Appendix H

Transportation Study

Irvine Campus Medical Complex Transportation Study

University of California, Irvine

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Prepared for:

UC Irvine Physical and Environmental Planning

Prepared by:

Stantec Consulting Service Inc.

This document entitled Irvine Campus Medical Complex Transportation Study was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of Regents of the University of California (the "Client").

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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has performed a transportation impact analysis for the proposed University of California Irvine (UCI) Campus Medical Complex (Project). The purpose of this study is to determine significant impacts related to transportation with the implementation of the proposed Project. This analysis was prepared in support of the Environmental Impact Report in accordance with the California Environmental Quality Act (CEQA) and focuses on vehicle miles traveled (VMT) as the primary metric for identifying significant impacts.

1.1 PROJECT DESCRIPTION

The 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 Project site is currently undeveloped real property and occupied by existing UCI support service facilities. The Project would involve the potential removal of up to 8 buildings, cargo and storage units, and other existing site infrastructure. The proposed Project would construct an integrated medical campus providing inpatient ambulatory, and emergency care services space to meet community needs. The Project includes 350,000 GSF hospital with an emergency department, inpatient bed services, operating rooms, pre and post observation beds, inpatient imagining, and support services. The hospital is proposed to include approximately 96-144 inpatient beds. The Project also includes a 225,000 GSF ambulatory care center with outpatient surgery and procedure rooms, diagnostic and imaging services, oncology treatment and infusion, clinical examination rooms, pharmacy, and support services. An approximately 25,000 GSF central utility plant would provide chilling and heating energy services to the proposed Project. Lastly, a 37,000 GSF five to seven-story parking structure with approximately 1,400 spaces to serve patients, visitors, and staff. A 0.6-acre temporary surface parking lot, adjacent to the existing surface lot, would also be available temporarily,

Additional site improvements would include grading, internal roadways and access, surface and structured parking, driveway paving, construction of internal on-site circulation, landscaping, installation of site utility connections, lighting, pedestrian walkways and trail systems and water quality improvements.

The Project includes pedestrian circulation and access improvements, including those required to comply with the American with Disabilities Act (ADA). On-site pedestrian walkways and trails will serve all buildings and provide connections to off-site pedestrian systems. On-site bicycle circulation and access will be provided on shared vehicle/bicycle access roads to provide connections to the UCI, City and regional bike trail network. On-site bicycle parking hubs will be provided in key locations to service bicycle commuters.

The proposed Project's site plan is illustrated in **Figure 1-2**.

