Ramps (a)	8M	72,000	79,700	1.11	11/12/2019
150	Jamboree Rd.	b/w Dupont Dr. and Campus Dr. (a)	7M	63,000	42,500	0.67	11/14/2019
151	Jamboree Rd.	b/w Campus Dr. and Birch St.	6M	54,000	41,800	0.77	11/14/2019
152	Jamboree Rd.	b/w Birch St and Fairchild	7M	63,000	42,400	0.67	11/12/2019
156	Jamboree Rd.	b/w MacArthur Blvd and Bristol N.	6M	54,000	35,000	0.65	11/12/2019
167	Carlson Av.	b/w Campus Dr. and Michelson (a)	4S	28,000	9,100	0.33	11/12/2019
846	Michelson Dr.	b/w Jamboree Rd. and Carlson Av. (a)	4S	28,000	33,000	1.18	11/12/2019
872	Campus Dr.	b/w Von Karman Av. and Jamboree Rd. (a)	4P	32,000	10,700	0.33	11/12/2019
877	Campus Dr.	b/w Jamboree Rd. and Carlson Av. (a)	4S	28,000	16,100	0.58	11/12/2019
879	Campus Dr.	b/w Carlson Av. and University Dr.	2C	18,000	16,900	0.94	11/12/2019
893	Campus Dr.	b/w University Dr. and Bridge/W. Peltason Dr.	4P	32,000	20,900	0.65	11/12/2019

ADT = average daily traffic; V/C = volume/capacity; M = major; S = secondary; P = primary; C = collector; b/w = between; s/o = south of; e/o = east of; w/o = west of; n/o = north of; NB = Northbound; Dr. = Drive; St. = Street; Blvd = Boulevard; Rd = Road; Av. = Avenue

(a) = Within Planning Area 36 – LOS E acceptable

(b) = CMP arterial

Shading denotes deficient location

Bold denotes potential undesirable change per City of Irvine criteria.

An intersection analysis was conducted using the ICU methodology for intersections in the study area, using the applicable performance criteria. The results of intersection LOS analysis for intersections in the City of Irvine are provided in **Table 5,** and **Table 6** shows the results for intersections in Newport Beach. The results show that all intersections in the study area (Irvine and Newport Beach) are currently at an acceptable LOS.

Existing Plus Project Conditions Analysis

Existing plus Project traffic volume data were derived by adding the project-generated trips to the existing ADT and intersection turning movement volumes. For this analysis, the existing roadway network is assumed. Project only ADT volumes are illustrated in **Figure 7.** Project only peak hour volumes are shown in **Figure 8** and **Figure 9** Existing plus Project ADT volumes and the corresponding V/C ratios are illustrated in **Figure 10** and **Figure 11**Figure 11, respectively. Existing plus Project peak hour intersection volumes are shown in **Figure 12** and **Figure 13**.

LOS Analysis – Irvine Intersections

Per the City of Irvine, an arterial V/C analysis was conducted. The V/C analysis is a two-step process. The first step is to identify potential mid-block deficiencies by using the ADT volume. For any roadway segments that are at an undesirable LOS and the Project change is greater than 0.02, the peak hour volume is evaluated to determine a mid-block deficiency. The results of the ADT V/C analysis are summarized in the attached **Table 7**. The table shows that the same four mid-block segments that were at an unacceptable LOS are also deficient with the Project. However, only two of those have undesirable LOS and the Project's ICU change is 0.02 or greater. The two locations are as follows:

147. Jamboree Road between Michelson Drive and I-405 SB Ramps (LOS F)
879. Campus Drive between Carlson Avenue and University Drive (LOS E)

Consistent with City of Irvine traffic study guidelines, the potential for the ADT deficiency on these two arterial roadway segments to translate into an actual capacity deficiency was evaluated by examining peak hour levels of service. The resulting mid-block peak hour V/C ratios under existing plus Project conditions are summarized in **Table 8**. As the summary table indicates, the roadway segments are forecast to operate at desirable LOS during the peak hours. Therefore, an actual ADT deficiency is not forecast at this location (i.e., this arterial roadway segment does not cause undesirable conditions by the Project under existing plus Project conditions).

The mid-block V/C analysis under the existing plus Project conditions show that the proposed Project would not cause undesirable conditions on the City of Irvine's performance criteria.

An intersection analysis was conducted using the applicable performance criteria. The results of the ICU LOS analysis for intersections in the City of Irvine are summarized in the attached **Table 9**Error! Reference source not found.**.** Note that there are several intersections located in Planning Area 36, where LOS E is the desirable LOS. At the two intersections that provide access into the Project site, (Jamboree Road at Birch Street and Jamboree Road at Driveway south of Birch Street) the Project would construct intersection improvements as part of the Project. Those improvements have been incorporated in the ICU analysis for with Project conditions.

All intersections in the study area are at LOS E or better with the Project and does not cause any undesirable conditions based on the City of Irvine's criteria.

Table 5 Intersection LOS Summary – Existing (Irvine Intersections)

Intersection	AM Peak Hour		PM Peak Hour		Count Date
	ICU	LOS	ICU	LOS	
105. Von Karman Ave & Campus (a)	0.52	A	0.69	B	11/12/2019
141. Jamboree Rd & Main St (a)	0.73	C	0.81	D	11/12/2019
143. Jamboree Rd & I-405 NB Ramps (a)	0.74	C	0.81	D	11/12/2019
144. Jamboree Rd & I-405 SB Ramps (a)	0.92	E	0.91	E	11/12/2019
145. Jamboree Rd & Michelson Dr (a)	0.65	B	0.87	D	11/12/2019
147. Jamboree Rd & Campus Dr (a)	0.62	B	0.64	B	11/14/2019
148. Jamboree Rd & Birch St (a)	0.59	A	0.54	A	11/12/2019
149. Jamboree Rd & Fairchild Rd (a)	0.52	A	0.64	B	11/12/2019
150. Jamboree Rd & MacArthur Blvd (a)	0.61	B	0.68	B	11/12/2019
174. Carlson Ave & Michelson Dr (a)	0.49	A	0.55	A	11/12/2019
175. Carlson Ave & Campus Dr (a)	0.34	A	0.58	A	11/14/2019
190. University Dr & Campus Dr	0.82	D	0.79	C	11/12/2019
203. Bridge Rd & Campus Dr	0.44	A	0.56	A	11/12/2019
204. Jamboree & Access	0.33	A	0.45	A	11/12/2019
(a) LOS E is acceptable at this location (Irvine Planning Area 36 intersections)					

Table 6 Intersection LOS Summary – Existing (Newport Beach Intersections)

Intersection	AM Peak Hour		PM Peak Hour		Count Date
	ICU	LOS	ICU	LOS	
11. Von Karman Ave & Campus	0.498	A	0.685	B	11/12/2019
13. Jamboree Rd & Campus Dr	0.606	B	0.631	B	11/14/2019
14. Jamboree Rd & Birch St	0.568	A	0.513	A	11/12/2019
15. Campus Dr & Bristol St N	0.535	A	0.666	B	11/12/2019
16. Birch St & Bristol St N	0.549	A	0.470	A	11/12/2019
17. Campus Dr & Bristol St S	0.671	B	0.515	A	11/12/2019
18. Birch St & Bristol St S	0.423	A	0.430	A	11/12/2019
29. Jamboree Rd & MacArthur Blvd	0.589	A	0.668	B	11/12/2019
30. Jamboree Rd & Bristol St N	0.399	A	0.434	A	11/12/2019
32. Jamboree Rd & Bristol St S	0.686	B	0.650	B	11/12/2019
60. Jamboree Rd & Fairchild Rd	0.617	B	0.668	B	11/12/2019

Table 7 Arterial Roadway V/C Summary – Existing Plus Project

Link Location Number	Roadway	Segment	Lanes	Cap-acity	Existing ADT (000s)	Existing V/C Ratio	Existing Plus Project ADT (000s)	Existing Plus Project V/C Ratio	Diff-erence
146	Jamboree Rd.	b/w Main St. and I-405 NB Ramps	8M	72,000	80,000	1.11	80,700	1.12	0.01
147	Jamboree Rd.	b/w Michelson Dr. and I-405 SB Ramps (a)	8M	72,000	79,700	1.11	81,100	1.13	0.02
150	Jamboree Rd.	b/w Dupont Dr. and Campus Dr. (a)	7M	63,000	42,500	0.67	44,000	0.70	0.02
151	Jamboree Rd.	b/w Campus Dr. and Birch St.	6M	54,000	41,800	0.77	44,900	0.83	0.06
152	Jamboree Rd.	b/w Birch St and Fairchild	7M	63,000	42,400	0.67	44,600	0.71	0.03
156	Jamboree Rd.	b/w MacArthur Blvd and Bristol N.	6M	54,000	35,000	0.65	36,700	0.68	0.03
167	Carlson Av.	b/w Campus Dr. and Michelson (a)	4S	28,000	9,100	0.33	9,400	0.34	0.01
846	Michelson Dr.	b/w Jamboree Rd. and Carlson Av. (a)	4S	28,000	33,000	1.18	33,100	1.18	0.00
872	Campus Dr.	b/w Von Karman Av. and Jamboree Rd. (a)	4P	32,000	10,700	0.33	11,300	0.35	0.02
877	Campus Dr.	b/w Jamboree Rd. and Carlson Av. (a)	4S	28,000	16,100	0.58	16,900	0.60	0.03
879	Campus Dr.	b/w Carlson Av. and University Dr.	2C	18,000	16,900	0.94	17,500	0.97	0.03
893	Campus Dr.	b/w University Dr. and Bridge/W. Peltason Dr.	4P	32,000	20,900	0.65	21,300	0.67	0.01

ADT = average daily traffic; V/C = volume/capacity; M = major; S = secondary; P = primary; C = collector; b/w = between; s/o = south of; e/o = east of; w/o = west of; n/o = north of; NB = Northbound; Dr. = Drive; St. = Street; Blvd = Boulevard; Rd = Road; Av. = Avenue

(a) = Within Planning Area 36 – LOS E acceptable

(b) = CMP arterial

Shading denotes deficient location and bold denotes potential undesirable change per City of Irvine criteria. If an ADT has a change of more than 0.02, a peak hour segment analysis is conducted.

Table 8 Arterial Roadway Peak Hour Analysis Summary – Existing Plus Project

Roadway	Lanes	ADT	One-Way Peak Hour Capacity	Highest Peak Hour	Peak Hour V/C	Peak Hour LOS
Jamboree north of Michelson Dr.	8	81,100	6,400	4502 (AM Southbound)	0.70	B
Campus between Carlson and University	2	17,500	1,600	966 (PM Eastbound)	0.60	B

Abbreviations: ADT – average daily traffic; LOS – level of service; V/C – volume/capacity ratio

Table 9 Intersection LOS Summary – Existing Plus Project (Irvine Intersections)

Intersection	Existing				Existing Plus Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
105. Von Karman Ave & Campus (a)	0.52	A	0.69	B	0.52	A	0.70	B	0.00	0.01
141. Jamboree Rd & Main St (a)	0.73	C	0.81	D	0.73	C	0.82	D	0.00	0.01
143. Jamboree Rd & I-405 NB Ramps (a)	0.74	C	0.81	D	0.74	C	0.83	D	0.00	0.02
144. Jamboree Rd & I-405 SB Ramps (a)	0.92	E	0.91	E	0.93	E	0.92	E	0.01	0.01
145. Jamboree Rd & Michelson Dr (a)	0.65	B	0.87	D	0.66	B	0.88	D	0.01	0.01
147. Jamboree Rd & Campus Dr (a)	0.62	B	0.64	B	0.65	B	0.68	B	0.03	0.04
148. Jamboree Rd & Birch St (a)	0.59	A	0.54	A	0.59	A	0.64	B	0.00	0.10
149. Jamboree Rd & Fairchild Rd (a)	0.52	A	0.64	B	0.55	A	0.65	B	0.03	0.01
150. Jamboree Rd & MacArthur Blvd (a)	0.61	B	0.68	B	0.61	B	0.69	B	0.00	0.01
174. Carlson Ave & Michelson Dr (a)	0.49	A	0.55	A	0.49	A	0.55	A	0.00	0.00
175. Carlson Ave & Campus Dr (a)	0.34	A	0.58	A	0.35	A	0.60	A	0.01	0.02
190. University Dr & Campus Dr	0.82	D	0.79	C	0.82	D	0.80	C	0.00	0.01
203. Bridge Rd & Campus Dr	0.44	A	0.56	A	0.44	A	0.58	A	0.00	0.02
204. Jamboree & Access	0.33	A	0.45	A	0.33	A	0.51	A	0.00	0.06
(a) LOS E is acceptable at this location (Irvine Planning Area 36 intersections)										

LOS Analysis – Newport Beach Intersections

For intersections located in Newport Beach, the resulting ICU and LOS are summarized in **Table 10**. Site access improvements at the two intersections on Jamboree Road were assumed under with Project conditions. As shown in the LOS summary, all intersections are at LOS D or better with the Project. The Project does not cause any undesirable conditions based on the City of Newport Beach's criteria.

Buildout Analysis

The Project was evaluated under Buildout conditions. Since the City of Irvine and City of Newport Beach each maintain their own traffic models, this analysis utilizes traffic data from two sources, ITAM and Newport Beach General Plan. The proposed Project is evaluated for causing undesirable LOS in a future cumulative setting. For the purposes of this analysis, the Buildout conditions utilized in this analysis assumes the City of Irvine roadways will be constructed per the General Plan Circulation Element. To derive future forecast volumes, the Buildout Approved version of ITAM (Version 15) was used for locations in the City of Irvine. The Buildout Approved version of ITAM assumes General Plan Buildout of the roadway system per the City's Circulation Element.

Illustrations that show the Buildout No Project ADT volumes and corresponding V/C ratios are shown in **Figure 14** and **Figure 15**. Illustrations that show the Buildout With Project ADT volumes and corresponding V/C ratios are shown in **Figure 16** and **Figure 17.** Peak hour turning volumes that were derived using ITAM and represent Buildout Approved No Project conditions are shown in **Figure 18** for the AM peak hour and **Figure 19** for the PM peak hour. Peak hour volumes for intersection in Newport Beach are shown in **Figure 20** and **Figure 21**.

For Buildout conditions, peak hour volumes for intersections in Irvine are shown in **Figure 22** for the AM peak hour and **Figure 23** for the PM peak hour. For intersections in the City of Newport Beach, peak hour volumes are shown in **Figure 24** for the AM peak hour and **Figure 25** for the PM peak hour.

Buildout (Approved) LOS Analysis – Irvine Intersections

The V/C analysis is a two-step process. The first step is to identify potential mid-block deficiencies by using the ADT volume. For any roadway segments that are at an undesirable LOS and the Project change is greater than 0.02, the peak hour volume is evaluated to determine a mid-block deficiency. The results of the ADT V/C analysis are summarized in the attached **Table 11**. The following six segments are at an undesirable LOS, both without the Project and with the Project:

144. Jamboree Road north of Main Street (LOS F)
146. Jamboree Road between Main Street and I-405 NB Ramps (LOS F)
147. Jamboree Road between Michelson Drive and I-405 SB Ramps (LOS F)
151. Jamboree Road between Campus Drive and Birch Street (LOS E)
879. Campus Drive between Carlson Avenue and University Drive (LOS E)
893. Campus Drive between University Drive and Bridge Road (LOS F)

While the six locations are deficient, only two segments have undesirable LOS and the Project's ICU increases by 0.02 or greater:

151. Jamboree Road between Campus Drive and Birch Street (LOS E)
893. Campus Drive between University Drive and Bridge Road (LOS F)

Table 10 Intersection LOS Summary – Existing Plus Project (Newport Beach Intersections)

Intersection	Existing				Existing Plus Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
11. Von Karman & Campus	0.498	A	0.685	B	0.498	A	0.690	B	0.000	0.005
13. Jamboree & Campus	0.606	B	0.631	B	0.643	B	0.666	B	0.037	0.035
14. Jamboree & Birch	0.568	A	0.513	A	0.589	A	0.648	B	0.021	0.135
15. Campus & Bristol N	0.535	A	0.666	B	0.538	A	0.682	B	0.003	0.016
16. Birch & Bristol N	0.549	A	0.470	A	0.552	A	0.484	A	0.003	0.014
17. Campus & Bristol S	0.671	B	0.515	A	0.674	B	0.517	A	0.003	0.002
18. Birch & Bristol S	0.423	A	0.430	A	0.425	A	0.430	A	0.002	0.000
29. Jamboree & MacArthur	0.589	A	0.668	B	0.597	A	0.684	B	0.008	0.016
30. Jamboree & Bristol N	0.399	A	0.434	A	0.420	A	0.467	A	0.021	0.033
32. Jamboree & Bristol S	0.686	B	0.650	B	0.702	C	0.660	B	0.016	0.010
60. Jamboree Rd & Fairchild Rd	0.617	B	0.668	B	0.645	B	0.683	B	0.028	0.015
61. Jamboree & Access	0.309	A	0.427	A	0.324	A	0.484	A	0.015	0.057

Table 11 Arterial Roadway V/C Summary – Buildout Conditions

ITAM Link Number	Roadway	Segment	Lanes	Capacity	Buildout No Project ADT (000s)	Buildout No Project V/C Ratio	Buildout With Project ADT (000s)	Buildout With Project V/C Ratio	Diff-erence
111	Von Karman Av.	b/w Dupont Dr. and Campus Dr. (a)	4P	32,000	24,400	0.76	25,000	0.78	0.02
144	Jamboree Rd.	n/o Main St. (a)	8M	72,000	74,800	1.04	75,200	1.04	0.01
146	Jamboree Rd.	b/w Main and I-405 NB Ramps	8M	72,000	79,200	1.10	79,700	1.11	0.01
147	Jamboree Rd.	b/w Michelson Dr. and I-405 SB Ramps (a)	8M	72,000	94,300	1.31	95,100	1.32	0.01
150	Jamboree Rd.	b/w Dupont and Campus Dr. (a)	7M	63,000	54,100	0.86	55,100	0.87	0.02
151	Jamboree Rd.	b/w Campus Dr. and Birch St.	6M	54,000	51,800	0.96	52,700	0.98	0.02
152	Jamboree Rd.	b/w Birch St and Fairchild	7M	63,000	49,700	0.79	51,600	0.82	0.03
155	Jamboree Rd.	b/w Fairchild and MacArthur Blvd. (a)	6M	54,000	43,700	0.81	46,600	0.86	0.05
167	Carlson Av.	b/w Campus Dr. and Michelson (a)	4S	28,000	9,100	0.33	9,400	0.34	0.01
186	University Dr.	b/w Campus Dr. and Harvard Av.	6M	54,000	33,800	0.63	34,000	0.63	0.00
845	Michelson Dr.	b/w Von Karman and Jamboree Rd. (a)	5M	43,000	24,100	0.56	24,200	0.56	0.00
846	Michelson Dr.	b/w Jamboree Rd. and Carlson Av. (a)	4P	32,000	29,700	0.93	29,600	0.93	0.00
847	Michelson Dr.	b/w Carlson Av. and Harvard Av. (a)	4P	32,000	30,000	0.94	30,200	0.94	0.01
870	Campus Dr.	b/w Dupont and Von Karman Av. (a)	4P	32,000	17,100	0.53	17,200	0.54	0.00
872	Campus Dr.	b/w Von Karman Av. and Jamboree Rd. (a)	4P	32,000	16,000	0.50	16,400	0.51	0.01
877	Campus Dr.	b/w Jamboree Rd. and Carlson Av. (a)	4S	28,000	26,500	0.95	26,900	0.96	0.01
879	Campus Dr.	b/w Carlson Av. and University Dr.	4S	28,000	30,000	1.07	30,500	1.09	0.02
893	Campus Dr.	b/w University Dr. and Bridge Rd.	4P	32,000	32,800	1.03	33,100	1.03	0.01
916	MacArthur Blvd.	b/w Jamboree Rd. and Fairchild Rd. (a)	6M	54,000	53,300	0.99	53,600	0.99	0.01

ADT = average daily traffic; V/C = volume/capacity; M = major; S = secondary; P = primary; C = collector; b/w = between; s/o = south of; e/o = east of; w/o = west of; n/o = north of; NB = Northbound; Dr. = Drive; St. = Street; Blvd = Boulevard; Rd = Road; Av. = Avenue

(a) = Within Planning Area 36 – LOS E acceptable

(b) = CMP arterial

Shading denotes deficient location and bold denotes potential undesirable changes per City of Irvine criteria. If an ADT has a change of more than 0.02, a peak hour segment analysis is conducted.

The potential for the ADT deficiency on these two potentially arterial roadway segments to translate into an actual capacity deficiency was evaluated by examining peak hour levels of service. The resulting mid-block peak hour V/C ratios under existing plus Project conditions are summarized in **Table 12**. As the summary table indicates, the roadway segments are forecast to operate at desirable levels of service during the peak hours. Therefore, an actual ADT deficiency is not forecast at this location (i.e., this arterial roadway segment is not considered to be undesirable by the Project under Buildout conditions).

The mid-block V/C analysis under the Buildout conditions show that the proposed Project would not cause a negative change based on the City of Irvine's performance criteria.

An intersection analysis was conducted and the results of the ICU analysis for intersections in the City of Irvine are summarized in the attached **Table 13**. Two intersections are at an undesirable LOS:

145. Jamboree Road at Michelson Drive (LOS F)
203. Bridge Road at Campus Drive (LOS F)

Although the two intersections listed above are deficient, neither intersection has a project increment greater than 2.0, which is the criteria used by the City of Irvine to identify undesirable change. Note that the intersection of Jamboree Road at Birch Street includes site access improvements that were included in the with Project conditions for the ICU analysis.

Based on the results of the ICU analysis, the Project does not result in undesirable changes to any of the study area intersections under Buildout conditions.

Buildout (Approved) LOS Analysis – Newport Beach Intersections

For roadways in the City of Newport Beach, General Plan buildout is assumed as the baseline. For the intersections located in the City of Newport Beach, volumes and intersection lane configurations were collected from the City of Newport Beach General Plan and is utilized here in this analysis as the baseline.

An intersection analysis was conducted and the resulting ICU and LOS are summarized in **Table 14**. As shown in the LOS summary, four intersections are at an undesirable LOS without and with the proposed Project:

1. Jamboree Road at Campus Drive (LOS E)
15. Campus Drive at Bristol Street North (LOS E)
60. Jamboree Road at Fairchild Road (LOS E)

Although the three intersections listed above are deficient, the project's increment does not exceed one (0.01) percent. Therefore, the Project does not cause an undesirable change under General Plan Buildout conditions.

CMP Analysis

The CMP legislation requires that the CMP Agency monitor the implementation of the Orange County CMP, including CMP land use coordination component requirements. The goal of the CMP is to ensure that certain key intersections within the CMP Highway System (CMPHS) are operating at acceptable levels. The CMP has been developed to monitor changes on CMPHS intersections. The CMP Monitoring Checklist for the Land Use Coordination Component is attached to this memorandum.

There are three intersection locations within the study area that are monitored as part of the CMP. There are three CMP monitoring intersection in the study area:

- Jamboree & I-405 SB Ramps

Table 12 Arterial Roadway Peak Hour Analysis Summary – Buildout Conditions

Roadway	Lanes	ADT	One-Way Peak Hour Capacity	Highest Peak Hour	Peak Hour V/C	Peak Hour LOS
Jamboree between Campus Av. and Birch St.	6	52,700	4,800	2,660 (AM Southbound)	0.55	A
Campus between Carlson and University	4	30,500	3,200	1,617 (PM Eastbound)	0.51	A
Abbreviations: ADT – average daily traffic; LOS – level of service; V/C – volume/capacity ratio						

Table 13 Intersection LOS Summary – Buildout Conditions (Irvine Intersections)

ITAM Intersection Number	Buildout Conditions no Project				Buildout Conditions with Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
105. Von Karman Ave & Campus (a)	0.77	C	0.88	D	0.77	C	0.88	D	0.00	0.00
141. Jamboree Rd & Main St (a)	0.80	C	0.91	E	0.80	C	0.91	E	0.00	0.00
143. Jamboree Rd & I-405 NB Ramps (a)	0.81	D	0.94	E	0.83	D	0.95	E	0.02	0.01
144. Jamboree Rd & I-405 SB Ramps (a)	0.88	D	0.83	D	0.88	D	0.84	D	0.00	0.01
145. Jamboree Rd & Michelson Dr (a)	0.91	E	1.03	F	0.92	E	1.04	F	0.01	0.01
147. Jamboree Rd & Campus Dr (a)	0.84	D	0.82	D	0.83	D	0.82	D	-0.01	0.00
148. Jamboree Rd & Birch St (a)	0.75	C	0.86	D	0.72	C	0.77	C	-0.03	-0.09
149. Jamboree Rd & Fairchild Rd (a)	0.63	B	0.72	C	0.65	B	0.74	C	0.02	0.02
150. Jamboree Rd & MacArthur Blvd (a)	0.82	D	0.84	D	0.82	D	0.87	D	0.00	0.03
174. Carlson Ave & Michelson Dr (a)	0.70	B	0.80	C	0.68	B	0.81	D	-0.02	0.01
175. Carlson Ave & Campus Dr (a)	0.70	B	0.81	D	0.73	C	0.82	D	0.03	0.01
190. University Dr & Campus Dr	0.75	C	0.83	D	0.74	C	0.82	D	-0.01	-0.01
203. Bridge Rd & Campus Dr	1.02	F	0.85	D	1.03	F	0.85	D	0.01	0.00
204. Jamboree & Access	0.46	A	0.51	A	0.46	A	0.54	A	0.00	0.03

(a) LOS E is acceptable at this location (Irvine Planning Area 36 intersections)
Shaded denotes a peak hour deficiency and bold denotes an undesirable change.

Table 14 Intersection LOS Summary – Buildout Conditions (Newport Beach Intersections)

	Buildout Conditions no Project				Buildout Conditions with Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
NB GP Intersection Number	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
11. Von Karman Ave & Campus	0.731	C	0.888	D	0.739	C	0.899	D	0.008	0.011
13. Jamboree Rd & Campus Dr	0.880	D	0.991	E	0.888	D	0.989	E	0.008	-0.002
14. Jamboree Rd & Birch St	0.796	C	0.935	E	0.855	D	0.852	D	0.059	-0.083
15. Campus Dr & Bristol St N	0.954	E	0.963	E	0.954	E	0.969	E	0.000	0.006
16. Birch St & Bristol St N	0.897	D	0.720	C	0.897	D	0.724	C	0.000	0.004
17. Campus Dr & Bristol St S	0.893	D	0.775	C	0.894	D	0.778	C	0.001	0.003
18. Birch St & Bristol St S	0.510	A	0.538	A	0.510	A	0.543	A	0.000	0.005
29. Jamboree Rd & MacArthur Blvd	0.877	D	0.847	D	0.881	D	0.862	D	0.004	0.015
30. Jamboree Rd & Bristol St N	0.681	B	0.672	B	0.690	B	0.682	B	0.009	0.010
32. Jamboree Rd & Bristol St S	0.897	D	0.815	D	0.902	D	0.827	D	0.005	0.012
60. Jamboree Rd & Fairchild Rd	0.891	D	0.913	E	0.903	D	0.922	E	0.012	0.009
61. Jamboree Rd & Access	0.581	A	0.488	A	0.578	A	0.518	A	-0.003	0.030

- Jamboree & I-405 NB Ramps
- MacArthur Boulevard & Jamboree Road

The results, which are summarized in **Table 15** indicate that all of the CMP intersections in the study area are forecast to operate at LOS E or better, which is within the CMP performance standard for CMP intersections. Therefore, the Project does not cause an undesirable change to any of the CMP locations.

Project Improvement Summary

The results of this LOS analysis show that the proposed Project would not cause an undesirable change to the arterial segments and the intersections in the study area. Roadway improvements at the two site access intersections located along Jamboree Road are proposed as part of the Project. Peak hour volumes at the two site access intersections are shown in **Figure 26** (Project Only), **Figure 27** (Buildout Approved conditions), and **Figure 28** (General Plan Buildout conditions). To accommodate the Project-generated traffic, **Table 16** summarizes the site access improvements that would be constructed as part of the Project.

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Attachment:
Figure 1 Study Area Intersection Locations
Figure 2 Project Trip Distribution
Figure 3 Existing ADT Volumes
Figure 4 Existing V/C Ratios
Figure 5 Existing Turning Movement Volumes – AM Peak Hour
Figure 6 Existing Turning Movement Volumes – PM Peak Hour
Figure 7 Project Only ADT Volumes
Figure 8 Project Only Turning Movement Volumes – AM Peak Hour
Figure 9 Project Only Turning Movement Volumes – PM Peak Hour
Figure 10 Existing Plus Project ADT Volumes
Figure 11 Existing Plus Project V/C Ratios
Figure 12 Existing Plus Project Turning Movement Volumes – AM Peak Hour
Figure 13 Existing Plus Project Turning Movement Volumes – PM Peak Hour
Figure 14 Buildout (Approved) No Project ADT Volumes
Figure 15 Buildout (Approved) No Project V/C Ratios
Figure 16 Buildout (Approved) With Project ADT Volumes
Figure 17 Buildout (Approved) With Project V/C Ratio
Figure 18 Buildout Approved No Project Turning Movement Volumes – AM Peak Hour
Figure 19 Buildout Approved No Project Turning Movement Volumes – PM Peak Hour
Figure 20 Newport Beach General Plan Buildout No Project Turning Movement Volumes – AM Peak Hour
Figure 21 Newport Beach General Plan Buildout No Project Turning Movement Volumes – PM Peak Hour
Figure 22 Buildout Approved With Project Turning Movement Volumes – AM Peak Hour
Figure 23 Buildout Approved With Project Turning Movement Volumes – PM Peak Hour
Figure 24 Newport Beach General Plan Buildout With Project Turning Movement Volumes – AM Peak Hour
Figure 25 Newport Beach General Plan Buildout With Project Turning Movement Volumes – PM Peak Hour
Figure 26 Site Access Project Only Turning Movement Volumes
Figure 27 Site Access Buildout Approved Turning Movement Volumes
Figure 28 Site Access Newport Beach General Plan Buildout Turning Movement Volumes

Table 15 Intersection LOS Summary – CMP Analysis

Intersection	No Project				With Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
Existing								
Jamboree & I-405 NB Ramps	0.74	C	0.81	D	0.74	C	0.83	D
Jamboree & I-405 SB Ramps	0.92	E	0.91	E	0.93	E	0.92	E
Jamboree & MacArthur	0.61	B	0.68	B	0.61	B	0.69	B
Buildout (ITAM Volumes)								
Jamboree & I-405 NB Ramps	0.81	D	0.94	E	0.83	D	0.95	E
Jamboree & I-405 SB Ramps	0.88	D	0.83	D	0.88	D	0.84	D
Jamboree & MacArthur	0.82	D	0.84	D	0.82	D	0.87	D
Buildout (Newport Beach General Plan Volumes)								
Jamboree & MacArthur	0.88	D	0.85	D	0.89	D	0.87	D

Table 16 Project Improvement Summary

Intersection	Site Access Improvements
Jamboree Rd & Birch St	Add second southbound left-turn lane Add one northbound right-turn lane Westbound configuration to include one left-turn lane, one shared left/through lane and one right turn lane.
Jamboree & Access	Add one northbound right-turn lane

