

4.13 TRANSPORTATION, TRAFFIC, AND PARKING

This section evaluates the potential for implementation of the 2007 LRDP to impact traffic operations, circulation, and parking on and off the UCI campus, including the potential for LRDP implementation to interfere with emergency access and conflict with applicable alternative transportation programs, practices, and procedures. Information in this section is based on a traffic analysis report prepared by Austin-Foust Associates, Inc. (2007) included as Appendix E of this EIR. The LRDP traffic analysis was conducted in coordination with City of Irvine and City of Newport Beach transportation staff and is consistent with their respective guidelines for conducting traffic analyses.

4.13.1 ENVIRONMENTAL SETTING

4.13.1.1 EXISTING TRAFFIC CONDITIONS

Regional Highway and Street Network

The UCI campus is located within the City of Irvine and adjacent to the City of Newport Beach in Orange County. The major freeways and surface streets in the project vicinity are described below and illustrated in Figure 4.13-1.

Freeways. The UCI campus is bordered on the south by SR-73 and is accessible via I-405 and SR-73. I-405 is a north-south trending freeway that provides regional access throughout Los Angeles and Orange counties. I-405 also provides direct access to other freeways around the campus, including an interchange with SR-73 approximately 4 miles northwest of UCI and with SR-55 approximately 2 miles north of the campus. Access to and from the surface street network immediately surrounding the campus is provided by I-405 on- and off-ramps located at MacArthur Boulevard, Jamboree Road, Culver Drive, and University Drive.

SR-73 is another north-south freeway that provides local access through Orange County. This freeway extends approximately 15 miles between an I-405 interchange in Costa Mesa and an I-5 interchange in Laguna Niguel; the southernmost 12 miles are operated as a toll road. Access to and from the surface street network immediately surrounding the campus is provided via SR-73 on- and off-ramps located at MacArthur Boulevard, Bison Avenue, Bonita Canyon Drive, and Newport Coast Drive.

Toll Roads. A significant amount of regional traffic capacity is served by Orange County's toll road system. The Transportation Corridor Agencies (TCA) were formed in 1986 as a public joint powers authority to plan, finance, construct and operate Orange County's 67-mile public toll road system. Toll road construction is funded through bonds repaid through toll revenues and development fees. The San Joaquin Hills Transportation Corridor Agency (SJHTCA) manages the 15-mile SR-73 Toll Road, which stretches from Newport Beach to San Juan Capistrano in southwest Orange County. The Foothill/Eastern Transportation Corridor Agency (F/ETCA) manages the SR-241, SR-261 & SR-133 Toll Roads which link the Riverside (SR-91) Freeway near the Orange/Riverside County border to I-5 in Irvine and to communities in south Orange County.

Streets and Highways. The following is a summary of major surface streets near UCI.

- **MacArthur Boulevard** – In the vicinity of UCI, MacArthur Boulevard is a north-south trending road. It begins in the City of Santa Ana as an east-west road. At SR-55, MacArthur Boulevard

enters the City of Irvine, turns south past UCI, and terminates at SR-1 in the City of Newport Beach. This road operates at six or eight lanes.

- **Jamboree Road** – Jamboree Road is a north-south trending road that extends from Irvine Regional Park in the City of Orange to SR-1 in the City of Newport Beach. This road operates at six to eight lanes.
- **Culver Drive** – Culver Drive is a north-south trending road that extends from Portola Parkway in the City of Irvine to the southern portion of UCI. This road operates at six lanes from Portola Parkway to Campus Drive. There is a two-lane section between Campus Drive and Bonita Canyon Drive with improvements to widen this segment to four lanes anticipated to be completed in summer 2007.
- **Campus Drive** – Campus Drive is an east-west trending road that extends from Bristol Street North in the City of Newport Beach and enters the City of Irvine at MacArthur Boulevard east of Orange County Airport to Turtle Rock Drive northeast of UCI. This road operates at four lanes, with the exception of a two-lane section between Carlson Avenue and University Drive.
- **University Drive** – University Drive is an east-west trending road that extends from Jamboree Road in the City of Newport Beach to I-405 in the City of Irvine. This road operates at four to five lanes.

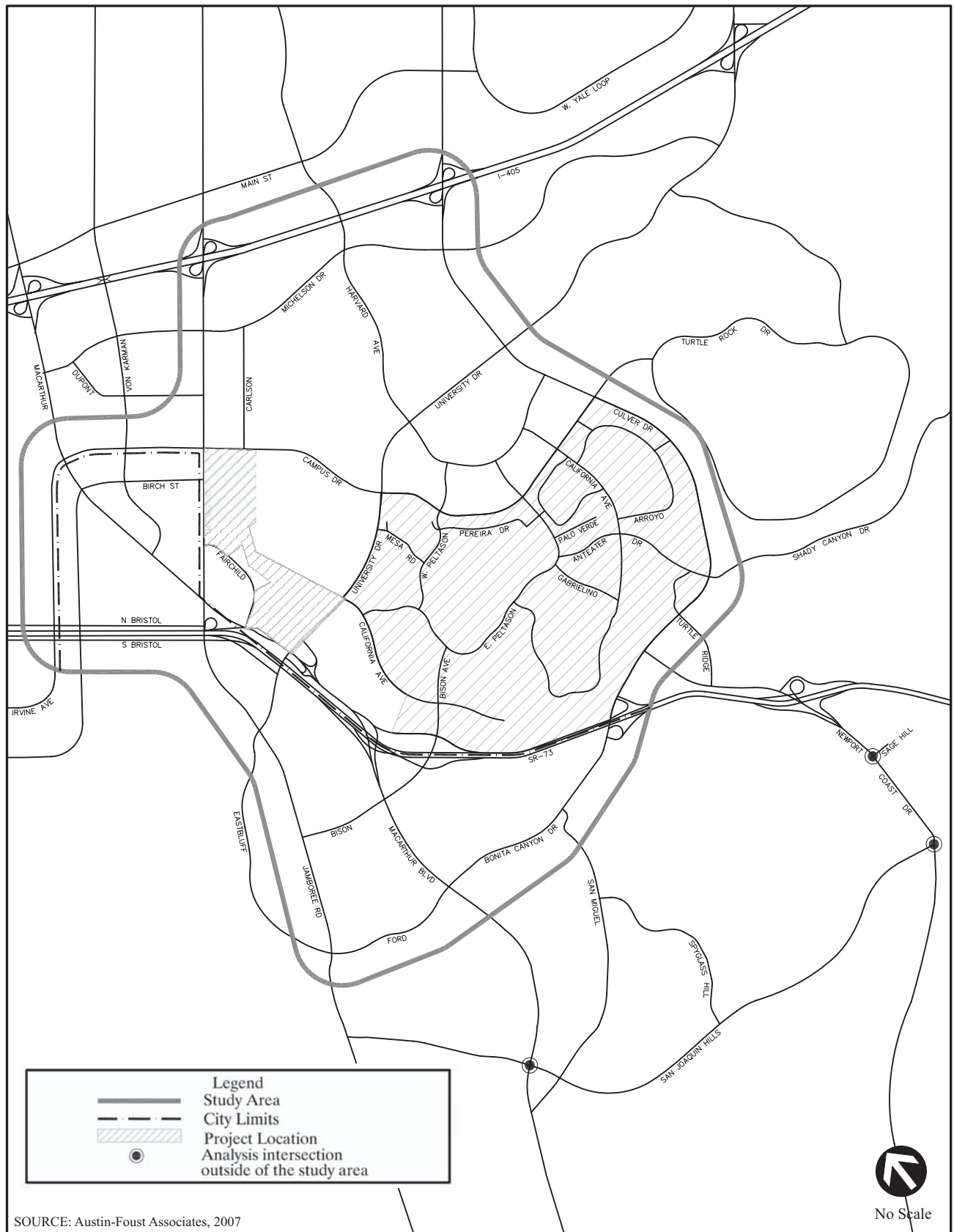
Level of Service Standards

Level of Service (LOS) is a qualitative measure of operational conditions along freeways and roadways and at intersections, and their perception by motorists and/or passengers in terms of speed, travel time, freedom to maneuver, comfort and convenience, and safety. LOS is expressed as a letter designation from A through F, with A representing the best operating conditions and F representing the worst (Tables 4.13-1 and 4.13-2).

Existing Roadway Segment Conditions

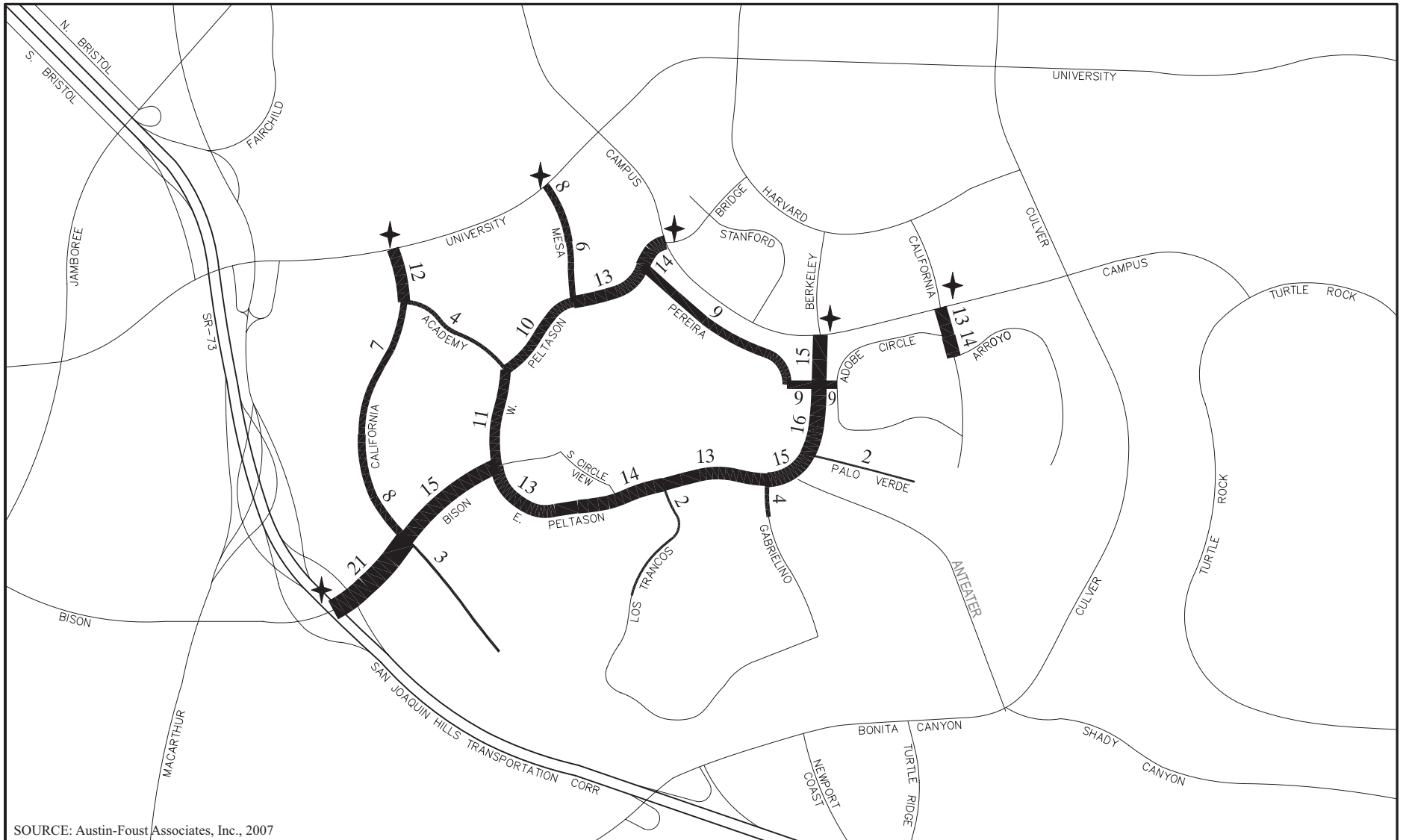
On Campus. Based on traffic counts obtained in Spring 2005, existing average daily trips (ADT) for the campus roadway system are shown in Figure 4.13-2. Of the entry points to the main campus, Bison Avenue is the most heavily used roadway with 21,000 ADT. Next are Berkeley Avenue/East Peltason Drive and Bridge Road/West Peltason Drive with 15,000 and 14,000 ADT, respectively, for the sections just south of Campus Drive. The California Avenue access point carries 13,000 ADT just south of Campus Drive and 12,000 ADT just south of University Drive. The Mesa Avenue access point carries 8,000 ADT. The counts presented for on-campus locations were taken prior to the 2006 opening of Anteater Drive from Culver Drive to East Peltason Drive and California Avenue between Gabrielino Drive and Adobe Circle South.