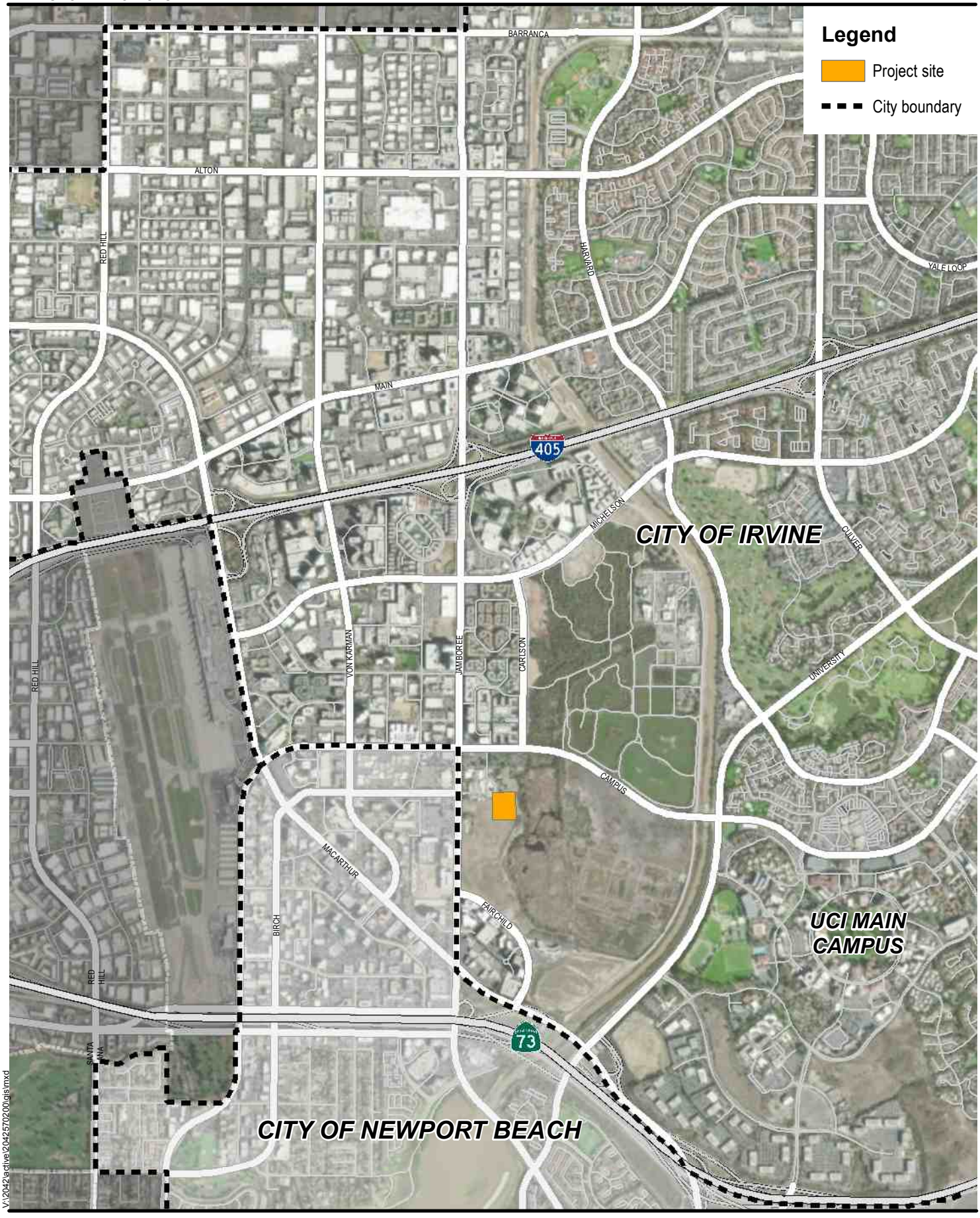

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Figure 1-1
Project Location

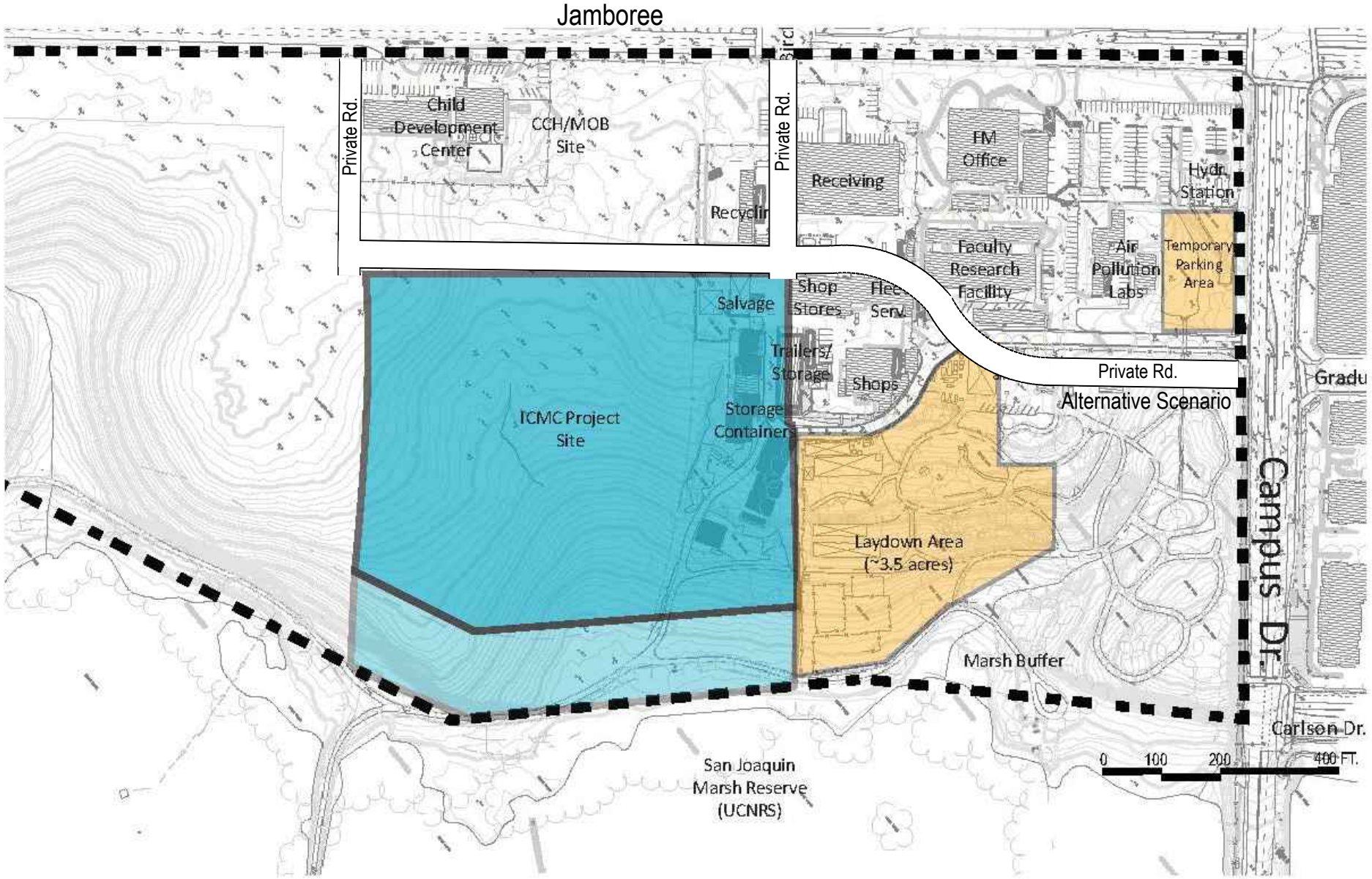

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Figure 1-2
Proposed Project Site Plan
1.3

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 Project site is located in UCI's North Campus.

The North Campus area is designated as Mixed Use - Commercial, Open Space – General, and Open Space Athletics and Recreation 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 (i.e., medical office buildings)

This Project requires an amendment to the 2007 LRDP to add Inpatient Clinical use to the Mixed Use – Commercial category. The Nature trail is located in the 150-foot buffer zone, which is designated as Open Space – General. **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[1]
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: Inpatient Clinical (Proposed Project)	TSF	--	350
Mixed Use Commercial: Clinical (Proposed Project)	TSF		200
Mixed Use Commercial: Clinical (Center for Child Health)	TSF	--	168
Parking	SPA	3,800	2,400
Total	DU	435	435
	TSF	950	950
	SPA	3,800	2,400

DU= Dwelling Unit; TSF = Thousand Square Feet; SPA = Spaces
[1]Includes development not a part of the Project

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 and the number of parking spaces to accommodate anticipated parking demand is decreased. Therefore, the Project is consistent with the approved 2007 LRDP.

1.2 PROJECT ACCESS

Vehicular access to the North Campus is currently provided from Jamboree Road and Campus Drive. There are two access points into the Project site. Access points on Jamboree Road provide staff, visitor, and service vehicle ingress/egress through a signalized intersection at Jamboree Road/Birch Street and one non-signalized right-in/right-out access point approximately 680 feet west of Birch Street.

Additional future access from Campus Drive could potentially be provided by an existing right-in/right-out/left-in access between Jamboree Road and Carlson Avenue or by a relocated driveway to form a four-way intersection with Graduate. This future access is evaluated as an alternative scenario.

Figure 1-3 shows the existing driveway configuration and the proposed site access lane configurations and intersection controls.

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 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 three 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 Elements. 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 west 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 between Teller and Bardeen. On-street parking is not permitted near the Project site.

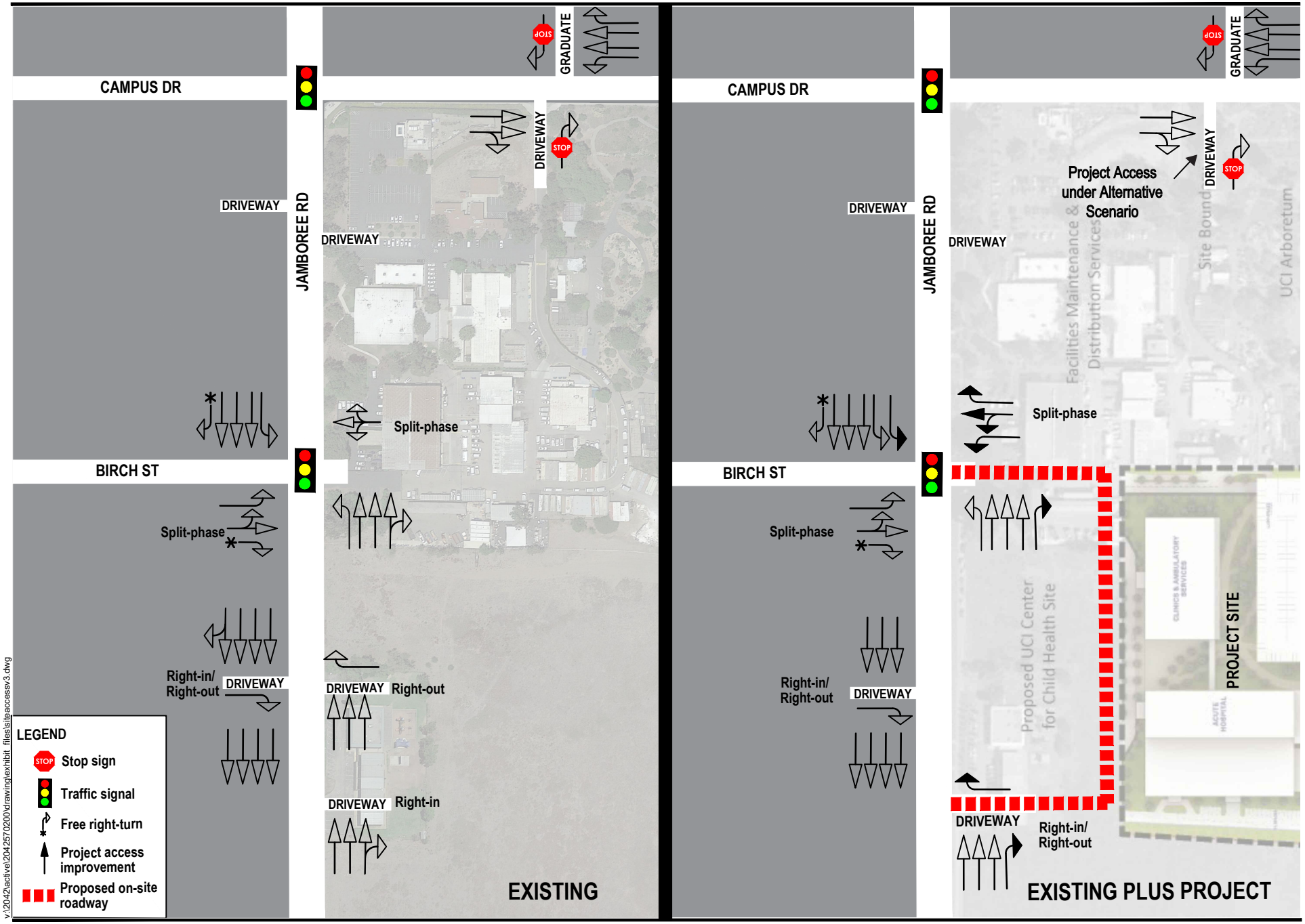

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Figure 1-3
Site Access - Lane Configurations and Intersection Control
1.6

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 is 45 mph. There are no existing bicycle facilities and on-street parking is not 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 the Orange County Transportation Authority (OCTA) bus route 472. The pedestrian crosswalks at the intersection provide access to the southbound route stop, and the sidewalk (with cycling permitted) on the west side of Jamboree Road. OCTA operates seven bus routes with 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 3.1.3.

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

2.1 SIGNIFICANCE THRESHOLDS

SB 743 requires the Governor's Office of Planning and Research (OPR) to establish recommendations for identifying and mitigating transportation impacts within CEQA. Generally, SB 743 moves away from using delay-based level of service as the primary metric for identifying a project's significant impact to instead use 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.