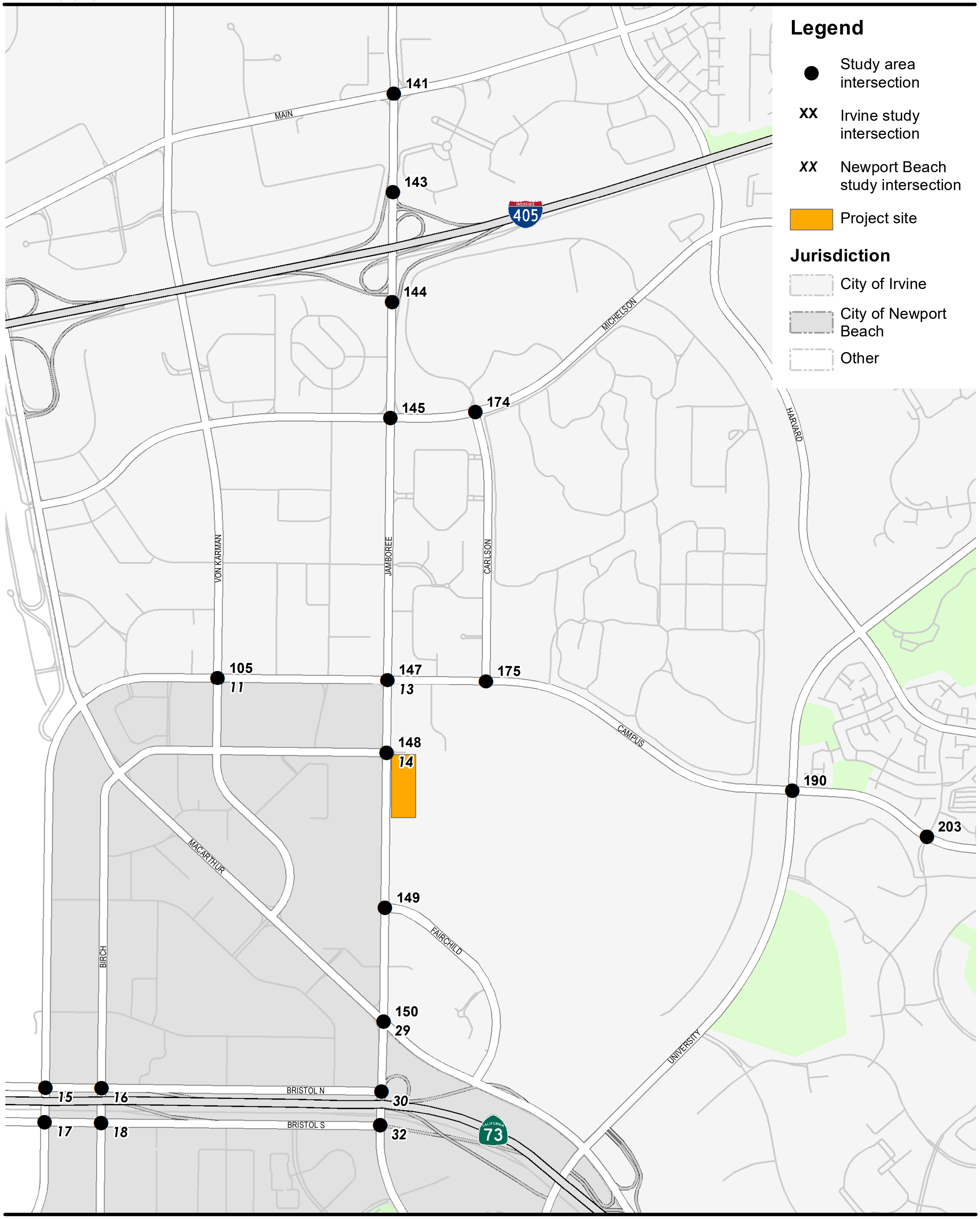


Figure 1
Study Area Intersection Locations

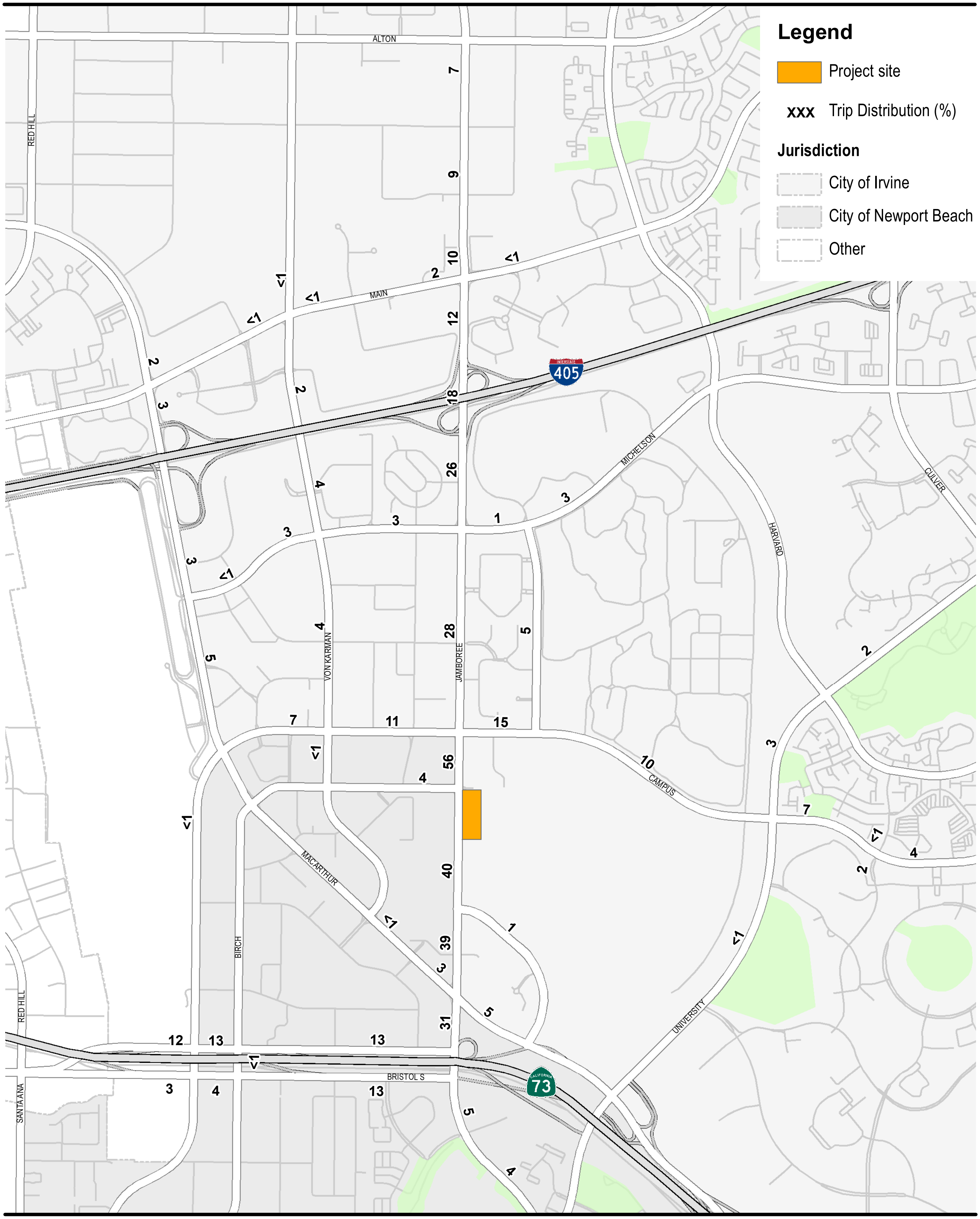
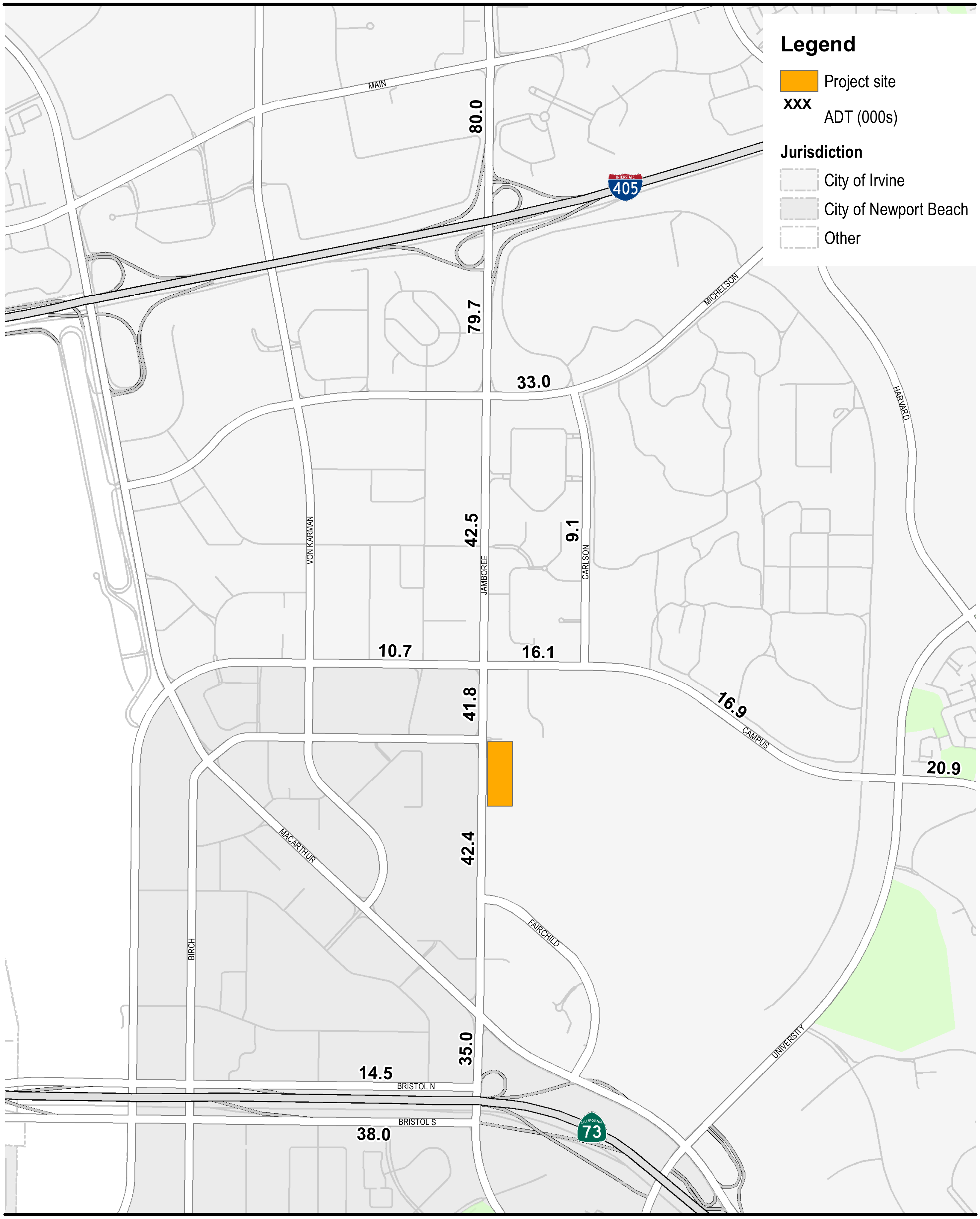


Figure 2
Project Trip Distribution


Legend
Project site
XXX
ADT (000s)
Jurisdiction
City of Irvine
City of Newport Beach
Other
MAIN
80.0
405
79.7
MICHELSON
33.0
HARVARD
VON KARMAN
42.5
9.1
JAMBOREE
CARLSON
10.7
16.1
16.9
CAMPUS
41.8
20.9
MACARTHUR
42.4
FAIRCHILD
BIRCH
35.0
UNIVERSITY
14.5
BRISTOL N
BRISTOL S
73
38.0