Off Campus. Existing ADT volumes for key off-campus roadways are illustrated in Figure 4.13-3. The traffic volumes for the indicated roadway segments are based on 24-hour counts in Spring 2005. The freeway volumes are from 2005 Caltrans counts. An additional analysis was conducted to show the existing volume-to-capacity (V/C) ratio. This ratio compares the peak-hour traffic volume to the capacity of the roadway. As the V/C ratio approaches 1.00, the roadway segment is approaching capacity. The existing V/C ratios are illustrated in Figure 4.13-4.

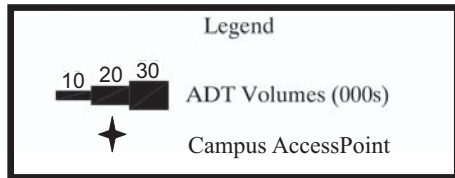


PROJECT SITE AND STUDY AREA

FIGURE 4.13-1



SOURCE: Austin-Foust Associates, Inc., 2007


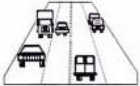






No Scale

EXISTING ON-CAMPUS ADT VOLUMES

FIGURE 4.13-2

Table 4.13-1. Level of Service (LOS) Definitions – Urban Streets

LOS	Example	Flow Conditions	Percent of free flow speeds (FFS)
A		Primarily free-flow operations at average travel speeds. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is normal.	90
B		Reasonably unimpeded operations at average travel speeds. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.	70
C		Stable operations; however, ability to maneuver and change lanes in midblock locations may be more restricted than at LOS "B" and longer queues, adverse signal coordination, or both may contribute to lower average travel speeds.	50
D		Small increases in flow may cause substantial increases in delay and decreases in travel speed. May be due to adverse signal progression, inappropriate signal timing, high volumes, or a combination of these factors.	40
E		Significant delays caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.	33
F		Extremely low speeds. Intersection congestion is likely at critical signalized locations, with high delays, high volumes, and extensive queuing.	25

Source: Highway Capacity Manual 2000, Transportation Research Board, National Research Council

Table 4.13-2 Level Of Service (LOS) Descriptions – Signalized Intersections

LOS	Description	Control Delay Per Vehicle (Secs)
A	LOS “A” describes operations with low control delay, up to 10 seconds per vehicle. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.	< 10
B	LOS “B” describes operations with control delay greater than 10 and up to 20 seconds per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than the LOS “A”, causing higher levels of delay.	10 – 20
C	LOS “C” describes operations with control delay greater than 20 and up to 35 seconds per vehicle. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.	20 – 35
D	LOS “D” describes operations with control delay greater than 35 and up to 55 seconds per vehicle. At LOS “D”, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35 – 55
E	LOS “E” describes operations with control delay greater than 55 and up to 80 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent.	55 – 80
F	LOS “F” describes operations with control delay in excess of 80 seconds per vehicle. This level, considered unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high V/C ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.	> 80

Source: Highway Capacity Manual 2000, Transportation Research Board, National Research Council

Existing Intersection Conditions

Existing AM and PM peak-hour turn movement counts were assembled for 79 intersections located on- and off-campus. Peak period counts were made from 7:00 to 9:00 AM and 4:00 to 6:00 PM, and the peak hour of each intersection represents the maximum one-hour total volume within the two-hour peak period. Existing intersection LOS was calculated using the peak-hour counts in combination with the geometric lane configuration of each intersection. The technique used to assess the operation of an intersection is known as intersection capacity utilization (ICU). LOS designation represents a range of ICU values. The acceptable LOS for intersections is LOS D (maximum ICU = 0.90) with the exception of intersections in the Irvine Business Complex (IBC) Planning Area, where LOS E (maximum ICU = 1.00) is the maximum acceptable ICU value.¹ The existing conditions at intersections within the study area during peak hours are shown in Table 4.13-3.

All campus access points are signalized and six on-campus intersections are under signal control. The remainder of the campus intersections operate under stop-sign control. As shown in Table 4.13-3, all on-campus intersections operate at an acceptable LOS. All but three of the off-campus intersections in the study area operate at an acceptable LOS. These three intersections - MacArthur Boulevard at Ford Road/Bonita Canyon Drive, Campus Drive at Bristol Street North, and Jamboree Road at MacArthur Boulevard - are located within the City of Newport Beach and operate at LOS E during the PM peak hour.

4.13.1.2 EXISTING PARKING CONDITIONS

Parking Supply

As indicated in Table 4.13-4, UCI provides for a total of 13,240 spaces to serve commuter, visitor, and resident parking needs in the central Academic Core and Health Sciences complex. These spaces are distributed in numerous parking lots and multi-level parking structures throughout the Academic Core and Health Sciences complex (Figure 4.13-5). Parking in the residential neighborhoods, University Research Park, and other areas in the outer campus (i.e., East Campus, South Campus, West Campus, and North Campus) are provided on site.

In total, the 2005/06 parking supply is sufficient to meet demand; however, during peak hours some of the interior parking areas may fill up, with space availability limited to peripheral lots. UCI's shuttle system serves the primary peripheral lots, providing free service for riders to the campus core. UCI Parking and Transportation Services (P&TS) regularly monitors permit sales, space utilization, and other demand factors to assess parking supply and demand. Based on commuter behavior and space utilization, UCI maintains a 90 percent peak parking occupancy, which is equivalent to industry standards for parking utilization.

Parking Management

P&TS staff continually monitors parking supply and demand to maintain adequate service for students, faculty, staff, and visitors. P&TS conducts surveys monthly to maintain an up-to-date inventory of parking spaces at UCI. Demand is monitored through quarterly surveys of occupancy levels for all of the parking lots.

¹ Sources: City of Irvine Traffic Impact Guidelines (August 24, 2004); City of Newport Beach General Plan Transportation Study (March 22, 2006).

Parking is allocated through a variety of designations as indicated in Table 4.13-4. The most common designation is a permit parking space, indicated as “X” (Executive), “AR (Reserved), “C” (Faculty/Staff Commuter), “S” (Student Commuter), “ZC” (Zone Permit), “R” (Resident), or “RL” (Remote Lot). A permit is required year-round, with a few exceptions (e.g., during commencement exercises), for these spaces.

A total of 12,699 auto/85 motorcycle spaces in the Academic Core and Health Sciences complex are allocated to permit parking. The remaining 456 spaces are loading spaces, UC vehicle parking spaces, metered parking spaces, and Americans with Disabilities Act (ADA)-accessible spaces.

Visitors have many options when parking on campus. They can obtain hourly permits from either information booths or dispensers/meters that are located throughout the campus. Visitor permits are valid in general stalls before 5:00 PM and in AR/Reserved stalls (except those marked as 24-hour enforced) after 5:00 PM and on weekends.

Faculty and staff have the option of purchasing four types of permits (X, AR, C, and RL) that allow parking in their respective zones. X permits are also eligible to utilize AR, C, R, RL, and ZC zones. AR permits are also eligible to park in C, R, RL, and ZC zones. C permits may also park in R and RL zones. RL permits are typically valid in lots outside the core and are sold at a reduced rate. RL permit holders may utilize general areas after 5:00 PM and on the weekends. These permits are offered on an annual, quarterly, monthly, or daily basis.

Undergraduate and graduate commuter students may purchase annual, quarterly, monthly, and daily S or ZC permits. However, some undergraduates are restricted to underutilized ZC zones. S permits are valid in general or unspecified stalls.

When AR/Reserved areas have reduced demand, both S and C permits are eligible to upgrade to these parking areas. Issuance of these permits is limited, based upon utilization studies.

Student residents may purchase annual, quarterly, monthly, and daily R permits. R permit holders are restricted to designated parking areas adjacent to the residential complex in which they reside (e.g., Arroyo Vista, Middle Earth, Campus Village, and Mesa Court). R permit holders may utilize general areas after 5:00 PM and on weekends.

UCI maintains 268 ADA-compliant parking spaces in the Academic Core and Health Sciences complex for which a Disabled Person (DP) license plate or placard is required. A DP visitor may park in any ADA space or any unused stall. A vehicle driven by a UCI employee or student that is parked in an ADA stall must display either a UCI “short-term” medical parking permit or a DP license plate/placard with a valid UCI permit.

A total of 103 spaces in the Academic Core and Health Sciences complex are designated as UC vehicle stalls or service stalls. These spaces are used primarily by UCI staff, faculty, and management in conjunction with the day-to-day operations of the campus.

Responsibility for enforcement of UCI parking regulations and other applicable state and local laws rests with the P&TS Enforcement Division. All provisions of the California Vehicle Code are applicable in the absence of specific UCI regulations.



- EXISTING PARKING STRUCTURE
- FUTURE PARKING STRUCTURE
- PRIMARY VEHICULAR ACCESS

SOURCE: University of California, Irvine, 2006

EXISTING AND PROPOSED PARKING IN THE ACADEMIC CORE

FIGURE 4.13-5

Table 4.13-3. Existing Intersection Conditions during Peak Hours

Intersection (ID No. and Location)	AM		PM	
	ICU	LOS	ICU	LOS
UC Irvine				
6. E. Peltason & Pereira	.41	A	.48	A
7. Palo Verde & E Peltason	.39	A	.50	A
8. Gabrielino & E. Peltason	.47	A	.60	A
9. Los Trancos & E. Peltason	.42	A	.47	A
10. Peltason & Bison	.57	A	.66	B
11. Academy & W. Peltason	.40	A	.58	A
12. Mesa & W. Peltason	.36	A	.52	A
13. Pereira & W. Peltason	.32	A	.54	A
16. California & Bison	.44	A	.73	C
17. California & Academy	.51	A	.46	A
18. S. Circle View & E. Peltason	.43	A	.47	A
19. Pereira & Pereira	.33	A	.38	A
20. California & Adobe Circle N.	.25	A	.59	A
22. California & Arroyo Dr N.	.24	A	.43	A
City of Irvine				
84. MacArthur Bl. & Campus Dr *	.56	A	.78	C
105. Von Karman Av. & Campus Dr. *	.60	A	.75	C
143. Jamboree Rd. & I-405 NB Ramps *	.84	D	.88	D
144. Jamboree Rd. & I-405 SB Ramps *	.86	D	.93	E
145. Jamboree Rd. & Michelson Dr. *	.63	B	.83	D
146. Jamboree Rd. & Dupont Dr. *	.52	A	.59	A
147. Jamboree Rd. & Campus Dr. *	.58	A	.65	B
148. Jamboree Rd. & Birch St. *	.57	A	.56	A
149. Jamboree Rd. & Fairchild Rd.*	.71	C	.60	A
150. Jamboree Rd. & MacArthur Bl. *	.66	B	.92	E
174. Carlson Av. & Michelson Dr.	.52	A	.58	A
175. Carlson Av. & Campus Dr.	.54	A	.52	A
176. Fairchild Rd. & MacArthur Bl.	.77	C	.72	C
188. Harvard Av. & Michelson Dr.	.70	B	.76	C
189. Harvard Av. & University Dr.	.61	B	.57	A
190. University Dr. & Campus Dr.	.77	C	.75	C
192. University Dr & California Av.	.72	C	.73	C
193. University Dr. & MacArthur Bl. NB	.43	A	.49	A
194. University Dr. & MacArthur Bl. SB	.37	A	.37	A
202. Bridge Rd. & Harvard Av.	.21	A	.40	A
203. Bridge Rd. & Campus Dr.	.54	A	.49	A
208. Bison Av. & SR-73 NB Ramps	.44	A	.53	A
209. Bison Av. & SR-73 SB Ramps	.37	A	.29	A
210. Berkeley Av. & Harvard Av.	.33	A	.43	A
211. Berkeley Av. & Campus Dr	.45	A	.40	A
215. California Av. & Harvard Av.	.24	A	.42	A
216. California Av. & Campus Dr.	.41	A	.67	B
232. Culver Dr. & I-405 NB Ramps	.48	A	.73	C
233. Culver Dr. & I-405 SB Ramps	.64	B	.73	C
234. Culver Dr. & Michelson Dr.	.59	A	.76	C