Prior to undertaking a full VMT analysis, OPR's Technical Advisory advises that lead agencies conduct a screening process "to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study". The screening criteria that used in this analysis is described later in this chapter.

When conducting a VMT analysis, OPR's 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 OPR Technical Advisory 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 Technical Advisory recommendations, lead agencies have the discretion to set or apply their own thresholds of significance or rely on thresholds recommended by other agencies. The University of California has adopted the new CEQA guidelines making VMT as the metric for evaluating transportation impacts. However, each campus has the discretion to utilize their own thresholds of significance based on their location.

Since UCI is located within the City of Irvine, significance thresholds set by the City may be appropriate for UCI. The City of Irvine has adopted VMT Impact Analysis Guidelines that are generally consistent with OPR's Technical Advisory recommendations. The City has updated the Irvine Traffic Analysis Model (ITAM) for use in VMT analyses of this type and it includes a VMT tool for use when evaluating development projects.

Per the City of Irvine Guidelines, the impact analysis methodology is consistent with Section 15064.3 of the CEQA Guidelines. ITAM (TransCAD 2018 VMT version) is used to calculate VMT statistics for both No Project and With Project conditions. For analysis, two model scenarios are evaluated — a No Project run and a With Project run. The net difference in VMT between the With Project run and the No Project run represents the VMT attributable to the project. This takes into account both direct and indirect effects of the project as trips are redistributed throughout the highway network based on the effect of the Project. The net difference in VMT and the net difference in population or employees due to the Project are used to calculate a "project change VMT rate" on a per capita basis (VMT per population and VMT per employee). A project that results in a net change VMT rate that is below the applicable significance threshold does not result in a significant impact. A project that results in a project net change VMT rate that is above the applicable significance threshold is deemed significant and requires mitigation.

The City of Irvine methodology utilizes VMT statistics at a countywide level in order to account for both the direct and indirect effects of the project, as noted above, since trips are redistributed throughout the highway network due to the effect of the Project. In comparison to a methodology that only addresses VMT at the zonal level, this methodology is better suited for a project such as a hospital since it accounts for changes in travel patterns that will occur when patients chose a new hospital that is closer or more convenient to their home.

Table 2-2 summarizes the City of Irvine's significance thresholds.

Table 2-2 City of Irvine Significance Thresholds

Type	Metric	Significance Threshold Description	Existing	Significance Threshold (15 percent reduction)
Residential project	VMT per population	15% less than existing countywide residential VMT per capita	17.5	14.9
Non-residential project	VMT per employee	15% less than existing countywide VMT per employee	48.8	41.5
Mixed-use projects	Each use evaluated separately per above			
Source: CEQA Manual Volume III. Technical Appendices, City of Irvine, April 2020				

OPR's Technical Advisory specifically recommends using VMT per employee as the metric for evaluating office developments and advises local agencies to establish an appropriate method of analysis for projects that don't fit the standard residential, office or retail category. The City of Irvine Guidelines address these types of "non-standard" projects by utilizing VMT per employee as the metric for all non-residential projects. The non-residential projects category includes uses such as office, industrial, retail greater than 100,000 total gross square feet, hotels, hospitals, commercial recreation, and university uses. The non-residential significance threshold is based on the countywide commute and other (i.e., customer and client) VMT trips divided by the number of countywide employees. Important to note is that with this approach, the VMT statistics for the non-residential category includes more than home-based work trips, it also accounts for patient trips. Since OPR's Technical Advisory defers selection of an appropriate criteria to the local agency, the City of Irvine methodology and significance thresholds, which are appropriate for a project consisting of hospital and medical uses, are utilized in this analysis.

Since the project consists of hospital and medical office uses, the Project is classified as a non-residential project and the VMT per employee metric is applicable. As mentioned above, the non-residential category captures more than just the home-based work trips and VMT attributable to the patients of the Project is also captured in the non-residential category. As shown in **Table 2-2**, the existing countywide average for non-residential uses is 48.8 VMT per employee and the significance threshold established by the City of Irvine is 41.5 VMT per employee (15 percent lower than the existing average). Since the non-residential project category considers all trip types, both the hospital employee and patent trips are accounted for in the model.

The nearby City of Newport Beach has also adopted VMT guidelines which are also generally consistent with OPR's Technical Advisory recommendations. However, for analysis of the Project ITAM is better suited since the Project is located within the ITAM primary modeling area.

In addition to the quantitative analysis, a qualitative analysis of the Project's potential transportation impacts related to VMT has also been conducted. The quantitative analysis was prepared as described above, and a qualitative significance criteria has 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 OPR's Technical Advisory:

1. The reduction of GHG.
2. The development of multimodal transportation networks.
3. A diversity of land uses.

The significance criteria utilized here for qualitative analysis is summarized in **Table 2-3**. Differences between OPR's Technical Advisory and City of Irvine's Guidelines are also noted in **Table 2-3**.

If a significant impact is identified, feasible mitigation measures are identified based on substantial evidence from the California Air Pollution Control Officers Association's (CAPCOA) Comprehensive Report for Quantifying Greenhouse Gas Mitigation Measures. The CAPCOA document provides 54 travel demand management (TDM) strategies associated with the reductions of VMT and GHG emissions and is an appropriate resource for this type of analysis.

Table 2-3 VMT Significance Criteria

Category	Criteria/Screening	Threshold
1. Screening Thresholds	OPR's Technical Advisory and the City of Irvine's VMT Guidelines provides screening thresholds for land use projects. These screening thresholds include: 1. Trip generation screening – Small projects 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. The Project must also meet additional criteria regarding Floor Area Ratio, parking, affordable housing units, and consistency with the applicable Sustainable Communities Strategy. 4. Locally-serving retail – Retail that is 50,000 square feet or smaller are generally considered locally serving and cab be screened out form completing a full VMT analysis. 5. Affordable residential development – 100% affordable housing in infill locations can be screened out from completing a full VMT analysis. Evaluate the Project using the screening thresholds.	1. Per OPR Technical Advisory, if the Project generates less than 110 trips per day, the Project is assumed to have a less than significant impact. The City of Irvine utilizes a threshold of 250 trips per day. 2. Per OPR Technical Advisory, if the Project is in a low VMT area, the Project is assumed to have a less than significant impact. The City of Irvine does not use the map-based screening criteria. 3. Per OPR Technical Advisory, If the Project is within ½ mile of a high-quality transit stop/corridor, and meet the other four requirements, the Project is assumed to have less than significant impact. The City of Irvine has identified two Transit Priority Areas (TPA) in the City. 4. Per OPR Technical Advisory, if the retail component of the Project is less than 50,000 then the retail component is assumed to have a less than significant impact. The City of Irvine considers retail of 100,000 or smaller as locally serving. 5. Per OPR Technical Advisory and the City of Irvine, if the Project consists of 100% affordable units and is located in an infill location, then the Project is assumed to have less than significant impact.
2. VMT Analysis	Evaluate the Project's VMT per capita and compare to threshold of significance. Since the City of Irvine's Guidelines specify specialty uses such as the Project, the City of Irvine's impact analysis methodology and significance thresholds are used in this analysis.	Refer to **Table 2-3** for City of Irvine significance thresholds.
3. Multi-modal transportation	Providing alternative modes of transportation that has high accessibility and connectivity reduces VMT, 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. 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. The Project's cumulative effects are determined through consistency with the RTP/SCS, If the Project consistent with the RTP/SCS than the Project does not result in a cumulative significant impact.	If the Project is consistent with the RTP/SCS, then the Project would have less than significant cumulative impact. If the Project is inconsistent then the inconsistency should be evaluated for a significant impact on transportation.

3.0 TRANSPORTATION IMPACT ANALYSIS

3.1 SCREENING EVALUATION

Prior to undertaking a detailed VMT study, OPR's Technical Advisory advises that lead agencies conduct a screening process "to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study". OPR suggests that lead agencies may presume a project has a less than significant impact on VMT using project size, maps, transit availability and provision of affordable housing. The City of Irvine Guidelines utilizes a similar screening criteria. For this analysis, the Project has been evaluated using both OPR's Technical Advisory and the City of Irvine's screening process.