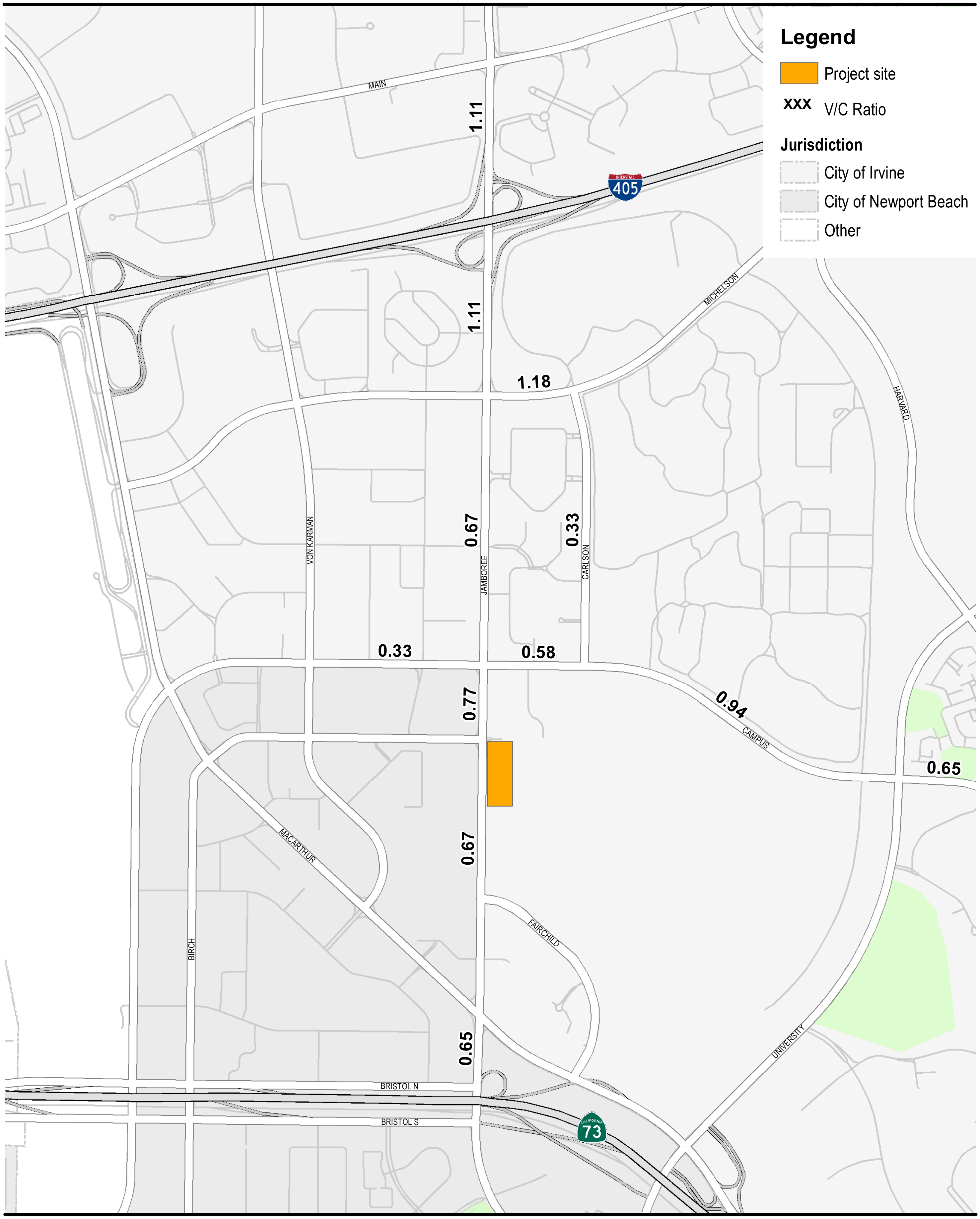


Figure 4
Existing V/C Ratios

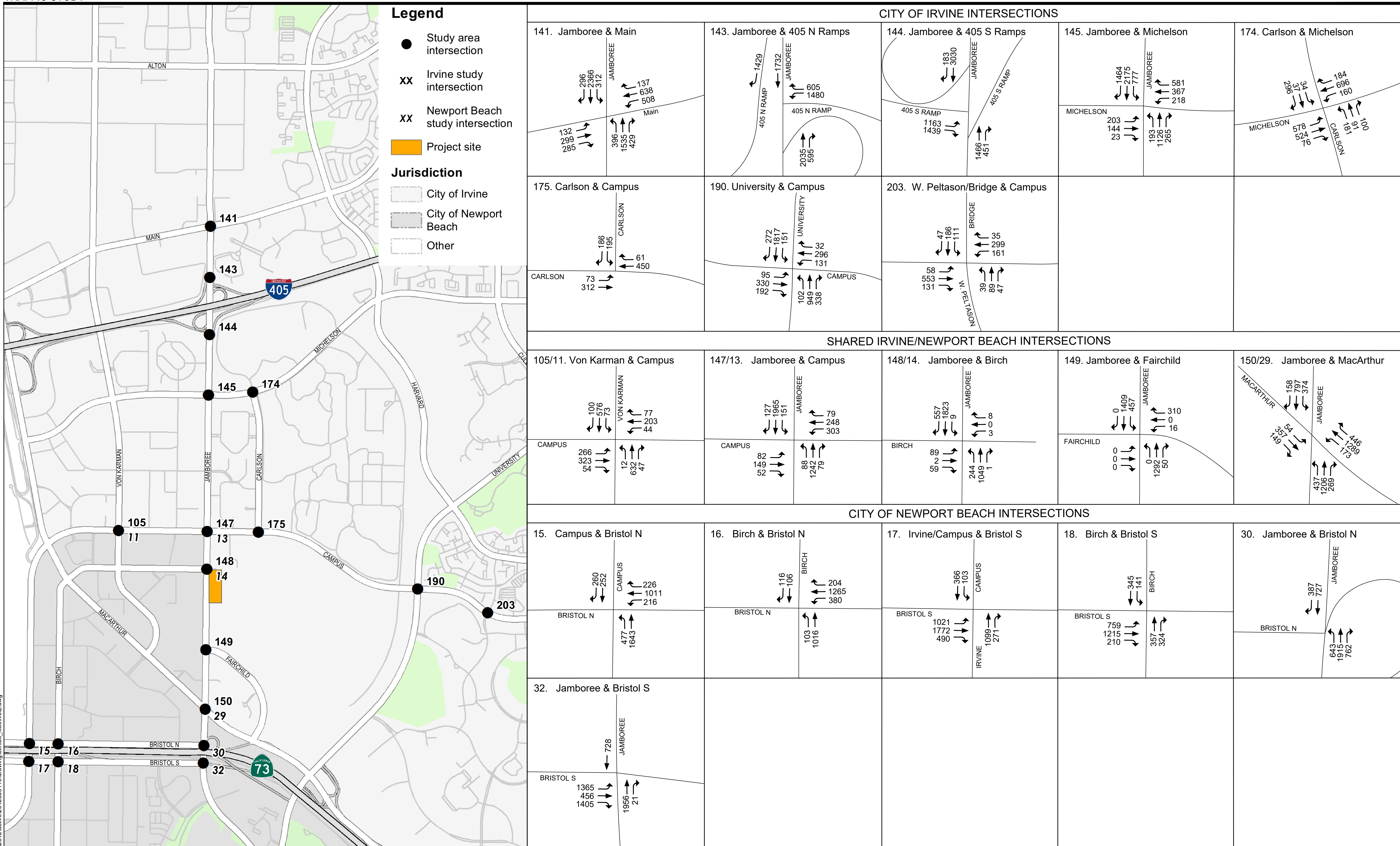


Figure 5

Existing Turning Movement Volumes - AM Peak Hour

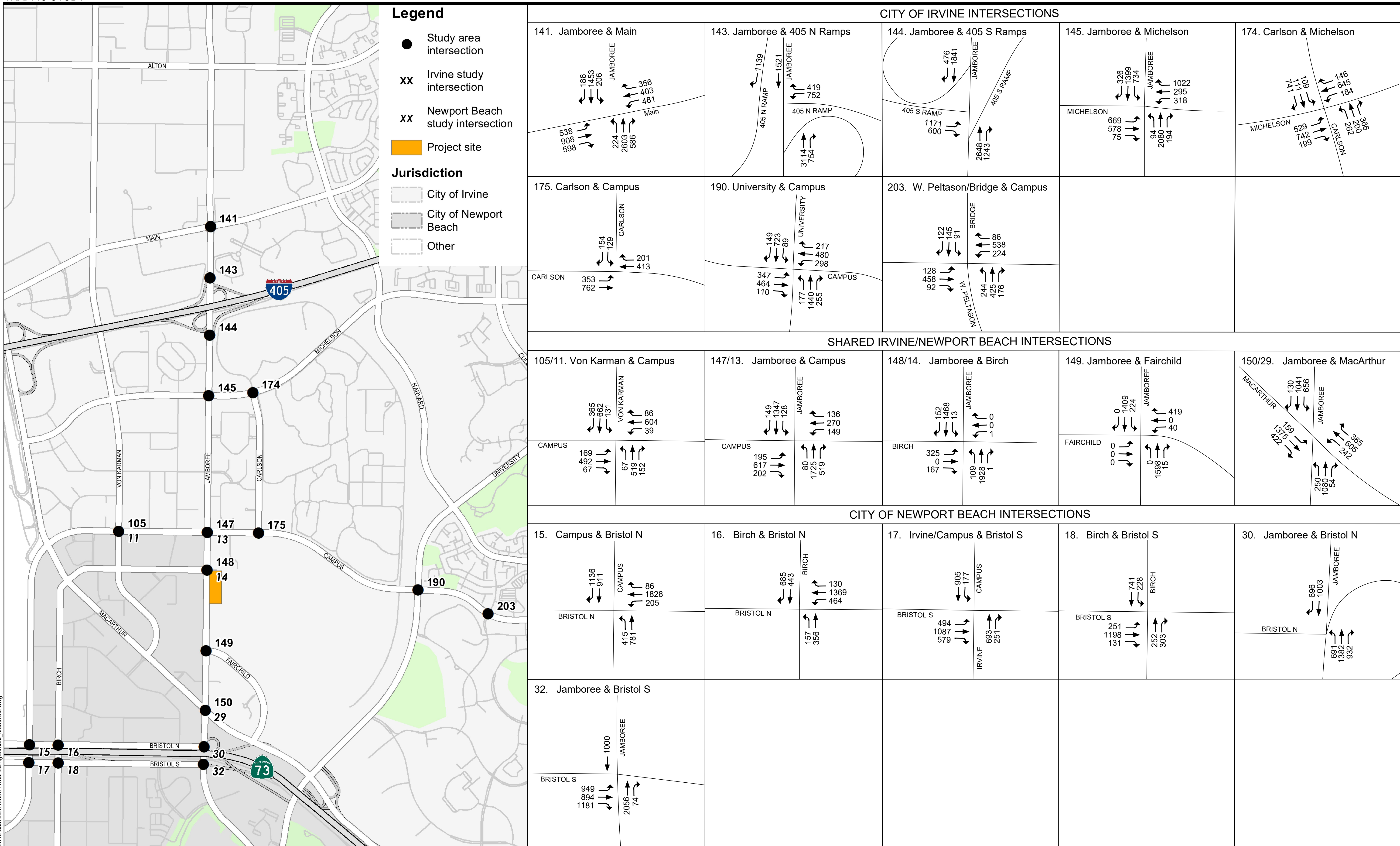


Figure 6

Existing Turning Movement Volumes - PM Peak Hour

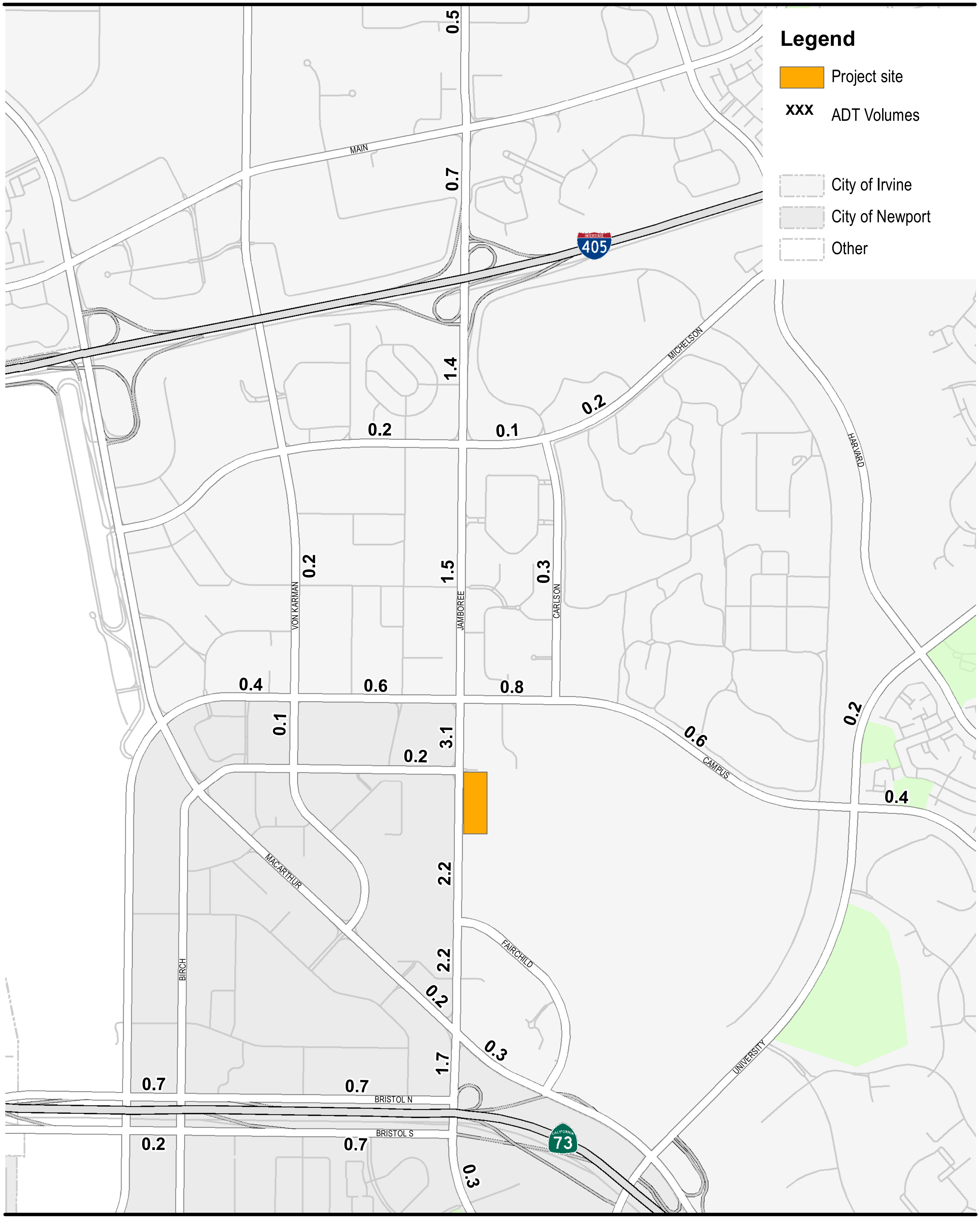


Figure 7
Project Only ADT Volumes

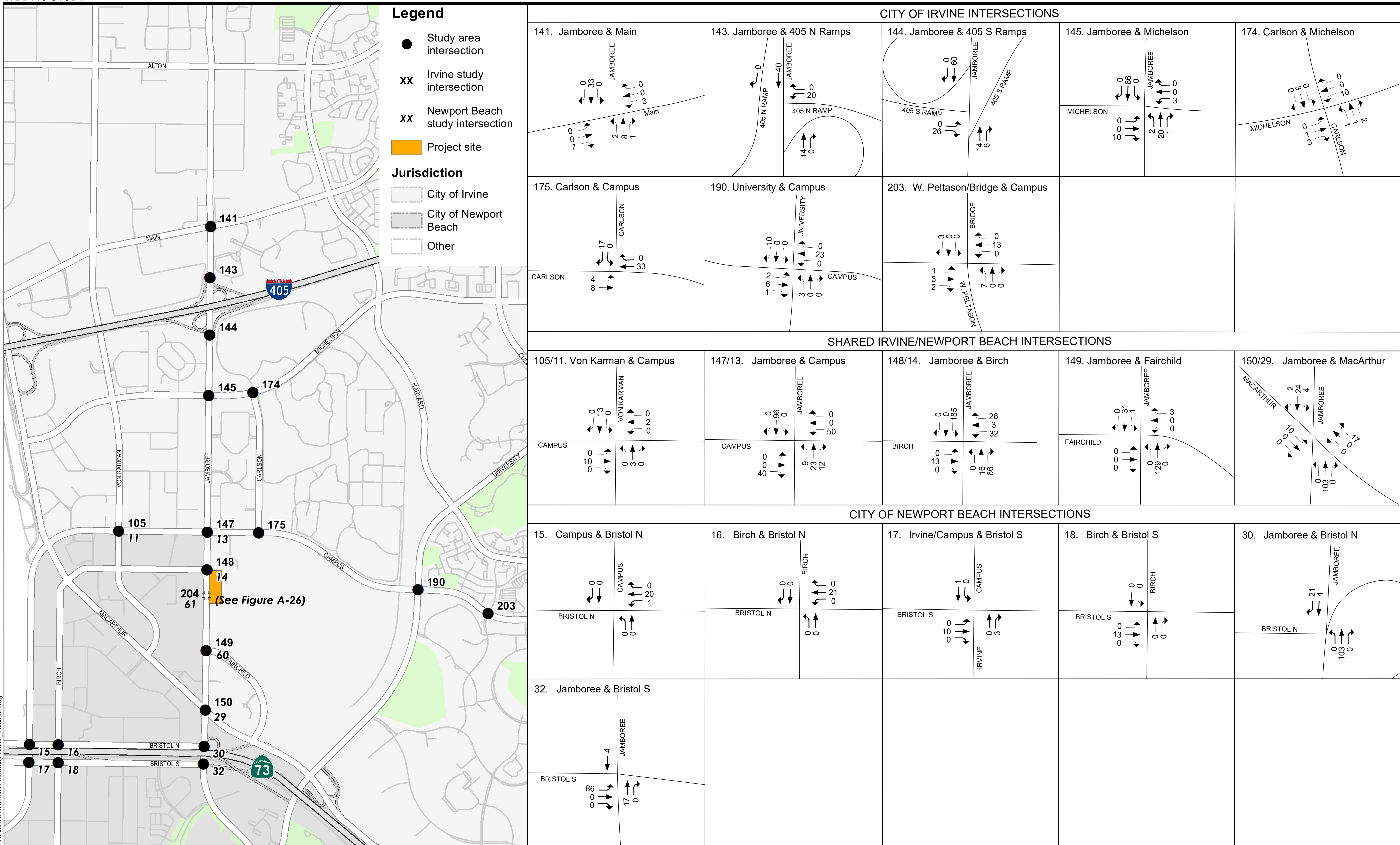


Figure 8

Project Only Turning Movement Volumes - AM Peak Hour

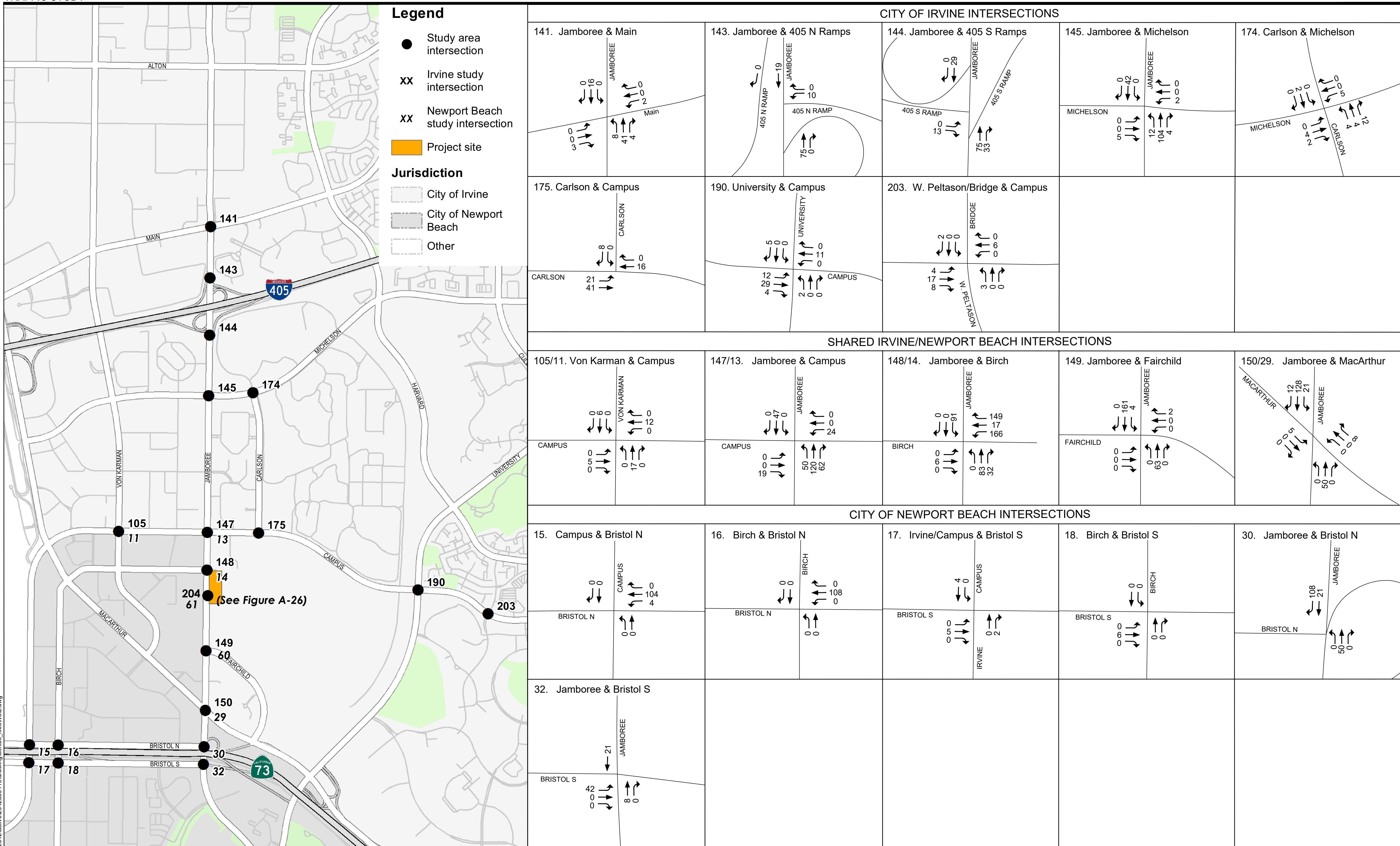


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Figure 9

Project Only Turning Movement Volumes - PM Peak Hour

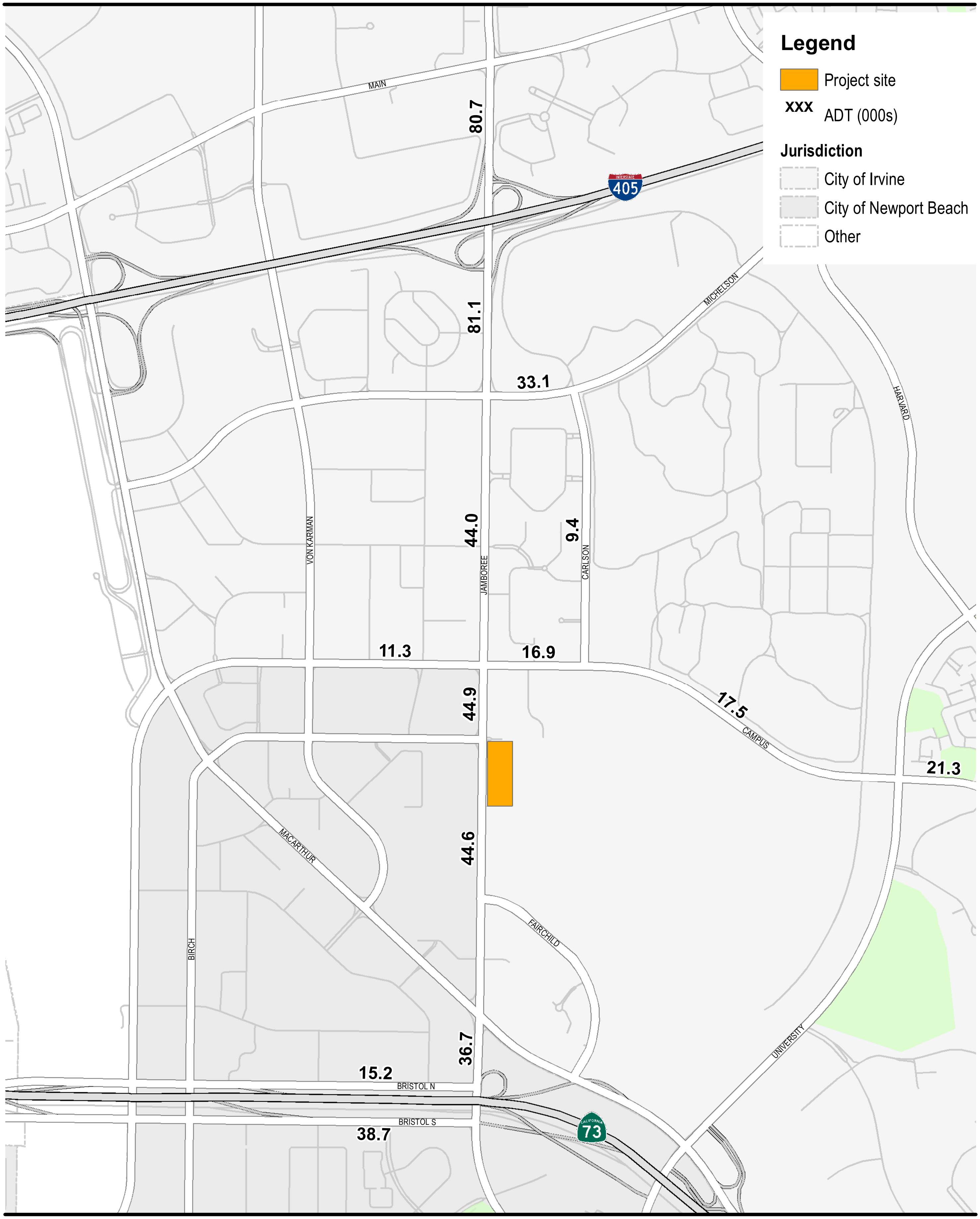


Figure 10
Existing Plus Project ADT Volumes

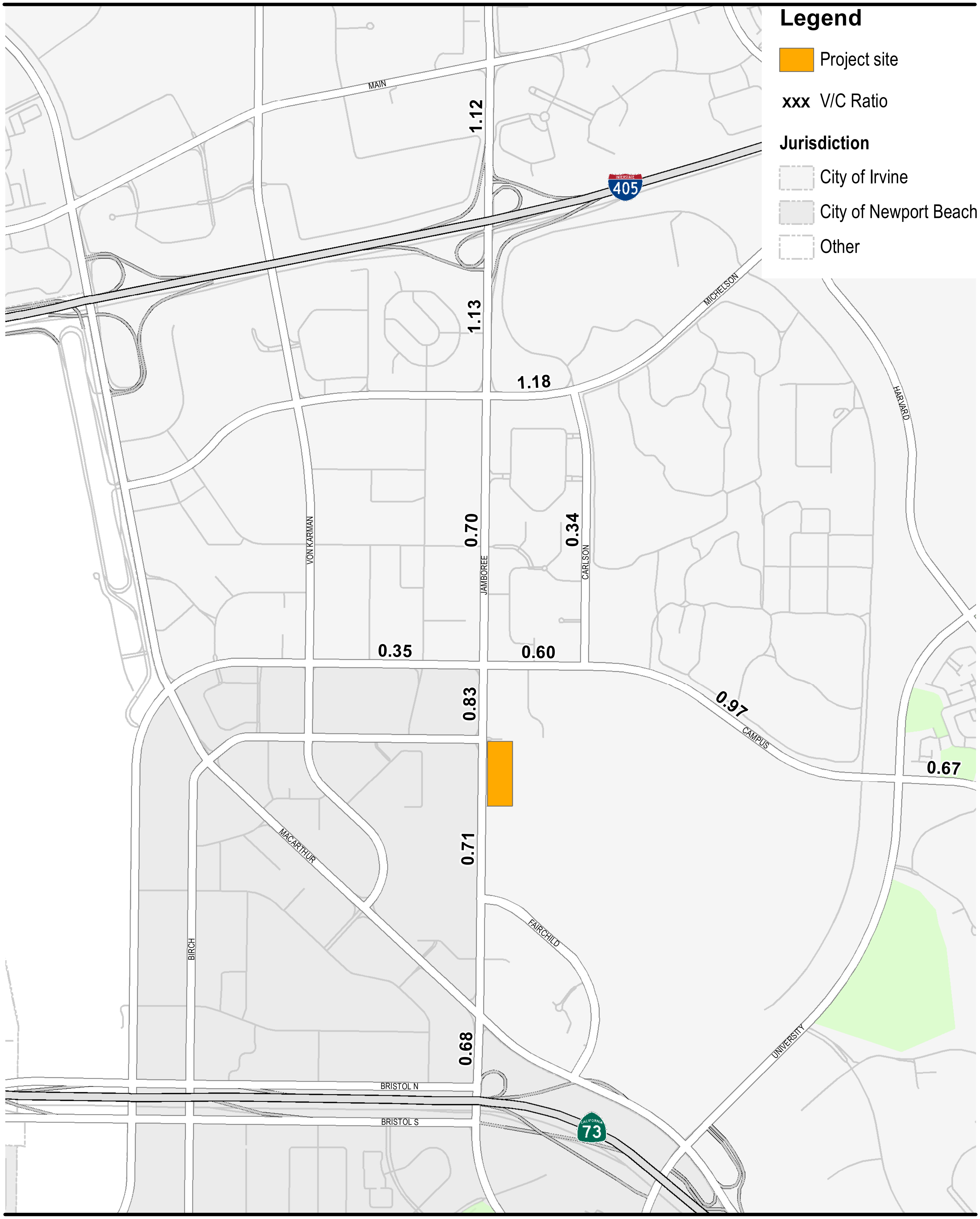


Figure 11
Existing Plus Project V/C Ratios

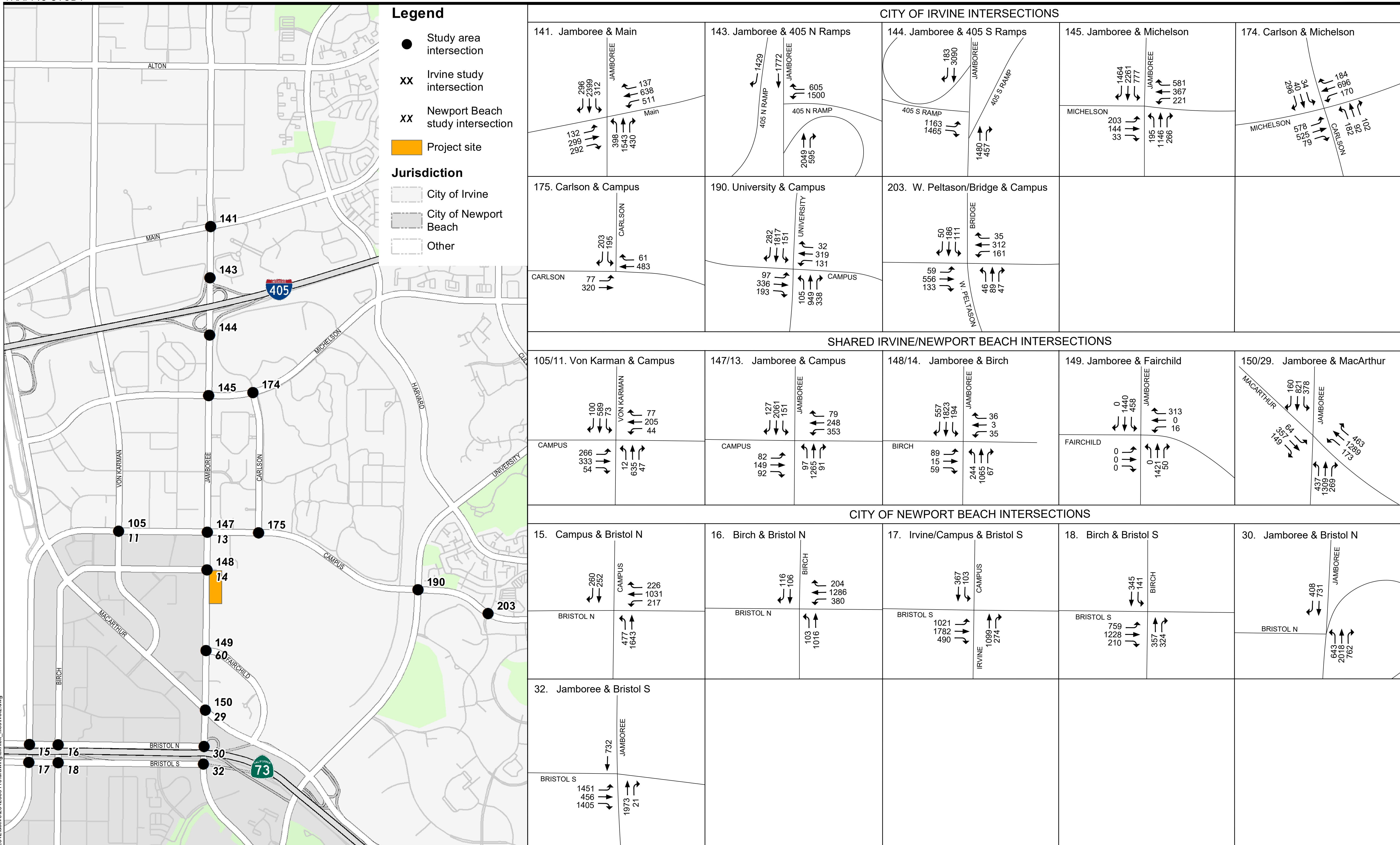


Figure 12

Existing Plus Project Turning Movement Volumes - AM Peak Hour

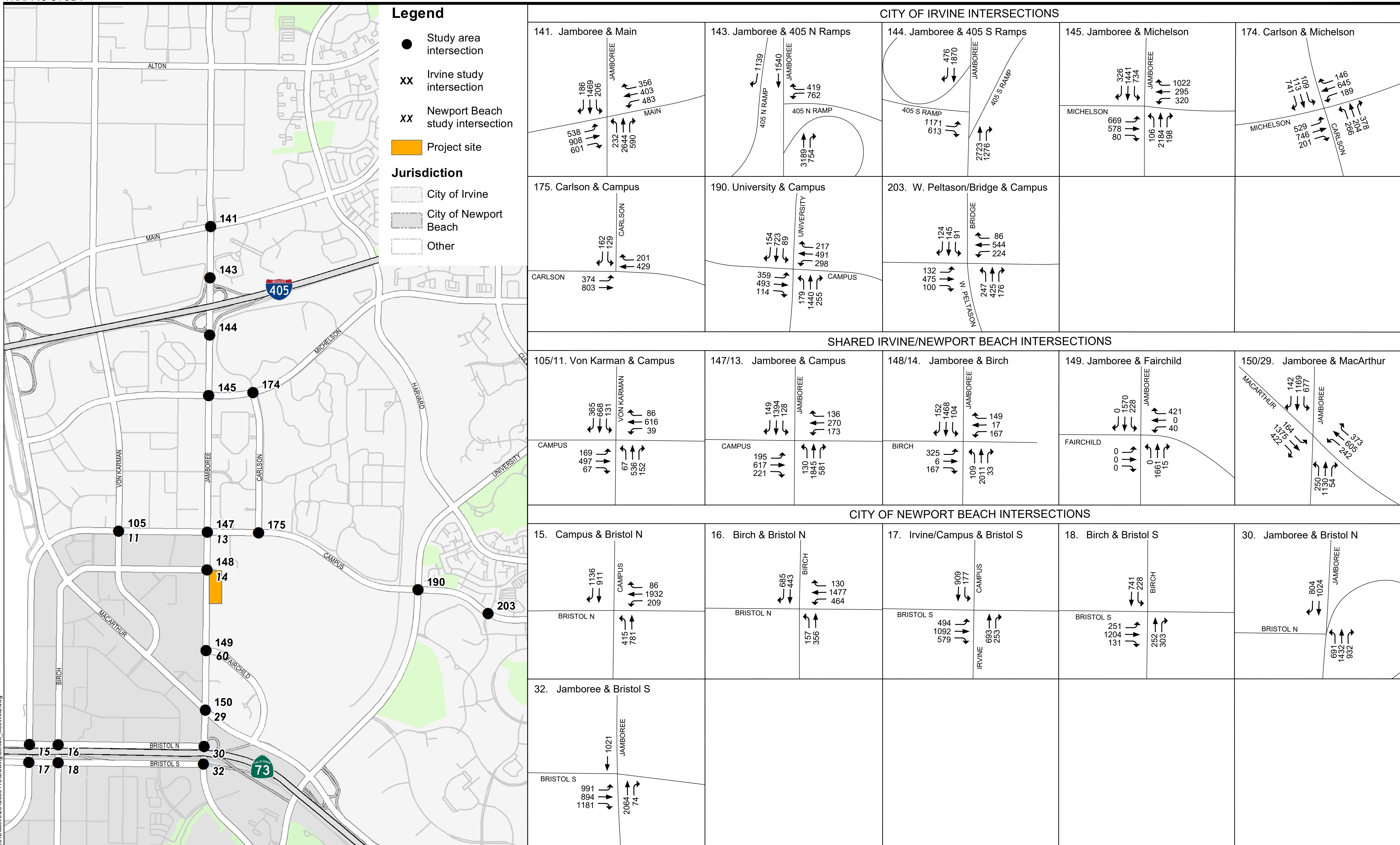


Figure 13

Existing Plus Project Turning Movement Volumes - PM Peak Hour

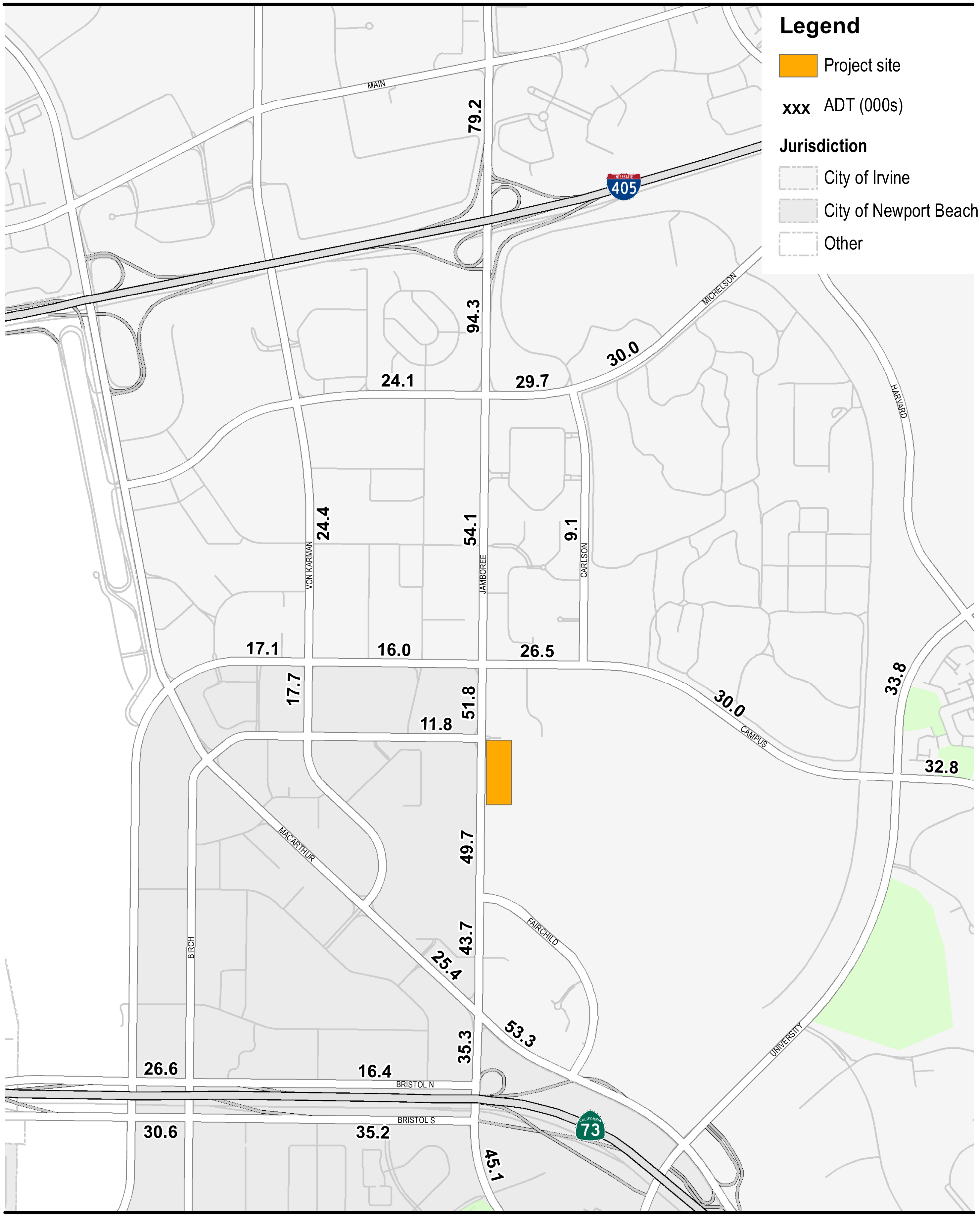


Figure 14
Buildout Approved No Project ADT Volumes

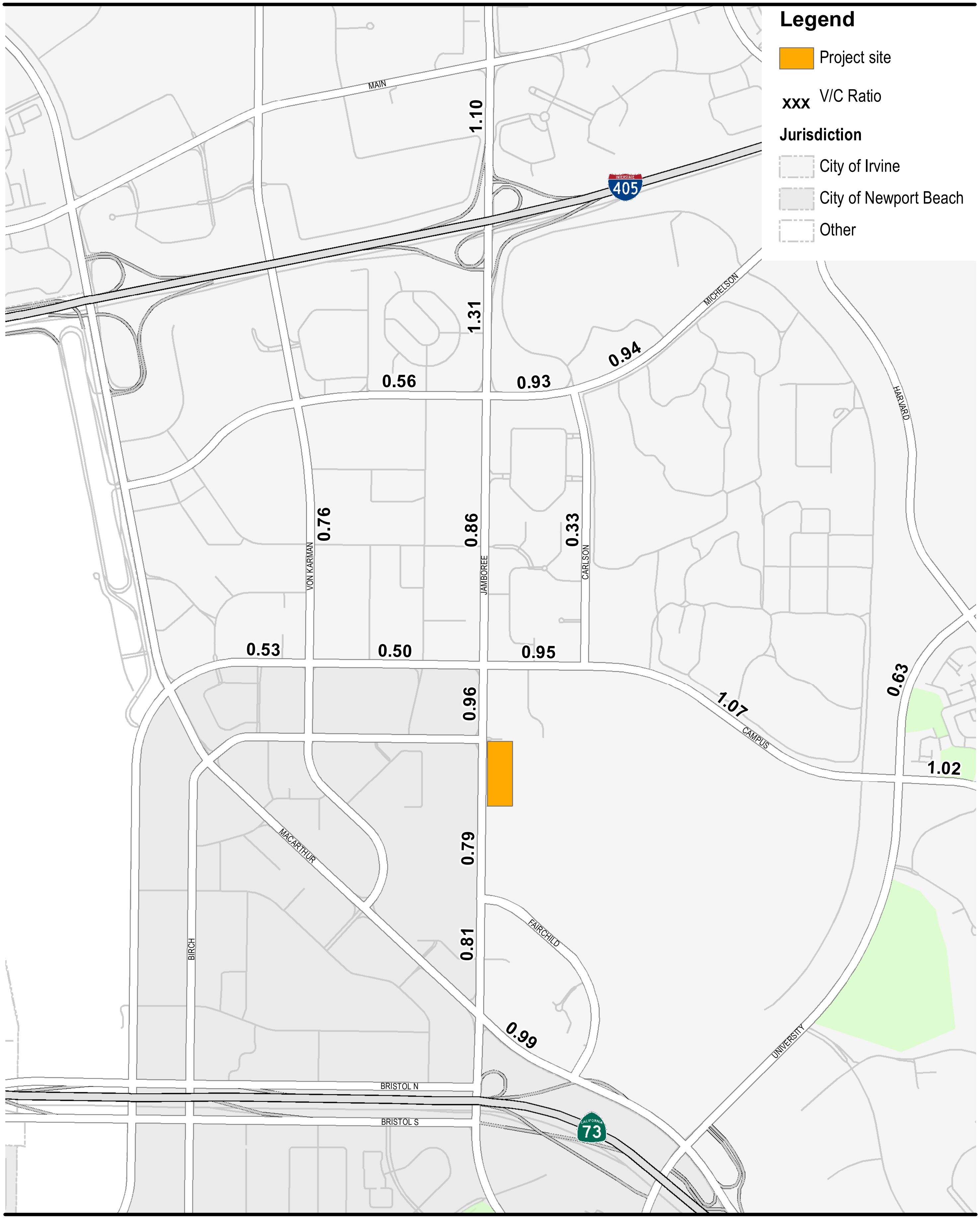


Figure 15
Buildout Approved No Project V/C Ratios

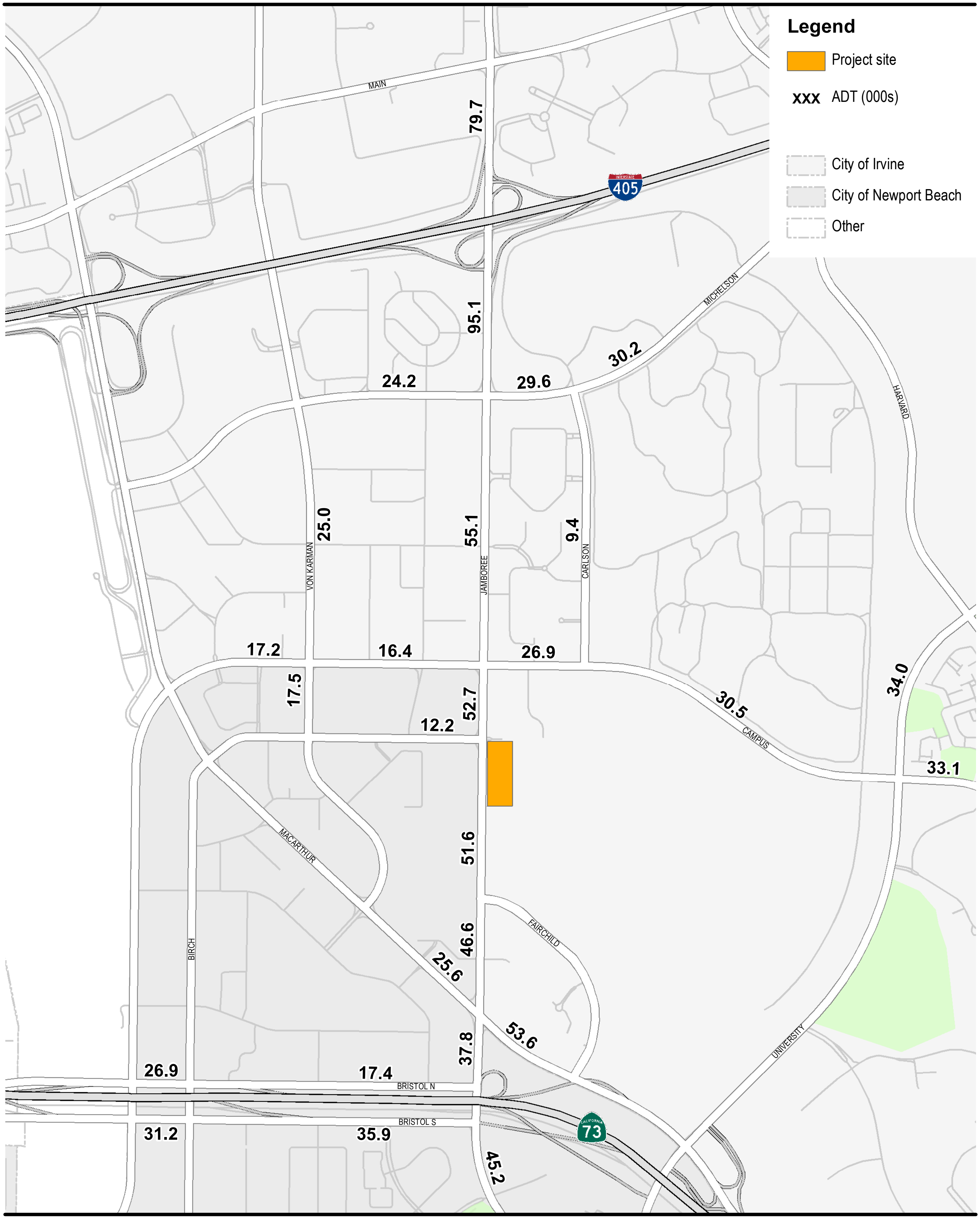


Figure 16
Buildout Approved With Project ADT Volumes

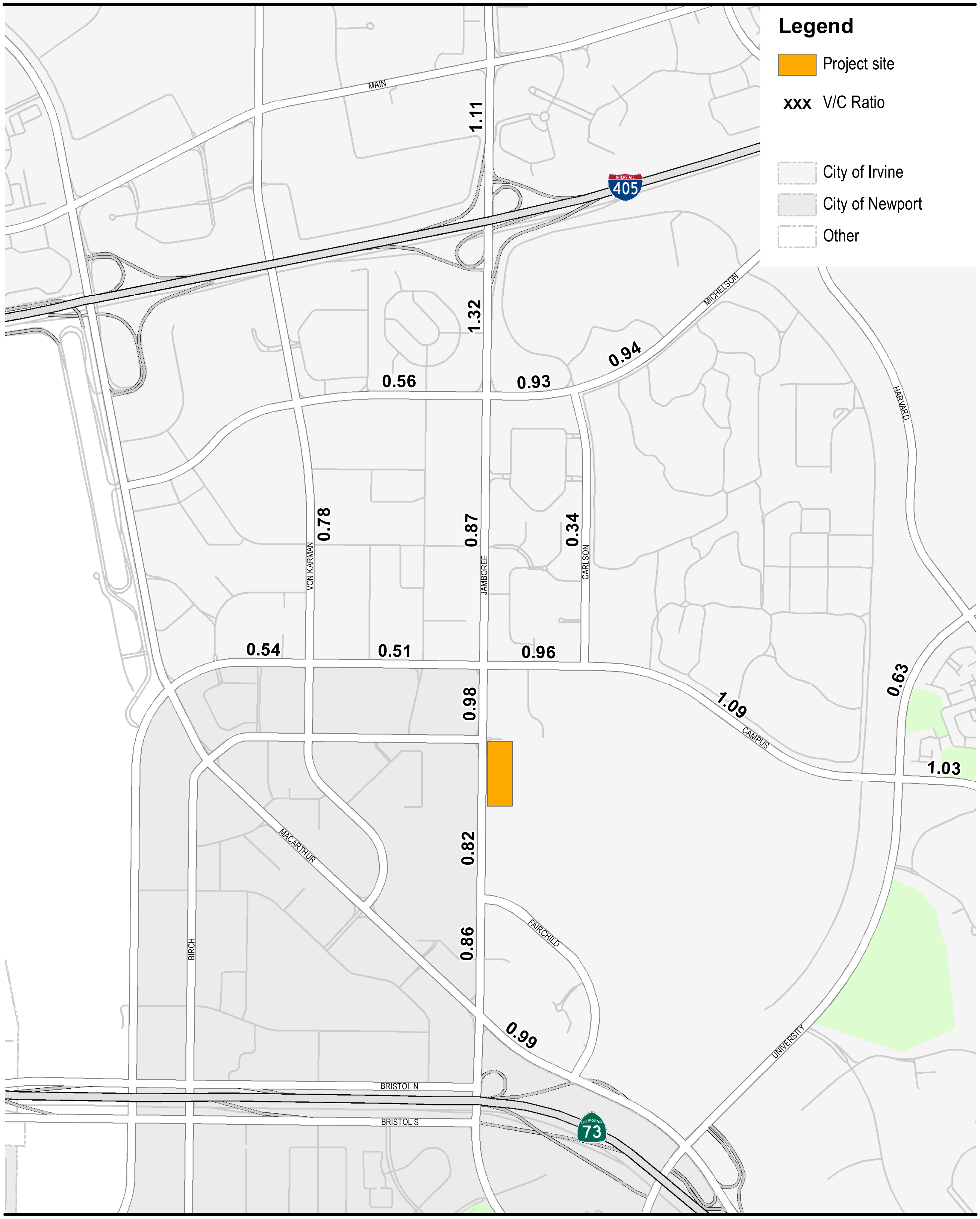


Figure 17
Buildout Approved With Project V/C Ratios

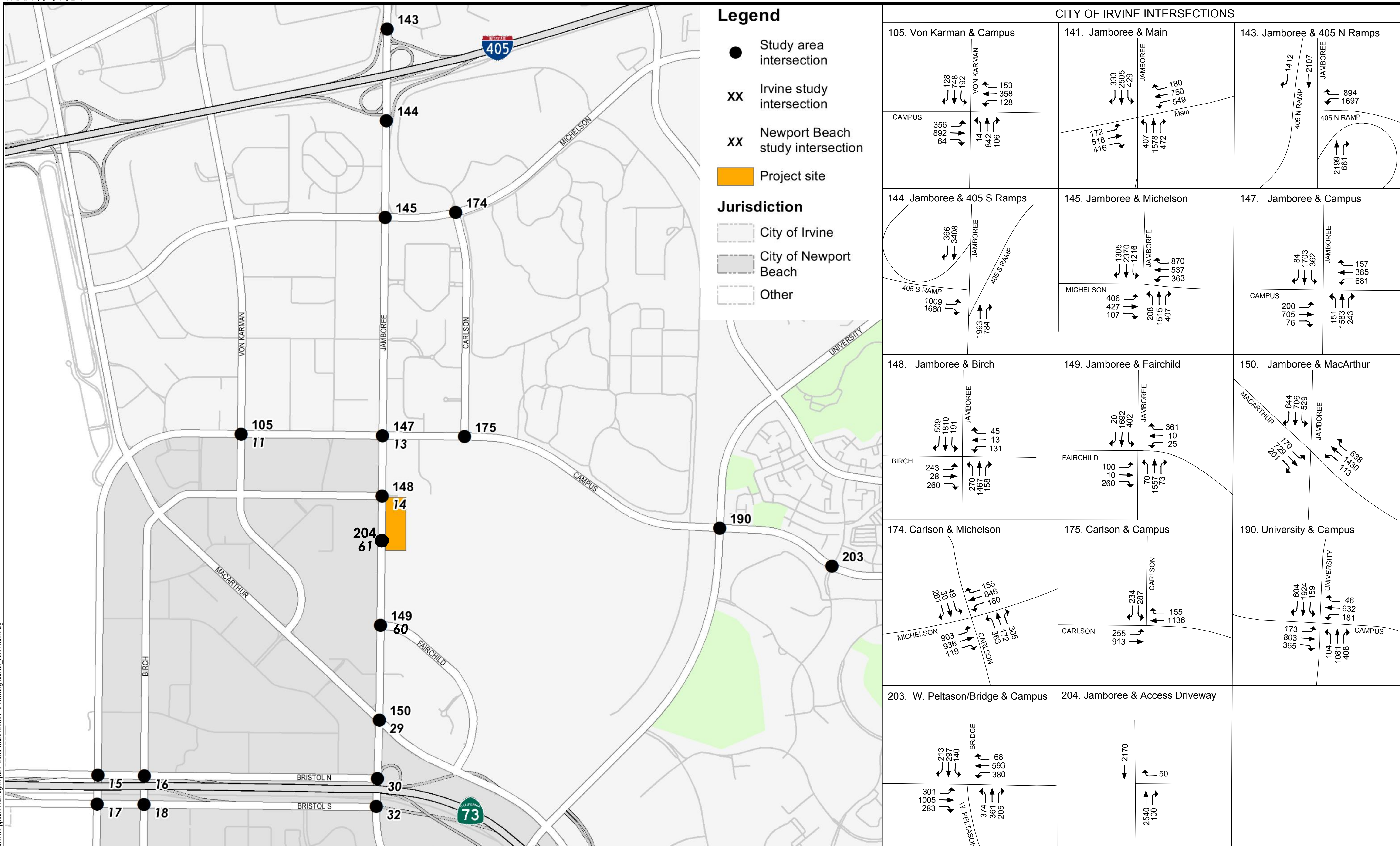


Figure 18
Buildout Approved No Project Turning Movement Volumes - AM Peak Hour

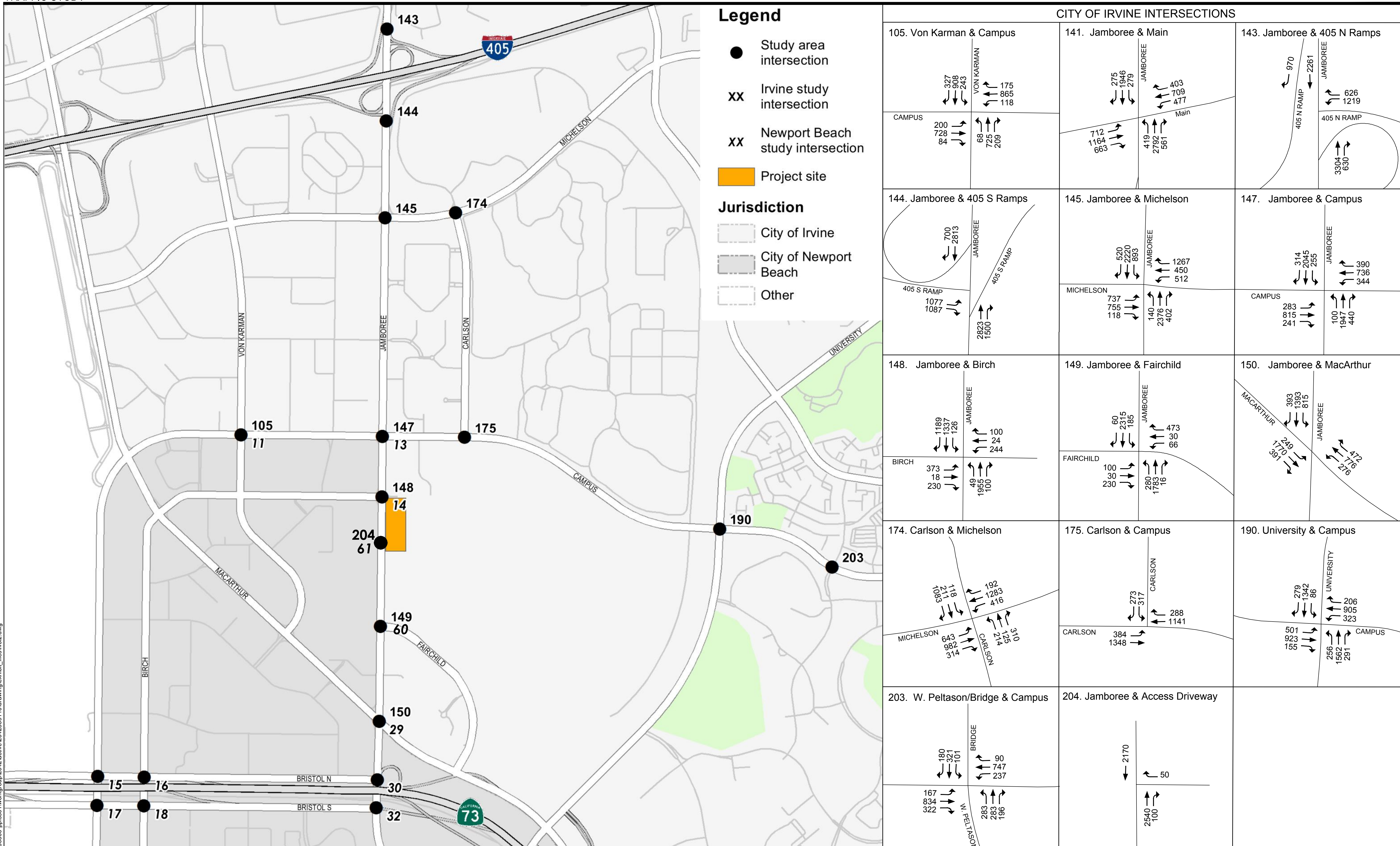
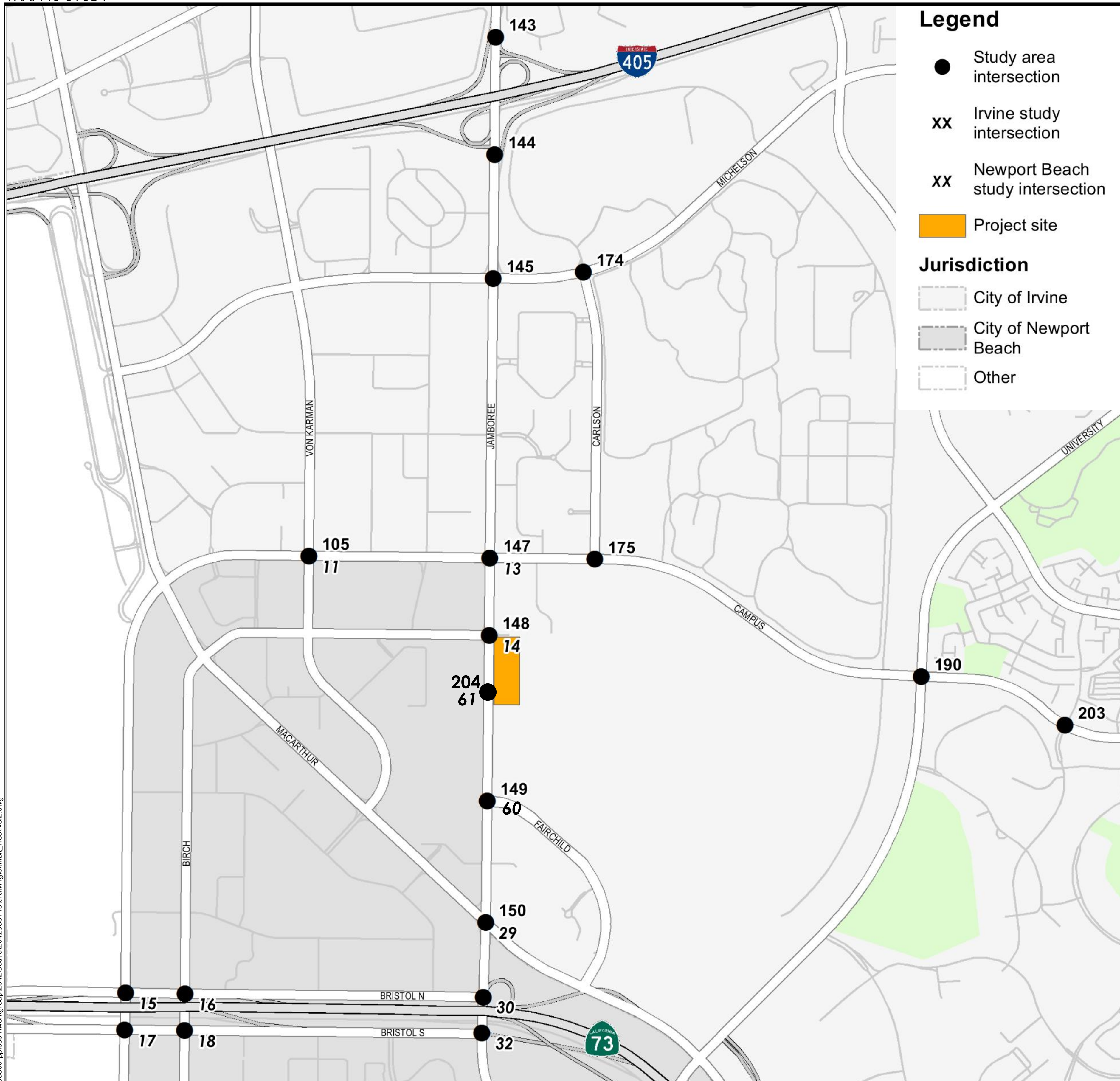