Table 4.13-3. Continued

Intersection (ID No. and Location)	AM		PM	
	ICU	LOS	ICU	LOS
235. Culver Dr. & University	.56	A	.78	C
236. Culver Dr. & Harvard Av.	.51	A	.57	A
237. Culver Dr. & Campus Dr.	.64	B	.66	B
238. Culver Dr. & Bonita Cyn. Dr.	.74	C	.76	C
239. Bonita Cyn. Dr. & Newport Coast Dr.	.73	C	.59	A
240. Bonita Cyn. Dr. & SR-73 NB Ramps	.51	A	.47	A
241. Bonita Cyn. Dr. & SR-73 SB Ramps	.35	A	.44	A
280. Newport Coast Dr. & SR-73 NB Ramps	.46	A	.31	A
City of Newport Beach				
9. MacArthur Bl. & Campus Dr.	.544	A	.859	D
10. MacArthur Bl. & Birch St.	.453	A	.806	D
11. Von Karman Av. & Campus Dr.	.583	A	.741	C
12. MacArthur Bl. & Von Karman Av.	.464	A	.595	A
13. Jamboree Rd. & Campus Dr.	.560	A	.665	B
14. Jamboree Rd. & Birch St.	.552	A	.543	A
15. Campus Dr. & Bristol St. N.	.597	A	.911	E
16. Birch St. & Bristol St. N.	.681	B	.655	B
17. Campus Dr. & Bristol St. S.	.651	B	.514	A
18. Birch St. & Bristol St. S.	.721	C	.633	B
29. MacArthur Bl. & Jamboree Rd.	.640	B	.911	E
30. Jamboree Rd. & Bristol St. N.	.786	C	.590	A
32. Jamboree Rd. & Bristol St. S.	.668	B	.706	C
33. Jamboree Rd. & Bayview Wy.	.239	A	.394	A
34. Jamboree Rd. & Eastbluff/University Dr.	.563	A	.616	B
35. Jamboree Rd. & Bison Av.	.482	A	.530	A
36. Jamboree Rd. & Eastbluff/Ford Rd.	.495	A	.589	A
46. SR-73 NB Ramps & Bison Av.	.422	A	.541	A
47. SR-73 SB Ramps & Bison Av.	.348	A	.247	A
48. MacArthur Bl. & Bison Av.	.643	B	.709	C
49. MacArthur Bl. & Ford Rd/Bonita Cyn. Dr.	.804	D	.993	E
50. MacArthur Bl. & San Joaquin Hills Rd.	.630	B	.837	D
53. SR-73 NB Ramps & Bonita Cyn. Dr.	.488	A	.453	A
54. SR-73 SB Ramps & Bonita Cyn. Dr.	.373	A	.437	A
62. Newport Coast Dr & SR-73 NB Ramps	.426	A	.280	A
64. Newport Coast Dr & San Joaquin Hills Rd.	.393	A	.411	A
71. Newport Coast Dr & Sage Hill	.442	A	.519	A

Notes: Traffic counts in the city of Newport Beach were taken from the "Newport Beach General Plan Update Transportation Study" and were collected in Spring 2005. Traffic counts in the City of Irvine were taken from the citywide count program carried out for the Irvine Circulation Phasing Analysis and were also collected in Spring 2005. The counts for UCI were also conducted in Spring 2005.

* indicates that the intersection is located within the Irvine Business Center (IBC) and therefore the acceptable LOS is E.

Bold intersections and values indicate intersections that are over the acceptable LOS.

LOS ranges: 0.00 – 0.60 = LOS A 0.81 – 0.90 = LOS D
0.61 – 0.70 = LOS B 0.91 – 1.00 = LOS E
0.71 – 0.80 = LOS C Above 1.00 = LOS F

Table 4.13-4. Existing Parking Spaces⁽¹⁾

Campus Sector	Associated Lots	Number of Parking Spaces								Motorcycle Areas	
		X	AR	C/S/ZC	R	ADA ⁽²⁾ Accessible	UC Vehicle	Meter	Loading		Total ⁽³⁾
Academic Core	1, 1B, 1C, BP, SSPS, 2, 3, 3A, SCPS, 5, 6, 6A, 7, 8, MPS, 12A, 12B, 14, 14A, 16, 16AE, 16AW, 16H, 16B, EHS, 17A, EPS, 18D, 19A, ARC	12	1,775	9,323	470	242	97	63	16	11,998	79
Health Sciences	80,81,82,83,84, Hitachi	4	245	870	0	26	6	4	2	1,157	6
Totals		16	2,020	10,193	470	268	103	67	18	13,155	85

⁽¹⁾ Allocations are subject to almost constant change. Permit parking spaces are indicated as “X” (Executive), “AR” (Reserved), “C” (Faculty/Staff Commuter), “S” (Student Commuter), “ZC” (Zone Permit), and “R” (Resident).

⁽²⁾ ADA = Americans with Disabilities Act.

⁽³⁾ Total non-motorcycle spaces.

Source: UCI Parking and Transportation Services, 2006

Off-Campus Parking

UCI serves all parking demand on-campus. No off-campus parking is required to serve existing campus development and the 2007 LRDP assumes no off-campus parking. UCI provides access to on-campus parking for UCI affiliates who live in the neighboring University Town Center to assist the City of Irvine in meeting local parking demand.

4.13.1.3 UCI ALTERNATIVE TRANSPORTATION

As part of an overall Transportation Demand Management (TDM) program and as required by the University of California’s Sustainable Transportation Policy (discussed in Section 4.13.2.2), UCI implements numerous alternative transportation and commuter services measures that have resulted in reductions of on- and off-campus traffic. UCI will continue to implement such measures to further reduce the number of vehicles on roadways within and surrounding UCI and the community at large.

The goal of the TDM program is to reduce the total number of vehicle trips to and within the UCI campus made by faculty, staff, and students. This program supports regional air quality goals, reduces campus and community vehicle trips and related congestion, reduces the number of parking spaces required on the campus, and promotes a high quality pedestrian-oriented campus environment. As part of its compliance program, P&TS conducts an employee commuter survey each April in conformance with South Coast Air Quality Management District (SCAQMD) Rule 2202 and administers numerous programs and incentives to encourage the use of alternative transportation options. The following sections describe the status of UCI TDM programs as of 2006/07.

Commuter Modes

Walk or Bike. UCI implements a broad range of infrastructure and incentive programs to promote the use of bicycles to travel to and within the campus. As shown on Figures 3-9 and 3-10 in Chapter 3, this includes a network of existing and planned on-street bikeways, off-street trails, grade separated crossings,

and bicycle parking facilities. UCI actively seeks funding opportunities for bikeway and pedestrian improvements including partnerships, grants, and other opportunities working with the City of Irvine and other local agencies.

The UCI Campus was designed to allow efficient pedestrian travel within the Academic Core and other sectors of the campus. The Academic Core is organized into six quads that are linked by a circular pedestrian Ring Mall. Walkways leading to major academic schools and facilities radiate outward from the Ring Mall. Parking structures are placed at the perimeter of the Academic Core near primary vehicular entries, with pedestrian links to the Core via malls and bridges, allowing the separation of vehicles from pedestrians to retain a pedestrian friendly environment in the core

Carpool. UCI offers incentives to employees and graduate students with employment appointments to encourage carpooling. Such incentives include a rideshare matching program, discounted parking permits, preferred parking locations, and free parking days. UCI also offers rideshare matching programs to undergraduate students to encourage carpooling.

Vanpool. UCI operates 21 vanpools that transport employee, graduate student, and undergraduate student commuters to campus each day for a monthly fare. Vanpools provide transportation to the campus Monday through Friday and do not operate on weekends and campus administrative holidays. UCI offers incentives to vanpool participants including four days of free parking per month for employees who do not purchase a long-term parking permit.

Shuttles. UCI operates one of the largest privately operated shuttle systems in the region, with annual ridership exceeding 1 million trips. The UCI Express Shuttle system, operated as a joint venture between the Associated Students (ASUCI) and P&TS, has several routes serving the Academic Core and outer campus areas. The Parkwest Shuttle services student residents who live in the Parkwest Apartments on Michelson Drive. All shuttles are free with the exception of the Parkwest Shuttle which charges \$1.00 per ride (students may also purchase an 18-ride pass for \$11.00 or an unlimited use quarterly pass for \$50.00). UCI is working collaboratively with the City of Irvine and other local agencies to coordinate UCI Shuttle system with other proposed shuttles and public transit serving the local community to further promote transit use in the community. To further promote environmental sustainability, the UCI shuttle fleet operates on 100% biodiesel fuel.

Train. UCI offers subsidies to students and employees who purchase train passes from Amtrak or Metrolink, Southern California's Regional Rail Authority that provides transportation between Orange, Ventura, Riverside, San Bernardino, and Los Angeles counties. In addition, UCI participates in the Zero Emission Vehicle–Network Enabled Transportation (ZEV-NET) program. Two ZEV-NET vehicles (Zero Emission Vehicle – Network Enabled Transport) commute between the campus and the Irvine Transportation Center located on Barranca Parkway north of Alton Parkway. ZEV-NET provides vehicles for shared-use by rail commuters to travel from the Transportation Center train station to the campus.

Bus. The Orange County Transportation Authority (OCTA) offers bus transit service to UCI and areas surrounding the campus. UCI is served by four OCTA bus stops: three located on Campus Drive and one on University Drive. OCTA Routes 59, 75, 79, 175, 178, 213, and 470 serve the UCI campus with destinations including John Wayne Airport, Tustin Metrolink Station, Santa Ana Transit Depot, Irvine Transportation Center, and Newport Center/Fashion Island. To promote the use of bus transit, UCI, in collaboration with OCTA, implements the “U-Pass” program which provides free OCTA bus ridership to all UCI employees and students.

The most recent commuter survey conducted in March 2006 in compliance with SCAQMD Rule 2202 included a full census of UCI employees. The results of this survey indicate that UCI has attained an average vehicle ridership (AVR) of 1.9, representing one of the highest AVR rates for major employers within the region. Table 4.13-5 identifies the distribution of UCI commuters as reported in this survey.

Table 4.13-5. UCI Employee Commuter Distribution⁽¹⁾

Point of Origin	Percent
UCI and Vicinity (University Town Center, Turtle Rock)	43.8%
Other City of Irvine	11.8%
North Orange County	11.5%
Los Angeles County	7.5%
East Orange County	7.2%
West Orange County	6.5%
South Orange County	4.9%
City of Newport Beach	3.7%
Riverside County	1.5%
San Diego County	1.1%
San Bernardino County	0.6%

⁽¹⁾ Derived from SCAQMD Rule 2022 census of UCI employees, March 2006.