3.1.1 Trip Generation Screening

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

Trips generated by the proposed Project were estimated using trip rates from the Institute of Traffic Engineers Trip Generation Manual (10th Edition). The Hospital (Code 610) and Medical Office Building (Code 720) categories were utilized. **Table 3-1** shows the trip rates and corresponding estimated trip generation for the proposed Project.

Table 3-1 Irvine Campus Medical Center Estimated Trip Generation Summary

Land Use	Amount	Units	AM Peak Hour			PM Peak Hour			ADT
			In	Out	Total	In	Out	Total	
Trip Rates									
Hospital (Code 610) [1]	BED		1.32	0.52	1.84	0.27	0.7	0.97	22.32
Medical Office Building (Code 720) [1]	TSF		2.17	0.61	2.78	0.97	2.49	3.46	34.8
Trip Generation – ICMC									
Hospital	144	BED	190	75	265	39	101	140	3,214
Ambulatory Care	225	TSF	488	137	626	218	560	779	7,830
Subtotal			**678**	**212**	**891**	**257**	**661**	**919**	**11,044**
Internal Capture [2]			152	49	201	55	141	197	2,494
Internal Capture (%)					23%			21%	23%
Total External Trips			**526**	**163**	**690**	**202**	**520**	**722**	**8,550**

[1] Source: ITE Trip Generation Manual (10th Edition)
[2] Based on field measurements of on-site trip capture at the Henry Mayo Newhall Memorial Hospital, Santa Clarita, California. (Source: Henry Mayo Newhall Memorial Hospital Master Plan Environmental Impact Report, 2008)
ADT = average daily trips; TSF = thousand square feet

To estimate the number of on-site trips that would stay internal to the site, actual field measurements from an existing medical complex site were utilized. The Henry Mayo Newhall Memorial Hospital Master Plan (located in Santa Clarita, California), which is a comparably sized medical complex consisting of a hospital and multiple medical office buildings, was determined to have an on-site trip capture of as much as one third of the total trip generation based on traffic count surveys taken at that facility. Based on the field measurement findings from the Henry Mayo Master Plan EIR, a conservative 21-23 percent on-site trip capture is utilized for the proposed Project.

As shown in **Table 3-1** the Project would generate approximately 8,550 daily trips, 690 trips during the AM peak hour and 722 trips during the PM peak hour. Since the proposed Project is estimated to generate more than 110 trips per day as well as more than 250 trips per day, the Project does not qualify as a small Project that can be presumed to be less than significant.

3.1.2 Map-Based Screening

OPR's 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.

The City of Irvine does not intend to use a map-based resource for identifying areas in the City with low VMT per capita. Therefore, this screening threshold has not be used for the proposed Project.

3.1.3 Proximity to High Quality Transit

OPR's Technical Advisory suggests that a project can be presumed to have a less than significant impact on VMT if the project is within a half-mile of an "existing major transit stop or an existing stop along a high-quality transit corridor". A major transit stop is defined as "the intersection of two or more major bus routes with a frequency service interval of 15 minutes or less during the morning and afternoon peak commute periods". A high-quality transit corridor is defined as an existing corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. Based on this definition, the proposed Project would not be eligible to be "screened out" under this threshold under existing conditions. However, under future conditions the Project site is in a Southern California Association of Governments (SCAG) designated high-quality transit area.

The City of Irvine utilizes a similar screening criteria for projects located near high-quality transit. The City has identified two existing Transit Priority Areas (TPA) in the city. The first TPA is a half mile radius around the Tustin Metrolink Station, and the second TPA is a half mile radius around the Irvine Metrolink Station. Therefore, the Project would not be eligible to be screen out under this criteria.

The following describes bus transit under existing and future conditions around the Project site.

Existing Transit - Under existing conditions headways are generally longer than 15 minutes for the bus routes in the vicinity of the Project. **Figure 3-1** illustrates the existing transit services located near the Project site.

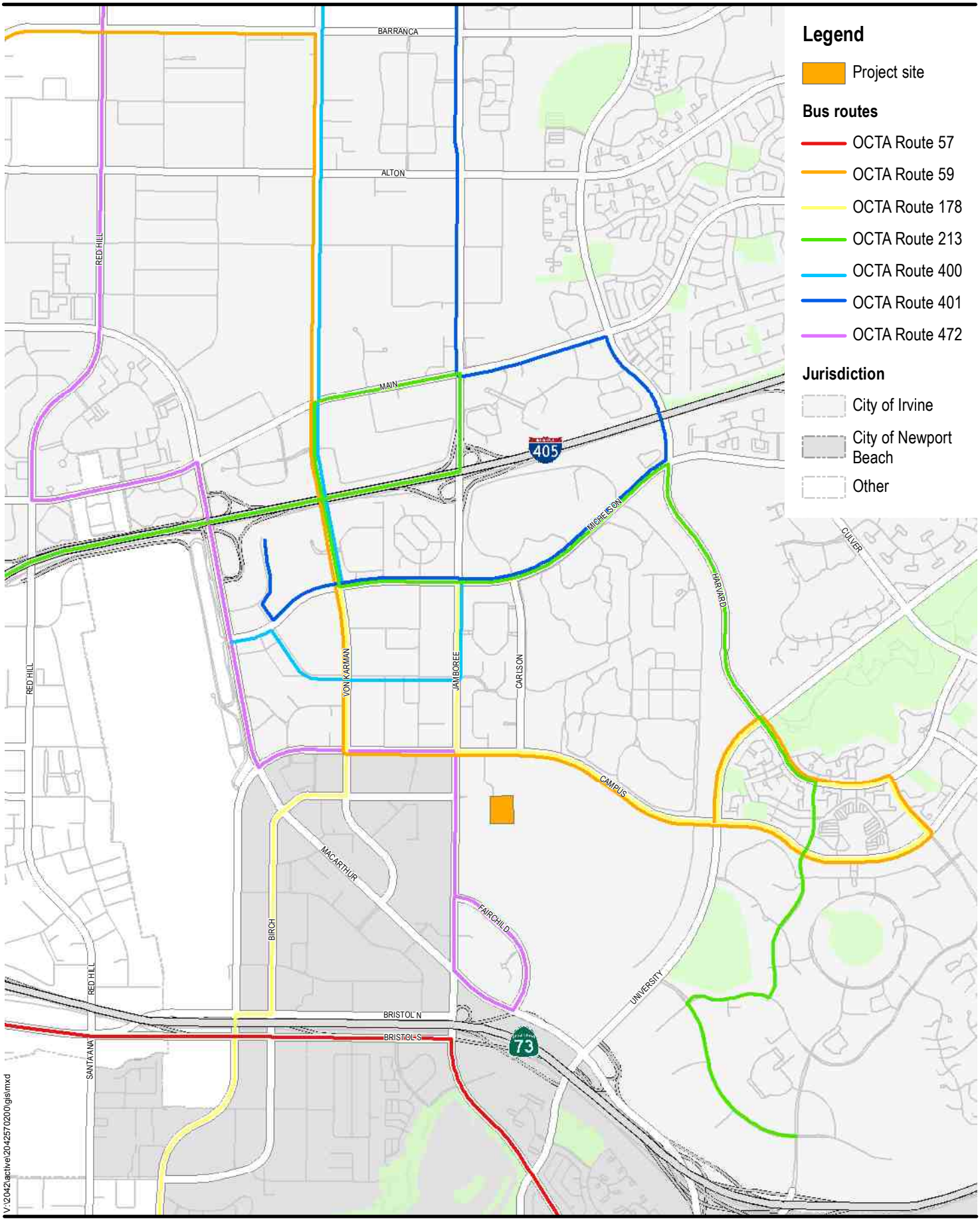

Figure 3-1
OCTA Transit Routes

Below is a detailed discussion of each route and bus stops within a half mile of the Project site.

Route 472 - 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. A second stop for route 472 is located on the northwest corner of the Jamboree Road and Campus Drive intersection. 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 10 minutes to one hour apart between 6:00am and 9:00am, 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.

Route 59 and Route 178 - Located approximately 1,000 feet from the Project site is the Campus-Jamboree bus stop, which is serviced by OCTA bus routes 59 and 178. Both routes operate Monday through Friday, and route 59 also includes weekend and holiday services. The eastbound stop (headed towards UC Irvine) is located on the southeast corner of the Jamboree Road and Campus Drive intersection. Collectively Routes 59 and 178 in the eastbound direction have headways that range from 6 minutes to 24 minutes during the AM peak hours (7-9) and one minute to 33 minutes during the PM (4-6) peak hours.