Figure 19
Buildout Approved No Project Turning Movement Volumes - PM Peak Hour



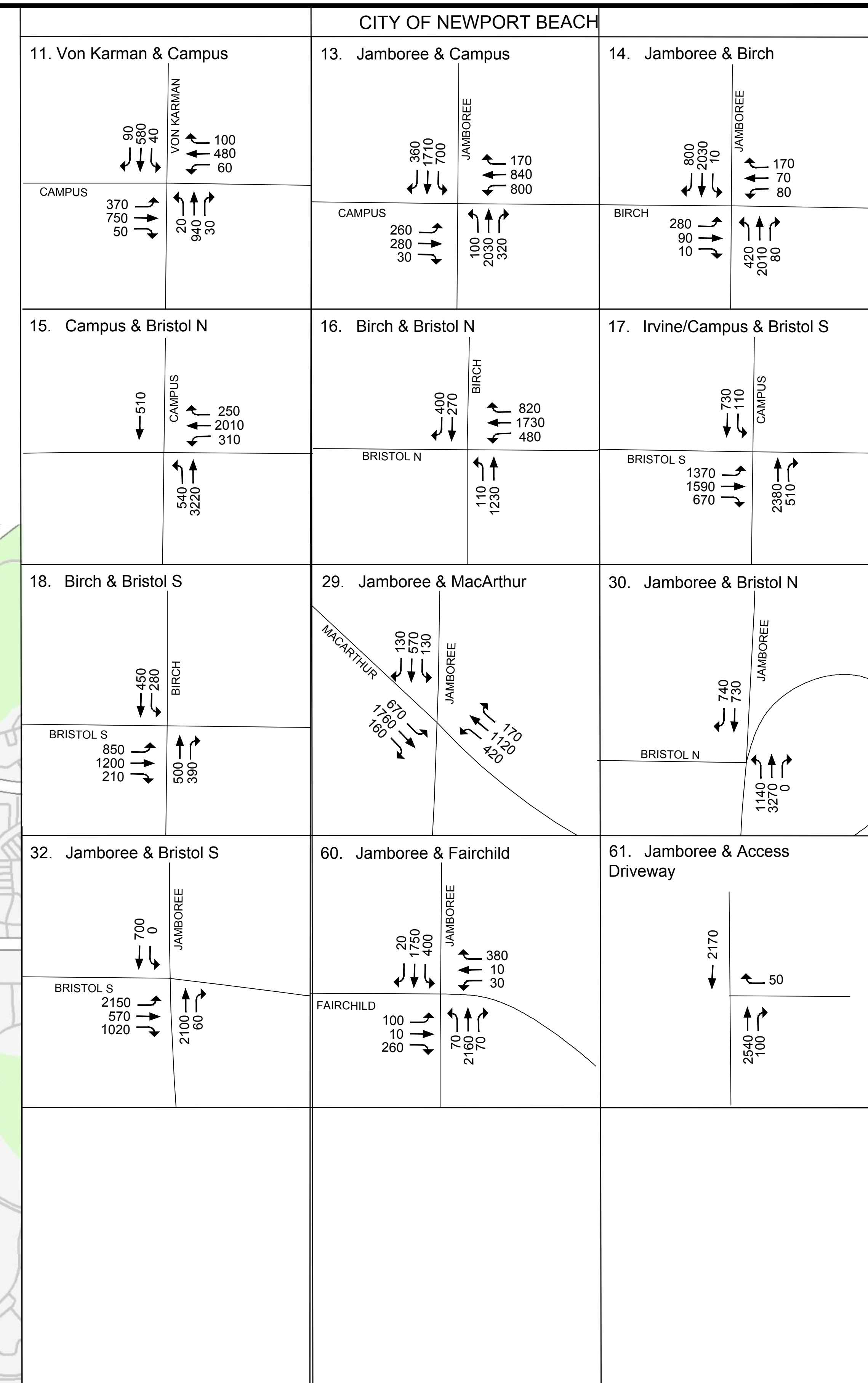


Figure 20

Newport Beach General Plan Buildout No Project Turning Movement Volumes - AM Peak Hour

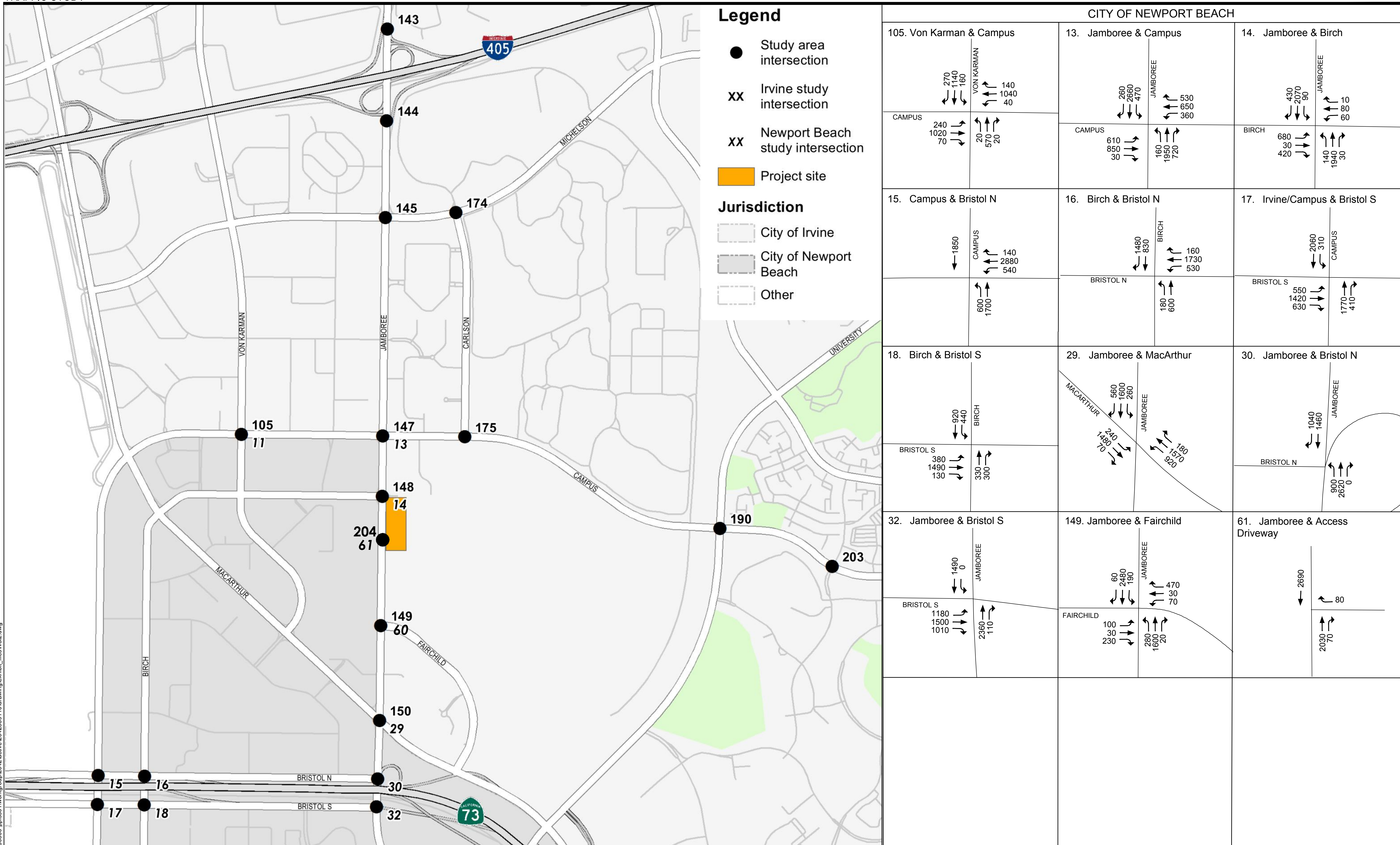
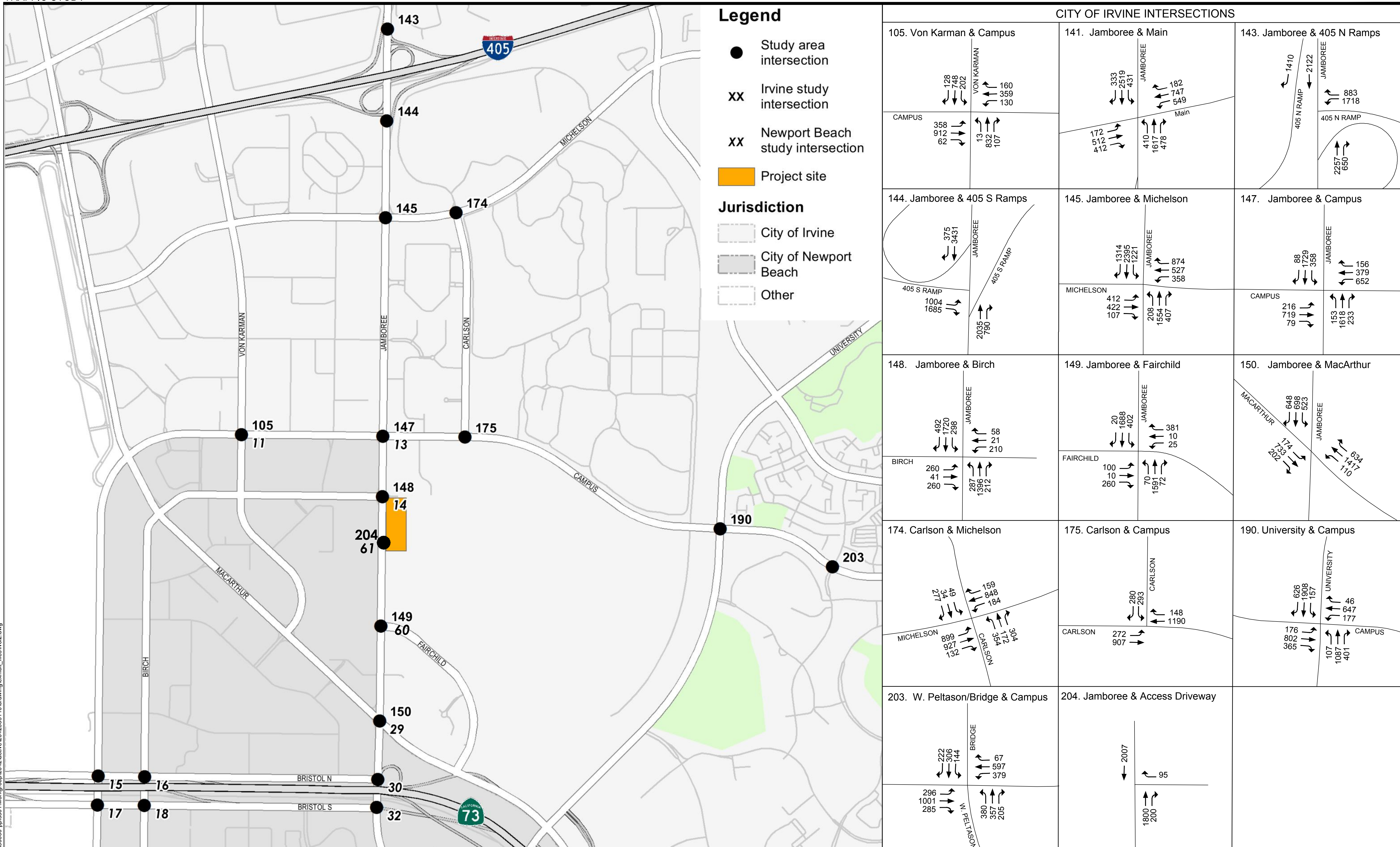


Figure 21
Newport Beach General Plan Buildout No Project Turning Movement Volumes - PM Peak Hour



\\us0300-ppfss01\workgroup\2042\active\204253911\0\drawing\exhibit_files\vol2.dwg

Figure 22

Buildout Approved With Project Turning Movement Volumes - AM Peak Hour

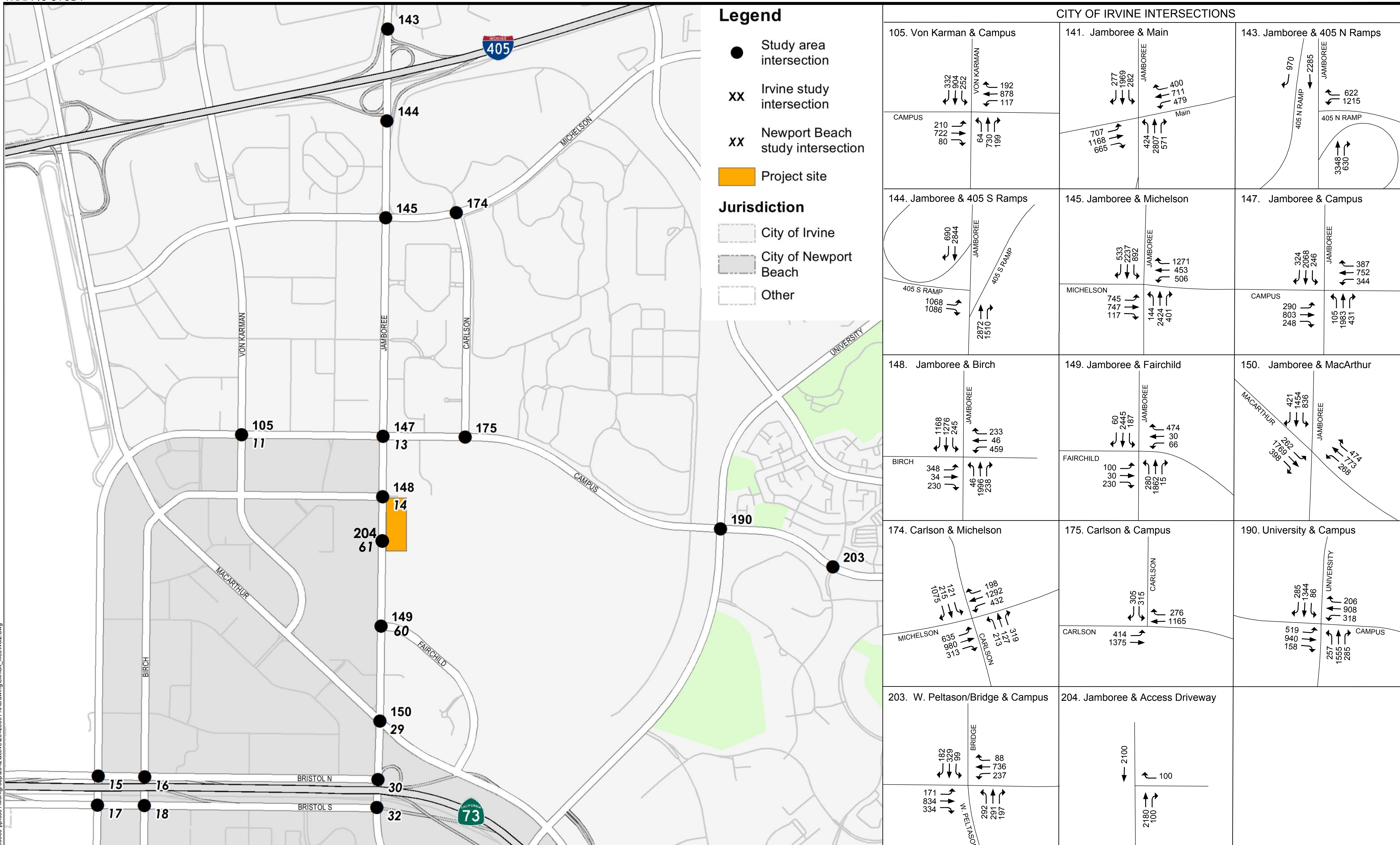
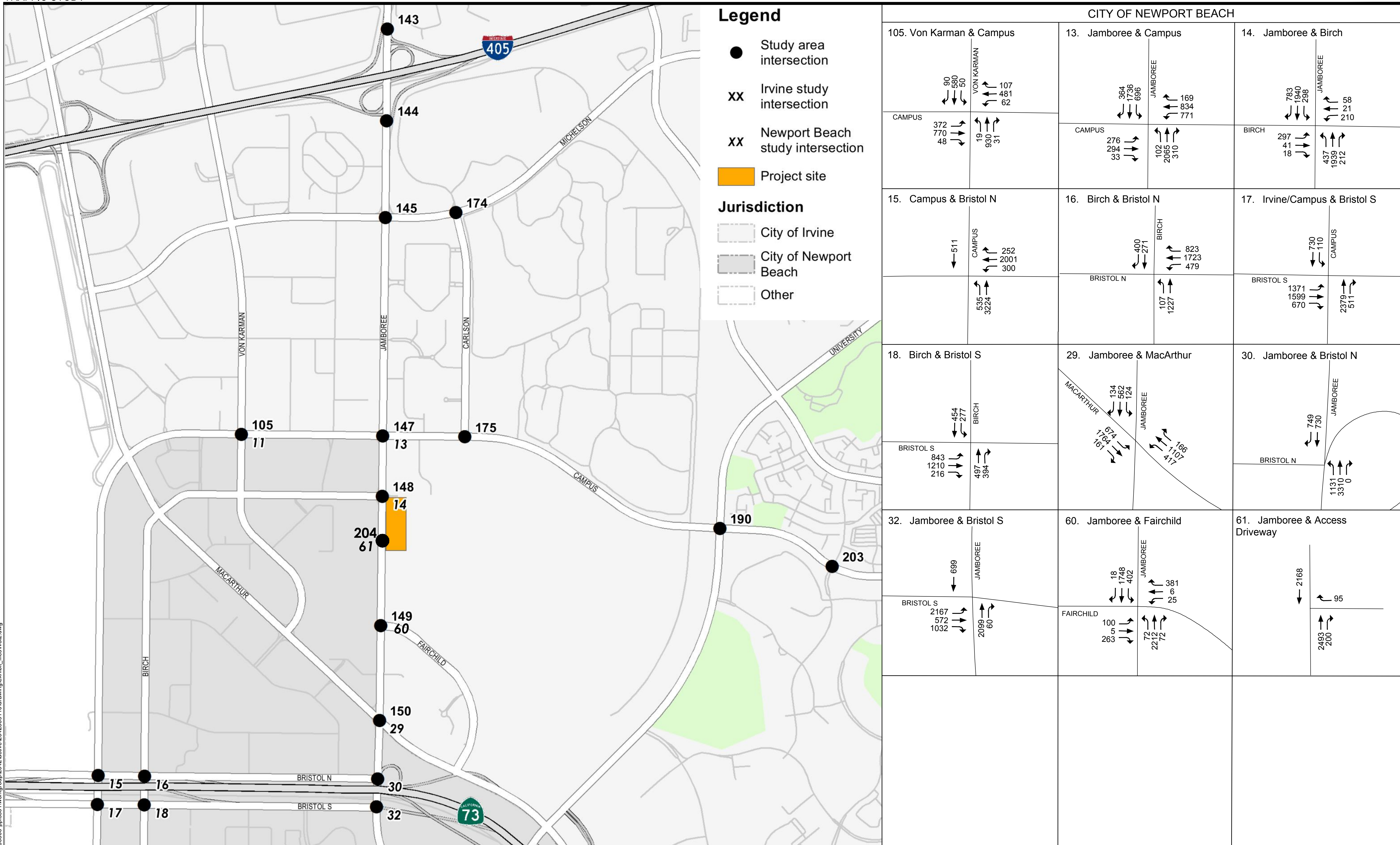


Figure 23

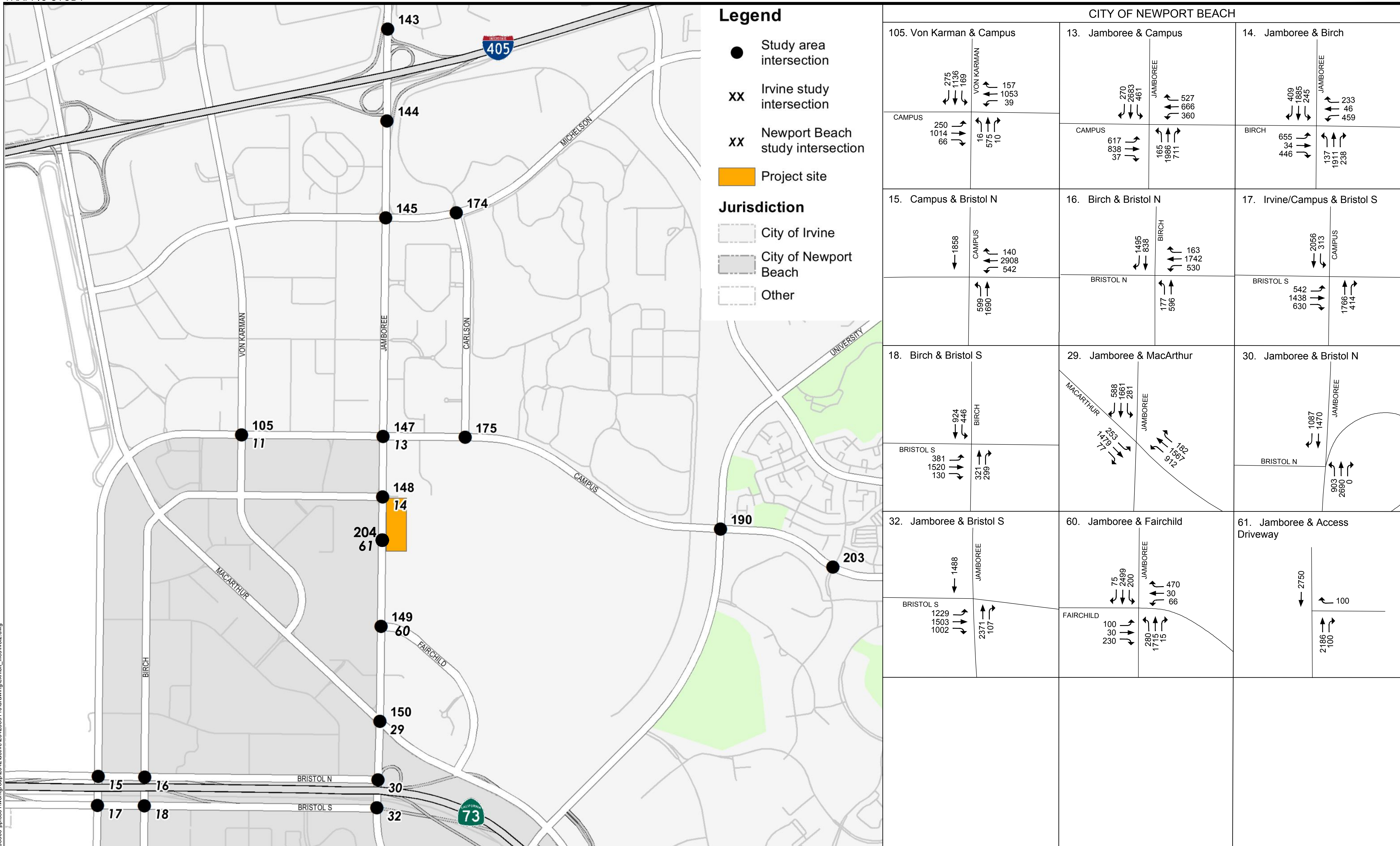
Buildout Approved With Project Turning Movement Volumes - PM Peak Hour



\\us0300-ppfss01\workgroup\2042\active\204253910\drawing\exhibit_files\vol2.dwg

Figure 24

Newport Beach General Plan Buildout With Project Turning Movement Volumes - AM Peak Hour


Legend
Study area intersection
XX Irvine study intersection
XX Newport Beach study intersection
Project site
Jurisdiction
City of Irvine
City of Newport Beach
Other
143
144
145
174
105
11
147
13
175
148
14
204
61
149
60
150
29
190
203
15
16
17
18
30
32
405
73
VON KARMAN
JAMBOREE
CARLSON
MICHELSON
UNIVERSITY
CAMPUS
MACARTHUR
FAIRCHILD
BIRCH
BRISTOL N
BRISTOL S
CITY OF NEWPORT BEACH
105. Von Karman & Campus
275 1136 169
157 1053 39
250 1014 66
16 575 10
13. Jamboree & Campus
270 2683 461
527 666 360
617 838 37
165 1986 711
14. Jamboree & Birch
409 1885 245
233 46 459
655 34 446
137 1911 238
15. Campus & Bristol N
1858
140 2908 542
599 1690
16. Birch & Bristol N
1495 838
163 1742 530
177 596
17. Irvine/Campus & Bristol S
2056 313
542 1438 630
1766 414
18. Birch & Bristol S
924 446
381 1520 130
321 299
29. Jamboree & MacArthur
588 1661 281
253 1479 77
182 1567 912
30. Jamboree & Bristol N
1087 1470
903 2690 0
32. Jamboree & Bristol S
1488
1229 1503 1002
2371 107
60. Jamboree & Fairchild
75 2499 200
470 30 66
100 30 230
280 1715 15
61. Jamboree & Access Driveway
2750
100
2186 100

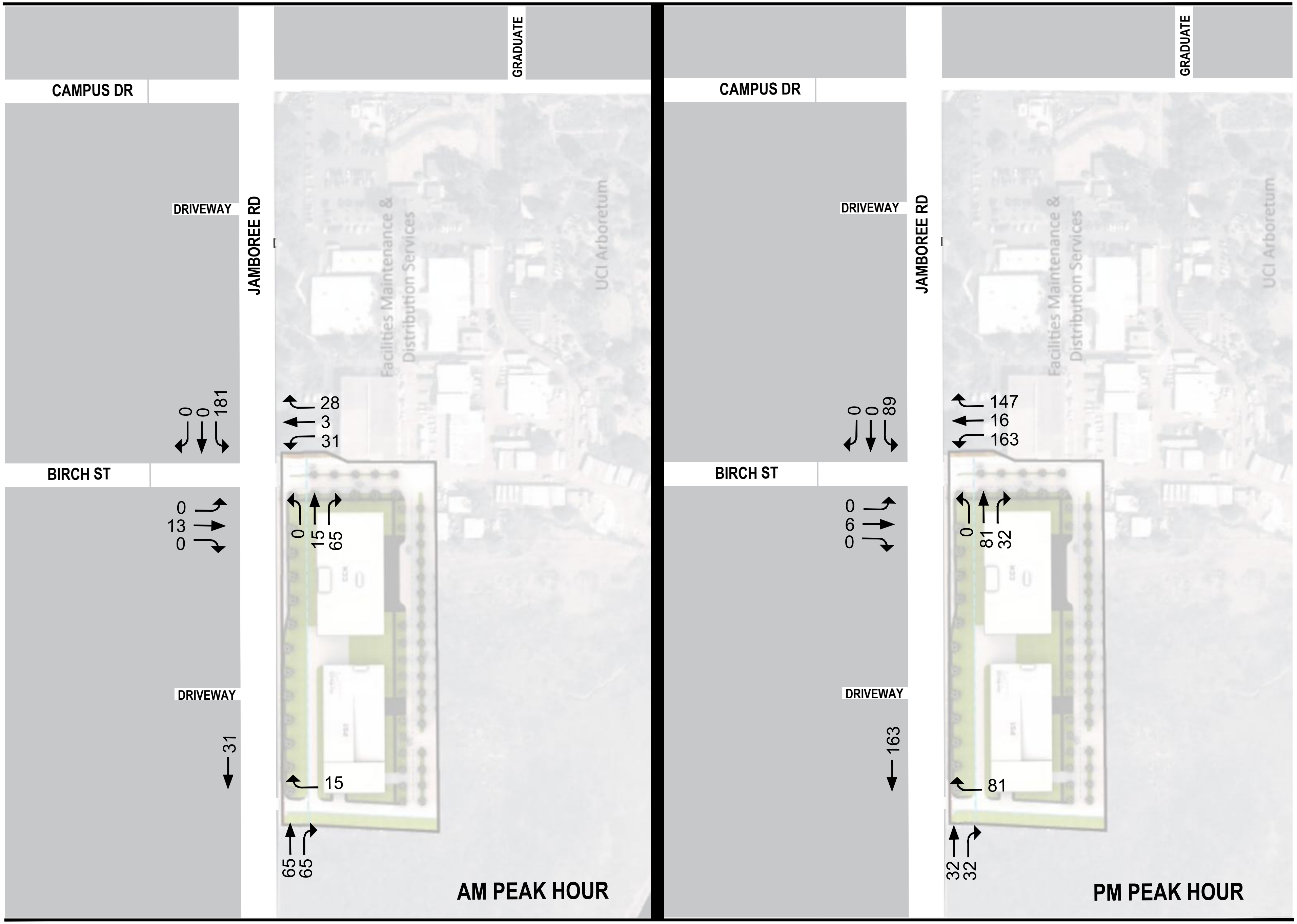


Figure 26

Site Access Project Only Turning Movement Volumes

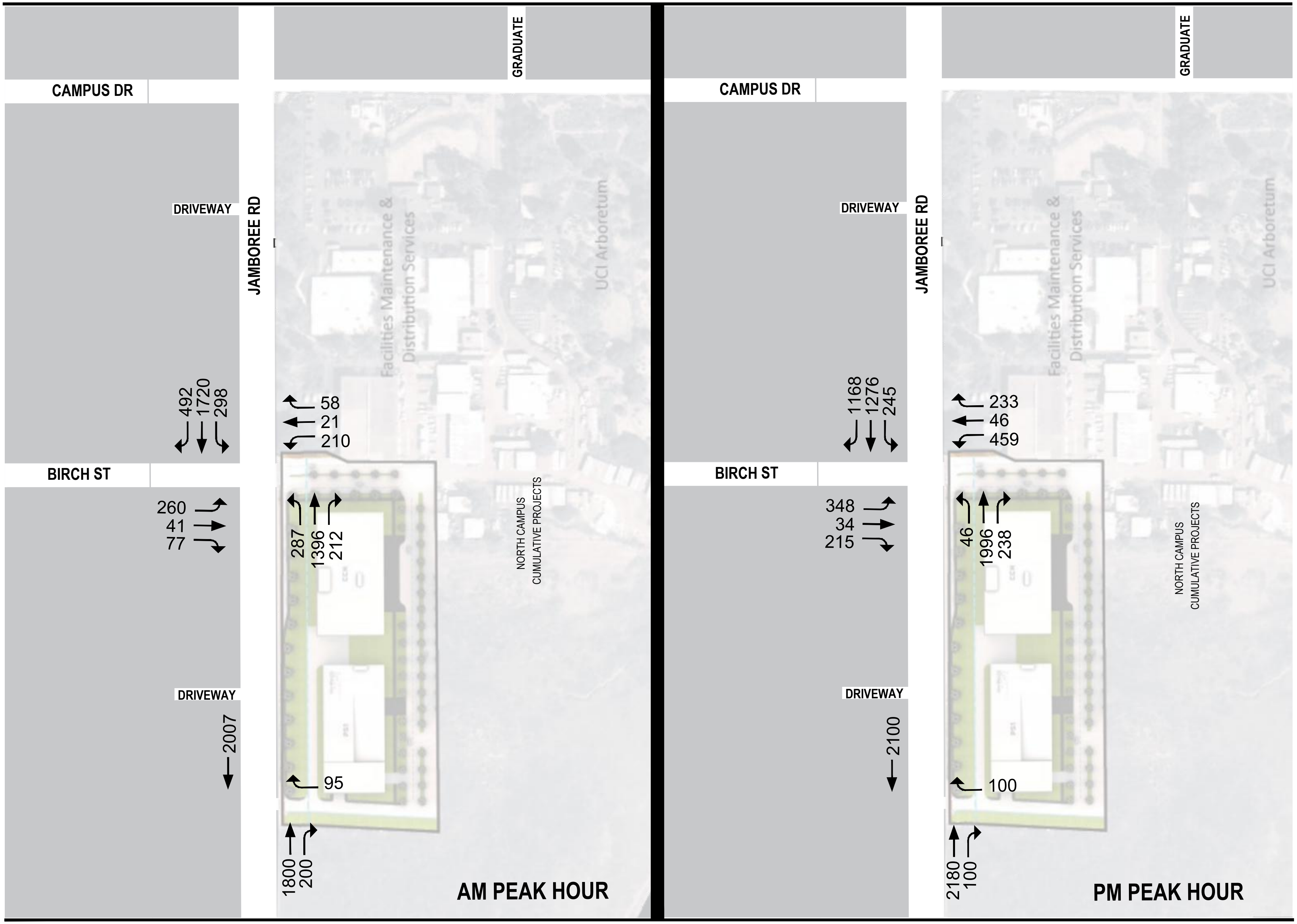


Figure 27

Site Access Buildout Approved Turning Movement Volumes

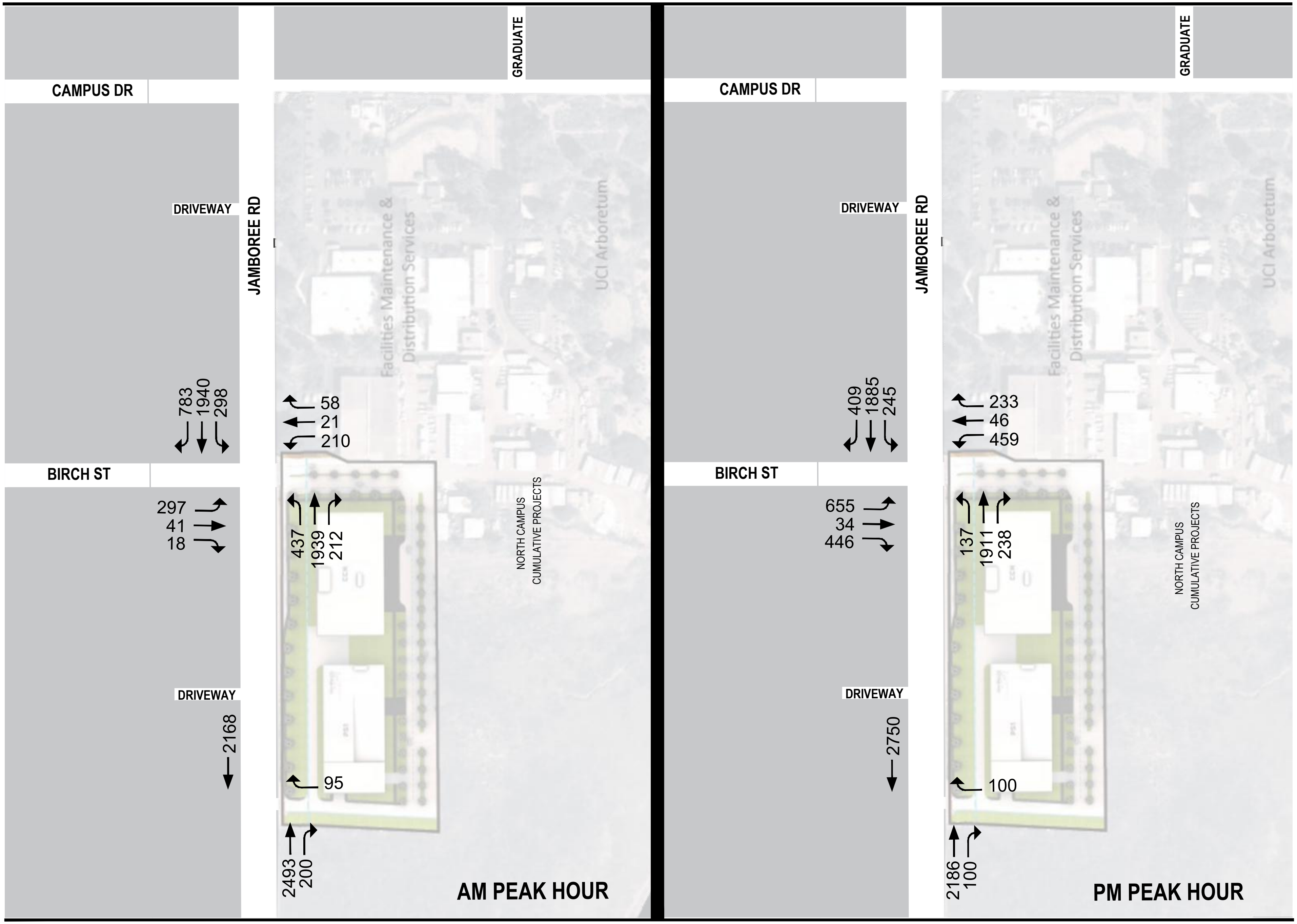


Figure 28

Site Access Newport Beach General Plan Buildout Turning Movement Volumes

Existing and Existing Plus Project (Irvine Locations)