Incentives

Employees – Employees who meet certain qualifications may register for the Employee Alternate Commute Incentive Program. Depending on the form of transportation chosen to commute to work, employees may receive up to four one-day parking permits per month in exchange for committing not to purchase a parking permit. In addition, employees are eligible for free bus passes and subsidies for train passes. As an additional incentive, all registered participants may receive a guaranteed ride in case of illness or emergency. Transportation can be arranged to the employee's home or other destination free of charge once every six months.

Students – Undergraduate and graduate students who are not employed by UCI are eligible for free OCTA bus passes, free access to the UCI on-campus shuttle, and subsidies for train passes. Students are not eligible for free day parking passes.

4.13.2 REGULATORY FRAMEWORK

4.13.2.1 FEDERAL

Highway Capacity Manual

The Highway Capacity Manual 2000 (HCM 2000), prepared by the federal Transportation Research Board (TRB), is the result of a collaborative multi-agency effort between the TRB, Federal Highway Administration (FHWA) and American Association of State Highway and Transportation Officials (AASHTO). The HCM 2000 contains concepts, guidelines, and computational procedures for computing the capacity and quality of service of various highway facilities, including freeways, signalized and unsignalized intersections, and rural highways, and the effects of transit, pedestrians, and bicycles on the

performance of these systems. HCM 2000 is organized into five parts including Overview, Concepts, Applications, Corridor and Area-wide Analysis, and Simulation and Other Models.

Americans with Disabilities Act of 1990

The ADA prohibits discrimination on the basis of disability in employment, state and local government, public accommodations, commercial facilities, transportation, and telecommunications. To be protected by the ADA, one must have a disability or have a relationship or association with an individual with a disability. An individual with a disability is defined by the ADA as a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history or record of such impairment, or a person who is perceived by others as having such impairment. The ADA does not specifically name all of the impairments that are covered. Numerous standards and guidance documents have been developed to facilitate the proper implementation of the ADA. The Department of Justice ADA, Title III, Regulation 28 (CFR Part 36) prohibits discrimination on the basis of disability by public accommodations, and requires places of public accommodation and commercial facilities to be designed, constructed, and altered in compliance with the accessibility standards established by this regulation. The regulation includes *Standards for Accessible Design* (Appendix A of CFR Part 36) establishing minimum standards for ensuring ADA accessibility when designing and constructing a new facility or altering an existing facility, including transportation improvements and parking facilities (e.g., number and dimension of disabled parking spaces), on the UCI campus.

4.13.2.2 STATE

UC Policies

Sustainable Transportation

UC's sustainable transportation policy requires each campus to incorporate alternative means of transportation to, from, and within each campus to improve the quality of life on campus and in the surrounding community. UCI will continue its strong commitment to provide affordable on-campus housing, which would also reduce the volume of commutes to and from campus.

Parking

The California Master Plan for Higher Education established parking as an auxiliary enterprise and deliberately precluded it from competing with academic instruction and research programs for state funding. Specifically, the Master Plan states that taxpayers' money should not be used to subsidize, openly or covertly, the operation of such services. The requirement that the UCI's P&TS be financially self-supporting is not likely to change and it creates unique challenges in continuing to provide these services.

In 1957, The Regents of the University of California, by resolution, required that all vehicles parked at UC campuses be registered with the California Department of Motor Vehicles (DMV) and be subject to a parking fee to cover the cost of construction, operation, maintenance, and administration of parking facilities. In 1960, the state legislature eliminated the use of state tax funds for parking purposes on the UC and California State College campuses, including the UC Medical Centers.

4.13.2.3 REGIONAL

Orange County Congestion Management Program

The Congestion Management Program (CMP) requires that a traffic impact analysis be conducted for any project generating 2,400 or more ADT, or 1,600 or more ADT for projects that directly access the CMP highway system. Per the CMP guidelines, these are the ADT thresholds for projects that contribute more than 3 percent of the traffic volumes to the existing CMP highway system facilities' capacity. The CMP facilities include State Highways and Super Streets, which are now known as Smart Streets, and CMP arterial monitoring locations/intersections. Therefore, the CMP traffic impact analysis requirements relate to the impacts only on the specified CMP highway system facilities. The CMP highway system arterial facilities and CMP arterials closest to the LRDP Traffic Study Area consist of Jamboree Road and MacArthur Boulevard. The CMP arterial monitoring locations/intersections within the LRDP Traffic Study Area include Jamboree Road at I-405 northbound and southbound ramps and Jamboree Road at MacArthur Boulevard.

Orange County Growth Management Plan

In August 1988, the County of Orange adopted a Growth Management Plan Element that presents a conceptual framework for coordinating traffic facilities and public facilities and services with new development. The Growth Management Plan Element also spawned several plans and programs, including the Development Monitoring Program, which evaluates the extent of new development and compliance with phasing requirements, and the Facilities Implementation Plans, which evaluate public facility needs and propose financing mechanisms. The Orange County Growth Management Plan Element and related plans are important to the City of Irvine because these plans affect the contract services provided to the City by the County.

The most comprehensive local legislation affecting transportation and growth management is Measure M, a half-cent sales tax dedicated to countywide transportation improvements approved by the County voters in November 1990 and re-authorized in November 2006 to extend Measure M from 2010 to 2040. The measure requires each jurisdiction in the County to adopt a Growth Management Plan with specific contents and guidelines. It is estimated that UCI generates approximately \$2 million per year in Measure M funds through sales taxes generated by the campus, which directly contributes to funding local and regional transportation improvements that serve the campus and community. As UCI sales tax generation will increase with implementation of the LRDP, Measure M transportation improvement funds generated by UCI may significantly exceed \$37 million between 2007 and 2025.

Regional Transportation Plans and Programs

The Southern California Association of Governments (SCAG) serves as the forum for decision-making on regional issues such as growth, transportation, land use, the economy, the environment, and criminal justice. SCAG builds consensus, makes strategic plans, obtains and allocates resources, and provides information on a broad range of topics pertinent to the region's quality of life. SCAG is governed by a Board of Directors composed of mayors, council members, and supervisors from over 100 local governments in Ventura, Los Angeles, Orange, San Bernardino, Riverside, and Imperial counties.

SCAG has produced the following documents that identify transportation plans and policies in the southern California region:

- **2004 Regional Transportation Plan (RTP)** - The RTP, also known as Destination 2030, serves as a blueprint which focuses on improving the balance between land use and the existing, as well

as future, transportation systems. The 2004 RTP is a multi-modal plan which provides basic policy and program framework for long-term investment in the regional transportation system.

- **2002 State Transportation Improvement Program (STIP)** - The STIP is a multi-year program of state and federally funded transportation projects developed locally and approved by the California Transportation Commission (CTC). Every two years the CTC provides an estimate of revenues available to each metropolitan area for use in developing a program of projects based upon local priorities. Upon approval by the CTC, the STIP is incorporated into the Regional Transportation Improvement Program, which also includes other locally funded transportation projects.
- **2006 Regional Transportation Improvement Program (RTIP)** - The RTIP is a multi-year program of proposed major highway, arterial, transit, and non-motorized projects. Improvements to many state and local highways in the southern California region are included in the RTIP. The 2006 RTIP covers Fiscal Years 2006/07 to 2011/12. The 2006 RTIP also includes an air quality emissions analysis.
- **2006 Orange County Transportation Authority (OCTA) Long Range Transportation Plan (LRTP)** – The LRTP is a visionary blueprint for transportation improvements in Orange County up to 2030. The LRTP lays out three overarching goals: improve mobility; protect transportation resources; and enhance the quality of life. The plan also outlines performance measures by which OCTA can gauge its progress and allow strategies to be refined.

City of Irvine General Plan Circulation Element

The Circulation Element of the City of Irvine General Plan provides general City-wide transportation goals, as well as guidelines, standards and recommendations for streets and highways, parking, transit, airports, bicycles and pedestrians, and noise. The general circulation objectives that are relevant to the 2007 LRDP are listed below.

- Plan, provide, and maintain an integrated vehicular circulation system to accommodate projected local and regional needs.
- Develop a vehicular circulation system consistent with high standards of transportation engineering safety and with sensitivity to adjoining land uses.
- Establish a pedestrian circulation system to support and encourage walking as a mode of transportation.
- Plan, provide, and maintain a comprehensive bicycle trail network that together with the regional trail system encourages increased use of bicycle trails for commuters and recreational purposes.

UCI/City of Irvine Cooperative Agreements

While UCI, as a state entity, does not fall within the jurisdiction of municipal policies such as the City of Irvine General Plan, UCI and the City of Irvine work collaboratively to coordinate planning and development programs. Consistent with this collaborative approach UCI and the City of Irvine entered into a Memorandum of Understanding (MOU) in 1988 to establish principles for cooperation in implementing the UCI LRDP and City General Plan. The MOU included an estimate of 148,000 ADT to be generated by campus growth through buildout of the LRDP, committed UCI to establish a traffic monitoring program for growth anticipated under the LRDP and committed the City to incorporate LRDP traffic projections in City planning and zoning documents and City traffic models for use in future planning.

Subsequent to adoption of the 1989 LRDP and certification of the LRDP EIR, UCI established a traffic fee system under Mitigation Measure (MM) 123 consistent with the 1988 MOU to provide a mechanism to fund UCI's proportional share of off-campus traffic improvements based on an overall trip generation of approximately 150,000 ADT. UCI conducted a traffic analysis to identify off-campus roadway improvements to be funded through the MM 123 traffic fee program. Under that system fees collected from UCI "for-profit" development in University Research Park have been paid to the City to fund UCI's share for construction of roadway improvements by the City to offset UCI impacts to the off-campus roadway network. In addition, UCI has contributed right-of-way to the City in lieu of MM 123 fees for the City's realignment of Culver Drive. UCI has paid a total of \$5.4 million in fees and in-lieu payments through the MM 123 traffic fee program. As the LRDP has been implemented, elements of the MM 123 improvement list have been constructed using MM 123 fees and other non-UCI funding sources, while certain improvements have been removed from local plans and other improvements remain to be implemented. The 2007 LRDP traffic analysis updates the UCI Transportation Fee Program (UCITP) with new mitigation measures described in Section 4.13.3.1 below to reflect existing conditions and transportation needs and to mitigate traffic impacts resulting from implementation of the 2007 LRDP.

4.13.3 PROJECT IMPACTS AND MITIGATION

4.13.3.1 ISSUE 1 - INCREASES IN TRAFFIC

Transportation, Traffic, and Parking Issue 1 Summary

Would implementation of the 2007 LRDP cause a substantial increase in traffic?

Impact: Implementation of the 2007 LRDP would result in significant direct traffic impacts at two off-campus intersections in Year 2025 and at two off-campus intersections Post-2025 (Tra-1A); and significant cumulative impacts at 11 off-campus intersections in Year 2025, and at one off-campus arterial roadway and 10 off-campus intersections Post-2025 (Tra-1B).

Mitigation: Continued operation and expansion of alternative transportation program (Tra-1A and Tra-1I); implementation of additional on-campus housing (Tra-1B); enhancement of transit service (Tra-1C); ongoing traffic monitoring (Tra-1D); implementation of UCITP or negotiation of "fair share" funding for intersection and roadway improvements (Tra-1E, Tra-1F, and Tra-1G); payment of SJHTC fees (Tra-1H); ensuring that individual projects are consistent with UC alternative transportation policies and goals; and traffic control measures during construction (Tra-1J).

Significance Before Mitigation: Significant.

Significance After Mitigation: Less than significant.

Standards of Significance

Based on the CEQA Guidelines, implementation of the 2007 LRDP may have a significant adverse impact if it would:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the V/C ratio on roads, or congestion at intersections); or
- Exceed, either individually or cumulatively, a LOS standard established by the county congestion management agency for designated roads or highways.