The bus stop on the northwest corner of Jamboree Road and Campus Drive is serviced by route 59 in the westbound direction (headed away from UC Irvine) and route 472. Collectively, headways in the AM peak hour range from 23 minutes to 27 minutes in the AM peak hours and 3 minutes to 29 minutes in the PM starting from 3:00pm to 7:00pm.

The bus stop at the northeast corner of the Jamboree and Campus Drive intersection is serviced by Route 178 in the westbound direction (headed away from UC Irvine). Route 178 have headways that are over an hour in both the AM and PM peak periods.

Route 400A – Bus stops that provide service for route 400A via iShuttle bus, operated by OCTA, are located just under a half mile from the Project site. 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 bus stop on the northeast corner of Jamboree Road and Dupont Drive provides service for route 400A and route 178. Collectively headways are greater than 15 minutes at this stop (approximately 10 to 35 minutes in both peak periods). The bus stop on the northwest corner of Jamboree Road and Dupont Drive provides service for route 400A southbound. Headways in both the AM and PM peak periods are greater than 15 minutes (approximately 10 to 37-minute headways in both the AM and PM peak periods).

Collectively, 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, 213 and iShuttle 400B. 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.

The Project would not remove any transit stops. Ridership on bus routes in proximity of the site is likely to increase as a result of the Project.

No existing 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.

Future Transit - Corridor studies are currently being conducted by the OCTA to determine the feasibility of a rapid streetcar or bus rapid transit that will provide service from Westminster to the UC Irvine campus, via the proposed 17th/Westminster-Bristol Rapid Streetcar/BRT Line. The Project site would be located along the potential route. The potential route was identified in the OC Transit Vision OC Transit Opportunities Corridors Report as a transit opportunity corridor that was recommended for future evaluation based on its high performing score. Implementation of the proposed streetcar/BRT line would result in the Project site being in a high-quality transit area in the future, as identified by SCAG's Connect SoCal Plan that has a horizon year of 2045. **Figure 3-2** provides an illustration of the proposed route. According to OCTA's Transit Vision report, the route is listed as a "Medium-term action" with implementation of the project scheduled anytime in between 2023 to 2032. Since the actual timing is not known the determination that the Project would be in a high-quality transit area by the time of construction and full operation cannot be made.

Although the Project is currently not in a high-quality transit area, the Project is anticipated to increase transit ridership. Employees and patients would be able to utilize public bus transit provided by OCTA to access the site using several different route options.

3.1.4 Affordable Housing

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

Figure A-2 17th-Westminster-Bristol Rapid Streetcar/BRT Line

Source: OC Transit Vision, 2018

v:\2042\active\204257020\drawing\exhibit_files\street-car.dwg

N

Figure 3-2

Proposed Future Routes
- 17th/Westminster-Bristol Rapid Streetcar/BRT Line

3.2 VMT ANALYSIS

When a project does not meet one of the above screening criteria, a VMT analysis is conducted to determine if a Project causes a significant impact. For this analysis, since OPR's Technical Advisory does not specifically address specialty uses such as a hospital or a university, the City of Irvine's Guidelines are used.

The City of Irvine's Guidelines specify significance thresholds for two categories, residential and non-residential projects. The non-residential projects category includes office, industrial, retail greater than 100,000 total gross square feet, hotels, hospitals, commercial recreation and university uses. Therefore, the City of Irvine's impact analysis methodology and significance thresholds are utilized (see previously referenced Table 2-2 for City of Irvine significance thresholds).

As previously mentioned, the City of Irvine's impact analysis methodology involves using ITAM to estimate the net change in VMT when the project is added to existing baseline conditions. The net change in VMT and net change in population or employment is used to calculate the project change VMT rate measured on a per capita basis (VMT per population or VMT per employee). The project change VMT rate is then compared to the applicable significance threshold. A project that results in an increase above the significance threshold may be deemed significant and mitigation is required.

The Project is in ITAM TAZ 326. The Project's land uses were added to the TAZ 326 existing conditions (2018 baseline). A full ITAM run was conducted and the ITAM VMT tool was used to estimate VMT for conditions with the Project. Per City of Irvine Guidelines, the net change in total countywide non-residential VMT and the net change in total employees are used to estimate the project change VMT rate per employee. As discussed in Section 2.1 above, this methodology of using the net change in countywide totals, as opposed to the Project's location by TAZ, captures both the direct and indirect effects of the project as trips are redistributed throughout the highway network due to the effect of the project. This methodology also accounts for VMT by both employees and patients.

Table 3-2 summarizes the ITAM VMT estimates for conditions with and without the Project.

Table 3-2 ITAM VMT Estimates

Area	Category	Baseline (No Project)	Baseline (with Project)	Net Change
Orange County	Non-Residential VMT	82,969,450	83,021,913	52,463
	Employees	1,706,388	1,707,511	1,123
Project Change VMT Rate (Non-Residential VMT per Employee)				46.72

As shown in **Table 3-2**, ITAM estimates that the net change of non-residential VMT is 52,463 under conditions with the Project. ITAM also estimates that the Project would result in a net increase of 1,123 employees with the Project. The net change in employment VMT and number of employees results in a project change VMT rate of 46.7 VMT per employee. As noted previously, the non-residential project category considers both customer and client trips, and as such, the hospital employee and patient trips are accounted for in the ITAM model VMT statistics.

Table 3-3 provides a comparison between the Project VMT per employee and the significance threshold.

Table 3-3 OCTAM VMT Estimates

Description	VMT per Employee
Project VMT rate (per capita)	46.7
Regional Average (Baseline)	48.8
Regional Threshold of Significance (Baseline minus 15%)	41.5
Difference from Threshold of Significance	5.2
Is Project above or below Regional Threshold?	Above
Significant Impact?	Yes

As shown, the Project results in a VMT per employee of 46.7. The threshold of significance is 41.5 VMT per employee. The Project VMT is lower than the regional average but is greater than the threshold of significance and would result in significant impact (See **Appendix A** for the ITAM Project VMT Summary Report Worksheet).

Although VMT statistics from ITAM show a net increase in VMT without mitigation, the construction of a new medical facility in Orange County has the potential to reduce overall VMT for segments of the population, specifically from trips made by patients. Residents seeking medical attention typically travel to the closest and most convenient medical facility for general medical care and may choose to drive further for specialty care. Similar to the beneficial effects of providing local-serving retail, the availability of local medical facilities will generally result in local trips being made, as opposed to leaving the area for the services of a larger regional hospital. If the existing local medical facility has longer than average wait times or a specific type of specialty care is not available, residents may travel a further distance to obtain medical service, thereby increasing VMT.

Data from 2017 Office of Statewide Health Planning and Development shows that 92% of patients originating in the Irvine area received medical care at a facility within Orange County. The remaining 8% travel outside the County for specialty healthcare purposes. Since the Project will offer specialty health care, such as oncology, neurosurgery, orthopedics, spine services and an ambulatory care center, there is potential to capture the longer trips that the remaining 8% of Irvine patients are currently making for specialty care. Based on statistics obtained from UCI, the Irvine service area is the fastest-growing population area and is forecast to grow an additional 1.5% annually. The construction of new medical facilities in the Irvine area would help service the population growth and encourage residents to make shorter trips to receive general and specialty medical care, thereby reducing VMT.

Project components that reduce VMT to less than significant levels are discussed in Section 4.0.

3.3 MULTIMODAL TRANSPORTATION NETWORKS ANALYSIS

The Project has also been evaluated with consideration to the multimodal transportation network.

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, remove, or interfere with pedestrian paths, bicycle paths, or transit stops would have a significant impact on VMT.

UCI has a robust bicycle program that promotes bicycle transportation. In addition to bicycle infrastructure, UCI has BikeUCI Ambassadors, a Bicycle Advisory Group, and Bicycle Education and Enforcement (B.E.E.P). 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 3-3**).

Additional trails are potentially envisioned along Jamboree Road, Campus Drive and within the Project as shown in **Figure 3-3**. The trail to the south, between the UCI North Campus and the UC San Joaquin Marsh, is part of the UCI Naturescape Vision which envisions connectivity between the Project site and the main UCI campus. Internal trails would also connect the Project with the adjacent proposed project site and scenic viewpoints overlooking the neighboring San Joaquin Marsh Reserve.