105. Von Karman Ave & Campus

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	12	.01	67	.04*
NBT	2	3400	632	.19*	519	.15
NBR	f		47		152	
SBL	1	1700	73	.04*	131	.08
SBT	2	3400	576	.20	662	.30*
SBR	0	0	100		365	
EBL	1	1700	266	.16*	169	.10*
EBT	2	3400	323	.10	492	.14
EBR	1	1700	54	.03	67	.04
WBL	1	1700	44	.03	39	.02
WBT	2	3400	203	.08*	604	.20*
WBR	0	0	77		86	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.52**		**.69**

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	12	.01	67	.04*
NBT	2	3400	635	.19*	536	.16
NBR	f		47		152	
SBL	1	1700	73	.04*	131	.08
SBT	2	3400	589	.20	668	.30*
SBR	0	0	100		365	
EBL	1	1700	266	.16*	169	.10*
EBT	2	3400	333	.10	497	.15
EBR	1	1700	54	.03	67	.04
WBL	1	1700	44	.03	39	.02
WBT	2	3400	205	.08*	616	.21*
WBR	0	0	77		86	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.52**		**.70**

141. Jamboree Rd & Main St

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	396	.12*	224	.07
NBT	4	6800	1535	.23	2603	.38*
NBR	f		429		586	
SBL	2	3400	312	.09	206	.06*
SBT	4	6800	2366	.35*	1453	.21
SBR	1	1700	296	.17	186	.11
EBL	2	3400	132	.04	538	.16
EBT	3	5100	299	.06*	908	.18*
EBR	f		285		598	
WBL	2	3400	508	.15*	481	.14*
WBT	3	5100	638	.13	403	.08
WBR	f		137		356	
Clearance Interval				.05*		.05*
Note: Assumes Right-Turn Overlap for SBR						
TOTAL CAPACITY UTILIZATION				**.73**		**.81**

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	398	.12*	232	.07
NBT	4	6800	1543	.23	2644	.39*
NBR	f		430		590	
SBL	2	3400	312	.09	206	.06*
SBT	4	6800	2399	.35*	1469	.22
SBR	1	1700	296	.17	186	.11
EBL	2	3400	132	.04	538	.16
EBT	3	5100	299	.06*	908	.18*
EBR	f		292		601	
WBL	2	3400	511	.15*	483	.14*
WBT	3	5100	638	.13	403	.08
WBR	f		137		356	
Clearance Interval				.05*		.05*
Note: Assumes Right-Turn Overlap for SBR						
TOTAL CAPACITY UTILIZATION				**.73**		**.82**

143. Jamboree Rd & I-405 NB Ramps

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	2035	.40*	3114	.61*
NBR	f		595		754	
SBL	0	0	0		0	
SBT	4	6800	1732	.25	1521	.22
SBR	f		1429		1139	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	3	5100	1480	.29*	752	.15*
WBT	0	0	0		0	
WBR	f		605		419	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.74**		**.81**

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	2049	.40*	3189	.63*
NBR	f		595		754	
SBL	0	0	0		0	
SBT	4	6800	1772	.26	1540	.23
SBR	f		1429		1139	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	3	5100	1500	.29*	762	.15*
WBT	0	0	0		0	
WBR	f		605		419	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.74**		**.83**

144. Jamboree Rd & I-405 SB Ramps

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1466	.29	2648	.52*
NBR	f		451		1243	
SBL	0	0	0		0	
SBT	4	6800	3030	.45*	1841	.27
SBR	f		183		476	
EBL	2	3400	1163	.34*	1171	.34*
EBT	0	0	0		0	
EBR	2	3400	1439	.42	600	.18
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.08*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.92**		**.91**

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1480	.29	2723	.53*
NBR	f		457		1276	
SBL	0	0	0		0	
SBT	4	6800	3090	.45*	1870	.28
SBR	f		183		476	
EBL	2	3400	1163	.34*	1171	.34*
EBT	0	0	0		0	
EBR	2	3400	1465	.43	613	.18
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.09*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.93**		**.92**

145. Jamboree Rd & Michelson Dr

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	193	.11*	94	.06
NBT	4	6800	1126	.17	2080	.31*
NBR	1	1700	265	.16	194	.11
SBL	2	3400	777	.23	734	.22*
SBT	4	6800	2175	.32*	1399	.21
SBR	f		1464		326	
EBL	2	3400	203	.06*	669	.20*
EBT	2	3400	144	.05	578	.19
EBR	0	0	23		75	
WBL	2	3400	218	.06	318	.09
WBT	2	3400	367	.11*	295	.09*
WBR	f		581		1022	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.65**		**.87**

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	195	.11*	106	.06
NBT	4	6800	1146	.17	2184	.32*
NBR	1	1700	266	.16	198	.12
SBL	2	3400	777	.23	734	.22*
SBT	4	6800	2261	.33*	1441	.21
SBR	f		1464		326	
EBL	2	3400	203	.06*	669	.20*
EBT	2	3400	144	.05	578	.19
EBR	0	0	33		80	
WBL	2	3400	221	.07	320	.09
WBT	2	3400	367	.11*	295	.09*
WBR	f		581		1022	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.66**		**.88**

147. Jamboree Rd & Campus Dr

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	88	.03*	80	.02
NBT	4	6800	1242	.19	1725	.33*
NBR	0	0	79		519	
SBL	2	3400	151	.04	128	.04*
SBT	3	5100	1965	.41*	1347	.29
SBR	0	0	127		149	
EBL	2	3400	82	.02	195	.06
EBT	2	3400	149	.04*	617	.18*
EBR	f		52		202	
WBL	2	3400	303	.09*	149	.04*
WBT	2	3400	248	.07	270	.08
WBR	1	1700	79	.05	136	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.62**		**.64**

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	97	.03*	130	.04
NBT	4	6800	1265	.20	1845	.36*
NBR	0	0	91		581	
SBL	2	3400	151	.04	128	.04*
SBT	3	5100	2061	.43*	1394	.30
SBR	0	0	127		149	
EBL	2	3400	82	.02	195	.06
EBT	2	3400	149	.04*	617	.18*
EBR	f		92		221	
WBL	2	3400	353	.10*	173	.05*
WBT	2	3400	248	.07	270	.08
WBR	1	1700	79	.05	136	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.65**		**.68**

148. Jamboree Rd & Birch St

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	244	.14*	109	.06
NBT	3	5100	1049	.21	1928	.38*
NBR	0	0	1		1	
SBL	1	1700	9	.01	13	.01*
SBT	3	5100	1823	.36*	1468	.29
SBR	f		557		152	
EBL	1.5		89		325	
EBT	0.5	3400	2	.03*	0	.10*
EBR	f		59		167	
WBL	0	0	3		1	
WBT	1	1700	0	.01*	0	.00*
WBR	0	0	8		0	
Clearance Interval				.05*		.05*

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .59 .54

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	244	.14*	109	.06
NBT	3	5100	1065	.21	2011	.39*
NBR	1	1700	67	.04	33	.02
SBL	2	3400	194	.06	104	.03*
SBT	3	5100	1823	.36*	1468	.29
SBR	f		557		152	
EBL	1.5		89		325	
EBT	0.5	3400	15	.03*	6	.10*
EBR	f		59		167	
WBL	1.5		35		167	
WBT	0.5	3400	3	.01*	17	.05*
WBR	1	1700	36	.02	149	.09
Right Turn Adjustment					WBR	.02*
Clearance Interval				.05*		.05*

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .59 .64

149. Jamboree Rd & Fairchild Rd

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	0	.00	0	.00
NBT	3	5100	1292	.26*	1598	.32*
NBR	0	0	50		15	
SBL	2	3400	457	.13*	224	.07*
SBT	4	6800	1409	.21	1409	.21
SBR	d	1700	0	.00	0	.00
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	16	.01*	40	.02*
WBT	1	1700	0	.00	0	.00
WBR	1	1700	310	.18	419	.25
Right Turn Adjustment			WBR	.07*	WBR	.18*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .52 .64

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	0	.00	0	.00
NBT	3	5100	1421	.29*	1661	.33*
NBR	0	0	50		15	
SBL	2	3400	458	.13*	228	.07*
SBT	4	6800	1440	.21	1570	.23
SBR	d	1700	0	.00	0	.00
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	16	.01*	40	.02*
WBT	1	1700	0	.00	0	.00
WBR	1	1700	313	.18	421	.25
Right Turn Adjustment			WBR	.07*	WBR	.18*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .55 .65

150. Jamboree Rd & MacArthur Blvd

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	437	.13*	250	.07
NBT	4	6800	1206	.18	1080	.16*
NBR	d	1700	269	.16	54	.03
SBL	3	5100	374	.07	656	.13*
SBT	3	5100	797	.16*	1041	.20
SBR	1	1700	158	.09	130	.08
EBL	2	3400	54	.02*	159	.05
EBT	3	5100	357	.07	1375	.27*
EBR	f		149		422	
WBL	2	3400	173	.05	242	.07*
WBT	3	5100	1289	.25*	605	.12
WBR	1	1700	446	.26	365	.21
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .61 .68

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	437	.13*	250	.07*
NBT	4	6800	1309	.19	1130	.17
NBR	d	1700	269	.16	54	.03
SBL	3	5100	378	.07	677	.13
SBT	3	5100	821	.16*	1169	.23*
SBR	1	1700	160	.09	142	.08
EBL	2	3400	64	.02*	164	.05
EBT	3	5100	357	.07	1375	.27*
EBR	f		149		422	
WBL	2	3400	173	.05	242	.07*
WBT	3	5100	1289	.25*	605	.12
WBR	1	1700	463	.27	373	.22
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .61 .69

174. Carlson Ave & Michelson Dr

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	181	.05*	262	.08*
NBT	2	3400	91	.03	200	.06
NBR	1	1700	100	.06	366	.22
SBL	2	3400	34	.01	109	.03
SBT	1	1700	37	.02*	111	.07*
SBR	f		296		741	
EBL	2	3400	578	.17*	529	.16*
EBT	2	3400	524	.15	742	.22
EBR	1	1700	76	.04	199	.12
WBL	1	1700	160	.09	184	.11
WBT	2	3400	696	.20*	645	.19*
WBR	f		184		146	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .49 .55

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	182	.05*	266	.08*
NBT	2	3400	92	.03	204	.06
NBR	1	1700	102	.06	378	.22
SBL	2	3400	34	.01	109	.03
SBT	1	1700	40	.02*	113	.07*
SBR	f		296		741	
EBL	2	3400	578	.17*	529	.16*
EBT	2	3400	525	.15	746	.22
EBR	1	1700	79	.05	201	.12
WBL	1	1700	170	.10	189	.11
WBT	2	3400	696	.20*	645	.19*
WBR	f		184		146	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .49 .55

175. Carlson Ave & Campus Dr

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	195	.11*	129	.08*
SBT	0	0	0		0	
SBR	1	1700	186	.11	154	.09
EBL	1	1700	73	.04	353	.21
EBT	1	1700	312	.18*	762	.45*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	450	.13	413	.12
WBR	d	1700	61	.04	201	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.34**		**.58**

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	195	.11*	129	.08*
SBT	0	0	0		0	
SBR	1	1700	203	.12	162	.10
EBL	1	1700	77	.05*	374	.22
EBT	1	1700	320	.19	803	.47*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	483	.14*	429	.13
WBR	d	1700	61	.04	201	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.35**		**.60**

190. University Dr & Campus Dr

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	102	.06*	177	.10
NBT	3	5100	949	.19	1440	.28*
NBR	d	1700	338	.20	255	.15
SBL	1	1700	151	.09	89	.05*
SBT	2	3400	1817	.53*	723	.21
SBR	1	1700	272	.16	149	.09
EBL	1	1700	95	.06	347	.20*
EBT	2	3400	330	.10*	464	.14
EBR	d	1700	192	.11	110	.06
WBL	1	1700	131	.08*	298	.18
WBT	2	3400	296	.10	480	.21*
WBR	0	0	32		217	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.82**		**.79**

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	105	.06*	179	.11
NBT	3	5100	949	.19	1440	.28*
NBR	d	1700	338	.20	255	.15
SBL	1	1700	151	.09	89	.05*
SBT	2	3400	1817	.53*	723	.21
SBR	1	1700	282	.17	154	.09
EBL	1	1700	97	.06	359	.21*
EBT	2	3400	336	.10*	493	.15
EBR	d	1700	193	.11	114	.07
WBL	1	1700	131	.08*	298	.18
WBT	2	3400	319	.10	491	.21*
WBR	0	0	32		217	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.82**		**.80**

203. Bridge Rd & Campus Dr

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	39	.02	244	.14*
NBT	2	3400	89	.03*	425	.13
NBR	1	1700	47	.03	176	.10
SBL	1	1700	111	.07*	91	.05
SBT	2	3400	186	.07	145	.08*
SBR	0	0	47		122	
EBL	1	1700	58	.03	128	.08
EBT	2	3400	553	.20*	458	.16*
EBR	0	0	131		92	
WBL	1	1700	161	.09*	224	.13*
WBT	2	3400	299	.09	538	.16
WBR	d	1700	35	.02	86	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.44**		**.56**

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	46	.03*	247	.15*
NBT	2	3400	89	.03	425	.13
NBR	1	1700	47	.03	176	.10
SBL	1	1700	111	.07	91	.05
SBT	2	3400	186	.07*	145	.08*
SBR	0	0	50		124	
EBL	1	1700	59	.03	132	.08
EBT	2	3400	556	.20*	475	.17*
EBR	0	0	133		100	
WBL	1	1700	161	.09*	224	.13*
WBT	2	3400	312	.09	544	.16
WBR	d	1700	35	.02	86	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.44**		**.58**

204. Jamboree & Access

Existing (2019)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1273	.26	2034	.40*
NBR	0	0	34		1	
SBL	0	0	0		0	
SBT	4	6800	1895	.28*	1636	.24
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	1	1700	21	.01	4	.00
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.33**		**.45**

Existing Plus Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1339	.26	2066	.41*
NBR	1	1700	100	.06	33	.02
SBL	0	0	0		0	
SBT	4	6800	1927	.28*	1802	.26
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	1	1700	37	.02	87	.05
Right Turn Adjustment					WBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.33**		**.51**

Existing and Existing Plus Project (Newport Beach Locations)

11. Von Karman Ave & Campus

Existing (2019) NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	12	.008	67	.042*
NBT	2	3200	632	.198*	519	.162
NBR	f		47		152	
SBL	1	1600	73	.046*	131	.082
SBT	2	3200	576	.211	662	.321*
SBR	0	0	100		365	
EBL	1	1600	266	.166*	169	.106*
EBT	2	3200	323	.101	492	.154
EBR	1	1600	54	.034	67	.042
WBL	1	1600	44	.028	39	.024
WBT	2	3200	203	.088*	604	.216*
WBR	0	0	77		86	
TOTAL CAPACITY UTILIZATION				**.498**		**.685**

Existing Plus Project NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	12	.008	67	.042*
NBT	2	3200	635	.198*	536	.168
NBR	f		47		152	
SBL	1	1600	73	.046*	131	.082
SBT	2	3200	589	.215	668	.323*
SBR	0	0	100		365	
EBL	1	1600	266	.166*	169	.106*
EBT	2	3200	333	.104	497	.155
EBR	1	1600	54	.034	67	.042
WBL	1	1600	44	.028	39	.024
WBT	2	3200	205	.088*	616	.219*
WBR	0	0	77		86	
TOTAL CAPACITY UTILIZATION				**.498**		**.690**

13. Jamboree Rd & Campus Dr

Existing (2019) NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	88	.028*	80	.025
NBT	4	6400	1242	.206	1725	.351*
NBR	0	0	79		519	
SBL	2	3200	151	.047	128	.040*
SBT	3	4800	1965	.436*	1347	.312
SBR	0	0	127		149	
EBL	2	3200	82	.026	195	.061
EBT	2	3200	149	.047*	617	.193*
EBR	f		52		202	
WBL	2	3200	303	.095*	149	.047*
WBT	2	3200	248	.078	270	.084
WBR	1	1600	79	.049	136	.085
TOTAL CAPACITY UTILIZATION				**.606**		**.631**

Existing Plus Project NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	97	.030*	130	.041
NBT	4	6400	1265	.212	1845	.379*
NBR	0	0	91		581	
SBL	2	3200	151	.047	128	.040*
SBT	3	4800	2061	.456*	1394	.321
SBR	0	0	127		149	
EBL	2	3200	82	.026	195	.061
EBT	2	3200	149	.047*	617	.193*
EBR	f		92		221	
WBL	2	3200	353	.110*	173	.054*
WBT	2	3200	248	.078	270	.084
WBR	1	1600	79	.049	136	.085
TOTAL CAPACITY UTILIZATION				**.643**		**.666**

14. Jamboree Rd & Birch St

Existing (2019) NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	244	.153*	109	.068
NBT	3	4800	1049	.219	1928	.402*
NBR	0	0	1		1	
SBL	1	1600	9	.006	13	.008*
SBT	3	4800	1823	.380*	1468	.306
SBR	f		557		152	
EBL	1.5		89		325	
EBT	0.5	3200	2	.028*	0	.102*
EBR	f		59		167	
WBL	0	0	3		1	
WBT	1	1600	0	.007*	0	.001*
WBR	0	0	8		0	

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .568 .513

Existing Plus Project NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	244	.153*	109	.068
NBT	3	4800	1065	.222	2011	.419*
NBR	1	1600	67	.042	33	.021
SBL	2	3200	194	.061	104	.033*
SBT	3	4800	1823	.380*	1468	.306
SBR	f		557		152	
EBL	1.5		89		325	
EBT	0.5	3200	15	.033*	6	.103*
EBR	f		59		167	
WBL	1.5		35		167	
WBT	0.5	3200	3	.012*	17	.058*
WBR	1	1600	36	.023	149	.093
Right Turn Adjustment			WBR	.011*	WBR	.035*

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .589 .648

15. Campus Dr & Bristol St N

Existing (2019) NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	477	.149	415	.130*
NBT	3	4800	1643	.342*	781	.163
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6400	252	.039	911	.142*
SBR	3	4800	260	.054	1136	.237
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	216	.135	205	.128
WBT	4	6400	1011	.193*	1828	.299*
WBR	0	0	226		86	
Right Turn Adjustment					SBR	.095*

TOTAL CAPACITY UTILIZATION .535 .666

Existing Plus Project NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	477	.149	415	.130*
NBT	3	4800	1643	.342*	781	.163
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6400	252	.039	911	.142*
SBR	3	4800	260	.054	1136	.237
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	217	.136	209	.131
WBT	4	6400	1031	.196*	1932	.315*
WBR	0	0	226		86	
Right Turn Adjustment					SBR	.095*

TOTAL CAPACITY UTILIZATION .538 .682

16. Birch St & Bristol St N

Existing (2019) NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	103	.032	157	.049*
NBT	2	3200	1016	.318*	356	.111
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1.5	6400	106	.035	443	.176*
SBR	2.5		116		685	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		380		464	
WBT	3.5	8000	1265	.231*	1369	.245*
WBR	0		204		130	
TOTAL CAPACITY UTILIZATION				**.549**		**.470**

Existing Plus Project NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	103	.032	157	.049*
NBT	2	3200	1016	.318*	356	.111
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1.5	6400	106	.035	443	.176*
SBR	2.5		116		685	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		380		464	
WBT	3.5	8000	1286	.234*	1477	.259*
WBR	0		204		130	
TOTAL CAPACITY UTILIZATION				**.552**		**.484**

17. Campus Dr & Bristol St S

Existing (2019) NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	5	8000	1099	.171*	693	.108*
NBR	0	0	271		251	.157
SBL	1	1600	103	.064*	177	.111*
SBT	3	4800	366	.076	905	.189
SBR	0	0	0		0	
EBL	1.5		1021	{.436}*	494	{.247}*
EBT	2.5	6400	1772	.436	1087	.247
EBR	2	3200	490	.153	579	.181
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment					NBR	.049*
TOTAL CAPACITY UTILIZATION				**.671**		**.515**

Existing Plus Project NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	5	8000	1099	.172*	693	.108*
NBR	0	0	274		253	.158
SBL	1	1600	103	.064*	177	.111*
SBT	3	4800	367	.076	909	.189
SBR	0	0	0		0	
EBL	1.5		1021	{.438}*	494	{.248}*
EBT	2.5	6400	1782	.438	1092	.248
EBR	2	3200	490	.153	579	.181
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment					NBR	.050*
TOTAL CAPACITY UTILIZATION				**.674**		**.517**

18. Birch St & Bristol St S

Existing (2019) NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2.5	6400	357	.106*	252	.079
NBR	1.5		324		303	.095
SBL	2	3200	141	.044*	228	.071
SBT	2	3200	345	.108	741	.232*
SBR	0	0	0		0	
EBL	1.5		759	{.273}*	251	
EBT	3.5	8000	1215	.273	1198	.198*
EBR	0		210		131	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				**.423**		**.430**

Existing Plus Project NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2.5	6400	357	.106*	252	.079
NBR	1.5		324		303	.095
SBL	2	3200	141	.044*	228	.071
SBT	2	3200	345	.108	741	.232*
SBR	0	0	0		0	
EBL	1.5		759	{.275}*	251	
EBT	3.5	8000	1228	.275	1204	.198*
EBR	0		210		131	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				**.425**		**.430**

29. Jamboree Rd & MacArthur Blvd

Existing (2019) NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	437	.137*	250	.078
NBT	4	6400	1206	.188	1080	.169*
NBR	d	1600	269	.168	54	.034
SBL	3	4800	374	.078	656	.137*
SBT	3	4800	797	.166*	1041	.217
SBR	1	1600	158	.099	130	.081
EBL	2	3200	54	.017*	159	.050
EBT	3	4800	357	.074	1375	.286*
EBR	f		149		422	
WBL	2	3200	173	.054	242	.076*
WBT	3	4800	1289	.269*	605	.126
WBR	1	1600	446	.279	365	.228

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION				**.589**		**.668**

Existing Plus Project NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	437	.137*	250	.078*
NBT	4	6400	1309	.205	1130	.177
NBR	d	1600	269	.168	54	.034
SBL	3	4800	378	.079	677	.141
SBT	3	4800	821	.171*	1169	.244*
SBR	1	1600	160	.100	142	.089
EBL	2	3200	64	.020*	164	.051
EBT	3	4800	357	.074	1375	.286*
EBR	f		149		422	
WBL	2	3200	173	.054	242	.076*
WBT	3	4800	1289	.269*	605	.126
WBR	1	1600	463	.289	373	.233

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION				**.597**		**.684**

30. Jamboree Rd & Bristol St N

Existing (2019) NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	643	.201	691	.216*
NBT	3	4800	1915	.399*	1382	.288
NBR	f		762		932	
SBL	0	0	0		0	
SBT	3.5	8000	727	.139	1003	.209*
SBR	1.5		387		696	.218
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.009*
TOTAL CAPACITY UTILIZATION				**.399**		**.434**

Existing Plus Project NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	643	.201	691	.216*
NBT	3	4800	2018	.420*	1432	.298
NBR	f		762		932	
SBL	0	0	0		0	
SBT	3.5	8000	731	.142	1024	.213*
SBR	1.5		408		804	.251
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.038*
TOTAL CAPACITY UTILIZATION				**.420**		**.467**

32. Jamboree Rd & Bristol St S

Existing (2019) NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	5	8000	1956	.247*	2056	.266*
NBR	0	0	21		74	
SBL	0	0	0		0	
SBT	4	6400	728	.114	1000	.156
SBR	0	0	0		0	
EBL	1.5		1365	.427*	949	{.384}*
EBT	1.5	4800	456	.285	894	.384
EBR	2	3200	1405	.439	1181	.369
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.012*		
TOTAL CAPACITY UTILIZATION				**.686**		**.650**

Existing Plus Project NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	5	8000	1973	.249*	2064	.267*
NBR	0	0	21		74	
SBL	0	0	0		0	
SBT	4	6400	732	.114	1021	.160
SBR	0	0	0		0	
EBL	1.5		1451	.453*	991	{.393}*
EBT	1.5	4800	456	.285	894	.393
EBR	2	3200	1405	.439	1181	.369
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				**.702**		**.660**

60. Jamboree Rd & Fairchild Rd

Existing (2019) NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	0	.000	0	.000
NBT	3	4800	1292	.280*	1598	.336*
NBR	0	0	50		15	
SBL	2	3200	457	.143*	224	.070*
SBT	4	6400	1409	.220	1409	.220
SBR	d	1600	0	.000	0	.000
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	16	.010*	40	.025*
WBT	1	1600	0	.000	0	.000
WBR	1	1600	310	.194	419	.262
Right Turn Adjustment			WBR	.184*	WBR	.237*
TOTAL CAPACITY UTILIZATION				**.617**		**.668**

Existing Plus Project NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	0	.000	0	.000
NBT	3	4800	1421	.306*	1661	.349*
NBR	0	0	50		15	
SBL	2	3200	458	.143*	228	.071*
SBT	4	6400	1440	.225	1570	.245
SBR	d	1600	0	.000	0	.000
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	16	.010*	40	.025*
WBT	1	1600	0	.000	0	.000
WBR	1	1600	313	.196	421	.263
Right Turn Adjustment			WBR	.186*	WBR	.238*
TOTAL CAPACITY UTILIZATION				**.645**		**.683**

61. Jamboree & Access

Existing (2019) NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	4800	1273	.272	2034	.424*
NBR	0	0	34		1	
SBL	0	0	0		0	
SBT	4	6400	1895	.296*	1636	.256
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	1	1600	21	.013	4	.003
Right Turn Adjustment			WBR	.013*	WBR	.003*
TOTAL CAPACITY UTILIZATION				**.309**		**.427**

Existing Plus Project NB

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	4800	1339	.279	2066	.430*
NBR	1	1600	100	.063	33	.021
SBL	0	0	0		0	
SBT	4	6400	1927	.301*	1802	.282
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	1	1600	37	.023	87	.054
Right Turn Adjustment			WBR	.023*	WBR	.054*
TOTAL CAPACITY UTILIZATION				**.324**		**.484**

Buildout Conditions

(Irvine Locations)

105 . Von Karman Av. at Campus Dr.

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	14	.01	68	.04*
NBT	2	3400	842	.25*	725	.21
NBR	f		106		209	
SBL	1	1700	192	.11*	243	.14
SBT	2	3400	748	.26	908	.36*
SBR	0	0	128		327	
EBL	1	1700	356	.21*	200	.12*
EBT	2	3400	892	.26	728	.21
EBR	f		64		84	
WBL	1	1700	128	.08	118	.07
WBT	2	3400	358	.15*	865	.31*
WBR	0	0	153		175	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.77**		**.88**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	13	.01	64	.04*
NBT	2	3400	832	.24*	730	.21
NBR	f		107		199	
SBL	1	1700	202	.12*	252	.15
SBT	2	3400	748	.26	904	.36*
SBR	0	0	128		332	
EBL	1	1700	358	.21*	210	.12*
EBT	2	3400	912	.27	722	.21
EBR	f		62		80	
WBL	1	1700	130	.08	117	.07
WBT	2	3400	359	.15*	878	.31*
WBR	0	0	160		192	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.77**		**.88**

136 . Jamboree Rd. at Barranca Pkwy.

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	213	.06*	499	.15
NBT	5	8500	1078	.13	3279	.39*
NBR	1	1700	151	.09	91	.05
SBL	2	3400	568	.17	332	.10*
SBT	4	6800	3926	.58*	1872	.28
SBR	f		1347		539	
EBL	3	5100	204	.04	1071	.21*
EBT	2	3400	590	.17*	980	.29
EBR	1	1700	164	.10	258	.15
WBL	2	3400	190	.06*	144	.04
WBT	3	5100	560	.11	966	.19*
WBR	f		148		659	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.92**		**.94**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	223	.07*	496	.15
NBT	5	8500	1078	.13	3271	.38*
NBR	1	1700	157	.09	90	.05
SBL	2	3400	565	.17	331	.10*
SBT	4	6800	3923	.58*	1870	.28
SBR	f		1354		540	
EBL	3	5100	200	.04	1073	.21*
EBT	2	3400	598	.18*	979	.29
EBR	1	1700	167	.10	258	.15
WBL	2	3400	189	.06*	144	.04
WBT	3	5100	563	.11	966	.19*
WBR	f		143		661	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.94**		**.93**

138 . Jamboree Rd. at Alton Pkwy.

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	213	.06*	284	.08
NBT	4	6800	1241	.18	3102	.46*
NBR	1	1700	279	.16	185	.11
SBL	2	3400	317	.09	275	.08*
SBT	4	6800	2963	.47*	1536	.26
SBR	0	0	199		248	
EBL	2	3400	157	.05	433	.13*
EBT	3	5100	504	.13*	810	.21
EBR	0	0	182		248	
WBL	2	3400	204	.06*	286	.08
WBT	3	5100	579	.11	808	.16*
WBR	d	1700	151	.09	236	.14
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.77**		**.88**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	216	.06*	286	.08
NBT	4	6800	1259	.19	3104	.46*
NBR	1	1700	278	.16	185	.11
SBL	2	3400	314	.09	276	.08*
SBT	4	6800	2964	.47*	1556	.27
SBR	0	0	200		250	
EBL	2	3400	161	.05	433	.13*
EBT	3	5100	507	.14*	809	.21
EBR	0	0	185		250	
WBL	2	3400	201	.06*	285	.08
WBT	3	5100	574	.11	804	.16*
WBR	d	1700	150	.09	233	.14
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.78**		**.88**

141 . Jamboree Rd. at Main St.

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	407	.12*	419	.12
NBT	4	6800	1578	.23	2792	.41*
NBR	f		472		561	
SBL	2	3400	429	.13	279	.08*
SBT	4	6800	2505	.37*	1946	.29
SBR	1	1700	333	.20	275	.16
EBL	2	3400	172	.05	712	.21
EBT	3	5100	518	.10*	1164	.23*
EBR	f		416		663	
WBL	2	3400	549	.16*	477	.14*
WBT	3	5100	750	.15	709	.14
WBR	f		180		403	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.80**		**.91**

Note: Assumes Right-Turn Overlap for SBR

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	410	.12*	424	.12
NBT	4	6800	1617	.24	2807	.41*
NBR	f		478		571	
SBL	2	3400	431	.13	282	.08*
SBT	4	6800	2519	.37*	1969	.29
SBR	1	1700	333	.20	277	.16
EBL	2	3400	172	.05	707	.21
EBT	3	5100	512	.10*	1168	.23*
EBR	f		412		665	
WBL	2	3400	549	.16*	479	.14*
WBT	3	5100	747	.15	711	.14
WBR	f		182		400	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.80**		**.91**

Note: Assumes Right-Turn Overlap for SBR

143 . Jamboree Rd. at I-405 NB Ramps

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	2199	.43*	3304	.65*
NBR	f		661		630	
SBL	0	0	0		0	
SBT	4	6800	2107	.31	2261	.33
SBR	f		1412		970	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	3	5100	1697	.33*	1219	.24*
WBT	0	0	0		0	
WBR	f		894		626	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.81**		**.94**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	2257	.44*	3348	.66*
NBR	f		650		630	
SBL	0	0	0		0	
SBT	4	6800	2122	.31	2285	.34
SBR	f		1410		970	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	3	5100	1718	.34*	1215	.24*
WBT	0	0	0		0	
WBR	f		883		622	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.83**		**.95**

144 . Jamboree Rd. at I-405 SB Ramps

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1993	.39	2823	.55*
NBR	f		784		1500	
SBL	0	0	0		0	
SBT	4	6800	3408	.50*	2813	.41
SBR	f		366		700	
EBL	2.5		1009	.30*	1077	{.23}*
EBT	0	8500	0		0	{.23}
EBR	2.5		1680	.33	1087	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.03*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.88**		**.83**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	2035	.40	2872	.56*
NBR	f		790		1510	
SBL	0	0	0		0	
SBT	4	6800	3431	.50*	2844	.42
SBR	f		375		690	
EBL	2.5		1004	.30*	1068	{.23}*
EBT	0	8500	0		0	{.23}
EBR	2.5		1685	.33	1086	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.03*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.88**		**.84**

145 . Jamboree Rd. at Michelson Dr.