Off-Campus Roadways. For off-campus roadway links and intersections that would operate below an acceptable LOS, impacts associated with the 2007 LRDP would be significant if the project contribution exceeds the thresholds described below and in Table 4.13-6. For arterial roads and intersections, LOS D is considered acceptable (unless the arterial or intersection is located in the Irvine Business Complex, in which case LOS E is acceptable). For freeway/tollway ramps and mainline segments, LOS E is considered acceptable.² For significant impacts, mitigation would be required to bring the location back to an acceptable LOS (if the deficiency is caused by the project) or to no-project conditions or better (if the project adds to an already deficient condition).

Table 4.13-6. Significance Thresholds for Traffic Impacts to Off-Campus Facilities

Location of facility ⁽¹⁾	Allowable Change Due to Project Impact ⁽²⁾			
	Arterial Roads	Intersections	Freeway/Tollway Ramps	Freeway/Tollway Mainline
	V/C	ICU	V/C	V/C
Within the City of Newport Beach	Not Applicable	0.01	–	–
All other facilities within study area	0.02	0.02	0.02	0.03

Notes:

⁽¹⁾ For arterial roadways and intersections in the Irvine Business Complex, an LOS “E” (peak hour V/C or ICU less than or equal to 1.00) is deemed acceptable. For all other arterials and intersections, an LOS “D” (peak hour V/C or ICU less than or equal to 0.90) is deemed acceptable. For freeway/tollway facilities, an LOS “E” is deemed acceptable.

⁽²⁾ If the proposed project’s contribution to a deficient location exceeds the given value, the impact is determined to be significant.

Arterial Roadway Segments. On arterial roadway segments operating at an unacceptable LOS, an impact is considered significant if the project’s contribution to the roadway segment’s V/C ratio is 0.02 or greater for all arterial roadways in the LRDP Traffic Study Area, with the exception of roadway segments within the City of Newport Beach. The City of Newport Beach does not employ ADT V/C ratios to determine project impacts on arterial roads; rather, project impacts in Newport Beach are identified using peak-hour intersection performance.

Intersections. For intersections operating at an unacceptable LOS, an impact is considered significant if the project’s contribution to the intersection’s ICU value is 0.01 or greater for roadways in the City of Newport Beach, or 0.02 or greater for all other intersections in the study area.

Freeway/Tollway Ramps. For ramps operating at an unacceptable LOS, an impact is considered significant if the project contribution is greater than 0.02 V/C ratio.

Freeway/Tollway Mainline Segments. Impacts are considered significant for locations where the project adds to a deficient condition by greater than 0.03 V/C ratio (the impact threshold specified in the CMP).

On-Campus Roadways. For UCI on-campus roadways, a LOS D (peak-hour ICU less than or equal to 0.90) is considered acceptable.

² Sources: City of Irvine Traffic Impact Guidelines (August 24, 2004); City of Newport Beach General Plan Transportation Study (March 22, 2006); Caltrans Highway Design Manual (July 1995); Caltrans Ramp Meter Design Manual (January 2000); and 2005 Congestion Management Program.

Impact Analysis

The following analysis evaluates off-campus roadway segments, off-campus intersections, freeway and tollway ramp and mainline segments, and on-campus intersections. This analysis compares existing conditions to future conditions, with and without implementation of the 2007 LRDP.

Traffic Report Analysis Methodology. Traffic forecast data for this analysis has been derived from three sources: the Irvine Transportation Analysis Model (ITAM), the Newport Beach Traffic Model (NBTM), and the UCI Main Campus Traffic Model (MCTM). The first two are subsets of the Orange County Transportation Analysis Model (OCTAM) which is maintained by the OCTA. All three traffic models are described in more detail below. Figure 4.13-6 shows the areas where traffic forecast data was taken from each model.

The ITAM is the principal tool for transportation planning in the City of Irvine. The Year 2025 version of ITAM uses Orange County Year 2025 demographic projections for areas outside the City. The long-range (Post-2025) version of ITAM represents buildout of the City's General Plan and reflects Orange County Year 2030 demographic projections outside the City. The off-campus analysis using the ITAM involved refining the traffic forecasts in this model to reflect the existing conditions and implementation of the 2007 LRDP.³

Traffic forecasts within the City of Newport Beach portions of the study area are based on data taken from the NBTM. The NBTM sub-area model has been used for transportation planning applications within Newport Beach and adjacent unincorporated areas of the county. The most current land uses for Newport Beach are those adopted as part of a recently completed General Plan Update (November 2006).⁴

The UCI MCTM is used for evaluating the on-campus roadway system. This is a detailed traffic forecasting procedure designed to forecast future traffic volumes on the UCI Main Campus roadway system based on future campus land uses identified in the LRDP. Methodology embodied in the model addresses traffic from all campus activities (academic, housing, and inclusion areas).⁵

The planning horizon year for the 2007 LRDP is 2025/26, and therefore the off-campus Year 2025 traffic volumes and capacity evaluations were determined for "with project" and "without project" conditions. City of Irvine Year 2025 projections and City of Newport Beach General Plan buildout traffic data are included in the Year 2025 analysis. A second scenario, the Post-2025 condition, also evaluated traffic volumes and roadway capacity for the "with project" and "without project" conditions. City of Irvine and City of Newport Beach General Plan buildout traffic data is included in the Post-2025 analysis..

The LRDP Traffic Study Area was determined by reviewing commuter census data for UCI commuters to determine their points of origin, and by including all intersections addressed in the 1995 LRDP Amendment and all intersection and roadway link locations that local jurisdictions requested be analyzed during the 2007 LRDP EIR scoping process (Figure 4.13-1).

³ Additional detail about ITAM may be found in "Irvine Transportation Analysis Model (ITAM) 3.01 Primary Study Area Database Expansion Technical Supplement," Urban Crossroads, Inc., November 2001.

⁴ Additional detail about NBTM may be found in "Newport Beach Traffic Model (NBTM) 3.1 Technical Documentation Report," Urban Crossroads, Inc., December 2003. See also, "City of Newport Beach General Plan Transportation Study," Urban Crossroads, Inc., March 2006.

⁵ Additional information on UCI MCTM may be found in "UCI Main Campus Traffic Model, Traffic Model Description and Validation 2003 Update," Austin-Foust Associates, Inc., March 2003.

Future Circulation Network Modifications. The arterial roadway and intersection analyses herein assume full buildout of the City of Irvine and City of Newport Beach General Plan Circulation Elements post-2025. The circulation system in each City conforms to the County of Orange Master Plan of Arterial Highways (MPAH). Some improvements are funded, while others are planned but not funded (“non-committed”). Table 4.13-7 summarizes the local improvements assumed in 2025 and Post-2025.

UCI Trip Generation and Distribution. The total trip generation for the 2007 LRDP compared to existing conditions is summarized in Table 4.13-8. UCI trips generated by the area north of University Drive (“North Campus”) is distinguished from those generated by the area south of University Drive (“Main Campus”). The North Campus is proposed to contain mixed use development with land use and traffic characteristics more typical of the surrounding IBC. The Main Campus contains the primary academic, research, and housing areas of UCI.

The trip generation estimates used in this analysis, as identified in Table 4.13-8, are based on existing commuting habits and patterns including existing transportation modes, commuter origin, and TDM participation, and therefore represent a conservative approximation of future conditions. As described in Section 4.13.1.3 above, UCI implements a comprehensive program of TDM measures, including parking policies, transit systems, and alternative transportation incentives focused on reducing off-site trip generation. Expanded implementation of the TDM program as UCI implements the 2007 LRDP would likely result in a lower trip generation than is reflected in this analysis, and this would further reduce impacts on the off-campus circulation network.

UCI hosts certain on-campus special events such as commencement ceremonies, intercollegiate sports, and other on-campus events. These events generally occur during off-peak hours. UCI employs specialized event staff in the UCI Parking and Transportation Services office to oversee event parking and transportation needs including special signage, parking management, traffic control, visitor information, and other measures to manage event related traffic. The 2007 LRDP identifies as a permitted “Inclusion Area” use, future multi-purpose facilities for on-campus events and assemblies. No such facilities have been planned, however, and their analysis is outside the scope of the present project. Prior to the approval of an arena or other project with assembly spaces capable of hosting large on-campus events, a project-specific event traffic analysis would be conducted as a part of project-level CEQA review.

Year 2025 and Post-2025 Off-Campus Arterial Roadways Analysis

Year 2025. Year 2025 “No Project” V/C ratios are illustrated in Figure 4.13-7 and Year 2025 “With Project” V/C ratios are illustrated in Figure 4.13-8. Based on the ADT V/C performance criteria and impact thresholds identified in this section, ten arterial roadway segments in Irvine would be impacted by implementation of the 2007 LRDP. (As discussed above, the City of Newport Beach does not use ADT V/C ratios to determine project impacts on arterial roads; rather, project impacts are identified using peak-hour intersection performance.)

Consistent with City of Irvine traffic study guidelines, the Irvine locations were further analyzed by examining peak-hour LOS. The resulting midblock peak-hour V/C ratios for the arterial segments under Year 2025 “With Project” conditions are summarized in Table 4.13-9. As shown, all arterial roadway segments within the LRDP Traffic Study Area are projected to operate at an acceptable LOS during the peak hour; therefore, there would be no significant impacts to arterial roadways in Year 2025 associated with implementation of the 2007 LRDP.

Table 4.13-7. Long-Range Buildout of Off-Campus Roadway and Intersection Improvements

Location	Improvement(s)	Comments
YEAR 2025 IMPROVEMENTS		
I. City of Irvine		
<u>Roadway Segments</u>		
Bonita Canyon Dr <i>SR-73 to Shady Canyon Dr</i>	Construct one additional southbound through lane to complete ultimate four-lane cross-section.	Preliminary engineering completed.
Culver Dr <i>Campus Dr to Bonita Canyon Dr</i>	Construct one additional through lane in each direction to complete ultimate four-lane cross-section.	Under construction.
<u>Intersections</u>		
Culver Dr & University Dr	Construct two northbound separate right turn lanes with right-turn overlap with westbound left turn lane, and construct eastbound defacto right turn lane.	North Irvine Transportation Mitigation (NITM) Program fully funded
Culver Dr & Bonita Canyon Dr	Construct second southbound thru lane and separate right turn lane, second westbound left turn lane and separate thru lane, second northbound left turn lane and second thru lane, construct separate eastbound right turn lane and two right turn lanes.	Anteater Dr, completed in Summer 2006, forms the fourth leg of the intersection.
II. City of Newport Beach		
<u>Roadway Segments</u>		
None		
<u>Intersections</u>		
None		
POST- 2025 IMPROVEMENTS		
I. City of Irvine		
<u>Roadway Segments</u>		
Campus Dr <i>Carlson Av to University Dr</i>	Construct one additional through lane in each direction to complete ultimate four-lane cross-section.	Non-committed
University Dr <i>MacArthur Blvd to Campus Dr</i>	Construct one additional through lane in each direction to complete ultimate six-lane cross-section.	Non-committed
<u>Intersections</u>		
Jamboree Rd & I-405 NB Ramps	Construct fourth northbound thru lane	IBC
Jamboree Rd & I-405 SB Ramps	Construct fourth northbound thru lane	IBC
Carlson Av & Campus Dr	Construct second eastbound thru lane and second westbound thru lane	Non-committed
University Dr & Campus Dr	Construct second southbound left turn lane, third southbound thru lane, second westbound left turn lane, second northbound left turn lane and second eastbound left turn lane, and remove southbound right turn lane.	IBC project development and non-committed
University Dr & California Av	Construct third southbound thru lane and third northbound thru lane	Non-committed
Culver Dr & University Dr	Construct second southbound left turn lane and defacto right turn lane, second northbound left turn lane	NITM Program fully funded
II. City of Newport Beach		
<u>Roadway Segments</u>		
None		
<u>Intersections</u>		
Jamboree Rd & Bristol St S	Construct fourth southbound thru lane	Non-committed