The Project would not remove any pedestrian or bicycle facilities, or transit stops. Rather, the Project will enhance transit access as described in Section 3.1.3 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.

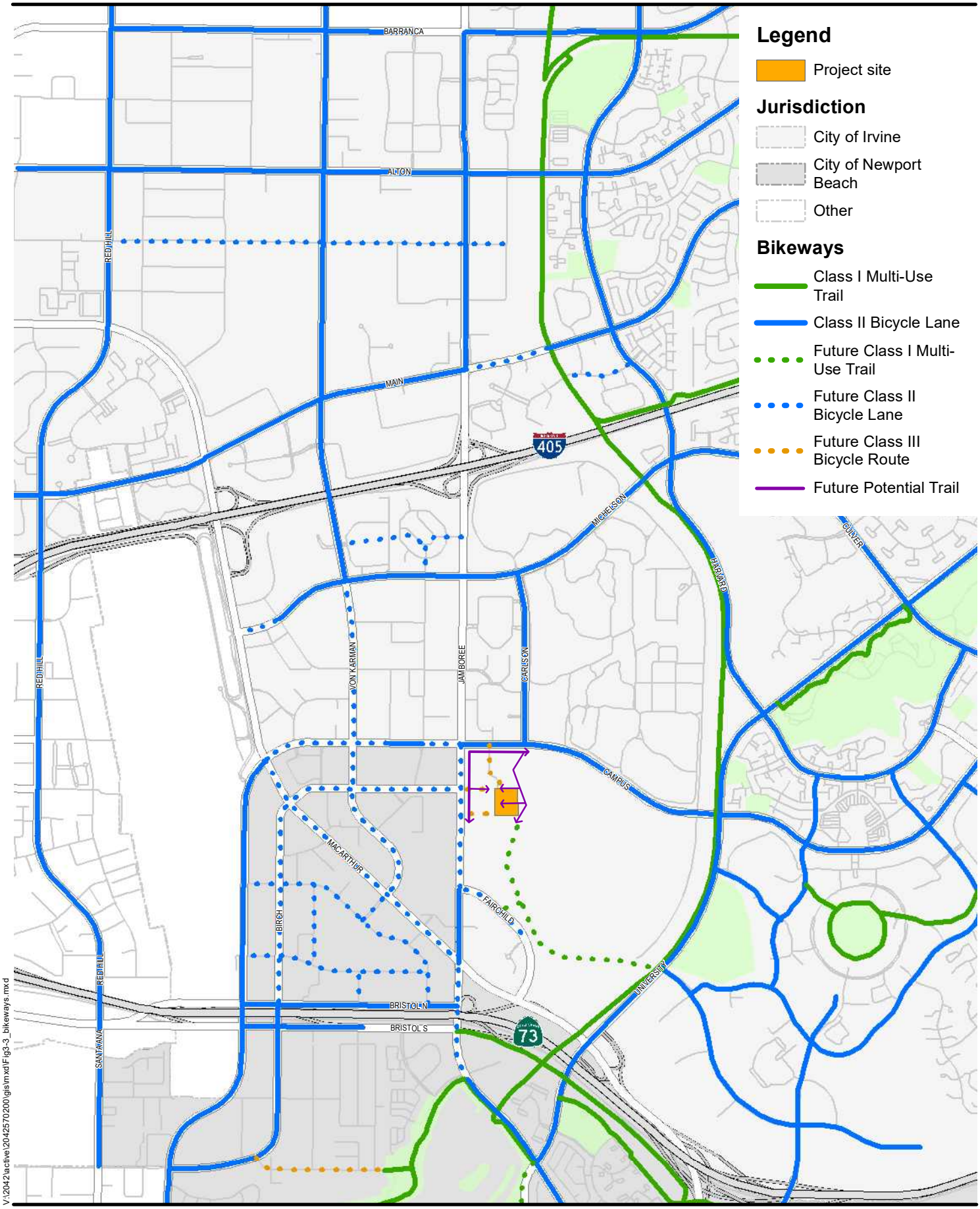

Figure 3-3
City of Irvine & City of Newport Beach Bicycle Networks

3.4 DIVERSITY OF LAND USES

The Project has also been evaluated with consideration to diversity of land uses.

The third goal of the VMT metric is the development of "a diversity of land uses". OPR's Technical Advisory notes that new land use projects alone will not reduce VMT, however "interactions between land use projects, and also between land use and transportation projects, existing and future, together affect VMT".

The 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]:

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 from high-rise apartments along the Jamboree Road corridor. Therefore, the Project would have a less than significant impact on the diversity of land uses in the area.

3.5 REGIONAL TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITY STRATEGIES CONSISTENCY

The Project has also been evaluated with consideration to consistency with the Regional Transportation Plan and Sustainable Community Strategies (RTP/SCS). Generally, a Project's cumulative effects are

[1] 2007 Long Range Development Plan, A Framework to Guide Physical Development at the University of California, Irvine, Through 2025-2026, November 2007.

determined through consistency with the RTP/SCS. Projects that are consistent with the RTP/SCS would have less than significant cumulative impact on VMT.

Metropolitan Planning Organizations (MPOs) are required to develop an 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 SCAG MPO region. In 2016 SCAG's Regional Council adopted the 2016-2040 RTP/SCS. An update was undertaken in 2019/2020 for the 2020-2045 RTP/SCS, also known as Connect SoCal. In May 2020, SCAG's Regional Council adopted Connect SoCal for federal transportation conformity purposes only, and the full adoption is expected to occur in September 2020, 120 days from May 7, 2020.

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

The City of Irvine initially adopted its General Plan in December 1973 with a comprehensive update in 2000. Since then, the City has been growing and is now in the process of Phase 2 of their comprehensive General Plan Update. The City maintains ITAM which incorporates buildout conditions (per the City 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 latest version of the City of Irvine zoning map shows that the Project site is zoned for Institutional uses, which is defined in the City of Irvine General Plan as "a variety of publicly or privately owned and operated facilities (hospitals, schools, religious facilities) and other nonprofit land uses." The City of Irvine and UCI have a long-standing history of 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 this type of information is supplied to SCAG during their Bottom-Up Local Input and Envisioning process. The Project is fully accounted for in the growth allocated by the 2007 LRDP. 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 was accounted for in the City's growth forecast and is consistent with the current zoning map, the Project would be consistent with the latest RTP/SCS, Connect SoCal, and would have a less than significant cumulative impact on transportation based on this consistency criteria.

4.0 PROJECT COMPONENTS AND VMT REDUCTION

4.1 VMT REDUCING MEASURES

Project components that would reduce the Project's VMT are described here. Quantification methodologies from CAPCOA's Quantifying Greenhouse Gas Mitigation Measures document are utilized in this analysis as substantial evidence of VMT reducing measures.

The following project components are applicable to this Project:

PC-1: The Project will improve pedestrian connectivity by constructing an on-site pedestrian network. The Project will also improve the existing off-site pedestrian network by filling in gaps in the sidewalk system for pedestrian connectivity. The Project will construct pedestrian improvements that are consistent with University and City of Irvine standards. The Project will 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 that will facilitate pedestrian movements throughout the Project and connecting off-site. The sidewalks will link areas within the Project site and encourage walking in and around the Project site. To the extent that off-site improvements in the immediate vicinity of the Project are needed at the time of construction, the Project will fill in gaps, where needed, that will aid in pedestrian circulation. This PDF is consistent with the City of Irvine's Tier 1 VMT mitigation of On-Site Infrastructure improvements that provide pedestrian network connectivity and facilities with the potential to result in a mode shift to walking. To quantify the VMT reductions related to this site design feature, SDT-1 Improve Pedestrian Network from CAPCOA is utilized. This measure would result in a Project VMT reduction of **2.0%**. (See **Appendix B** for calculations). Note that the City of Irvine generally assigns a 2.5% VMT reduction when a Project meets the Tier 1 VMT mitigation.