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	208	.12	140	.08
NBT	4	6800	1515	.22*	2376	.35*
NBR	1	1700	407	.24	402	.24
SBL	2	3400	1216	.36*	893	.26*
SBT	4	6800	2370	.35	2220	.33
SBR	f		1305		520	
EBL	2	3400	406	.12*	737	.22
EBT	2	3400	427	.13	755	.22*
EBR	1	1700	107	.06	118	.07
WBL	2	3400	363	.11	512	.15*
WBT	2	3400	537	.16*	450	.13
WBR	f		870		1267	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.91**		**1.03**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	208	.12	144	.08
NBT	4	6800	1554	.23*	2424	.36*
NBR	1	1700	407	.24	401	.24
SBL	2	3400	1221	.36*	892	.26*
SBT	4	6800	2395	.35	2237	.33
SBR	f		1314		533	
EBL	2	3400	412	.12*	745	.22
EBT	2	3400	422	.12	747	.22*
EBR	1	1700	107	.06	117	.07
WBL	2	3400	358	.11	506	.15*
WBT	2	3400	527	.16*	453	.13
WBR	f		874		1271	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.92**		**1.04**

147 . Jamboree Rd. at Campus Dr.

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	151	.04	100	.03
NBT	4	6800	1583	.27*	1947	.35*
NBR	0	0	243		440	
SBL	2	3400	362	.11*	255	.08*
SBT	4	6800	1703	.26	2045	.35
SBR	0	0	84		314	
EBL	2	3400	200	.06	283	.08
EBT	2	3400	705	.21*	815	.24*
EBR	f		76		241	
WBL	2	3400	681	.20*	344	.10*
WBT	2	3400	385	.11	736	.22
WBR	1	1700	157	.09	390	.23
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.84**		**.82**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	153	.05	105	.03
NBT	4	6800	1618	.27*	1983	.36*
NBR	0	0	233		431	
SBL	2	3400	358	.11*	246	.07*
SBT	4	6800	1729	.27	2068	.35
SBR	0	0	88		324	
EBL	2	3400	216	.06	290	.09
EBT	2	3400	719	.21*	803	.24*
EBR	f		79		248	
WBL	2	3400	652	.19*	344	.10*
WBT	2	3400	379	.11	752	.22
WBR	1	1700	156	.09	387	.23
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.83**		**.82**

148 . Jamboree Rd. at Birch St.

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	270	.16*	49	.03
NBT	3	5100	1467	.32	1955	.40*
NBR	0	0	158		100	
SBL	1	1700	191	.11	126	.07*
SBT	3	5100	1810	.35*	1337	.26
SBR	f		509		1189	
EBL	1.5		243		373	
EBT	0.5	3400	28	.08*	18	.12*
EBR	f		69		189	
WBL	0	0	131		244	
WBT	1	1700	13	.11*	24	.22*
WBR	0	0	45		100	
Clearance Interval				.05*		.05*
Note: Assumes E/W Split Phasing						
TOTAL CAPACITY UTILIZATION				**.75**		**.86**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	287	.17*	46	.03
NBT	3	5100	1396	.27	1996	.39*
NBR	1	1700	212	.12	238	.14
SBL	2	3400	298	.09	245	.07*
SBT	3	5100	1720	.34*	1276	.25
SBR	f		492		1168	
EBL	1.5		260		348	
EBT	0.5	3400	41	.09*	34	.11*
EBR	f		77		215	
WBL	1.5		210		459	
WBT	0.5	3400	21	.07*	46	.15*
WBR	1	1700	58	.03	233	.14
Clearance Interval				.05*		.05*
Note: Assumes E/W Split Phasing						
TOTAL CAPACITY UTILIZATION				**.72**		**.77**

149 . Jamboree Rd. at Fairchild Rd.

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	70	.04	280	.16*
NBT	3	5100	1557	.32*	1783	.35
NBR	0	0	73		16	
SBL	2	3400	402	.12*	185	.05
SBT	4	6800	1692	.25	2315	.34*
SBR	d	1700	20	.01	60	.04
EBL	1	1700	100	.06	100	.06
EBT	1	1700	10	.16*	30	.15*
EBR	0	0	260		230	
WBL	1	1700	25	.01*	66	.04*
WBT	1	1700	10	.01	30	.02
WBR	1	1700	361	.21	473	.28
Right Turn Adjustment			WBR	.01*	WBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.67**		**.78**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	70	.04	280	.16*
NBT	3	5100	1591	.33*	1862	.37
NBR	0	0	72		15	
SBL	2	3400	402	.12*	187	.06
SBT	4	6800	1688	.25	2445	.36*
SBR	d	1700	20	.01	60	.04
EBL	1	1700	100	.06	100	.06
EBT	1	1700	10	.16*	30	.15*
EBR	0	0	260		230	
WBL	1	1700	25	.01*	66	.04*
WBT	1	1700	10	.01	30	.02
WBR	1	1700	381	.22	474	.28
Right Turn Adjustment			WBR	.02*	WBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.69**		**.80**

150 . Jamboree Rd. at MacArthur Bl.

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	346	.10	311	.09*
NBT	4	6800	1152	.17*	1038	.15
NBR	d	1700	223	.13	45	.03
SBL	3	5100	529	.10*	815	.16
SBT	3	5100	706	.14	1393	.27*
SBR	1	1700	644	.38	393	.23
EBL	2	3400	170	.05*	249	.07
EBT	3	5100	729	.14	1770	.35*
EBR	f		201		391	
WBL	2	3400	113	.03	276	.08*
WBT	3	5100	1430	.28*	776	.15
WBR	1	1700	638	.38	472	.28
Right Turn Adjustment			SBR	.17*		
Clearance Interval				.05*		.05*
Note: Assumes Right-Turn Overlap for WBR						
TOTAL CAPACITY UTILIZATION				**.82**		**.84**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	354	.10	326	.10*
NBT	4	6800	1182	.17*	1094	.16
NBR	d	1700	224	.13	45	.03
SBL	3	5100	523	.10*	836	.16
SBT	3	5100	698	.14	1454	.29*
SBR	1	1700	648	.38	421	.25
EBL	2	3400	174	.05*	262	.08
EBT	3	5100	733	.14	1769	.35*
EBR	f		202		398	
WBL	2	3400	110	.03	268	.08*
WBT	3	5100	1417	.28*	773	.15
WBR	1	1700	634	.37	474	.28
Right Turn Adjustment			SBR	.17*		
Clearance Interval				.05*		.05*
Note: Assumes Right-Turn Overlap for WBR						
TOTAL CAPACITY UTILIZATION				**.82**		**.87**

174 . Carlson Av. at Michelson Dr.

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	363	.11*	214	.06*
NBT	2	3400	172	.05	125	.04
NBR	1	1700	305	.18	310	.18
SBL	2	3400	49	.01	118	.03
SBT	1	1700	30	.02*	211	.12*
SBR	f		281		1083	
EBL	2	3400	903	.27*	643	.19*
EBT	2	3400	936	.28	982	.29
EBR	1	1700	119	.07	314	.18
WBL	1	1700	160	.09	416	.24
WBT	2	3400	846	.25*	1283	.38*
WBR	f		155		192	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.70**		**.80**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	354	.10*	213	.06*
NBT	2	3400	172	.05	127	.04
NBR	1	1700	304	.18	319	.19
SBL	2	3400	49	.01	121	.04
SBT	1	1700	34	.02*	215	.13*
SBR	f		277		1075	
EBL	2	3400	899	.26*	635	.19*
EBT	2	3400	927	.27	980	.29
EBR	1	1700	132	.08	313	.18
WBL	1	1700	184	.11	432	.25
WBT	2	3400	848	.25*	1292	.38*
WBR	f		159		198	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.68**		**.81**

175 . Carlson Av. at Campus Dr.

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	287	.17*	317	.19*
SBT	0	0	0		0	
SBR	1	1700	234	.14	273	.16
EBL	1	1700	255	.15*	384	.23*
EBT	2	3400	913	.27	1348	.40
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	1136	.33*	1141	.34*
WBR	d	1700	155	.09	288	.17
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.70**		**.81**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	293	.17*	315	.19*
SBT	0	0	0		0	
SBR	1	1700	280	.16	305	.18
EBL	1	1700	272	.16*	414	.24*
EBT	2	3400	907	.27	1375	.40
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	1190	.35*	1165	.34*
WBR	d	1700	148	.09	276	.16
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.73**		**.82**

190 . University Dr. at Campus Dr.

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	104	.03*	256	.08
NBT	3	5100	1081	.21	1562	.31*
NBR	1	1700	408	.24	291	.17
SBL	1	1700	159	.09	86	.05*
SBT	3	5100	1924	.38*	1342	.26
SBR	1	1700	604	.36	279	.16
EBL	2	3400	173	.05	501	.15*
EBT	2	3400	803	.24*	923	.27
EBR	d	1700	365	.21	155	.09
WBL	2	3400	181	.05*	323	.10
WBT	2	3400	632	.19	905	.27*
WBR	d	1700	46	.03	206	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.75**		**.83**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	107	.03*	257	.08
NBT	3	5100	1087	.21	1555	.30*
NBR	1	1700	401	.24	285	.17
SBL	1	1700	157	.09	86	.05*
SBT	3	5100	1908	.37*	1344	.26
SBR	1	1700	626	.37	285	.17
EBL	2	3400	176	.05	519	.15*
EBT	2	3400	802	.24*	940	.28
EBR	d	1700	365	.21	158	.09
WBL	2	3400	177	.05*	318	.09
WBT	2	3400	647	.19	908	.27*
WBR	d	1700	46	.03	206	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.74**		**.82**

203 . Bridge Rd. at Campus Dr.

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	374	.22*	283	.17*
NBT	2	3400	361	.11	283	.08
NBR	1	1700	205	.12	196	.12
SBL	1	1700	140	.08	101	.06
SBT	2	3400	297	.15*	321	.15*
SBR	0	0	213		180	
EBL	1	1700	301	.18	167	.10
EBT	2	3400	1005	.38*	834	.34*
EBR	0	0	283		322	
WBL	1	1700	380	.22*	237	.14*
WBT	2	3400	593	.17	747	.22
WBR	d	1700	68	.04	90	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**1.02**		**.85**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	380	.22*	292	.17*
NBT	2	3400	357	.11	291	.09
NBR	1	1700	205	.12	197	.12
SBL	1	1700	144	.08	99	.06
SBT	2	3400	306	.16*	329	.15*
SBR	0	0	222		182	
EBL	1	1700	296	.17	171	.10
EBT	2	3400	1001	.38*	834	.34*
EBR	0	0	285		334	
WBL	1	1700	379	.22*	237	.14*
WBT	2	3400	597	.18	736	.22
WBR	d	1700	67	.04	88	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**1.03**		**.85**

204. Jamboree Rd at Access

Buildout Approved No Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1845	.38*	2027	.41*
NBR	0	0	100		65	
SBL	0	0	0		0	
SBT	4	6800	2010	.30	1920	.28
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	1	1700	50	.03	77	.05
Right Turn Adjustment			WBR	.03*	WBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.46**		**.51**

Buildout Approved With Project (Irvine)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1800	.35*	2180	.43*
NBR	1	1700	200	.12	100	.06
SBL	0	0	0		0	
SBT	4	6800	2007	.30	2100	.31
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	1	1700	95	.06	100	.06
Right Turn Adjustment			WBR	.06*	WBR	.06*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.46**		**.54**

Buildout Conditions

(Newport Beach Locations)

11. Von Karman Av. at Campus Dr.

NB GP Buildout No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	20	.013	20	.013*
NBT	2	3200	940	.294*	570	.178
NBR	f		30		20	
SBL	1	1600	40	.025*	160	.100
SBT	2	3200	580	.181	1140	.356*
SBR	1	1600	90	.056	270	.169
EBL	1	1600	370	.231*	240	.150*
EBT	2	3200	750	.234	1020	.319
EBR	1	1600	50	.031	70	.044
WBL	1	1600	60	.038	40	.025
WBT	2	3200	480	.181*	1040	.369*
WBR	0	0	100		140	
TOTAL CAPACITY UTILIZATION				**.731**		**.888**

NB GP Buildout With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	19	.012	16	.010*
NBT	2	3200	930	.291*	575	.180
NBR	f		31		10	
SBL	1	1600	50	.031*	169	.106
SBT	2	3200	580	.181	1136	.355*
SBR	1	1600	90	.056	275	.172
EBL	1	1600	372	.233*	250	.156*
EBT	2	3200	770	.241	1014	.317
EBR	1	1600	48	.030	66	.041
WBL	1	1600	62	.039	39	.024
WBT	2	3200	481	.184*	1053	.378*
WBR	0	0	107		157	
TOTAL CAPACITY UTILIZATION				**.739**		**.899**

13. Jamboree Rd. at Campus Dr.

NB GP Buildout No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	100	.031	160	.050*
NBT	4	6400	2030	.317*	1950	.305
NBR	1	1600	320	.200	720	.450
SBL	2	3200	700	.219*	470	.147
SBT	4	6400	1710	.323	2660	.456*
SBR	0	0	360		260	
EBL	2	3200	260	.081*	610	.191*
EBT	2	3200	280	.088	850	.266
EBR	f		30		30	
WBL	2	3200	800	.250	360	.113
WBT	2	3200	840	.263*	650	.203*
WBR	1	1600	170	.106	530	.331
Right Turn Adjustment					NBR	.091*
TOTAL CAPACITY UTILIZATION				**.880**		**.991**

Note: Assumes Right-Turn Overlap for WBR

NB GP Buildout With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	102	.032	165	.052*
NBT	4	6400	2065	.323*	1986	.310
NBR	1	1600	310	.194	711	.444
SBL	2	3200	696	.218*	461	.144
SBT	4	6400	1736	.328	2683	.461*
SBR	0	0	364		270	
EBL	2	3200	276	.086*	617	.193*
EBT	2	3200	294	.092	838	.262
EBR	f		33		37	
WBL	2	3200	771	.241	360	.113
WBT	2	3200	834	.261*	666	.208*
WBR	1	1600	169	.106	527	.329
Right Turn Adjustment					NBR	.075*
TOTAL CAPACITY UTILIZATION				**.888**		**.989**

Note: Assumes Right-Turn Overlap for WBR

14. **Jamboree Rd. at Birch St.**

NB GP Buildout No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	420	.263*	140	.088
NBT	3	4800	2010	.452	1870	.410*
NBR	0	0	160		100	
SBL	1	1600	190	.119	130	.081*
SBT	4	6400	2030	.317*	2030	.317
SBR	f		800		430	
EBL	1.5		280		680	
EBT	0.5	3200	30	.097*	20	.219*
EBR	f		10		420	
WBL	0	0	130		240	
WBT	1	1600	10	.119*	20	.225*
WBR	0	0	50		100	

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .796 .935

NB GP Buildout With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	437	.273*	137	.086*
NBT	3	4800	1939	.404	1911	.398
NBR	1	1600	212	.133	238	.149
SBL	2	3200	298	.093	245	.077
SBT	3	4800	1940	.404*	1885	.393*
SBR	f		783		409	
EBL	1.5		297		655	
EBT	0.5	3200	41	.106*	34	.215*
EBR	f		18		446	
WBL	1.5		210		459	
WBT	0.5	3200	21	.072*	46	.158*
WBR	1	1600	58	.036	233	.146

Note: Assumes E/W Split Phasing

TOTAL CAPACITY UTILIZATION .855 .852

15. **Campus Dr. at Bristol St. NB**

NB GP Buildout No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	540	.169	600	.188*
NBT	3	4800	3220	.671*	1700	.354
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6400	510	.080	1850	.289*
SBR	2	3200	410	.128	1270	.397
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3200	310	.097	540	.169
WBT	5	8000	2010	.283*	2880	.378*
WBR	0	0	250		140	
Right Turn Adjustment					SBR	.108*

TOTAL CAPACITY UTILIZATION .954 .963

NB GP Buildout With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	535	.167	599	.187*
NBT	3	4800	3224	.672*	1690	.352
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6400	511	.080	1858	.290*
SBR	2	3200	428	.134	1282	.401
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	2	3200	300	.094	542	.169
WBT	5	8000	2001	.282*	2908	.381*
WBR	0	0	252		140	
Right Turn Adjustment					SBR	.111*

TOTAL CAPACITY UTILIZATION .954 .969

16. Birch St. at Bristol St. NB

NB GP Buildout No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	110	.034	180	.056*
NBT	2	3200	1230	.384*	600	.188
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1.5	6400	270	.105	830	.361*
SBR	2.5		400		1480	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		480	.300	530	
WBT	3.5	8000	1730	.360*	1730	.303*
WBR	0		820	.513	160	
Right Turn Adjustment			WBR	.153*		
TOTAL CAPACITY UTILIZATION				**.897**		**.720**

NB GP Buildout With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	107	.033	177	.055*
NBT	2	3200	1227	.383*	596	.186
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1.5	6400	271	.105	838	.365*
SBR	2.5		400		1495	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1.5		479	.299	530	
WBT	3.5	8000	1723	.359*	1742	.304*
WBR	0		823	.514	163	
Right Turn Adjustment			WBR	.155*		
TOTAL CAPACITY UTILIZATION				**.897**		**.724**

17. Campus Dr. at Bristol St. SB

NB GP Buildout No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	5	8000	2380	.361*	1770	.273*
NBR	0	0	510		410	
SBL	1	1600	110	.069*	310	.194*
SBT	3	4800	730	.152	2060	.429
SBR	0	0	0		0	
EBL	1.5		1370		550	{.308}*
EBT	2.5	6400	1590	.463*	1420	.308
EBR	2	3200	670	.209	630	.197
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				**.893**		**.775**

NB GP Buildout With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	5	8000	2379	.361*	1766	.273*
NBR	0	0	511		414	
SBL	1	1600	110	.069*	313	.196*
SBT	3	4800	730	.152	2056	.428
SBR	0	0	0		0	
EBL	1.5		1371	{.464}*	542	{.309}*
EBT	2.5	6400	1599	.464	1438	.309
EBR	2	3200	670	.209	630	.197
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				**.894**		**.778**

18. Birch St. at Bristol St. SB

NB GP Buildout No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2.5	6400	500	.139*	330	.098
NBR	1.5		390		300	
SBL	2	3200	280	.088*	440	.138
SBT	2	3200	450	.141	920	.288*
SBR	0	0	0		0	
EBL	1.5		850		380	
EBT	3.5	8000	1200	.283*	1490	.250*
EBR	0		210		130	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .510 .538

NB GP Buildout With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2.5	6400	497	.139*	321	.097
NBR	1.5		394		299	
SBL	2	3200	277	.087*	446	.139
SBT	2	3200	454	.142	924	.289*
SBR	0	0	0		0	
EBL	1.5		843	{.284}*	381	
EBT	3.5	8000	1210	.284	1520	.254*
EBR	0		216		130	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .510 .543

29. MacArthur Bl. at Jamboree Rd.

NB GP Buildout No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	210	.066	290	.091*
NBT	3	4800	1890	.394*	870	.181
NBR	1	1600	600	.375	620	.388
SBL	2	3200	130	.041*	260	.081
SBT	3	4800	570	.119	1600	.333*
SBR	f		130		560	
EBL	2	3200	670	.209*	240	.075
EBT	4	6400	1760	.275	1480	.231*
EBR	f		160		70	
WBL	3	4800	420	.088	920	.192*
WBT	3	4800	1120	.233*	1570	.327
WBR	f		170		180	

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .877 .847

NB GP Buildout With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	218	.068	305	.095*
NBT	3	4800	1920	.400*	926	.193
NBR	1	1600	601	.376	620	.388
SBL	2	3200	124	.039*	281	.088
SBT	3	4800	562	.117	1661	.346*
SBR	f		134		588	
EBL	2	3200	674	.211*	253	.079
EBT	4	6400	1764	.276	1479	.231*
EBR	f		161		77	
WBL	3	4800	417	.087	912	.190*
WBT	3	4800	1107	.231*	1567	.326
WBR	f		166		182	

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .881 .862

30. **Jamboree Rd. at Bristol St. NB-SR73 NB Ram_(s**

NB GP Buildout No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	1140	.356	900	.281*
NBT	3	4800	3270	.681*	2620	.546
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2.5	6400	730	.228	1460	.391*
SBR	1.5		740	.231	1040	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				**.681**		**.672**

NB GP Buildout With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	1131	.353	903	.282*
NBT	3	4800	3310	.690*	2690	.560
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2.5	6400	730	.228	1470	.400*
SBR	1.5		749	.234	1087	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				**.690**		**.682**

32. **Jamboree Rd. at Bristol St. SB**

NB GP Buildout No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	6	9600	2100	.225*	2360	.257*
NBR	0	0	60		110	
SBL	0	0	0		0	
SBT	4	6400	700	.109	1490	.233
SBR	0	0	0		0	
EBL	1.5		2150	.672*	1180	{.558}*
EBT	1.5	4800	570	.356	1500	.558
EBR	2	3200	1020	.319	1010	.316
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				**.897**		**.815**

NB GP Buildout With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	6	9600	2099	.225*	2371	.258*
NBR	0	0	60		107	
SBL	0	0	0		0	
SBT	4	6400	699	.109	1488	.233
SBR	0	0	0		0	
EBL	1.5		2167	.677*	1229	{.569}*
EBT	1.5	4800	572	.358	1503	.569
EBR	2	3200	1032	.323	1002	.313
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				**.902**		**.827**

60. Jamboree Rd. at Fairchild Rd.

NB GP Buildout No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	70	.044	280	.175*
NBT	3	4800	2160	.465*	1530	.323
NBR	0	0	70		20	
SBL	2	3200	400	.125*	190	.059
SBT	4	6400	1750	.273	2440	.381*
SBR	d	1600	20	.013	60	.038
EBL	1	1600	100	.063	100	.063
EBT	1	1600	10	.169*	30	.163*
EBR	0	0	260		230	
WBL	1	1600	30	.019*	70	.044*
WBT	1	1600	10	.006	30	.019
WBR	1	1600	380	.238	470	.294
Right Turn Adjustment			WBR	.113*	WBR	.150*
TOTAL CAPACITY UTILIZATION				**.891**		**.913**

NB GP Buildout With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	72	.045	280	.175*
NBT	3	4800	2212	.476*	1715	.360
NBR	0	0	72		15	
SBL	2	3200	402	.126*	200	.063
SBT	4	6400	1748	.273	2499	.390*
SBR	d	1600	18	.011	75	.047
EBL	1	1600	100	.063	100	.063
EBT	1	1600	5	.168*	30	.163*
EBR	0	0	263		230	
WBL	1	1600	25	.016*	66	.041*
WBT	1	1600	6	.004	30	.019
WBR	1	1600	381	.238	470	.294
Right Turn Adjustment			WBR	.117*	WBR	.153*
TOTAL CAPACITY UTILIZATION				**.903**		**.922**

61. Jamboree Rd at Access

NB GP Buildout No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	4800	2540	.550*	2030	.438*
NBR	0	0	100		70	
SBL	0	0	0		0	
SBT	4	6400	2170	.339	2690	.420
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	1	1600	50	.031	80	.050
Right Turn Adjustment			WBR	.031*	WBR	.050*
TOTAL CAPACITY UTILIZATION				**.581**		**.488**

NB GP Buildout With Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	4800	2493	.519*	2186	.455*
NBR	1	1600	200	.125	100	.063
SBL	0	0	0		0	
SBT	4	6400	2168	.339	2750	.430
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	1	1600	95	.059	100	.063
Right Turn Adjustment			WBR	.059*	WBR	.063*
TOTAL CAPACITY UTILIZATION				**.578**		**.518**

CMP Intersections

143 . Jamboree Rd. at I-405 NB Ramps

Existing 2019 CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	2035	.40*	3114	.61*
NBR	f		595		754	
SBL	0	0	0		0	
SBT	4	6800	1732	.25	1521	.22
SBR	f		1429		1139	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	3	5100	1480	.29*	752	.15*
WBT	0	0	0		0	
WBR	f		605		419	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.74**		**.81**

Existing Plus Project CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	2049	.40*	3189	.63*
NBR	f		595		754	
SBL	0	0	0		0	
SBT	4	6800	1772	.26	1540	.23
SBR	f		1429		1139	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	3	5100	1500	.29*	762	.15*
WBT	0	0	0		0	
WBR	f		605		419	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.74**		**.83**

Buildout No Project CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	2199	.43*	3304	.65*
NBR	f		661		630	
SBL	0	0	0		0	
SBT	4	6800	2107	.31	2261	.33
SBR	f		1412		970	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	3	5100	1697	.33*	1219	.24*
WBT	0	0	0		0	
WBR	f		894		626	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.81**		**.94**

Buildout With Project CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	2257	.44*	3348	.66*
NBR	f		650		630	
SBL	0	0	0		0	
SBT	4	6800	2122	.31	2285	.34
SBR	f		1410		970	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	3	5100	1718	.34*	1215	.24*
WBT	0	0	0		0	
WBR	f		883		622	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.83**		**.95**

144 . Jamboree Rd. at I-405 SB Ramps

Existing 2019 CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1466	.29	2648	.52*
NBR	f		451		1243	
SBL	0	0	0		0	
SBT	4	6800	3030	.45*	1841	.27
SBR	f		183		476	
EBL	2	3400	1163	.34*	1171	.34*
EBT	0	0	0		0	
EBR	2	3400	1439	.42	600	.18
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.08*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.92**		**.91**

Existing Plus Project CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1480	.29	2723	.53*
NBR	f		457		1276	
SBL	0	0	0		0	
SBT	4	6800	3090	.45*	1870	.28
SBR	f		183		476	
EBL	2	3400	1163	.34*	1171	.34*
EBT	0	0	0		0	
EBR	2	3400	1465	.43	613	.18
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.09*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.93**		**.92**

Buildout No Project CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1993	.39	2823	.55*
NBR	f		784		1500	
SBL	0	0	0		0	
SBT	4	6800	3408	.50*	2813	.41
SBR	f		366		700	
EBL	2.5		1009	.30*	1077	{.23}*
EBT	0	8500	0		0	{.23}
EBR	2.5		1680	.33	1087	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.03*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.88**		**.83**

Buildout With Project CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	2035	.40	2872	.56*
NBR	f		790		1510	
SBL	0	0	0		0	
SBT	4	6800	3431	.50*	2844	.42
SBR	f		375		690	
EBL	2.5		1004	.30*	1068	{.23}*
EBT	0	8500	0		0	{.23}
EBR	2.5		1685	.33	1086	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.03*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.88**		**.84**

150 . Jamboree Rd. at MacArthur Bl.

Existing 2019 CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	437	.13*	250	.07
NBT	4	6800	1206	.18	1080	.16*
NBR	d	1700	269	.16	54	.03
SBL	3	5100	374	.07	656	.13*
SBT	3	5100	797	.16*	1041	.20
SBR	1	1700	158	.09	130	.08
EBL	2	3400	54	.02*	159	.05
EBT	3	5100	357	.07	1375	.27*
EBR	f		149		422	
WBL	2	3400	173	.05	242	.07*
WBT	3	5100	1289	.25*	605	.12
WBR	1	1700	446	.26	365	.21
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .61 .68

Existing Plus Project CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	437	.13*	250	.07*
NBT	4	6800	1309	.19	1130	.17
NBR	d	1700	269	.16	54	.03
SBL	3	5100	378	.07	677	.13
SBT	3	5100	821	.16*	1169	.23*
SBR	1	1700	160	.09	142	.08
EBL	2	3400	64	.02*	164	.05
EBT	3	5100	357	.07	1375	.27*
EBR	f		149		422	
WBL	2	3400	173	.05	242	.07*
WBT	3	5100	1289	.25*	605	.12
WBR	1	1700	463	.27	373	.22
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .61 .69

Buildout No Project CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	346	.10	311	.09*
NBT	4	6800	1152	.17*	1038	.15
NBR	d	1700	223	.13	45	.03
SBL	3	5100	529	.10*	815	.16
SBT	3	5100	706	.14	1393	.27*
SBR	1	1700	644	.38	393	.23
EBL	2	3400	170	.05*	249	.07
EBT	3	5100	729	.14	1770	.35*
EBR	f		201		391	
WBL	2	3400	113	.03	276	.08*
WBT	3	5100	1430	.28*	776	.15
WBR	1	1700	638	.38	472	.28
Right Turn Adjustment			SBR	.17*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .82 .84

Buildout With Project CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	354	.10	326	.10*
NBT	4	6800	1182	.17*	1094	.16
NBR	d	1700	224	.13	45	.03
SBL	3	5100	523	.10*	836	.16
SBT	3	5100	698	.14	1454	.29*
SBR	1	1700	648	.38	421	.25
EBL	2	3400	174	.05*	262	.08
EBT	3	5100	733	.14	1769	.35*
EBR	f		202		398	
WBL	2	3400	110	.03	268	.08*
WBT	3	5100	1417	.28*	773	.15
WBR	1	1700	634	.37	474	.28
Right Turn Adjustment			SBR	.17*		
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for WBR

TOTAL CAPACITY UTILIZATION .82 .87

29. MacArthur Bl. at Jamboree Rd.

NB GP Buildout No Project CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	210	.06	290	.09*
NBT	3	5100	1890	.37*	870	.17
NBR	1	1700	600	.35	620	.36
SBL	2	3400	130	.04*	260	.08
SBT	3	5100	570	.11	1600	.31*
SBR	f		130		560	
EBL	2	3400	670	.20*	240	.07
EBT	4	6800	1760	.26	1480	.22*
EBR	f		160		70	
WBL	3	5100	420	.08	920	.18*
WBT	3	5100	1120	.22*	1570	.31
WBR	f		170		180	
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .88 .85

NB GP Buildout With Project CMP

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	218	.06	305	.09*
NBT	3	5100	1920	.38*	926	.18
NBR	1	1700	601	.35	620	.36
SBL	2	3400	124	.04*	281	.08
SBT	3	5100	562	.11	1661	.33*
SBR	f		134		588	
EBL	2	3400	674	.20*	253	.07
EBT	4	6800	1764	.26	1479	.22*
EBR	f		161		77	
WBL	3	5100	417	.08	912	.18*
WBT	3	5100	1107	.22*	1567	.31
WBR	f		166		182	
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION .89 .87

APPENDIX H

CEQA Notices

UCI Division of Finance and Administration

Physical & Environmental Planning
4199 Campus Drive, Suite 380
Irvine, CA 92697-2325
(949)824-8692

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

Project Title: UCI Center for Child Health/Medical Office Building
Location: University of California, Irvine
Lead Agency: University of California
County: Orange

In accordance with the California Environmental Quality Act (CEQA) Guidelines and University of California Guidelines for Implementation of CEQA, an Initial Study for the UCI Center for Child Health/Medical Office Building project (proposed project) was prepared by the University of California, Irvine (UCI), and was determined that a Mitigated Negative Declaration (MND) is the appropriate level of analysis.

The proposed project would construct an approximately 168,000-gross-square-foot (GSF), five-story medical office building with an additional mechanical penthouse and an 800-space parking structure at UCI's North Campus. The existing on-site approximately 6,500 GSF Child Development Center, approximately 2,400 GSF UCI Recycling Center, and an approximately 21,500 GSF receiving yard would be demolished in order to construct the proposed project. Additional site improvements would include grading, driveway improvements, construction of internal on-site circulation, landscaping, and installation of site utility connections and lighting. Off-site improvements include the addition of two eastbound right-turn pockets and a westbound left-turn pocket in Jamboree Road.

The project has been analyzed in the Draft Initial Study/Mitigated Negative Declaration (Draft IS/MND) and determined that, with the incorporation of mitigation, it will not have a significant effect on the environment. The document is available on the UCI website at: https://cpep.uci.edu/environmental/review.php.

Hard copies of the Draft IS/MND and referenced documents are available for review during business hours at the University of California, Irvine's Office of Physical and Environmental Planning. Comments will be received January 29, 2020 through February 27, 2020, and can be emailed to hashimol@uci.edu or mailed to:

Lindsey Hashimoto, Senior Planner
Office of Physical and Environmental Planning
University of California, Irvine
4199 Campus Drive, Suite 380
Irvine, CA 92697

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

Sincerely,

Richard Demerjian
Assistant Vice Chancellor
Physical & Environmental Planning

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: UCI Center for Child Health/Medical Office Building

Lead Agency: University of California, Irvine — Contact Person: Lindsey Hashimoto
Mailing Address: 4199 Campus Drive, Suite 380, Irvine, CA 92697 — Phone: (949) 824-8692
City: Irvine — Zip: 92697 — County: Orange

Project Location: County: Orange — City/Nearest Community: Irvine
Cross Streets: Jamboree Road and Birch Street — Zip Code: 92697
Longitude/Latitude (degrees, minutes and seconds): 33 ° 39 ′ 45.5 ″ N / -117 ° 51 ′ 24.4 ″ W — Total Acres: 5.5
Assessor's Parcel No.: — Section: — Twp.: — Range: — Base:
Within 2 Miles: State Hwy #: SR-73 and I-405 — Waterways: San Diego Creek
Airports: — Railways: — Schools: IUSD

Document Type:

CEQA: ☐ NOP ☐ Early Cons ☐ Neg Dec ☒ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) — Other:
NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI
Other: ☐ Joint Document ☐ Final Document ☐ Other:

Local Action Type:

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

Development Type:

☐ Residential: Units — Acres
☒ Office: Sq.ft. 168,000 Acres 5.5 Employees 225
☐ Commercial: Sq.ft. — Acres — Employees
☐ Industrial: Sq.ft. — Acres — Employees
☐ Educational:
☐ Recreational:
☐ Water Facilities: Type — MGD
☐ Transportation: Type
☐ Mining: Mineral
☐ Power: Type — MW
☐ Waste Treatment: Type — MGD
☐ Hazardous Waste: Type
☐ Other:

Project Issues Discussed in Document:

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

Present Land Use/Zoning/General Plan Designation:
UC Irvine is not subject to local zoning. The 2007 UCI LRDP land use designation allows clinical and office space.

Project Description: *(please use a separate page if necessary)*
The proposed project would construct an approximately 168,000-gross-square-foot (GSF), five-story medical office building with an additional mechanical penthouse and an 800-space parking structure at UCI's North Campus. The existing on-site approximately 6,500 GSF Child Development Center, approximately 2,400 GSF UCI Recycling Center, and an approximately 21,500 GSF receiving yard would be demolished in order to construct the proposed project. Additional site improvements include grading, driveway improvements, construction of internal on-site circulation, landscaping, and installation of site utility connections and lighting. Off-site improvements include the addition of two eastbound right-turn pockets and a westbound left-turn pocket in Jamboree Road.

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

Reviewing Agencies Checklist

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

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

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

Starting Date January 29, 2020 Ending Date February 27, 2020

Lead Agency (Complete if applicable):

Consulting Firm:	Applicant: University of California, Irvine
Address:	Address: 4199 Campus Drive, Suite 380
City/State/Zip:	City/State/Zip: Irvine, CA 92697-2325
Contact:	Phone: (949) 824-8692
Phone:	

Signature of Lead Agency Representative: **Date:** 1·27·20

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

The Orange County Register
2190 S. Towne Centre Place Suite 100
Anaheim, CA 92806
714-796-2209

5195875

UNIVERSITY OF CALIFORNIA - IRVINE
750 UNIVERSITY TOWER
IRVINE, CA 92697-2325

AFFIDAVIT OF PUBLICATION

STATE OF CALIFORNIA, } ss.
County of Orange

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of The Orange County Register, a newspaper of general circulation, published in the city of Santa Ana, County of Orange, and which newspaper has been adjudged to be a newspaper of general circulation by the Superior Court of the County of Orange, State of California, under the date of November 19, 1905, Case No. A-21046, that the notice, of which the annexed is a true printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

01/29/2020

I certify (or declare) under the penalty of perjury under the laws of the State of California that the foregoing is true and correct:

Executed at Anaheim, Orange County, California, on Date: January 29, 2020.