Table 4.13-8. Existing and 2007 LRDP Trip Generation Summary

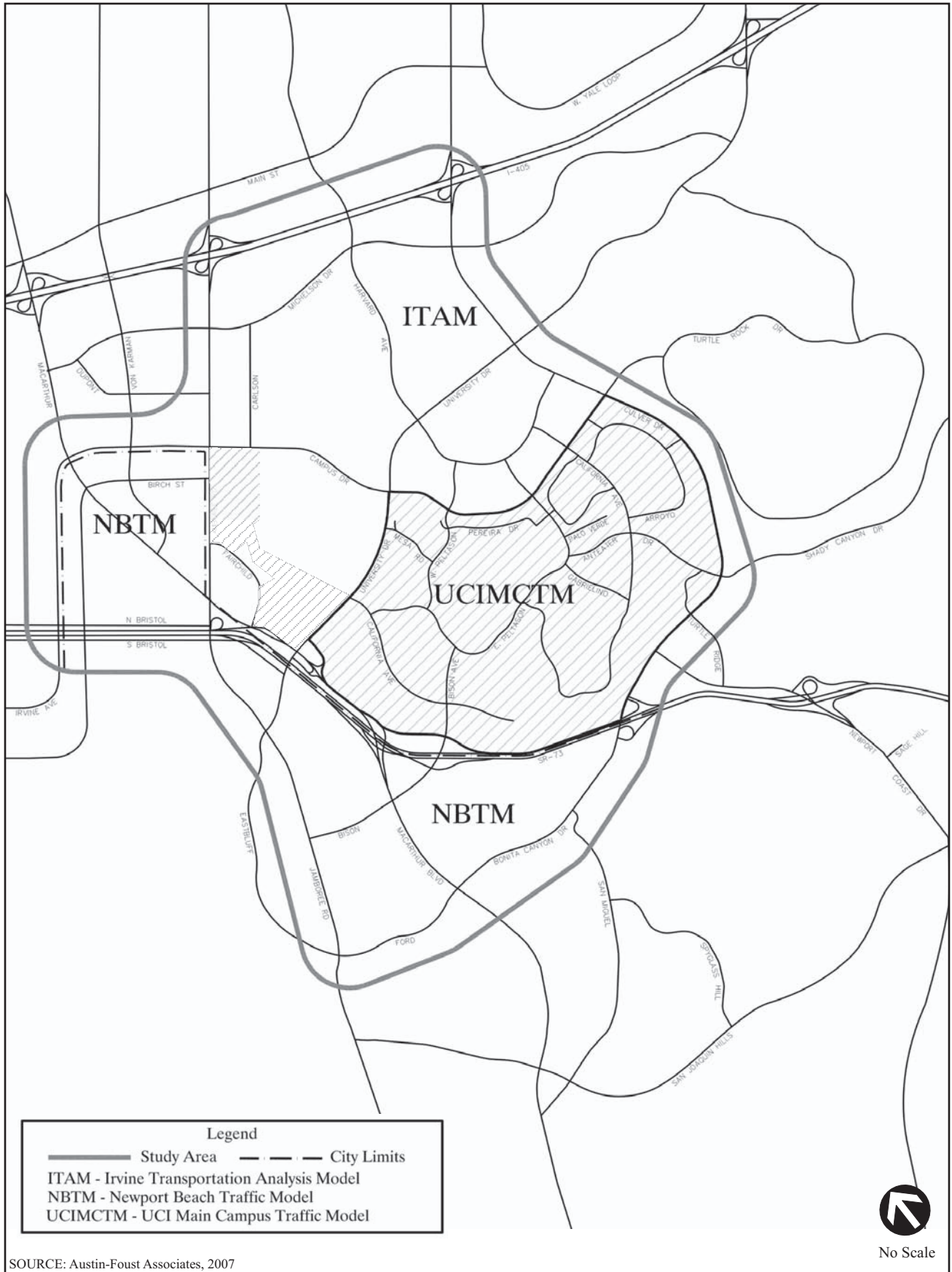
Description	AM Peak Hour				PM Peak Hour				ADT
	In	Out	Total	% of ADT	In	Out	Total	% of ADT	
Existing									
Main Campus	2,953	1,830	4,783	6.3%	2,213	4,408	6,621	8.7%	75,756
North Campus	71	37	108	8.3%	48	71	119	9.1%	1,308
Total UCI	3,024	1,897	4,891	6.3%	2,261	4,479	6,740	8.7%	77,064
Proposed LRDP (2025)									
Main Campus	5,564	3,419	8,983	6.7%	4,452	7,235	11,687	7.0%	133,190
North Campus	718	374	1,092	8.2%	491	705	1,196	8.9%	13,364
Total UCI	6,282	3,793	10,075	6.9%	4,943	7,940	12,883	8.2%	146,554
Difference, Total UCI	3,258	1,896	5,184		2,682	3,461	6,143		69,490

Table 4.13-9. Year 2025 “With Project” Arterial Roadway Peak Hour Analysis Summary

Roadway	Lanes	ADT	Peak Hour Capacity ¹	Highest Peak Volume	Peak Hour	
					V/C	LOS
City of Irvine						
Bonita Canyon (Shady Canyon to Newport Coast)	4	38,000	3,200	2,060 (AM Northbound)	.64	B
Campus (E. Peltason to California)	4	30,000	3,200	1,458 (PM Eastbound)	.46	A
Campus (Jamboree to Carlson)	4	29,000	3,200	1,662 (PM Westbound)	.52	A
Campus (Carlson to University)	2	23,000	2,000	1,337 (PM Westbound)	.67	B
Culver (I-405 to Michelson)	6	58,000	4,800	3,547 (PM Northbound)	.74	C
Culver (Michelson to University)	6	50,000	4,800	2,688 (PM Northbound)	.56	A
Culver (University to Harvard)	6	70,000	4,800	3,304 (PM Northbound)	.69	B
Harvard (Michelson to University)	2	23,000	2,000	1,573 (PM Northbound)	.79	C
Jamboree (I-405 to Michelson)	8	91,000	6,400	4,281 (AM Southbound)	.67	B
Michelson (Carlson to Harvard)	4	32,000	3,200	1,762 (PM Eastbound)	.55	A
University (Ridgeline to Culver)	4	40,000	3,200	2,840 (PM Eastbound)	.89	D
University (Mesa to Campus)	4	42,000	3,200	2,110 (PM Northbound)	.66	B
University (Mesa to California)	4	40,000	3,200	2,002 (PM Northbound)	.63	B
University (California to MacArthur)	4	39,000	3,200	2,443 (PM Southbound)	.76	C

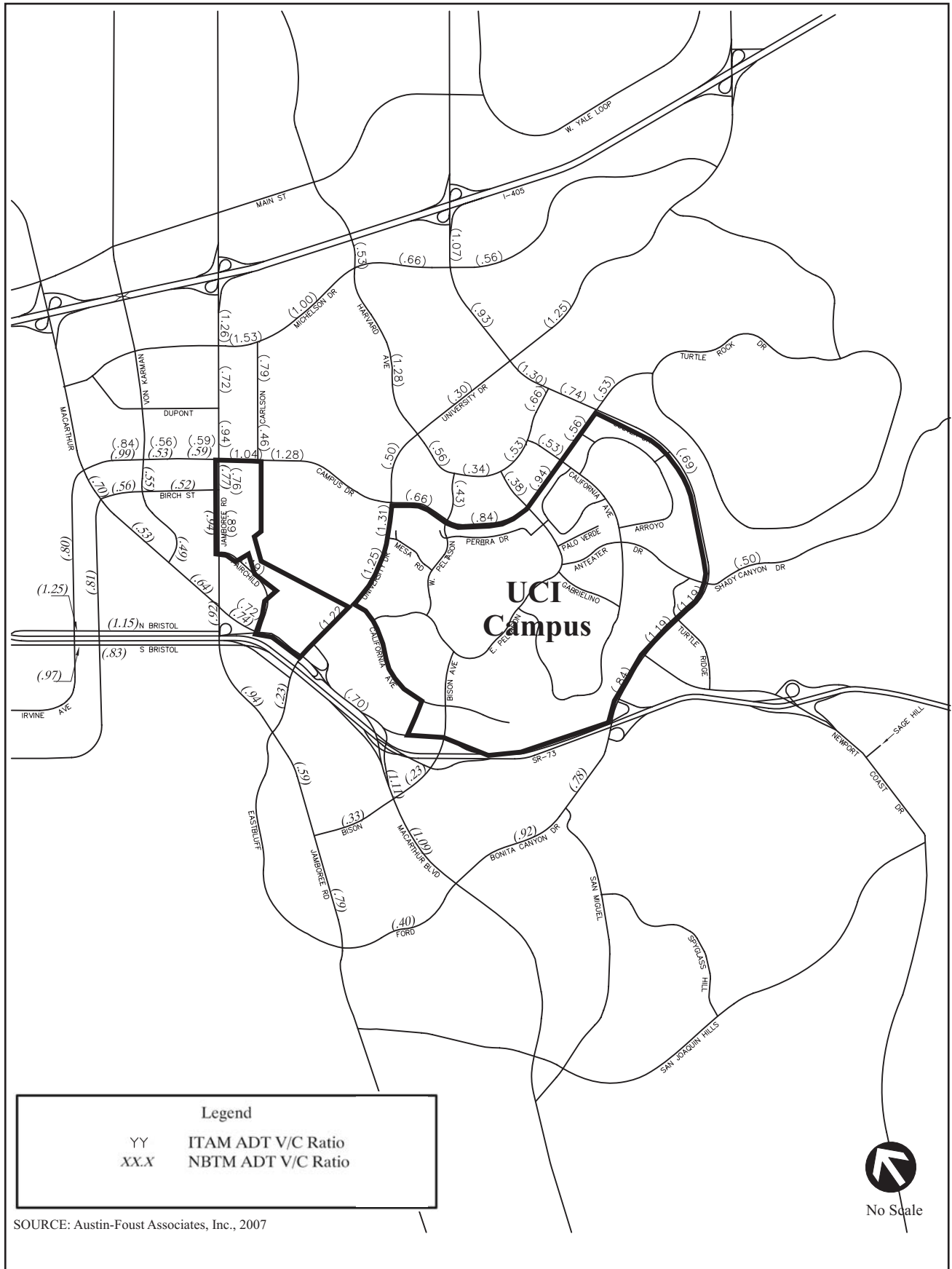
¹ The peak-hour capacity is determined by multiplying the midblock number of lanes for each direction by a lane capacity of 1,600 vehicles per hour. Where the distance between controlled intersections is one or more miles, the midblock number of lanes is multiplied by a lane capacity of 2,000 vehicles per hour (such as the case with Harvard Avenue and Campus Drive between Carlson Avenue and University Drive). (Source: Revised Peak Hour Link Analysis Methodology, December 16, 1996.)

Post-2025. Post-2025 “No Project” V/C ratios are illustrated in Figure 4.13-9 and Post-2025 “With Project” V/C ratios are illustrated in Figure 4.13-10. Based on the ADT V/C performance criteria and impact thresholds identified in this section, 11 arterial roadway segments in Irvine would be impacted by implementation of the 2007 LRDP. (As discussed above, the City of Newport Beach does not use ADT V/C ratios to determine project impacts on arterial roads; rather, project impacts are identified using peak-hour intersection performance.)