The following is an existing program that would be applicable to this Project:

PC-2: The Project will participate in a commute trip reduction program through UCI's Sustainable Transportation Program, that will require monitoring and reporting. This measure will reduce single occupancy vehicle travel mode and encourage alternative modes to reduce VMT. The Commute Trip Reduction Program may be implemented through UCI's Sustainable Transportation Program that will provide employees with assistance and provide incentives in using alternative modes of travel. Such services could include carpooling encouragement, ride-matching assistance, preferential carpool parking, flexible work schedules for carpools, vanpool assistance, and bicycle end-trip facilities (parking, showers, and lockers). UCI's Sustainable Transportation Program is used to achieve the University of California's Sustainable Transportation Policy goals (see Section 4.2.2). Regular monitoring and reporting are required to assess the effectiveness of the commute trip reduction program. This strategy is similar to the City of Irvine's Tier 2 – Off-site TDM VMT mitigation that requires participation in a City TDM Program (Spectrumotion, Irvine Business Complex). The services offered by UCI's Sustainable Transportation Program is routinely monitored and updated to

meet the demand and sustainability goals set by the campus. Because of UCI's monitoring and reporting, the results of a mode shift from single occupancy vehicle exceed typical TDM programs. To quantify the VMT reductions related to this site design feature, TRT-2 Implement Commute Trip Reduction Program – Required Implementation/Monitoring is utilized. The calculations assume that 100% of employees will be eligible to participate. This will result in a Project VMT reduction of **21.0%**. (See **Appendix A** for calculations). Note that the City of Irvine assigns a 5.0% VMT reduction when a Project meets the Tier 2 Off-site TDM VMT mitigation. The City of Irvine guidelines allows for variation from the 5.0% noted above, where the applicant provides substantial evidence documenting that the proposed measure reduces the VMT to the claimed percentage, as demonstrated here. Since UCI's robust TDM Program exceeds typical TDM programs, VMT reductions are anticipated to be greater.

As shown in **Table 4-1**, the project components would achieve an approximately 22.6% reduction in Project VMT. Per CAPCOA's limitation recommendations, the VMT reduction is adjusted to 20.0%, which represents is the maximum reduction typically expected to be achieved for a project located in a suburban center.

Table 4-1 VMT Reductions Summary

Description	CAPCOA Category	Calculated Reduction
PC-1. The Project will construct an on-site pedestrian network and connect to off-site facilities	Neighborhood/ Site Enhancement SDT-1	2.0%
PC-2. The Project will participate in a commute trip reduction program through UCI's Sustainable Transportation Program	Commute Trip Reduction Programs TRT-1	21.0%
Total		22.6%
Adjusted Total		20.0%[2]

[1] The calculated reductions do not sum up total since each strategy are multiplicative and not additive. Overall % VMT Reduction = 1-(1-A)*(1-B)*(1-C) where A, B, C equals reductions for individual strategies.
[2] Per CAPCOA recommendations on VMT reduction limitations based on a project's location (i.e., urban, compact infill, suburban center, and suburban), the VMT reduction is adjusted to a maximum of 20%, which is generally considered the maximum achievable reduction for a suburban center area.

Table 4-2 summarizes the resulting VMT rate when the VMT reduction is applied.

Table 4-2 Project VMT with Project Components

Description	VMT per Employee
Threshold of Significance	
Existing Baseline with 15% reduction	41.5
Project	
Employment VMT rate per capita	46.7
Employment VMT rate with VMT reducing Project Components (-20.0%)	37.4
Difference (Project minus Regional Threshold of Significance)	-4.1
Is Project above or below Regional Threshold of Significance?	Below
Significant Transportation Impact	No

As shown in **Table 4-2,** without consideration of the project components, the project VMT rate is 46.7 VMT per employee. When the project components are considered, the project rate is 37.4 VMT per employee.

The non-residential threshold of significance is 41.5 VMT per employee. As shown in **Table 4-2**, the Project's VMT per employee would be below the non-residential threshold of significance and the Project would have a less than significant impact on VMT.

The following Section describes the existing program referenced in PC-2 above, UC Irvine's robust TDM Program, that would be extended to the Project and reduces VMT.

4.2 TDM STRATEGIES FOR THE REDUCTION OF GREENHOUSE GAS EMISSIONS ANALYSIS

TDM measures are important and effective tools to reduce GHG, 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 through UCI's Sustainable Transportation Program, which complies with the UC's Sustainable Transportation Policy Goals.

4.2.1 UCI Sustainable Transportation Program

UCI's Sustainable Transportation Program utilizes various TDM measures and was created with the goal to "reduce the total number of vehicle trips made to the campus by faculty, staff and students and reduce commute emissions". Since 2007 UCI has implemented a comprehensive program of TDM measures resulting in an average vehicle ridership of 2.11 (based on 2019 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.

As shown in Section 4.1 above, TDM measures result in a significant reduction of VMT. UCI's Transportation and Distribution Services offers a number of sustainable commuting options as listed below:

- carpool matching through WAZEpool (an on-demand carpool matching service),
- carpool incentive program for employees and graduate students (free parking for carpools),
- ride-share through Zimride (a private ride-sharing network for UCI),
- OC Vanpools (also known as "super carpools" subsidized in part by OCTA and operated through a third-party provider),
- Guaranteed Ride Home Program,
- "University Pass" transit program with 80% subsidy for unlimited OCTA ridership and coordination OCTA of routes,
- 20% rebate on commuter Metrolink and Amtrak train passes,
- convenient cost-effective options to reduce monthly transportation expenses for University students and employees,

- UCI – OC University Bus Program (provides unlimited access to the OCTA bus system),
- Zipcar car sharing program with 16 cars and over 6,000 on campus members (the University's carshare),
- UCI Zotwheels bike ridesharing service (currently offline due to expansion),
- Anteater Express (UCI's campus shuttle service with live bus tracking), in 2019 UCI shuttle system ridership was 2.2 million passengers at a cost of $2.8 million,
- UCI Medical Campus shuttle route (provides rides to UCI Medical Hospital located outside of the campus), and
- bicycle program highlights include BikeUCI Ambassadors, the most comprehensive peer-to-peer outreach program for biking in the country; over 3,000 bike parking spaces; significant investment in bikeway infrastructure; bicycle education for campus affiliates of all bicycling levels offered quarterly; and major bi-annual bike education festivals to encourage safe and legal riding.

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

UCI Health serves a population of more than 3.3 million in greater Orange County. UCI Health offers services on two campuses, the academic programs of the Susan & Henry Samueli College of Health Sciences located on the UCI main campus, and the UCI Medical Center (UCIMC) located in the City of Orange. Currently, the UCIMC inpatient bed capacity at UCIMC exceeds 80 percent occupancy. Orange County will continue to experience population growth, with the City of Irvine's population growth as the highest in the County.

The Project will consist of a hospital with special emphasis on oncology, neurosurgery, orthopedics, and spine services and an ambulatory care center. The specific uses included in the Project are an emergency department, inpatient bed services, operating rooms, observation rooms, inpatient imaging, medical exam rooms, outpatient services, diagnostic services, pharmacy, rehabilitation and support services. Data from 2017 Office of Statewide Health Planning and Development showed that 92% of patients originating in the Irvine area received medical care at a facility within Orange County. The remaining 8% travel outside the County for specialty healthcare uses. Since the Project will offer specialty health care, there is potential to divert the longer trips that the remaining 8% of Irvine patients are currently making, to a shorter local trip.

With the City of Irvine's population growth as the highest in the County, the Project's location in Irvine is ideal since residents living in Irvine, adjacent cities, and South Orange County cities receiving care from

UCI health services could drive to the Irvine site rather than driving a further distance, such as the UCI hospital in the City of Orange. This would reduce VMT.

Furthermore, employees of the Project would be eligible to utilize the TDM services provided by the UCI Transportation and Distribution Service. Per PDF-2, the effectiveness of the program on the Project would need to be monitored and measured against performance thresholds set by the Program.

4.2.2 UC Sustainable Transportation Policy

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

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

The progress of each UC campus towards the goals stated above is continuously monitored. The policy goals above are a part of UCI's LRDP EIR mitigation measures and have been implemented through UCI Sustainable Transportation Program and are continuously monitored for progress to achieve the goals by 2025 and 2050. The current TDM programs that are in place have reduced SOV commute and would be extended to the Project.