Signature

PROOF OF PUBLICATION

Legal No. **0011358111**

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

UCI CENTER FOR CHILD HEALTH/MEDICAL OFFICE BUILDING

UNIVERSITY OF CALIFORNIA, IRVINE

In accordance with the California Environmental Quality Act (CEQA) Guidelines and University of California Guidelines for Implementation of CEQA, an Initial Study for the UCI Center for Child Health/Medical Office Building project (proposed project) was prepared by the University of California, Irvine (UCI), and was determined that a Mitigated Negative Declaration (MND) is the appropriate level of analysis.

The proposed project would construct an approximately 168,000-gross-square-foot (GSF), five-story medical office building with an additional mechanical penthouse and an 800-space parking structure at UCI's North Campus. The existing on-site approximately 6,500 GSF Child Development Center, approximately 2,400 GSF UCI Recycling Center, and an approximately 21,500 GSF receiving yard would be demolished in order to construct the proposed project. Additional site improvements would include grading, driveway improvements, construction of internal on-site circulation, landscaping, and installation of site utility connections and lighting. Off-site improvements include the addition of two eastbound right-turn pockets and a westbound left-turn pocket in Jamboree Road.

The project has been analyzed in the Draft Initial Study/Mitigated Negative Declaration (Draft IS/MND) and determined that, with the incorporation of mitigation, it will not have a significant effect on the environment. The document is available on the UCI website at: https://cpep.uci.edu/environmental/review.php. Hard copies of the Draft IS/MND and referenced documents are available for review during business hours at the University of California, Irvine's Office of Physical and Environmental Planning. Comments will be received January 29, 2020 through February 27, 2020, and can be emailed to Lindsey Hashimoto, Senior Planner, at hashimol@uci.edu or mailed to University of California, Irvine, Office of Physical and Environmental Planning, 4199 Campus Drive, Suite 380, Irvine, CA 92697. If you have any questions regarding the project, please call (949) 824-8692.

Published: Orange County Register Jan 29, 2020 11358111

APPENDIX I

Response to Comments

UCI Center for Child Health/Medical Office Building

Draft Initial Study/Mitigated Negative Declaration
Public Review/Response to Comments

Public Review

The Draft Initial Study/Mitigated Negative Declaration (IS/MND), along with a Notice of Completion (NOC) and Notice of Intent to Adopt a Mitigated Negative Declaration (NOI), were circulated for public review and comment from January 29, 2020 through February 27, 2020. Copies of the document were submitted to the State Clearinghouse; local agencies; UCI faculty, staff, and other members of the campus community; and additional interested groups and persons. On January 29, 2020, a notice regarding the availability of the Draft IS/MND was published in the Orange County Register. Copies of the distribution list and notices are provided in this appendix.

Comments and Responses

Written comments were submitted by the agencies listed below. The letters and the responses to comments are presented on the pages following the Draft IS/MND distribution list.

Commenting Agency	Date Received
Irvine Unified School District	February 13, 2020
Irvine Ranch Water District	February 25, 2020
Orange County Transportation Authority	February 27, 2020
City of Irvine	February 27, 2020
City of Newport Beach	February 27, 2020

UCI Center for Child Health/Medical Office Building IS/MND Mailing List	
Orange County Public Library University Park Branch 4512 Sandburg Way Irvine, CA 92612	California Coastal Commission 301 East Ocean Blvd, Suite 300 Long Beach, CA 90802
City of Newport Beach Community Development Dept. 100 Civic Drive, Bay B, 1st Floor Newport Beach, CA 92660	California Department of Transportation District 12 1750 E 4th Street, #100 Santa Ana, CA 92705
City of Irvine Community Development Dept. P.O. Box 19575 Irvine, CA 92623-9575	Orange County Fire Authority P.O. Box 57115 Irvine, CA 92619-7115
County of Orange Planning & Development Services 300 N. Flower Street	Irvine Ranch Water District 15600 Sand Canyon Ave. Irvine, CA 92618
Orange County Transportation Authority 550 South Main Street Orange, CA 92868	Public Utilities Commission 320 W. 4th Street, Suite 500 Los Angeles, CA 90013
California Department of Fish & Wildlife 3883 Ruffin Road San Diego, CA 92123	Transportation Corridor Agencies 125 Pacifica Irvine, CA 92618-3304
U.S. Fish & Wildlife Service Division of Ecological Services 2177 Salk Avenue, Suite 250 Carlsbad, CA 92008	Irvine Unified School District 5050 Barranca Parkway Irvine, CA 92604-4698
Regional Water Quality Control Board - Santa Ana Region 3737 Main Street, Suite 500 Riverside, CA 92501-3348	Metropolitan Water District P.O. Box 54153 Los Angeles, CA 90054
U.S. Army Corps of Engineers Los Angeles District 911 Wilshire Boulevard Los Angeles, CA 90017	Southern California Association of Governments 818 West 7th Street, 12th Floor Los Angeles, CA 90017
CA Department of Toxic Substances Control 5796 Corporate Avenue Cypress, California 90630	Department of Water Resources 1416 9th Street Sacramento, CA 95814
South Coast Air Quality Management District 21865 East Copley Drive Diamond Bar, CA 91765-4182	Southern California Edison P.O. Box 800 Rosemead, CA 91770

Natural Reserve System University of California 1111 Franklin St., 6th Floor Oakland, CA 94607-5200	Uptown Newport Building Owner 5000 Birch Street, Suite 600 Newport Beach, CA 92660
Jamboree Plaza 4425 Jamboree Road, Suite 250 Newport Beach, CA 92660	Todd I. Schiffman 9229 W Sunset Blvd, Unit 501B Los Angeles, CA 90069
Birch Legacy PO Box 52230 Irvine, CA 92619-2230	County of Orange 2860 Gateway Oaks Drive, #400 Sacramento, CA 95833-4336

IRVINE UNIFIED SCHOOL DISTRICT
5050 Barranca Parkway, Irvine, California 92604-4652 • 949/936-5000 • FAX 949/936-5259 • www.iusd.org

February 10, 2020

Lindsey Hashimoto, Senior Planner
Office of Physical and Environmental Planning
University of California, Irvine
4199 Campus drive, Suite 380
Irvine, CA 92697

SENT VIA EMAIL: hashimol@uci.edu

Re: **Notice of Intent to Adopt a Mitigated Negative Declaration for the UCI Center for Child Health/Medical Office Building**

Dear Ms. Hashimoto,

We are in receipt of the attached notice and have reviewed the referenced Mitigated Negative Declaration. Irvine Unified School District (IUSD) has no comments.

Thank you for providing IUSD with the opportunity to review the document.

Please feel free to contact me at (949) 936-5305, if you have any questions.

Sincerely,

Kelvin Okino
Executive Director, Facilities and Construction
Irvine Unified School District

Attachment

cc. Jesse Barron, IUSD (with attachment)
Robert Ramirez, IUSD (with attachement)
File

Responses to the Irvine Unified School District

Comment 1: We are in receipt of the attached notice and have reviewed the referenced Mitigated Negative Declaration. Irvine Unified School District (IUSD) has no comments.

Response 1: Comment from IUSD acknowledges receipt of the Notice of Intent for the IS/MND. No additional action required.

Irvine Ranch
WATER DISTRICT

February 25, 2020

Ms. Lindsey Hashimoto, Senior Planner
Office of Physical and Environmental Planning
University of California, Irvine
4199 Campus Drive, Suite 380
Irvine, CA 92697

Re: NOI/Draft MND-UCI Center for Child Health/Medical Office Building

Dear Ms. Hashimoto:

Irvine Ranch Water District (IRWD) has received the University of California, Irvine's (UCI) Notice of Intent (NOI) for the UCI Center for Child Health/Medical Office Building Draft Mitigated Negative Declaration (MND). IRWD has reviewed the NOI/Draft MND and offers the following comments.

The draft MND indicates that the proposed project would construct an approximately 168,000 gross-square-foot medical office building and an associated, approximately 800-space, seven-floor parking structure to serve the project.

The draft MND indicates that the proposed project would receive potable and recycled water, as well as sewer services from IRWD. As specified in the MND, the potable water would connect through an existing IRWD 12-inch pipeline located in Jamboree Road, adjacent to the site. The recycled water service would be provided through an existing 10-inch line in Campus Drive and the sanitary sewer connection would occur through an existing IRWD 21-inch sewer line in Campus Drive. Coordination with IRWD will be required to insure that existing facilities remain in service during construction. For design and construction coordination issues or questions, please contact Ms. Kelly Lew, Engineering Manager – Development and Inspection Services at (949) 453-5586.

As stated in the draft MND, the proposed project is consistent with the 2007 UCI Long Range Development Plan (LRDP). IRWD has included the overall demands associated with the 2007 UCI LRDP in IRWD's water demands and sewer flow projections. As projects in the LRDP are developed, IRWD will require UCI to complete studies analyzing the impact of the proposed projects on IRWD-owned facilities (potable, recycled, and sewer systems). These studies will verify if any additional off-site improvements to IRWD's existing systems are needed.

Prior to development plan submittal and approval, the developer shall coordinate with IRWD to develop a technical memorandum or Sub Area Master Plan (SAMP) addendum, identifying potential impacts to the potable, recycled, and sewer systems from this project. For questions about the LRDP studies or SAMP addendums, please contact Eric Akiyoshi, Engineering Manager - Planning at (949) 453-5552.

IRWD appreciates the opportunity to review and comment on the NOI/Draft MND. If you have any questions or if you require additional information, please contact me at (949) 453-5325 or Ms. Jo Ann Corey, Environmental Compliance Specialist at (949) 453-5326.

Sincerely,

FMSanchez

Fiona M. Sanchez
Director of Water Resources

cc: Kelly Lew, IRWD
Eric Akiyoshi, IRWD
Jo Ann Corey, IRWD

Responses to the Irvine Ranch Water District

Comment 1: The draft MND indicates that the proposed project would receive potable and recycled water, as well as sewer services from IRWD. As specified in the MND, the potable water would connect through an existing IRWD 12-inch pipeline located in Jamboree Road, adjacent to the site. The recycled water service would be provided through an existing 10-inch line in Campus Drive and the sanitary sewer connection would occur through an existing IRWD 21-inch sewer line in Campus Drive. Coordination with IRWD will be required to insure that existing facilities remain in service during construction. For design and construction coordination issues or questions, please contact Ms. Kelly Lew, Engineering Manager – Development and Inspection Services at (949) 453-5586.

Response 1: Coordination between UCI and IRWD staff has been initiated regarding connection to the potable water pipeline in Jamboree Road and the recycled water and sewer lines located within Campus Drive. As the design process proceeds, UCI will continue coordination regarding the feasibility of these connections.

Comment 2: As stated in the draft MND, the proposed project is consistent with the 2007 UCI Long Range Development Plan (LRDP). IRWD has included the overall demands associated with the 2007 UCI LRDP in IRWD's water demands and sewer flow projections. As projects in the LRDP are developed, IRWD will require UCI to complete studies analyzing the impact of the proposed projects on IRWD-owned facilities (potable, recycled, and sewer systems). These studies will verify if any additional off-site improvements to IRWD's existing systems are needed.

Response 2: UCI acknowledges IRWD's comment that future studies regarding potable, recycled, and sewer system capacities will be needed as UCI implements the LRDP. No additional action required.

Comment 3: Prior to development plan submittal and approval, the developer shall coordinate with IRWD to develop a technical memorandum or Sub Area Master Plan (SAMP) addendum, identifying potential impacts to the potable, recycled, and sewer systems from this project. For questions about the LRDP studies or SAMP addendums, please contact Eric Akiyoshi, Engineering Manager - Planning at (949) 453-5552.

Response 3: An update to the Sub Area Master Plan for the North Campus was prepared by Dudek and was provided to IRWD on February 5, 2020. UCI will continue to coordinate with IRWD staff regarding the study.

OCTA

AFFILIATED AGENCIES

Orange County
Transit District

Local Transportation
Authority

Service Authority for
Freeway Emergencies

Consolidated Transportation
Service Agency

Congestion Management
Agency

February 26, 2020

Ms. Lindsey Hashimoto
Office of Physical and Environmental Planning
University of California, Irvine
4199 Campus Drive, Suite 380
Irvine, CA 92697

Subject: **Notice of Intent to Adopt a Mitigated Negative Declaration for the UCI Center for Child Health/Medical Office Building**

Dear Ms. Hashimoto:

Thank you for providing the Orange County Transportation Authority (OCTA) with a copy of the Notice of Intent to Adopt a Mitigated Declaration (IS/MND) for the UCI Center for Child Health/Medical Office Building (Project). The following comments are provided for your consideration:

- In Appendix F, Traffic Study, Page 1.6, Section 1.4 Existing Roadway System, Campus Drive between University Drive to Jamboree Road is described as a two-lane undivided roadway. Please note that Campus Drive between Carlson Street and Jamboree Road is built as a four-lane divided roadway.

- Section 4.15 "Transportation", Subsection A does not address impacts to the Congestion Management Program Highway System (CMPHS). Please reference the latest Congestion Management Program (CMP) report available on the OCTA website here: http://www.octa.net/Projects-and-Programs/Plans-and-Studies/Congestion-Management-Program/Overview/.

- Section 4.15 "Transportation", Subsection B identifies a net volume of 5,531 new average daily trips for the proposed project. The Orange County CMP requires a CMP Traffic Impact Analysis (TIA) for any development project that meets the adopted trip generation thresholds: (1) 2,400 or more daily trips; or (2) 1,600 or more daily trips for projects that directly access the CMPHS. The proposed project meets the trip generation threshold and thus requires a CMP TIA.

Throughout the development of this project, we encourage communication with OCTA on any matters discussed herein. If you have any questions or comments, please contact me at (714) 560-5907 or at dphu@octa.net.

Sincerely,

Dan Phu
Manager, Environmental Programs

Responses to the Orange County Transportation Authority

Comment 1: In Appendix F, Traffic Study, Page 1.6, Section 1.4 Existing Roadway System, Campus Drive between University Drive to Jamboree Road is described as a two-lane undivided roadway. Please note that Campus Drive between Carlson Street and Jamboree Road is built as a four-lane divided roadway.

Response 1: Page 1.6 of Appendix F has been updated to include language regarding Jamboree Road, between Campus Drive and Carlson Street, as a four-lane divided roadway.

Comment 2: Section 4.15 "Transportation", Subsection A does not address impacts to the Congestion Management Program Highway System (CMPHS). Please reference the latest Congestion Management Program (CMP) report available on the OCTA website here: http://www.octa.net/Projects-andPrograms/Plans-and-Studies/Congestion-Management-Program/Overview/.

Response 2: With the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018, VMT was adopted as the standard to analyze transportation impacts and, as such, LOS is no longer considered the standard to measure transportation impacts under CEQA. However, Appendix G, Supplemental Level of Service Traffic Analysis, was included for informational purposes and includes the CMP analysis.

Comment 3: Section 4.15 "Transportation", Subsection B identifies a net volume of 5,531 new average daily trips for the proposed project. The Orange County CMP requires a CMP Traffic Impact Analysis (TIA) for any development project that meets the adopted trip generation thresholds: (1) 2,400 or more daily trips; or (2) 1,600 or more daily trips for projects that directly access the CMPHS. The proposed project meets the trip generation threshold and thus requires a CMP TIA.

Response 3: With the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018, VMT was adopted as the standard to analyze transportation impacts and, as such, LOS is no longer considered the standard to measure transportation impacts under CEQA. Appendix G, Supplemental Level of Service Traffic Analysis, was included for informational purposes only.

Community Development
cityofirvine.org
1 Civic Center Plaza, Irvine, CA 92606-5208
949-724-6000

February 26, 2020

Sent via USPS and
email: hashimol@uci.edu

Ms. Lindsey Hashimoto
Office of Physical and Environmental Planning
University of California, Irvine
4199 Campus Drive, Suite 380
Irvine, CA 92697

Subject: First Review of the Draft Tiered Initial Study and Mitigated Negative Declaration for the UCI Center for Child Health/Medical Office Building

Dear Ms. Hashimoto:

City of Irvine staff reviewed the Draft Tiered Initial Study/Mitigated Negative Declaration for the proposed UCI Center for Child Health/Medical Office Building located in UCI's North Campus on an approximately 5.5-acre site near the southeast corner of Jamboree Road and Birch Street in Planning Area 29. The building will house a new clinical facility providing comprehensive pediatric and adult medical care in Orange County, focusing on specialty care for children with chronic illnesses. It is anticipated that approximately 225 full-time staff and 228 daily outpatient visits would occur at full operation of the project. Project demolition and construction is anticipated to begin in November 2020 and would occur over 22 months with anticipated completion in September 2022.

For reference, the 2007 Long Range Development Plan (LRDP) is a comprehensive land use plan, based on projections through 2026, which guides campus growth. The subject project-level Draft IS/MND is tiered off of 2007 LRDP EIR.

The proposed project includes the following:

- Construct an approximately 168,000 gross square-foot five-story child health/medical office building with mechanical penthouse
- Construct an approximately 800-space, seven-floor parking structure
- Construct various on-site improvements such as internal vehicle circulation, patient drop-off, service and loading, emergency vehicle access, pedestrian pathways, 24-hour site lighting, and landscaping
- Demolish existing 6,500-square-foot child development center, 2,400-square-foot recycling center, 21,039-square-foot receiving yard (unenclosed outdoor space; no physical structure), and approximately 40 surface parking spaces.

Vehicular access to the project would be from two existing intersections: (1) four-way signalized intersection at Jamboree Road and Birch Street; and (2) right-in/right-out access approximately 700 feet south of Birch Street, known as the West Access Road. Both intersections would be improved to serve the proposed project.

Additional off-site roadway improvements include the following:

- Construct intersection improvements at the Jamboree/Birch as follows:
  - ➢ Add a second southbound left-turn
  - ➢ Add one northbound right-turn lane
  - ➢ Improve westbound approach to include one left-turn, one shared left/through, and one right-turn lane.
- Add northbound right-turn lane at access road off Jamboree, located south of the Jamboree/Birch intersection

Based on the review of the Draft IS/MND, staff would like to provide the following comments:

1. Per the City's General Plan and Zoning Ordinance, the property is zoned as 6.1 Institutional in Planning Area 29. There is currently 761,000 SF of educational facilities development intensity allocated to this planning area. Based on discussions between UCI and City planning staff in late 2019, the square footage intensity for PA 29 in the City's General Plan and Zoning Ordinance will be revised as part of the on-going comprehensive General Plan Update effort to 1,090,000 SF maximum, including 140,000 additive SF for the existing FDA Lab Building which is not a part of UCI, and 435 DU, consistent with the 2007 LRDP.

   While there is enough building square footage intensity, medical office use is not listed as a permitted or conditionally permitted land use in the 6.1 zone. However, the City has no permit authority on University land and therefore can exercise no land use jurisdiction, which is consistent with information indicated on Page 2-13 of the Draft IS-MND as follows: "The applicable land use plan is the 2007 LRDP and the University is the only agency with land use jurisdiction over projects located on the campus. The project site is designated as mixed use – commercial in the LRDP, which allows for clinical, general office, and research uses..."

   The project site is designated as Mixed Use-Commercial in the LRDP. Staff confirmed that Table 5-1, 2007 LRDP Land Use Matrix, specifies primary uses for "Mixed-use Commercial" as "Facilities for office, research, and development, and academic activities, commercial and retail space, conference facilities, residential facilities, clinical uses (uses may be non-University oriented if located in the Inclusion Areas)."

2. Exhibit 2-3, Conceptual Site Plan: Label area between zig zag dashed lines along eastern project edge. Is it the 150-foot buffer zone between North Campus

development and San Joaquin Freshwater Marsh where buildings and parking facilities are prohibited within this setback?

3. Paragraph 2 on Page 2-10: Indicate when full project operation is anticipated.

4. Paragraph 3 on Page 2-11 (and related California Coastal Commission section on Page 2-14) states, "The proposed project is located outside of the California Coastal Zone, but the segment of Jamboree Road west of the project site, including the West Access Road right-turn deceleration lane, is located within the California Coastal Zone in the City of Irvine. The location of the proposed right-turn pocket currently consists of previously disturbed land, including the existing unpaved roadway shoulder and non-native grass."

   State in the Draft IS-MND that the proposed project and off-site improvements are located outside the "area within the coastal zone" subject to the certified local coastal program (LCP) for Irvine in accordance with Figure 2-7 in Irvine Zoning Ordinance Chapter 2-7, Coastal Zone: Special Regulations for Developments Located in the Coastal Zone.

   However, the proposed right-turn pocket lane on Jamboree at the West Access Road is within the "California Coastal Zone" in Irvine so construction of this off-site roadway improvement requires approval by the California Coastal Commission as indicated on Page 2-14 of the Draft IS-MND. In addition, both Birch Street and West Access Road off-site street improvements are within Irvine and subject to review/approval of improvement plans, right-of-way acquisition, and permits by the City of Irvine prior to commencing construction.

5. Paragraph 2 on Page 4.2-3: The General Plan square footage intensity cap is 761,000, which is lower than the 950,000 SF specified in the 2007 LRDP. Therefore, omit the following sentence: The City of General Plan (General Plan) was based on 2007 LRDP projections and therefore is consistent with SCAQMD's population and job growth projections used to develop the AQMP."

6. Paragraph 1 on Page 4.11-5: Clarify that Irvine Municipal Code section 6-8-205(A) indicates that "Construction activities and agricultural operations may occur between 7 a.m. and 7 p.m. Mondays through Fridays, and 9 a.m. and 6 p.m. on Saturdays. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays..."

7. Last paragraph on Page 4.15-11: Revise from "...now in the process of Phase 1 of their comprehensive General Plan Update" to Phase 2.

8. Paragraph 2 on Page 4.15-12: Omit the strikeout wording: "Therefore, since the project land use was accounted for in the City's growth forecast, ~~including built~~

~~square footage~~, the proposed project would be consistent with the RTP/SCS and would have a less than significant impact on transportation based on the RTP/SCS screening threshold." Note the City does not show any existing square footage in PA 29 with the exception of the FDA building. Therefore, provide square footage data by address and land use to City planning staff so we can update our records.

Traffic Study Comments:

9. Table 1-1 UCI North Campus Land Use Summary: Please include the AM, PM, and ADT trips for each of the land use, a summary of the total trips associated with 2007 LRDP and Proposed North Campus, and the difference in trips between the two scenarios.

10. Based on initial comparison of the previously approved land uses to proposed land uses in ITE, the net increase in trips is between 400 – 500 peak hour trips. Therefore, the project is required to prepare of a comprehensive traffic study that includes, existing, short-term interim year, long-range interim year, and buildout analyses per City's adopted Traffic Impact Analysis guidelines. Please submit a comprehensive traffic study scope. The project is responsible for mitigating all impacts identified in the comprehensive traffic study.

11. Expand the study area to include: Culver at I-405 NB Ramps, Culver at I-405 SB Ramps, Culver/Michelson, and Culver/University intersections for all study years.

12. Provide a site map for the project site that shows dimensions of the driveways, distance between Jamboree/Birch and Jamboree/Access, connection to Graduate driveway (if Graduate driveway will provide connection to project site), pedestrian sidewalk, and transit connectivity

13. Provide an 8-foot wide sidewalk on the eastside of Jamboree from Campus to Fairchild.

14. Provide class II on-street bike lane on the eastside of Jamboree from Campus to Fairchild

15. Jamboree/Access Driveway: Please provide access analysis that includes Transportation Design Procedure (TDP) - 4 (right-turn lane at driveways), TDP – 10 (distance between driveways and intersections), TDP -11 (corner clearance), TDP - 14 (driveway lengths), and TDP – 15 (gate stacking), if applicable. The City's TDP – 4 requires a 250-foot right-turn lane with 90-foot taper at all major roadways such as Jamboree Road. The operational analysis must be consistent with City's TDPs.

16. Jamboree/Birch: Please provide access analysis that includes Transportation Design Procedure (TDP) – 1 (turn lane pocket length) for southbound left-turn, TDP – 14

(driveway lengths), and TDP – 15 (gate stacking), if applicable. The operational analysis must be consistent with City's TDPs.

17. The Graduate driveway currently provides connection to the project site, will this connection be maintained? Please provide trip distribution that shows the number of vehicles that would enter through Graduate driveway. Also, provide access analysis at this driveway that includes TDP -1 (turn lane pocket length), TDP – 4 (right-turn lane at driveways), and TDP -14 (driveway lengths). The operational analysis must be consistent with City's TDPs.

18. Table 3-1 and Appendix G Figure 26: There are vehicles missing on Figure 26 compared to the trips on Table 3-1. Are these vehicles taking access off Graduate driveway? Please review and revise the trip distribution on Figure 26.

19. Appendix G, Page 8 LOS Analysis: Replace "Irvine Intersections" with "Irvine locations."

20. Appendix G, Page 15 fourth paragraph: Replace "2.0" with "0.02." The revised sentence would read "although the two intersections listed above are deficient, neither intersection has a project increment greater than 0.02."

21. Appendix G, Table 13 #149 Jamboree/Fairchild: The ICU values according to the worksheet are 0.67 and 0.78 for Buildout Conditions No Build and 0.69 and 0.80 for Buildout Conditions with Project.

22. In the special issues section of the traffic analysis, provide discussion on pedestrian access and circulation, bicycle circulation, and transit facilities.

23. Please provide discussion on how the proposed project affects the 2007 LRDP mitigation measure findings. Please confirm the timing of the LRDP mitigation improvements and whether any changes result from the proposed project.

Thank you for the opportunity to review and comment on the proposed project. Staff would appreciate the opportunity to review any further information regarding this project as the planning process proceeds. If you have any questions, please contact Senior Planner Melissa Chao at 949-724-6395 or at mchao@cityofirvine.org.

Sincerely,

Marika Poynter
Principal Planner

ec: Kerwin Lau, Manager of Planning Services
Lisa Thai, Supervising Transportation Analyst
Traci Stubbler, Community Services Supervisor and ICCP Administrator
Melissa Chao, Senior Planner
Diane Vu, Senior Planner
Stan Ng, Associate Engineer

Response to the City of Irvine

Comment 1: Per the City's General Plan and Zoning Ordinance, the property is zoned as 6.1 Institutional in Planning Area 29. There is currently 761,000 SF of educational facilities development intensity allocated to this planning area. Based on discussions between UCI and City planning staff in late 2019, the square footage intensity for PA 29 in the City's General Plan and Zoning Ordinance will be revised as part of the ongoing comprehensive General Plan Update effort to 1,090,000 SF maximum, including 140,000 additive SF for the existing FDA Lab Building which is not a part of UCI, and 435 DU, consistent with the 2007 LRDP.

While there is enough building square footage intensity, medical office use is not listed as a permitted or conditionally permitted land use in the 6.1 zone. However, the City has no permit authority on University land and therefore can exercise no land use jurisdiction, which is consistent with information indicated on Page 2-13 of the Draft IS-MND as follows: "The applicable land use plan is the 2007 LRDP and the University is the only agency with land use jurisdiction over projects located on the campus. The project site is designated as mixed use-commercial in the LRDP, which allows for clinical, general office, and research uses..."

The project site is designated as Mixed Use-Commercial in the LRDP. Staff confirmed that Table 5-1, 2007 LRDP Land Use Matrix, specifies primary uses for "Mixed-use Commercial" as "Facilities for office, research, and development, and academic activities, commercial and retail space, conference facilities, residential facilities, clinical uses (uses may be non-University oriented if located in the Inclusion Areas)."

Response 1: Comment states the project is consistent with the UCI land use designation Mixed Use – Commercial and acknowledges that the University is the only agency with land use jurisdiction over the project site. No additional action required.

Comment 2: Exhibit 2-3, Conceptual Site Plan: Label area between zig zag dashed lines along eastern project edge. Is it the 150-foot buffer zone between North Campus development and San Joaquin Freshwater Marsh where buildings and parking facilities are prohibited within this setback?

Response 2: Correct. The line represents the 150-foot development buffer between the North Campus and the UC San Joaquin Marsh Reserve. Exhibit 2-3, Conceptual Site Plan, on page 2-6 (Section 2.0, Project Description) has been updated to add a label to the 150-foot development buffer for clarification.

Comment 3: Paragraph 2 on Page 2-10: Indicate when full project operation is anticipated.

Response 3: Project operation is stated on page 2-12 (Section 2.0, Project Description), which indicates completion in September 2022.

Comment 4: Paragraph 3 on Page 2-11 (and related California Coastal Commission section on Page 2-14) states, "The proposed project is located outside of the California Coastal Zone, but the segment of Jamboree Road west of the project site, including the West Access Road right-turn deceleration lane, is located within the California Coastal Zone in the City of Irvine. The location of the proposed right-turn pocket currently consists of previously disturbed land, including the existing unpaved roadway shoulder and non-native grass."

State in the Draft IS-MND that the proposed project and off-site improvements are located outside the "area within the coastal zone" subject to the certified local coastal program (LCP) for Irvine in accordance with Figure 2-7 in Irvine Zoning Ordinance Chapter 2-7, Coastal Zone: Special Regulations for Developments Located in the Coastal Zone.

However, the proposed right-turn pocket lane on Jamboree at the West Access Road is within the "California Coastal Zone" in Irvine so construction of this off-site roadway improvement requires approval by the California Coastal Commission as indicated on Page 2-14 of the Draft IS-MND. In addition, both Birch Street and West Access Road off-site street improvements are within Irvine and subject to review/approval of improvement plans, right-of-way acquisition, and permits by the City of Irvine prior to commencing construction.

Response 4: The City of Irvine and California Coastal Commission (CCC) are listed as Responsible Agencies on pages 2-13 and 2-14 (Section 2.0, Project Description). Additional discussion regarding permitting and coordination with the City of Irvine and CCC occurs on pages 2-11 (Section 2.0, Project Description) and page 4.10-2 (Section 4.10, Land Use and Planning).

Additional language has been added on page 2-11 (Section 2.0, Project Description), which states that the proposed project and the off-site improvements are not located within the area of the coastal zone subject to the certified local coastal program (LCP) for the City of Irvine. This has been confirmed by UCI staff in review of Figure 2-7 in Chapter 2-7 of the Irvine Zoning Code.

Comment 5: Paragraph 2 on Page 4.2-3: The General Plan square footage intensity cap is 761,000, which is lower than the 950,000 SF specified in the 2007 LRDP. Therefore, omit the following sentence: The City of General Plan (General Plan) was based on 2007 LRDP projections and therefore is consistent with SCAQMD's population and job growth projections used to develop the AQMP."

Response 5: The statement "The City of Irvine General Plan (General Plan) was based on 2007 LRDP projections and therefore is consistent with SCAQMD's population and job growth projections used to develop the AQMP" has been removed from page 4.2-3 of the Final IS/MND.

Comment 6: Paragraph 1 on Page 4.11-5: Clarify that Irvine Municipal Code section 6-8-205(A) indicates that "Construction activities and agricultural operations may occur between 7 a.m. and 7 p.m. Mondays through Fridays, and 9 a.m. and 6 p.m. on Saturdays. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays... "

Response 6: As discussed on page 4.11-4 of the IS/MND, although UCI is not subject to local regulations, the City's noise standards are relevant to establish guidelines and evaluating noise impacts. The suggested language "Per Irvine Municipal Code Section 6-8-205(A), construction activities and agricultural operations may occur between 7 a.m. and 7 p.m. Mondays through Fridays, and 9 a.m. and 6 p.m. on Saturdays. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays” has been added to page 4.11-5 of the IS/MND.

Comment 7: Last paragraph on Page 4.15-11: Revise from " ... now in the process of Phase 1 of their comprehensive General Plan Update" to Phase 2.

Response 7: Language “Phase 1” has been updated to “Phase 2” on page 4.15-11 if the IS/MND.

Comment 8: Paragraph 2 on Page 4.15-12: Omit the strikeout wording : "Therefore, since the project land use was accounted for in the City's growth forecast, ~~including built square footage~~, the proposed project would be consistent with the RTP/SCS and would have a less than significant impact on transportation based on the RTP/SCS screening threshold." Note the City does not show any existing square footage in PA 29 with the exception of the FDA building. Therefore, provide square footage data by address and land use to City planning staff so we can update our records.

Response 8: The language “including built square footage” has been removed from page 4.15-12 of the IS/MND.

Existing UCI Development at the North Campus

Academic		**GSF**
Greenhouse - Arboretum		2,350
Faculty Research Facility		16,166
Aviary Facility		2,480
Insectary/Biological Sciences Trailers		1,675
Air Pollution Labs		6,927
	Subtotal	29,598
Campus Support		
Mail Distribution		4,320
Shops/Stores		7,941
FM Building/Annex		14,473
Recycling Center		2,400
Receiving/Storehouse		21,039
Fleet Services		2,669
	Subtotal	52,842
	TOTAL	**82,440**

Comment 9: Table 1-1 UCI North Campus Land Use Summary: Please include the AM, PM, and ADT trips for each of the land use, a summary of the total trips associated with 2007 LRDP and Proposed North Campus, and the difference in trips between the two scenarios.

Response 9: With the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018, VMT was adopted as the standard to analyze transportation impacts and, as such, LOS is no longer considered the standard to measure transportation impacts under CEQA. However,

Appendix G, Supplemental Level of Service Traffic Analysis, was included for informational purposes and lists the ADT and AM and PM peak trips.

Comment 10: Based on initial comparison of the previously approved land uses to proposed land uses in ITE, the net increase in trips is between 400 - 500 peak hour trips. Therefore, the project is required to prepare of a comprehensive traffic study that includes, existing, short-term interim year, long-range interim year, and buildout analyses per City's adopted Traffic Impact Analysis guidelines. Please submit a comprehensive traffic study scope. The project is responsible for mitigating all impacts identified in the comprehensive traffic study.

Response 10: With the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018, vehicle miles traveled (VMT) was adopted as the standard to analyze transportation impacts. As such, LOS is no longer considered the standard to measure transportation impacts and mitigation is not required under CEQA. However, a supplemental LOS analysis was included as Appendix G within the IS/MND for informational purposes, which determined that the project would not result in unacceptable levels of service.

Comment 11: Expand the study area to include: Culver at 1-405 NB Ramps, Culver at 1-405 SB Ramps, Culver/Michelson, and Culver/University intersections for all study years.

Response 11: With the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018, VMT was adopted as the standard to analyze transportation impacts and, as such, LOS is no longer considered the standard to measure transportation impacts under CEQA. Appendix G, Supplemental Level of Service Traffic Analysis, was included for informational purposes only. Changes to or questions regarding the LOS analysis can be coordinated between the City and UCI outside this Response to Comments.

Comment 12: Provide a site map for the project site that shows dimensions of the driveways, distance between Jamboree/Birch and Jamboree/Access, connection to Graduate driveway (if Graduate driveway will provide connection to project site), pedestrian sidewalk, and transit connectivity.

Response 12: During the design phase of the project, in coordination with the City Traffic Engineer and within the TDP analysis, the dimensions and distances between the driveways along with the pedestrian sidewalk and Class II bicycle lane would be confirmed. The project site would not connect to the existing Graduate service road.

Comment 13: Provide an 8-foot wide sidewalk on the eastside of Jamboree from Campus to Fairchild.

Response 13: An eight-foot sidewalk will be constructed on the south side of Jamboree Road adjacent to the proposed project in compliance with City standards.