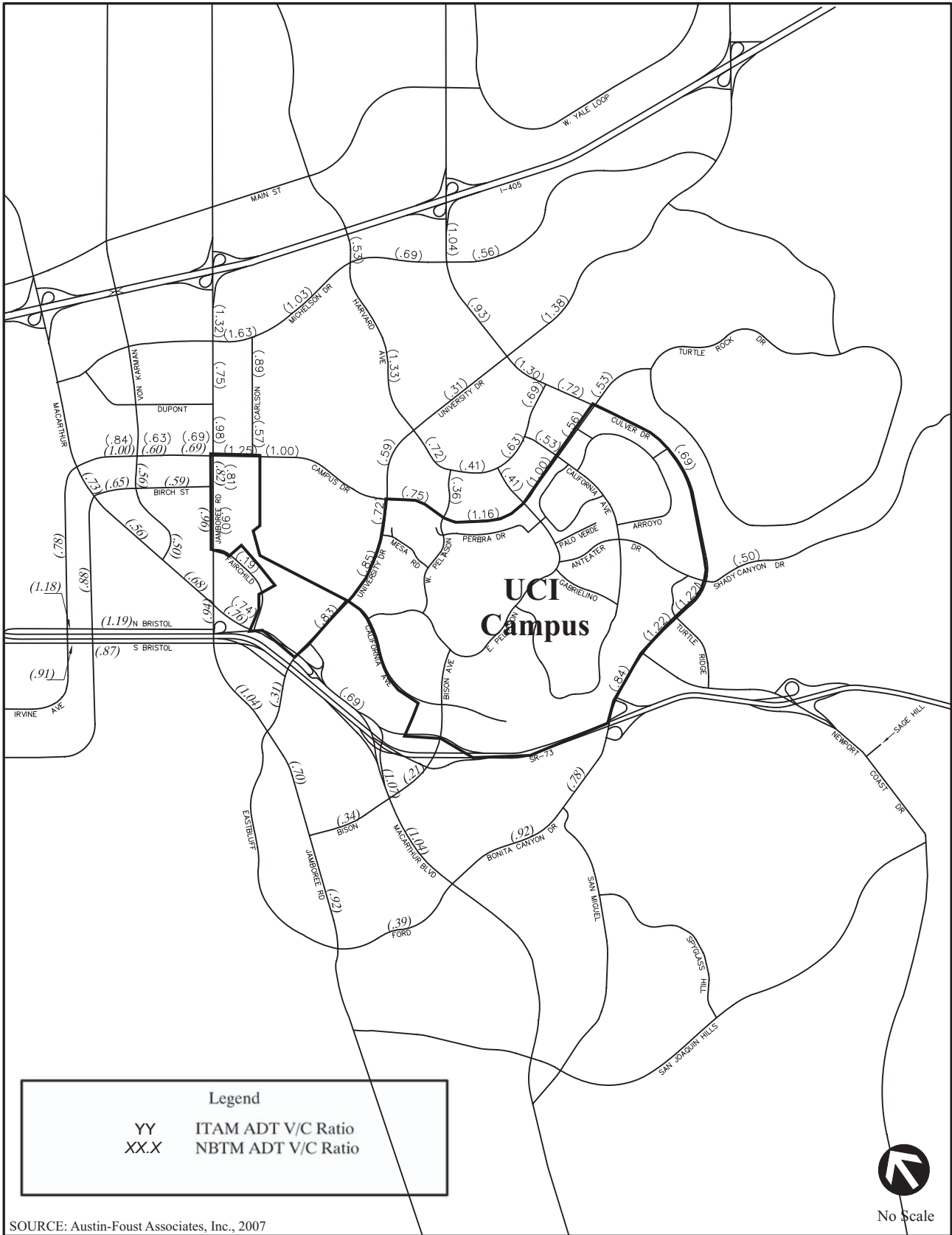
TRAFFIC FORECAST MODEL SOURCE AREAS

FIGURE 4.13-6



YEAR 2025 VOLUME-TO-CAPACITY (V/C) RATIOS WITH THE 2007 LRDP

FIGURE 4.13-8



**POST-2025 VOLUME-TO-CAPACITY (V/C)
RATIOS WITH THE 2007 LRDP**

FIGURE 4.13-10

Consistent with City of Irvine traffic study guidelines, the Irvine locations were further analyzed by examining peak-hour LOS. The resulting midblock peak-hour V/C ratios for the arterial segments under Post-2025 “With Project” conditions are summarized in Table 4.13-10. As shown, one arterial roadway segment within the LRDP Traffic Study Area (University Drive from Ridgeline Drive to Culver Drive) is projected to operate at an unacceptable LOS during the PM peak hour. This deficiency would occur with or without traffic from LRDP implementation and, therefore, would be considered a significant cumulative impact for which the contribution of LRDP traffic would be cumulatively considerable (refer to Section 4.13.4 below).

Table 4.13-10. Post-2025 “With Project” Arterial Roadway Peak Hour Analysis Summary

Roadway	Lanes	ADT	Peak Hour Capacity ¹	Highest Peak Volume	Peak Hour		
					V/C	LOS	
City of Irvine							
Bonita Canyon (Shady Canyon to Newport Coast)	4	39,000	3,200	2,120 (AM Northbound)	.66	B	
Campus (Carlson to University)	4	28,000	3,200	1,528 (PM Westbound)	.48	A	
Campus (E. Peltason to California)	4	32,000	3,200	1,670 (PM Eastbound)	.52	A	
Campus (Jamboree to Carlson)	4	35,000	3,200	2,022 (PM Westbound)	.63	B	
Campus (W. Peltason to E. Peltason)	4	37,000	3,200	1,500 (AM Eastbound)	.47	A	
Culver (I-405 to Michelson)	6	56,000	4,800	3,352 (PM Northbound)	.70	B	
Culver (Michelson to University)	6	50,000	4,800	2,626 (PM Northbound)	.55	A	
Culver (University to Harvard)	6	70,000	4,800	3,257 (PM Northbound)	.68	B	
Harvard (Michelson to University)	2	24,000	2,000	1,580 (PM Northbound)	.79	C	
Jamboree (I-405 to Michelson)	8	95,000	6,400	4,447 (AM Southbound)	.69	B	
University (Ridgeline to Culver)	4	44,000	3,200	3,110 (PM Eastbound)	.97²	E	

¹ The peak-hour capacity is determined by multiplying the midblock number of lanes for each direction by a lane capacity of 1,600 vehicles per hour. Where the distance between controlled intersections is one or more miles, the midblock number of lanes is multiplied by a lane capacity of 2,000 vehicles per hour (such as the case with Harvard Avenue). (Source: Revised Peak Hour Link Analysis Methodology, December 16, 1996.)

² Significant project impact.

Year 2025 and Post-2025 Off-Campus Intersection Analysis

Year 2025. As summarized in Table 4.13-11, peak-hour ICU values for Year 2025 were analyzed for 65 off-campus intersections within the LRDP Traffic Study Area. As shown, the following eight locations in Irvine and five locations in Newport Beach would operate at an unacceptable LOS during the AM and/or PM peak hour:

City of Irvine Intersections

Project Impact:

University Drive and Campus Drive
University Drive and California Avenue

Contribution to Cumulative Impact:

Carlson Avenue and Michelson Drive
Carlson Avenue and Campus Drive
Harvard Avenue and Michelson Drive
Culver Drive and Michelson Drive

Culver Drive and University Drive
Bonita Canyon Drive and Newport Coast Drive

City of Newport Beach Intersections

Contribution to Cumulative Impacts:

Von Karman Avenue and Campus Drive
Jamboree Road and Campus Drive
Jamboree Road and Birch Street
MacArthur Boulevard and Jamboree Road
MacArthur Boulevard and San Joaquin Hills Road

For Year 2025, traffic from implementation of the 2007 LRDP would result in significant direct impacts to the intersections of University Drive/Campus Drive and University Drive/California Avenue. Deficiencies at the other 11 intersections would occur with or without traffic from LRDP implementation and, therefore, would be considered significant cumulative impacts for which the contribution of LRDP traffic would be cumulatively considerable (refer to Section 4.13.4 below).

Post-2025. As shown in Table 4.13-11, six locations in Irvine and six locations in Newport Beach would operate at an unacceptable LOS during the AM and/or PM peak hour post-2025:

City of Irvine Intersections

Project Impact:

Carlson Avenue and Campus Drive
University Drive and Campus Drive

Contribution to Cumulative Impact:

Harvard Avenue and Michelson Drive
Culver Drive and Michelson Drive
Culver Drive and University Drive
Bonita Canyon Drive and Newport Coast Drive

City of Newport Beach Intersections

Contribution to Cumulative Impact:

Von Karman Avenue and Campus Drive
Jamboree Road and Campus Drive
Jamboree Road and Birch Street
MacArthur Boulevard and Jamboree Road
Jamboree Road and Bristol Street South
MacArthur Boulevard and San Joaquin Hills Road

For Post-2025, traffic from implementation of the 2007 LRDP would result in significant direct impacts to the intersections of Carlson Avenue/Campus Drive and University Drive/Campus Drive. Deficiencies at the other ten intersections would occur with or without traffic from LRDP implementation and, therefore, would be considered significant cumulative impacts for which the contribution of LRDP traffic would be cumulatively considerable (refer to Section 4.13.4 below).