5.0 CONCLUSION

This study was conducted to determine if the Project would result in a significant impact to transportation. The following summarizes the results from a quantitative analysis using VMT as the metric and the results from qualitative analyses that evaluate the Project's impact on the multimodal transportation system, diversity of land uses, and consistency with the RTP/SCS.

Transportation Impact Analysis Summary

Screening Evaluation: A screening criteria recommended in OPR's Technical Advisory is used to determine if the Project could be presumed to be less than significant based on size, location, proximity to transit, and affordable housing. The Project does not meet any of the screening criteria and a VMT analysis has been prepared.

VMT Analysis – OPR's Technical Advisory does not specifically address specialty uses such as a Hospital or a University. Therefore, the City of Irvine's Guidelines are used for this analysis since the City's methodology for a non-residential project includes hospital and university uses. Per the City of Irvine Guidelines, ITAM was used to estimate the project change VMT rate.

The project VMT rate is 46.7 VMT per employee. The average baseline for employment is 48.8 VMT per employee and the threshold of significance for employment is 41.5 VMT per employee. The project VMT rate is lower than the average baseline but is greater than the threshold of significance and without VMT reduction measures, would result in significant impact.

In regard to trips made by patients and visitors of the Project, the non-residential category used by the City of Irvine includes trips made by both employees and patients and, therefore, both trip types are accounted for in the VMT estimates. In addition, the construction of new medical facilities in Orange County has the potential to reduce existing regional VMT. Residents seeking medical attention typically travel to the closest and most convenient medical facility. If the local medical facility has longer than average wait times, residents may travel a further distance to obtain medical service, thereby increasing VMT. Data from 2017 Office of Statewide Health Planning and Development shows that 92% of patients originating in the Irvine area received medical care at a facility within Orange County. The remaining 8% travel outside the County for specialty healthcare uses. Since the Project will offer specialty health care, such as oncology, neurosurgery, orthopedics, spine services and an ambulatory care center, there is potential to capture the longer trips that the remaining 8% of Irvine patients are currently making. Based on statistics obtained from UCI staff, the Irvine service area is the fastest-growing population area and is forecast to grow an additional 1.5% annually. The construction of new medical facilities in the Irvine area would help service the population growth and encourage residents to make shorter trips to receive medical care, thereby reducing VMT.

Multimodal Transportation Analysis – The Project would not remove any pedestrian or bicycle facilities, or transit stops. Rather, the Project will enhance transit access, construct sidewalks, and pedestrian amenities such as lighting, trash receptacles, benches and landscaping. The Project would also provide

connections to future trails and bicycle infrastructure being implemented by the City. Since the Project is enhancing the multimodal transportation network, it would have less than significant impact.

Land Use Analysis – The proposed Project would add diversity to the surrounding area and provide a walkable distance to health-oriented services from high-rise apartments along the Jamboree Road corridor. Therefore, the Project would have a less than significant impact.

RTP/SCS Consistency – The Project's cumulative effects are determined through consistency with the RTP/SCS. The Project is accounted for in the growth allocated by UCI's 2007 LRDP. Through SCAG's Bottom-UP Local Input and Envisioning Process, there has been coordination between the City of Irvine and SCAG regarding land use assumptions used in the 2007 LRDP and the City of Irvine General Plan. In addition, the latest version of the City of Irvine zoning map shows that the project site is zoned for Institutional uses, which the City of Irvine General Plan defines as "a variety of publicly or privately owned and operated facilities (hospitals, schools, religious facilities) and other nonprofit land uses". Therefore, since the 2007 LRDP was accounted for in the City's growth forecast, and the Project is consistent with the City of Irvine's General Plan zoning map, the Project would be consistent with both the adopted 2016 RTP/SCS and draft Connect SoCal and the Project would have a less than significant impact based on this consistency criteria.

Project Components resulting in VMT Reduction

Project components that would reduce the Project's VMT to levels below the threshold of significance are as follows:

> **PC-1: The Project will improve pedestrian connectivity by constructing an on-site pedestrian network. The Project will also improve the existing off-site pedestrian network by filling in gaps in the sidewalk system for pedestrian connectivity.** To quantify the VMT reductions related to this site design feature, SDT-1 Improve Pedestrian Network from CAPCOA is utilized. This measure would result in a Project VMT reduction of 2.0%.
>
> **PC-2: The Project will participate in a commute trip reduction program through UCI's Sustainable Transportation Program, that will require monitoring and reporting**. To quantify the VMT reductions related to this measure, TRT-2 Implement Commute Trip Reduction Program – Required Implementation/Monitoring is utilized. The calculation assumes that 100% of employees will be eligible to participate. This will result in a Project VMT reduction of 21.0%.

The project components would achieve an approximately 22.6% reduction in Project VMT. Per CAPCOA's limitation recommendations the VMT reduction was adjusted to 20.0%, which is the maximum reduction typically achievable for a project in a suburban center.

Table 5-1 summarizes the Project VMT.

Table 5-1 Project VMT Summary

Description	VMT per Employee
Threshold of Significance	
Existing Baseline with 15% reduction	41.5
Project	
Employment VMT rate per capita	46.7
Employment VMT with Project Components VMT Reduction (-20.0%)	37.4
Difference (Project minus Regional Threshold of Significance)	-4.1
Is Project above or below Regional Threshold of Significance?	Below
Significant Transportation Impact	No

As shown in **Table 5-1**, above, without consideration to the project components that reduce VMT, the Project would have a project VMT rate of 46.7 VMT per employee. When VMT reductions from the project components are applied, the Project would have a project VMT rate of 37.4 VMT per employee. The significance threshold for non-residential projects is 41.5 VMT per employee. The project VMT rate per employee would be below the threshold of significance and the Project would have a less than significant impact on VMT.

In summary, the Project's impact on transportation is shown to be less than significant.

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APPENDIX A ITAM PROJECT VMT SUMMARY REPORT

ITAM PROJECT VMT SUMMARY REPORT

V 1.1-071820

PROJECT INFORMATION	
Project #:	1
Name:	UC Irvine Campus Medical Complex
Description:	Hopistal and Medical Offices in TAZ 326 (near Jamboree and Campus)
Type:	Non-Residential

			Baseline	Project
Vehicle Miles Travelled (VMT)	ORANGE COUNTY	Total	139,318,384	139,386,970
		Population	56,348,927	56,365,057
		Employment	82,969,450	83,021,913
Population and Employment		Population	3,219,593	3,219,593
		Employment	1,706,388	1,707,511
Δ VMT (With Project - No Project)		Total		68,586
		Population		16,130
		Employment		52,463
Δ Population & Employment Caused by Project		Population		-
		Employment		1,123
VMT Rate Threshold Goal[1]		Residential	14.88	
		Non-Residential	41.33	
Project Δ VMT Rate[1]		Residential		
		Non-Residential		46.72

Applicable Measure(s)	46.72
Threshold Goal	41.33
Net VMT Rate Percentage Increase[2]	11.54%
Mitigation required?	Yes

MITIGATION MEASURES		
On-Site	☐	2.5%
Off-Site	☐	5.0%
Additional Mitigation[3]	☐	
Significant VMT Impact?	**11.5%**	**YES**

Notes:

1- Both Residential and Non-Residential VMT Rates are calculated based on the County VMT and SED.

2- For Mixed-Use projects, the "Net VMT Rate Percentage Increase" is based on the higher of Residential or Non-Residential VMT rate.

3- Sufficient justification must be provided to support additional mitigation.

APPENDIX B CAPCOA CALCULATIONS

Project Component 1: SDT-1 Improve Pedestrian Network

Mitigation Method:

Estimated VMT Reduction	Extent of Pedestrian Accommodations	Context
2%	Within Project Site and Connecting Off-Site	Urban/Suburban
1%	Within Project Site	Urban/Suburban
< 1%	Within Project Site and Connecting Off-Site	Rural

Source: CAPCOA

Project Component 2: TRT-2 Implement Commute Trip Reduction Program – Required Implementation/Monitoring

Mitigation Method:

% VMT Reduction = A * B

Where

A = % shift in vehicle mode share of commute trips (from [1])
B = % employees eligible
C = Adjustment from vehicle mode share to commute VMT

Detail:

- A: 21% reduction in vehicle mode share (from [1])
- C: 1.0 (see Appendix C for detail)

Calculation:

% VMT Reduction = (100% eligibility) = 21% * 100% = 21%

Source: CAPCOA