Comment 14: Provide class II on-street bike lane on the eastside of Jamboree from Campus to Fairchild.

Response 14: A Class II on-street bicycle lane will be constructed on the south side of Jamboree Road adjacent to the proposed project in compliance with City standards.

Comment 15: Jamboree/Access Driveway: Please provide access analysis that includes Transportation Design Procedure (TDP) - 4 (right-turn lane at driveways), TDP - 10 (distance between driveways and intersections), TDP - 11 (corner clearance), TDP - 14 (driveway lengths), and TDP - 15 (gate stacking), if applicable. The City's TDP - 4 requires a 250-foot right-turn lane with 90-foot taper at all major roadways such as Jamboree Road. The operational analysis must be consistent with City's TDPs.

Response 15: UCI staff has begun coordination with City staff regarding the construction of the off-site roadway improvements located within Jamboree Road. As with previous off-site improvements located within the City of Irvine constructed by UCI, a TDP analysis will be prepared. Review and approval of the improvements plan by the City Traffic Engineer will be completed during the project's design process.

Comment 16: Jamboree/Birch: Please provide access analysis that includes Transportation Design Procedure (TDP) - 1 (turn lane pocket length) for southbound left-turn, TDP - 14 (driveway lengths), and TDP - 15 (gate stacking), if applicable. The operational analysis must be consistent with City's TDPs.

Response 16: UCI staff has begun coordination with City staff regarding the construction of the off-site roadway improvements located within Jamboree Road. As with previous off-site improvements located within the City of Irvine constructed by UCI, a TDP analysis will be prepared. Review and approval of the improvements plan by the City Traffic Engineer will be completed during the project's design process.

Comment 17: The Graduate driveway currently provides connection to the project site, will this connection be maintained? Please provide trip distribution that shows the number of vehicles that would enter through Graduate driveway. Also, provide access analysis at this driveway that includes TOP -1 (turn lane pocket length), TDP - 4 (right-turn lane at driveways), and TDP -14 (driveway lengths). The operational analysis must be consistent with City's TDPs.

Response 17: As currently proposed, access to the project will be via the Birch Street and West Access Road driveways on Jamboree Road. The Graduate service road will be maintained as access to the existing facilities located on the east side of the North Campus. The Graduate service road may be improved as part of future development and connect to the west side of the North Campus, but would be analyzed subsequently if any improvements were proposed.

Comment 18: Table 3-1 and Appendix G Figure 26: There are vehicles missing on Figure 26 compared to the trips on Table 3-1. Are these vehicles taking access off Graduate driveway? Please review and revise the trip distribution on Figure 26.

Response 18: With the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018, VMT was adopted as the standard to analyze transportation impacts and, as such, LOS is no longer considered the standard to measure transportation impacts under CEQA. Appendix G, Supplemental Level of Service Traffic Analysis, was included for informational purposes only.

Changes to or questions regarding the LOS analysis can be coordinated between the City and UCI outside this Response to Comments.

Comment 19: Appendix G, Page 8 LOS Analysis: Replace "Irvine Intersections" with "Irvine locations."

Response 19: With the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018, VMT was adopted as the standard to analyze transportation impacts and, as such, LOS is no longer considered the standard to measure transportation impacts under CEQA. Appendix G, Supplemental Level of Service Traffic Analysis, was included for informational purposes only. Changes to or questions regarding the LOS analysis can be coordinated between the City and UCI outside this Response to Comments.

Comment 20: Appendix G, Page 15 fourth paragraph: Replace "2.0" with "0.02." The revised sentence would read "although the two intersections listed above are deficient, neither intersection has a project increment greater than 0.02."

Response 20: With the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018, VMT was adopted as the standard to analyze transportation impacts and, as such, LOS is no longer considered the standard to measure transportation impacts under CEQA. Appendix G, Supplemental Level of Service Traffic Analysis, was included for informational purposes only. Changes to or questions regarding the LOS analysis can be coordinated between the City and UCI outside this Response to Comments.

Comment 21: Appendix G, Table 13 #149 Jamboree/Fairchild: The ICU values according to the worksheet are 0.67 and 0.78 for Buildout Conditions No Build and 0.69 and 0.80 for Buildout Conditions with Project.

Response 21: With the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018, VMT was adopted as the standard to analyze transportation impacts and, as such, LOS is no longer considered the standard to measure transportation impacts under CEQA. Appendix G, Supplemental Level of Service Traffic Analysis, was included for informational purposes only. Changes to or questions regarding the LOS analysis can be coordinated between the City and UCI outside this Response to Comments.

Comment 22: In the special issues section of the traffic analysis, provide discussion on pedestrian access and circulation, bicycle circulation, and transit facilities.

Response 22: With the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018, VMT was adopted as the standard to analyze transportation impacts and, as such, LOS is no longer considered the standard to measure transportation impacts under CEQA. Appendix G, Supplemental Level of Service Traffic Analysis, was included for informational purposes only. Changes to or questions regarding the LOS analysis can be coordinated between the City and UCI outside this Response to Comments.

However, pedestrian access, bicycle circulation, and transit are all discussed within Section 4.15 (Transportation) and Appendix F (VMT Analysis).

Comment 23: Please provide discussion on how the proposed project affects the 2007 LRDP mitigation measure findings. Please confirm the timing of the LRDP mitigation improvements and whether any changes result from the proposed project.

Response 23: The proposed project would not impact 2007 LRDP mitigation measure findings. Refer to attached Table 1.

As discussed on page 4.13-54 of the 2007 LRDP EIR, the UCITP intersections are not located within UCI's jurisdiction, and, as such, would be planned, designed, and implemented by the owning entity. Any required UCI "fair share" of the improvement costs would be guided by the requirements of LRDP mitigation measures Tra-1E and Tra-1F. Therefore, the improvements listed in the UCITP are not proposed to be constructed by UCI as none are located within UCI's jurisdiction.

Table 1
UCI LRDP Mitigation Measure Tra-1 Monitoring

Measure	***Status & Summary of Actions***
TRA-1A: To reduce on- and off-campus vehicle trips and resulting impacts, UCI will continue to implement a range of Transportation Demand Management (TDM) strategies. Program elements will include measures to increase transit and shuttle use, encourage alternative transportation modes including bicycle transportation, implement parking polices that reduce demand, and implement other administrative mechanisms that reduce vehicle trips to and from the campus. UCI shall monitor the performance of TDM programs through annual surveys.	Since 2007 UCI has implemented a comprehensive program of TDM measures resulting in an average vehicle ridership of 2.06 (based on 2019 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. • UCI shuttle system ridership was 2.2 million passengers at a cost of $2.8 million. • "University Pass" transit program with 80% subsidy for unlimited OCTA ridership and coordination OCTA of routes • 20% rebate on commuter Metrolink and Amtrak train passes • Incentivized vanpool, carpool, ridesharing programs • Zipcar car sharing program with 6,000 on campus members • Bicycle program highlights include "ZotWheels," the first bike sharing system in the region; over 3,000 bike parking spaces; significant investment in bikeway infrastructure; bicycle education for campus affiliates of all bicycling levels offered quarterly; and major bi-annual bike education festivals to encourage safe and legal riding.
TRA-1B: UCI will continue to pursue the implementation of affordable on-campus housing to reduce peak-hour commuter trips to the campus.	With the opening of the Middle Earth Expansion and East Campus Student Apartments Phase IV-A in the Fall 2019 quarter, UCI has constructed 5,000 beds of on-campus student housing since 2007. Additionally, UCI amended its 2007 LRDP in September 2019 to increase the total student bed capacity from 50% to 60% of enrollment to accommodate future expansion of the on-campus student housing program. UCI has constructed or approved 708 affordable on-campus faculty and staff homes at a cost of $275 million since 2007. Approximately two-thirds of UCI faculty live on campus.

TRA-1C: To enhance transit systems serving the campus and local community, UCI will work cooperatively with the City of Irvine, City of Newport Beach, OCTA and other local agencies to coordinate service and routes of the UCI Shuttle with existing and proposed shuttle and transit programs including the proposed Jamboree/IBC Shuttle, proposed Orange County Great Park Shuttle, Irvine Spectrum Shuttle, and other community transit programs.	UCI works collaboratively with the local community to coordinate transit service including the City of Irvine Transportation Coordination committee to coordinate City-wide transit programs such as the UCI Shuttle, City I-Shuttle, bike programs, and other transit needs. UCI collaborates regularly with OCTA regarding bus routing, schedules, and UCI ridership.
TRA-1D: UCI will monitor campus trip generation and distribution and the performance of UCITP intersections in relationship to enrollment growth. Monitoring will be conducted in consultation with the City of Irvine and the City of Newport Beach, and will occur at each 3,000-student increase in enrollment (measured as General Campus three-term average headcount), above the 2007-08 General Campus enrollment level. If UCI monitoring determines that LRDP traffic results in significant traffic impacts at UCITP intersections, UCI will implement measures to reduce vehicle trips contributing to the impact or provide “fair share” funding for improvements at the impacted intersections as described in Mitigation Measures Tra-1E and Tra-1F. UCI’s share of funding will be determined by the percentage of UCI traffic volumes compared to the total traffic volumes at the impacted intersections.	In 2018, UCI reached the second 3,000-student-enrollment increase threshold and initiated monitoring of UCITP intersections. The 2016 and 2018 analyses both found all UCITP intersections operating at an acceptable level of service of D or higher.
TRA-1E: UCI will collect UCITP traffic fees from “for-profit” development projects on campus or other campus development as determined by the University. Fees will be provided to the City of Irvine, City of Newport Beach, or other public agencies to fund UCI’s share of UCITP improvements when the improvements are	No for-profit development has occurred on campus since 2007; therefore, no for-profit traffic fees have been collected.

implemented, as provided in mitigation measure Tra-1D.	
TRA-1F: If the City of Irvine or City of Newport Beach implements UCITP improvements following UCI determination that LRDP traffic is causing a significant impact, and UCITP fees collected to date are insufficient to fund UCI's fair share, UCI shall identify and obtain funding for the fair share of identified improvements from an alternative source.	UCI currently holds a traffic fee balance of $2.6 million as a result of traffic fee credits from the City of Irvine, but no determination of impact has been identified to date. 2007 LRDP EIR estimated that UCI additionally generates $2 million per year in Measure M funds for off-campus transportation improvements.
TRA-1G: UCITP fees established for future "for-profit" development on UCI's North Campus shall be commensurate with the traffic fees established in the City of Irvine's IBC Transportation Fee program.	No for-profit development projects have occurred at the North Campus.
TRA-1H: UCI will assess a San Joaquin Hills Transportation Corridor fee to future "for-profit" campus development projects in accordance with the development fee program established by the Joint Powers Agreement entered into by the City of Irvine, the County of Orange, and neighbor cities to help pay for the San Joaquin Hills Transportation Corridor. Future "for-profit" campus development shall be required to pay such fees prior to construction. UCI's obligation to pay its share of the costs of the San Joaquin Hills Transportation Corridor shall be satisfied upon the forwarding of these fees to the Transportation Corridor Agencies or other agency designated to collect such fees.	SJHTC fees have been paid for all University Hills faculty/staff homes. No for-profit projects have occurred since adoption of the 2007 LRDP.

TRA-1I: UCI shall review individual projects proposed under the 2007 LRDP for consistency with UC Sustainable Transportation Policy and UCI Transportation Demand Management goals to ensure that bicycle and pedestrian improvements, transit stops, and other project features that promote alternative transportation are incorporated to the extent feasible.	All UCI projects undergo review for consistency with UC Sustainable Transportation Policy and UCI TDM goals.
TRA-1J: If a campus construction project or a specific campus event requires an on-campus lane or roadway closure, or could otherwise substantially interfere with campus traffic circulation, the contractor or other responsible party will provide a traffic control plan for review and approval by UCI. The traffic control plan shall ensure that adequate emergency access and egress is maintained and that traffic is allowed to move efficiently and safely in and around the campus. The traffic control plan may include measures such as signage, detours, traffic control staff, a temporary traffic signal, or other appropriate traffic controls. If the interference would occur on a public street, UCI shall apply for all applicable permits from the appropriate jurisdiction.	MM Tra-1J is implemented on all UCI projects.

CITY OF NEWPORT BEACH
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February 27, 2020

Ms. Lindsey Hashimoto, Senior Planner
Office of Physical and Environmental Planning
University of California, Irvine
4199 Campus Drive, Suite 380
Irvine, CA 92697
Via Email: hashimol@uci.edu

Subject: Notice of Intent to Adopt MND for UCI Center for Child Health/Medical Office Project

Dear Ms. Hashimoto,

Thank you for the opportunity to comment on the Notice of Intent to Adopt a Mitigated Negative Declaration for the UCI Center for Child Health/Medical Office project. The project is adjacent to the City of Newport Beach and some improvements are proposed within the City's jurisdictional boundaries. Please consider the following comments in your review of the project:

<u>Transportation</u>

Methodology

The section includes a discussion of the CEQA guidelines created by SB 743. It is correctly noted that the provisions of SB 743 will apply beginning July 1, 2020. It is also noted that the City of Irvine and OCTA do not have formalized policies or directives regarding VMT analysis. None of the VMT screening thresholds outlined by OPR apply for the project, thus a VMT analysis would be required.

It is then stated that a qualitative analysis should be conducted when methods do not exist for undertaking a quantitative analysis. Given that the SB 743 provisions are not required to apply for CEQA analysis until July 1, 2020, then the available method to quantitatively analyze the traffic impacts associated with 5,846 average daily trips would be the Level-of-Service metric. To apply a subjective qualitative analysis of the traffic associated with the project is not necessary and, in this analysis, does not accurately assess the traffic impacts.

In the discussion of existing TDM measures used by UCI, it is noted that these measures apply to vehicle trips made to the campus by faculty, staff, and students. It goes on to state that these measures would be available to employees of the proposed project. It appears the TDM measures provided by UCI are not available to patients, and would more than likely not be used by patients.

The discussion of multimodal network improvements such as bicycle lanes and pedestrian improvements is not sufficient or reasonable. A statement is made later in the section that the project is anticipated to increase transit ridership. It cannot be expected that a child visiting a specialized pediatric doctor, or a child with autism, or an urgent care patient will use transit or a bicycle lane or improved pedestrian facilities.

The project should be analyzed per the Level of Service metric to determine the impacts associated with 5,846 daily trips. This information should be evaluated in the MND text, and not just included as an appendix.

LRDP Assumptions

The LRDP EIR concludes that implementation of the plan would result in significant impacts to intersections in the City of Newport Beach under 2025 and post 2025 scenarios. The programmatic EIR includes the necessary mitigation measures to reduce the plan's cumulatively considerable contribution to traffic impacts. The mitigation identifies the payment of fair share fees to the City of Newport Beach upon construction of roadway improvements and/or the construction of planned projects. Please demonstrate compliance with the mitigation measures identified in the Final EIR (see Mitigation Measures Tra-1C to Tra-1f). The City wants to ensure that the proportionate fees are provided to implement the necessary roadway improvements that offset impacts of the project.

Did the cumulative analysis include the reasonably foreseeable Hospital project on the North Campus? Was this included in the 950,000 gross sf of commercial mixed-use development identified in the LRDP? Please clarify.

Utilities

Section 2.2.3 Utilities

Sanitary Sewer Service is currently provided by the City of Newport Beach through a previously unknown sewer connection on Jamboree. If the UCI request is to continue this City service, the City of Newport Beach, the Developer and Irvine Ranch Water District must meet and confer. The assumption of sewer service in the ISMND by Irvine Ranch Water District using a distantly located sewer pipe in Campus Drive may not be possible.

If you have any questions, please contact me at 949-644-3234 or lwestmoreland@newportbeachca.gov. We would be happy to discuss our comments and questions with you.

Thank you,

____
Liz Westmoreland, Associate Planner

Responses to Comments from the City of Newport Beach

Comments on Section 4.15, Transportation, and LRDP EIR

Comment 1: The section includes a discussion of the CEQA guidelines created by SB 743. It is correctly noted that the provisions of SB 743 will apply beginning July 1, 2020. It is also noted that the City of Irvine and OCTA do not have formalized policies or directives regarding VMT analysis. None of the VMT screening thresholds outlined by OPR apply for the project, thus a VMT analysis would be required.

It is then stated that a qualitative analysis should be conducted when methods do not exist for undertaking a quantitative analysis. Given that the SB 743 provisions are not required to apply for CEQA analysis until July 1, 2020, then the available method to quantitatively analyze the traffic impacts associated with 5,846 average daily trips would be the Level-of-Service metric. To apply a subjective qualitative analysis of the traffic associated with the project is not necessary and, in this analysis, does not accurately assess the traffic impacts.

Response 1: With the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018, vehicle miles traveled (VMT) was adopted as the standard to analyze transportation impacts and, as such, LOS is no longer considered an impact under CEQA. The Office of Planning and Research (OPR), however, gave a grace period ending July 1, 2020 for agencies to adopt VMT.

As the Lead Agency, the University of California is applying VMT system-wide as the standard in which to analyze transportation impacts in compliance with the 2018 CEQA Guidelines Update and in support of the University's overall sustainability initiatives. Per OPR's Technical Advisory on VMT, a qualitative analysis is used if a quantitative method for VMT does not exist. Therefore, the qualitative VMT analysis in the IS/MND is sufficient in compliance with OPR's Technical Advisory. As quantitative methods are developed, the University will likely adopt local methodology to address future VMT impacts.

Additionally, because it is still within the grace period, a supplemental LOS analysis was included for informational purposes only as Appendix G of the IS/MND, which determined that the project would not result in unacceptable levels of service.

Comment 2: In the discussion of existing TDM measures used by UCI, it is noted that these measures apply to vehicle trips made to the campus by faculty, staff, and students. It goes on to state that these measures would be available to employees of the proposed project. It appears the TDM measures provided by UCI are not available to patients, and would more than likely not be used by patients.

Response 2: Correct. The campus-specific TDM programs would not be available to patients, but can be utilized by the 225 faculty and staff estimated to be employed by the proposed project. This includes faculty and staff that would be moving between the North Campus, the Health Sciences Quad located in the West Campus, and the UCI Medical Center in Orange.

In addition, TDMs available to the public are proposed as part of the project, which includes construction of a sidewalk and a Class II bicycle lane on the south side of Jamboree Road where none currently exits. This would increase accessibility not only to the project site but to Jamboree Road overall and its existing transit stops, as there currently is no sidewalk or bicycle lane on the south side of Jamboree Road from Campus Drive to Fairchild Road.

Comment 3: The discussion of multimodal network improvements such as bicycle lanes and pedestrian improvements is not sufficient or reasonable. A statement is made later in the section that the project is anticipated to increase transit ridership. It cannot be expected that a child visiting a specialized pediatric doctor, or a child with autism, or an urgent care patient will use transit or a bicycle lane or improved pedestrian facilities.

Response 3: As discussed in Response 2 above, TDMs available to the public are proposed as part of the project, which includes construction of a sidewalk and a Class II bicycle lane on the south side of Jamboree Road where none currently exits. In addition, as discussed on page 4.15-8 (Section 4.15, Transportation), no existing bicycle, pedestrian, or transit routes would be removed in order to construct the project.

Because UCI Health focuses on providing medical services to the entire community, which includes underserved populations within the region, patients would utilize the OCTA route along Jamboree Road, including the bus stop located directly in front of the project site. Accessibility to these transit stops would increase with the construction of the TDMs, such as the proposed pedestrian sidewalk and Class II bicycle lane in Jamboree Road. Additionally, the proposed project includes both adult and child healthcare with urgent care comprising less than six percent of the total building space. Therefore, it can be expected that transit use would increase with the construction of the project. The proposed space breakdown of the facility (shell space would be built out as medical office in the future):

Center for Child Health Space Breakdown (GSF)

Space Type	GSF	% of Total GSF
Autism Center	12,588	7.5
Breast Center	8,849	5.3
Pediatric Primary Care	7,602	4.5
Pediatric Specialty Care	9,098	5.4
Pre-Op Clinic	3,116	1.9
Primary Care	13,834	8.2
Rehabilitation	2,866	1.7
Urgent Care	9,223	5.5
Shell Space	80,261	47.8
Clinical Diagnostics	3,614	2.2

Support Services	16,950	10.1
Total	**168,000**	**100%**

Comment 4: The project should be analyzed per the Level of Service metric to determine the impacts associated with 5,846 daily trips. This information should be evaluated in the MND text, and not just included as an appendix.

Response 4: With the 2018 CEQA Guidelines Update, which came into effect on December 28, 2018, VMT was adopted as the standard to analyze transportation impacts and, as such, LOS is no longer considered the standard to measure transportation impacts under CEQA. Appendix G, Supplemental Level of Service Traffic Analysis, was included for informational purposes only.

Comment 5: The LRDP EIR concludes that implementation of the plan would result in significant impacts to intersections in the City of Newport Beach under 2025 and post 2025 scenarios. The programmatic EIR includes the necessary mitigation measures to reduce the plan's cumulatively considerable contribution to traffic impacts. The mitigation identifies the payment of fair share fees to the City of Newport Beach upon construction of roadway improvements and/or the construction of planned projects. Please demonstrate compliance with the mitigation measures identified in the Final EIR (see Mitigation Measures Tra-1C to Tra-1f). The City wants to ensure that the proportionate fees are provided to implement the necessary roadway improvements that offset impacts of the project.

Response 5: The proposed project would not impact 2007 LRDP mitigation measure findings. Refer to attached Table 1.

As discussed on page 4.13-54 of the 2007 LRDP EIR, the UCI Transportation Program (UCITP) intersections are not located within UCI's jurisdiction, and, as such, would be planned, designed, and implemented by the owning entity. Any required UCI "fair share" of the improvement costs would be guided by the requirements of LRDP mitigation measures Tra-1E and Tra-1F. Improvements to UCITP intersections have not been identified as part of a UCI project nor during UCITP intersection monitoring at each 3,000 student enrollment increase as required under mitigation measure Tra-1D.

Comment 6: Did the cumulative analysis include the reasonably foreseeable Hospital project on the North Campus? Was this included in the 950,000 gross sf of commercial mixed-use development identified in the LRDP? Please clarify.

Response 6: The 2007 LRDP EIR analyzed 950,000 GSF of building space in addition to 435 residential units at the North Campus under the Mixed Use – Commercial land use designation, which allows for office, research, academic, commercial, retail, conference, residential, and clinical uses.

The Irvine Campus Medical Complex project (ICMC) is proposing to construct an approximately 350,000 GSF hospital, approximately 200,000 GSF ambulatory care center, central utility plant, and an approximately 1,400-space parking structure. Including the 168,000 GSF Center for Child Health/Medical Office Building project and approximately 82,440 of existing GSF at the North Campus, this is within the 950,000 GSF development envelope allotted for the North Campus.

Clinical uses, such as the proposed Center for Child Health/Medical Office Building project and the proposed ICMC ambulatory care center, are allowed under the Mixed Use – Commercial land use designation. However, the proposed ICMC specialty hospital will require amending the 2007 Long Range Development Plan (LRDP) to include Inpatient Clinical to the Mixed Use – Commercial land use designation.

An Environmental Impact Report (EIR) will be prepared for the ICMC project to analyze potential environmental impacts, including the proposed LRDP Amendment, and will be available for public review tentatively in summer 2020.

Comments on Section 4.17, Utilities and Service Systems

Comment 7: Sanitary Sewer Service is currently provided by the City of Newport Beach through a previously unknown sewer connection on Jamboree. If the UCI request is to continue this City service, the City of Newport Beach, the Developer and Irvine Ranch Water District must meet and confer. The assumption of sewer service in the ISMND by Irvine Ranch Water District using a distantly located sewer pipe in Campus Drive may not be possible.

Response 7: As currently proposed, IRWD would provide sewer service to the project via the 21-inch line located in Campus Drive. However, during the design phase, if it is determined infeasible by the design-build team, the University would coordinate connection to the Newport Beach sewer line.

Table 1
UCI LRDP Mitigation Measure Tra-1 Monitoring

Measure	*Status & Summary of Actions*
TRA-1A: To reduce on- and off-campus vehicle trips and resulting impacts, UCI will continue to implement a range of Transportation Demand Management (TDM) strategies. Program elements will include measures to increase transit and shuttle use, encourage alternative transportation modes including bicycle transportation, implement parking polices that reduce demand, and implement other administrative mechanisms that reduce vehicle trips to and from the campus. UCI shall monitor the performance of TDM programs through annual surveys.	Since 2007 UCI has implemented a comprehensive program of TDM measures resulting in an average vehicle ridership of 2.06 (based on 2019 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. • UCI shuttle system ridership was 2.2 million passengers at a cost of $2.8 million. • "University Pass" transit program with 80% subsidy for unlimited OCTA ridership and coordination OCTA of routes • 20% rebate on commuter Metrolink and Amtrak train passes • Incentivized vanpool, carpool, ridesharing programs • Zipcar car sharing program with 6,000 on campus members • Bicycle program highlights include "ZotWheels," the first bike sharing system in the region; over 3,000 bike parking spaces; significant investment in bikeway infrastructure; bicycle education for campus affiliates of all bicycling levels offered quarterly; and major bi-annual bike education festivals to encourage safe and legal riding.
TRA-1B: UCI will continue to pursue the implementation of affordable on-campus housing to reduce peak-hour commuter trips to the campus.	With the opening of the Middle Earth Expansion and East Campus Student Apartments Phase IV-A in the Fall 2019 quarter, UCI has constructed 5,000 beds of on-campus student housing since 2007. Additionally, UCI amended its 2007 LRDP in September 2019 to increase the total student bed capacity from 50% to 60% of enrollment to accommodate future expansion of the on-campus student housing program. UCI has constructed or approved 708 affordable on-campus faculty and staff homes at a cost of $275 million since 2007. Approximately two-thirds of UCI faculty live on campus.

TRA-1C: To enhance transit systems serving the campus and local community, UCI will work cooperatively with the City of Irvine, City of Newport Beach, OCTA and other local agencies to coordinate service and routes of the UCI Shuttle with existing and proposed shuttle and transit programs including the proposed Jamboree/IBC Shuttle, proposed Orange County Great Park Shuttle, Irvine Spectrum Shuttle, and other community transit programs.	UCI works collaboratively with the local community to coordinate transit service including the City of Irvine Transportation Coordination committee to coordinate City-wide transit programs such as the UCI Shuttle, City I-Shuttle, bike programs, and other transit needs. UCI collaborates regularly with OCTA regarding bus routing, schedules, and UCI ridership.
TRA-1D: UCI will monitor campus trip generation and distribution and the performance of UCITP intersections in relationship to enrollment growth. Monitoring will be conducted in consultation with the City of Irvine and the City of Newport Beach, and will occur at each 3,000-student increase in enrollment (measured as General Campus three-term average headcount), above the 2007-08 General Campus enrollment level. If UCI monitoring determines that LRDP traffic results in significant traffic impacts at UCITP intersections, UCI will implement measures to reduce vehicle trips contributing to the impact or provide "fair share" funding for improvements at the impacted intersections as described in Mitigation Measures Tra-1E and Tra-1F. UCI's share of funding will be determined by the percentage of UCI traffic volumes compared to the total traffic volumes at the impacted intersections.	In 2018, UCI reached the second 3,000-student-enrollment increase threshold and initiated monitoring of UCITP intersections. The 2016 and 2018 analyses both found all UCITP intersections operating at an acceptable level of service of D or higher.
TRA-1E: UCI will collect UCITP traffic fees from "for-profit" development projects on campus or other campus development as determined by the University. Fees will be provided to the City of Irvine, City of Newport Beach, or other public agencies to fund UCI's share of UCITP improvements when the improvements are	No for-profit development has occurred on campus since 2007; therefore, no for-profit traffic fees have been collected.

implemented, as provided in mitigation measure Tra-1D.	
TRA-1F: If the City of Irvine or City of Newport Beach implements UCITP improvements following UCI determination that LRDP traffic is causing a significant impact, and UCITP fees collected to date are insufficient to fund UCI's fair share, UCI shall identify and obtain funding for the fair share of identified improvements from an alternative source.	UCI currently holds a traffic fee balance of $2.6 million as a result of traffic fee credits from the City of Irvine, but no determination of impact has been identified to date. 2007 LRDP EIR estimated that UCI additionally generates $2 million per year in Measure M funds for off-campus transportation improvements.
TRA-1G: UCITP fees established for future "for-profit" development on UCI's North Campus shall be commensurate with the traffic fees established in the City of Irvine's IBC Transportation Fee program.	No for-profit development projects have occurred at the North Campus.
TRA-1H: UCI will assess a San Joaquin Hills Transportation Corridor fee to future "for-profit" campus development projects in accordance with the development fee program established by the Joint Powers Agreement entered into by the City of Irvine, the County of Orange, and neighbor cities to help pay for the San Joaquin Hills Transportation Corridor. Future "for-profit" campus development shall be required to pay such fees prior to construction. UCI's obligation to pay its share of the costs of the San Joaquin Hills Transportation Corridor shall be satisfied upon the forwarding of these fees to the Transportation Corridor Agencies or other agency designated to collect such fees.	SJHTC fees have been paid for all University Hills faculty/staff homes. No for-profit projects have occurred since adoption of the 2007 LRDP.

TRA-1I: UCI shall review individual projects proposed under the 2007 LRDP for consistency with UC Sustainable Transportation Policy and UCI Transportation Demand Management goals to ensure that bicycle and pedestrian improvements, transit stops, and other project features that promote alternative transportation are incorporated to the extent feasible.	All UCI projects undergo review for consistency with UC Sustainable Transportation Policy and UCI TDM goals.
TRA-1J: If a campus construction project or a specific campus event requires an on-campus lane or roadway closure, or could otherwise substantially interfere with campus traffic circulation, the contractor or other responsible party will provide a traffic control plan for review and approval by UCI. The traffic control plan shall ensure that adequate emergency access and egress is maintained and that traffic is allowed to move efficiently and safely in and around the campus. The traffic control plan may include measures such as signage, detours, traffic control staff, a temporary traffic signal, or other appropriate traffic controls. If the interference would occur on a public street, UCI shall apply for all applicable permits from the appropriate jurisdiction.	MM Tra-1J is implemented on all UCI projects.

APPENDIX J

Mitigation Monitoring and Reporting Program

Mitigation Measure		Responsible Party	Monitoring and Reporting Procedure
LRDP EIR Aes-2A	Prior to project design approval for future projects that implement the 2007 LRDP, UCI shall ensure that the projects include design features to minimize glare impacts. These design features shall include use of non-reflective exterior surfaces and low-reflectance glass (e.g., double or triple glazing glass, high technology glass, low-E glass, or equivalent materials with low reflectivity) on all project surfaces that could produce glare.	D&CS/EPS	D&CS to review during design EPS to confirm
LRDP EIR Aes-2B	Prior to approval of construction documents for future projects that implement the 2007 LRDP, UCI shall approve an exterior lighting plan for each project. In accordance with UCI's Campus Standards and Design Criteria for outdoor lighting, the plan shall include, but not be limited to, the following design features: • Full-cutoff lighting fixtures to direct lighting to the specific location intended for illumination (e.g., roads, walkways, or recreation fields) and to minimize stray light spillover into adjacent residential areas, sensitive biological habitat, and other light-sensitive receptors; • Appropriate intensity of lighting to provide campus safety and security while minimizing light pollution and energy consumption; and • Shielding direct lighting within parking areas, parking structures, or roadways away from adjacent residential areas, sensitive biological habitat, and other light-sensitive receptors through site configuration, grading, lighting design, or barriers such as earthen berms, walls, or landscaping.	D&CS/EPS	D&CS to prepare during design EPS to confirm
BR-1	Proposed project activities shall avoid the bird breeding season (typically January through July for raptors and February through August for other avian species), if feasible. If breeding season avoidance is not feasible, a qualified	D&CS/EPS	D&CS to coordinate survey EPS to confirm

Mitigation Measure		Responsible Party	Monitoring and Reporting Procedure
	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 shall be established by the qualified biologist to ensure that direct and indirect effects to nesting birds are avoided. To avoid the destruction of active nests and to protect the reproductive success of birds protected by the MBTA and the CFGC and minimize the potential for project delay, nesting bird surveys shall be performed prior to project commencement. In the event that active nests are discovered, a suitable buffer (distance to be determined by the biologist or overriding agencies) shall be established around such active nests, and no construction within the buffer allowed until the biologist has determined that the nest(s) is no longer active (i.e., the nestlings have fledged and are no longer reliant on the nest).		
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;	D&CS/EPS	On-site construction supervisor to notify D&CS and EPS who will stop/direct work Submit final report to EPS

Mitigation Measure		Responsible Party	Monitoring and Reporting Procedure
	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.		
LRDP EIR Cul-4A	Prior to grading or excavation for future project that implement the 2007 LRDP and would excavate sedimentary rock material other than topsoil, UCI shall retain a qualified paleontology to monitor these activities. In the event fossils are discovered during grading, the on-site construction supervisor shall be notified and shall redirect work away from the location of the discovery. The recommendations of the paleontologist shall be implemented with respect to the evaluation and recovery of fossils, in accordance with mitigation measures Cul-4B and Cul-4C, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the fossil discovery. A record of monitoring activity shall be submitted to UCI each month and ay the end of monitoring.	D&CS/EPS	On-site construction supervisor to notify D&CS and EPS who will stop/direct work Submit final report to EPS
LRDP EIR Cul-4B	If the fossils are determined to be significant, then mitigation measure Cul-4C shall be implemented.	D&CS/EPS	Submit documentation to EPS to report procedures were followed
LRDP EIR Cul-4C	For significant fossils as determined by mitigation measure Cul-4B, the paleontologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures: a. The paleontologist shall ensure that all significant fossils collected are cleaned, identified, catalogued, and permanently curated with an appropriate institution with a research interest in the materials (which may include UCI); b. The paleontologist shall ensure that specialty studies are completed, as	D&CS/EPS	Submit documentation to EPS to report procedures were followed and an attempt to house found fossils occurred

Mitigation Measure		Responsible Party	Monitoring and Reporting Procedure
	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.		
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.	D&CS/EPS	D&CS to record notification to the Fire Marshall EPS to confirm
LRDP EIR Hyd-1A	As early as possible in the planning process of future projects that implement the 2007 LRDP and would result in land disturbance of 1 acre or greater, and for all development projects occurring on the North Campus in the watershed of the San Joaquin Freshwater Marsh, a qualified engineer shall complete a drainage study. Design features and other recommendations from the drainage study shall be incorporated into project development plans and construction documents. Design features shall be consistent with UCI's Storm Water Management Program, shall be operational at the time of project occupancy, and shall be maintained by UCI. At a minimum, all drainage studies required by this mitigation measure shall include, but not be limited to, the following design features: Site design that controls runoff discharge volumes and durations shall be utilized, where applicable and feasible, to maintain or reduce the peak runoff for the 10-year, 6-hour storm event in the post-development condition compared to the pre-development condition, or as defined by current water quality regulatory requirements. Measures that control runoff discharge volumes and durations shall be	D&CS/EPS	D&CS to incorporate findings into project design EPS to confirm

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	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: • 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	D&CS/EPS	D&CS to prepare erosion control plan and incorporate into construction documents EPS to confirm

Mitigation Measure		Responsible Party	Monitoring and Reporting Procedure
	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	D&CS/EPS	D&CS to incorporate into construction documents EPS to confirm

	Mitigation Measure	Responsible Party	Monitoring and Reporting Procedure
	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.		