Table 4.13-11. Off-Campus Intersection Analysis

Intersection (ID No. and Location)	Peak Hour	Existing Condition		Year 2025 Condition					Post 2025 Condition				
				No Project		With Project			No Project		With Project		
		ICU	LOS	ICU	LOS	ICU	LOS	Δ^a	ICU	LOS	ICU	LOS	Δ^a
City of Newport Beach Intersections													
9. MacArthur Bl. & Campus Dr.	AM	0.544	A	0.825	D	0.835	D	0.010	0.806	D	0.815	D	0.009
	PM	0.806	D	1.253	F	1.259	F	0.006	1.236	F	1.237	F	0.001
10. MacArthur Bl. & Birch St.	AM	.453	A	0.722	C	0.742	C	0.020	0.763	C	0.792	C	0.029
	PM	.806	D	0.829	D	0.825	D	-0.004	0.909	E	0.903	E	-0.006
11. Von Karman Av. & Campus Dr.	AM	0.583	A	0.693	B	0.717	C	0.024	0.702	C	0.740	C	0.038
	PM	0.741	C	0.931	E	0.967	E	0.036	0.949	E	0.977	E	0.028
12. MacArthur Bl. & Von Karman Avenue	AM	0.464	A	0.544	A	0.550	A	0.006	0.532	A	0.538	A	0.006
	PM	0.595	A	0.606	B	0.614	B	0.008	0.642	B	0.652	B	0.010
13. Jamboree Rd. & Campus Dr.	AM	0.560	A	0.816	D	0.847	D	0.031	0.896	D	0.937	E	0.041
	PM	0.665	B	1.091	F	1.140	F	0.049	1.145	F	1.183	F	0.038
14. Jamboree Rd. & Birch St.	AM	0.552	A	0.915	E	0.986	E	0.071	0.946	E	1.010	F	0.064
	PM	0.543	A	0.745	C	0.787	C	0.042	0.806	D	0.841	D	0.035
15. Campus Dr. & Bristol St. N.	AM	0.597	A	1.025	F	1.032	F	0.007	1.025	F	1.024	F	-0.001
	PM	0.911	E	1.072	F	1.067	F	-0.005	1.057	F	1.057	F	0.000
16. Birch St. & Bristol St. N.	AM	0.681	B	0.904	E	0.908	E	0.004	0.897	D	0.895	D	-0.002
	PM	0.655	B	0.703	C	0.730	C	0.027	0.711	C	0.725	C	0.014
17. Campus Dr. & Bristol St. S.	AM	0.651	B	0.923	E	0.930	E	0.007	0.879	D	0.894	D	0.015
	PM	0.514	A	0.873	D	0.870	D	-0.003	0.773	C	0.772	C	-0.001
18. Birch St. & Bristol St. S.	AM	0.721	C	0.477	A	0.487	A	0.010	0.489	A	0.510	A	0.021
	PM	0.633	B	0.470	A	0.466	A	-0.004	0.533	A	0.537	A	0.004
29. MacArthur Bl. & Jamboree Rd.	AM	0.640	B	0.890	D	0.917	E	0.027	0.902	E	0.936	E	0.034
	PM	0.911	E	0.956	E	1.000	E	0.044	0.988	E	1.030	F	0.042
30. Jamboree Rd. & Bristol St. N.	AM	0.786	C	0.642	B	0.656	B	0.014	0.656	B	0.683	B	0.027
	PM	0.590	A	0.588	A	0.635	B	0.047	0.627	B	0.677	B	0.050
32. Jamboree Rd. & Bristol St. S.	AM	0.668	B	0.873	D	0.896	D	0.023	0.914	E	0.942	E	0.028
	PM	0.706	C	0.835	D	0.848	D	0.013	0.856	D	0.877	D	0.021
33. Jamboree Rd. & Bayview Wy.	AM	0.239	A	0.372	A	0.372	A	0.000	0.455	A	0.451	A	-0.004
	PM	0.394	A	0.625	B	0.632	B	0.007	0.654	B	0.674	B	0.020
34. Jamboree & Eastbluff/University	AM	0.563	A	0.600	A	0.607	B	0.007	0.677	B	0.678	B	0.001
	PM	0.616	B	0.569	A	0.577	A	0.008	0.646	B	0.675	B	0.029
35. Jamboree & Bison Ave.	AM	0.482	A	0.411	A	0.420	A	0.009	0.513	A	0.517	A	0.004
	PM	0.530	A	0.559	A	0.579	A	0.020	0.615	B	0.630	B	0.015
36. Jamboree Rd. & Eastbluff/Ford Rd.	AM	0.495	A	0.802	D	0.802	D	0.000	0.802	D	0.802	D	0.000
	PM	0.589	A	0.769	C	0.769	C	0.000	0.769	C	0.769	C	0.000
46. SR-73 NB Ramps & Bison Av.	AM	0.422	A	0.518	A	0.520	A	0.002	0.522	A	0.520	A	-0.002
	PM	0.541	A	0.596	A	0.604	B	0.008	0.599	A	0.609	B	0.010
47. SR-73 SB Ramps & Bison Av.	AM	0.348	A	0.420	A	0.442	A	0.022	0.421	A	0.428	A	0.007
	PM	0.247	A	0.291	A	0.326	A	0.035	0.305	A	0.329	A	0.024
48. MacArthur Bl. & Bison Av.	AM	0.643	B	0.810	D	0.821	D	0.011	0.778	C	0.789	C	0.011
	PM	0.709	C	0.821	D	0.852	D	0.031	0.781	C	0.804	D	0.023
49. MacArthur Bl. at Ford Rd./Bonita Canyon Dr.	AM	0.804	D	0.828	D	0.833	D	0.005	0.792	C	0.801	D	0.009
	PM	0.993	E	1.023	F	1.026	F	0.003	0.988	E	0.995	E	0.007
50. MacArthur at San Joaquin Hills Rd.	AM	0.630	B	0.764	C	0.772	C	0.008	0.776	C	0.784	C	0.008
	PM	0.837	D	1.166	F	1.179	F	0.013	1.103	F	1.118	F	0.015
53. SR-73 NB Ramps & Bonita Cyn Drive	AM	0.488	A	1.065	F	1.063	F	-0.002	1.058	F	1.060	F	0.002
	PM	0.453	A	0.766	C	0.764	C	-0.002	0.767	C	0.762	C	-0.005

Table 4.13-11. Continued

Intersection (ID No. and Location)	Peak Hour	Existing Condition		Year 2025 Condition					Post 2025 Condition				
				No Project		With Project			No Project		With Project		
		ICU	LOS	ICU	LOS	ICU	LOS	Δ ^a	ICU	LOS	ICU	LOS	Δ ^a
54. SR-73 SB Ramps & Bonita Cyn Drive	AM	0.373	A	0.465	A	0.461	A	-0.004	0.469	A	0.467	A	-0.002
	PM	0.437	A	0.630	B	0.651	B	0.021	0.660	B	0.662	B	0.002
62. Newport Coast Dr & SR-73 NB Ramps	AM	0.426	A	0.647	B	0.657	B	0.010	0.645	B	0.653	B	0.008
	PM	0.280	A	0.419	A	0.413	A	-0.006	0.410	A	0.398	A	-0.012
64. Newport Coast Dr & San Joaquin Hills Road	AM	0.393	A	0.620	B	0.621	B	0.001	0.622	B	0.622	B	0.000
	PM	0.411	A	0.491	A	0.499	A	0.008	0.464	A	0.481	A	0.017
71. Newport Coast Dr & Sage Hill	AM	0.442	A	0.456	A	0.455	A	-0.001	0.448	A	0.447	A	-0.001
	PM	0.519	A	0.503	A	0.512	A	0.009	0.516	A	0.521	A	0.005
City of Irvine Intersections													
84. MacArthur Bl. & Campus Dr.	AM	0.56	A	0.66	B	0.67	B	0.01	0.64	B	0.65	B	0.01
	PM	0.78	C	0.78	C	0.78	C	0.00	0.76	C	0.76	C	0.00
105. Von Karman Av. & Campus Dr.	AM	0.60	A	0.68	B	0.70	B	0.02	0.71	C	0.75	C	0.04
	PM	0.75	C	0.76	C	0.80	C	0.04	0.78	C	0.82	D	0.04
143. Jamboree Rd. & I-405 NB Ramps	AM	0.84	D	0.67	B	0.68	B	0.01	0.57	A	0.58	A	0.01
	PM	0.88	D	0.69	B	0.70	B	0.01	0.58	A	0.58	A	0.00
144. Jamboree Rd. & I-405 SB Ramps	AM	0.86	D	0.83	D	0.83	D	0.00	0.85	D	0.86	D	0.01
	PM	0.93	E	0.84	D	0.85	D	0.01	0.74	C	0.74	C	0.00
145. Jamboree Rd. & Michelson Dr.	AM	0.63	B	0.79	C	0.79	C	0.00	0.83	D	0.84	D	0.01
	PM	0.83	D	1.13	F	1.14	F	0.01	1.15	F	1.15	F	0.00
146. Jamboree Rd. & Dupont Dr.	AM	0.52	A	0.65	B	0.68	B	0.03	0.65	B	0.69	B	0.04
	PM	0.59	A	0.72	C	0.74	C	0.02	0.74	C	0.76	C	0.02
147. Jamboree Rd. & Campus Dr.	AM	0.58	A	0.75	C	0.78	C	0.03	0.78	C	0.82	D	0.04
	PM	0.65	B	0.83	D	0.89	D	0.06	0.89	D	0.91	E*	0.02
148. Jamboree Rd. & Birch St.	AM	0.57	A	0.73	C	0.79	C	0.06	0.75	C	0.81	D	0.06
	PM	0.56	A	0.87	D	0.93	E*	0.06	0.93	E	0.97	E*	0.04
149. Jamboree Rd. & Fairchild Rd.	AM	0.71	C	0.75	C	0.81	D	0.06	0.75	C	0.80	C	0.05
	PM	0.60	A	0.72	C	0.76	C	0.04	0.73	C	0.75	C	0.02
150. Jamboree Rd. & MacArthur Bl.	AM	0.66	B	0.78	C	0.78	C	0.00	0.77	C	0.78	C	0.01
	PM	0.92	E	0.92	E	0.96	E*	0.04	0.94	E	0.98	E*	0.04
174. Carlson Av. & Michelson Dr.	AM	0.52	A	0.94	E	0.94	E	0.00	1.05	F	1.02	F	-0.03
	PM	0.58	A	0.94	E	0.96	E	0.02	1.04	F	1.03	F	-0.01
175. Carlson & Campus Dr.	AM	0.54	A	0.73	C	0.76	C	0.03	0.60	A	0.64	B	0.04
	PM	0.52	A	1.03	F	1.16	F	0.13	0.90	D	0.95	E	0.05
176. Fairchild Rd. & MacArthur Bl.	AM	0.77	C	0.81	D	0.82	D	0.01	0.80	C	0.81	D	0.01
	PM	0.72	C	0.77	C	0.78	C	0.01	0.77	C	0.77	C	0.00
188. Harvard Av. & Michelson Dr.	AM	0.70	B	0.76	C	0.79	C	0.03	0.74	C	0.77	C	0.03
	PM	0.76	C	1.04	F	1.10	F	0.06	1.04	F	1.11	F	0.07
189. Harvard Av. & University Dr.	AM	0.61	B	0.70	B	0.75	C	0.05	0.78	C	0.78	C	0.00
	PM	0.57	A	0.79	C	0.85	D	0.06	0.83	D	0.90	D	0.07
190. University Dr. & Campus Dr.	AM	0.77	C	0.82	D	0.83	D	0.01	0.87	D	0.96	E	0.09
	PM	0.75	C	0.89	D	0.94	E	0.05	0.82	D	0.86	D	0.04
192. University Dr at California Ave.	AM	0.72	C	0.77	C	0.83	D	0.06	0.80	C	0.83	D	0.03
	PM	0.73	C	0.84	D	0.91	E	0.07	0.81	D	0.87	D	0.06
193. University Dr. & MacArthur NB	AM	0.43	A	0.56	A	0.59	A	0.03	0.63	B	0.68	B	0.05
	PM	0.49	A	0.64	B	0.70	B	0.06	0.67	B	0.77	C	0.10

Table 4.13-11. Continued

Intersection (ID No. and Location)	Peak Hour	Existing Condition		Year 2025 Condition					Post 2025 Condition				
				No Project		With Project			No Project		With Project		
		ICU	LOS	ICU	LOS	ICU	LOS	Δ^a	ICU	LOS	ICU	LOS	Δ^a
194. University Dr. & MacArthur SB	AM	0.37	A	0.28	A	0.29	A	0.01	0.37	A	0.39	A	0.02
	PM	0.37	A	0.31	A	0.31	A	0.00	0.41	A	0.43	A	0.02
202. Bridge Rd. & Harvard Av.	AM	0.21	A	0.27	A	0.31	A	0.04	0.26	A	0.28	A	0.02
	PM	0.40	A	0.48	A	0.57	A	0.09	0.43	A	0.48	A	0.05
203. Bridge Rd. & Campus Dr.	AM	0.54	A	0.58	A	0.65	B	0.07	0.65	B	0.72	C	0.07
	PM	0.49	A	0.54	A	0.64	B	0.10	0.57	A	0.59	A	0.02
208. Bison Av. & SR-73 NB Ramps	AM	0.44	A	0.35	A	0.42	A	0.07	0.37	A	0.42	A	0.05
	PM	0.53	A	0.38	A	0.48	A	0.10	0.36	A	0.45	A	0.09
209. Bison Av. & SR-73 SB Ramps	AM	0.37	A	0.31	A	0.35	A	0.04	0.31	A	0.34	A	0.03
	PM	0.29	A	0.27	A	0.32	A	0.05	0.26	A	0.28	A	0.02
210. Berkeley Av. & Harvard Av.	AM	0.33	A	0.36	A	0.43	A	0.07	0.37	A	0.46	A	0.09
	PM	0.43	A	0.52	A	0.55	A	0.03	0.53	A	0.57	A	0.04
211. Berkeley Av. & Campus Dr.	AM	0.45	A	0.50	A	0.57	A	0.07	0.51	A	0.60	A	0.09
	PM	0.40	A	0.61	B	0.70	B	0.09	0.66	B	0.78	C	0.12
215. California Av. & Harvard Av.	AM	0.24	A	0.37	A	0.49	A	0.12	0.36	A	0.47	A	0.11
	PM	0.42	A	0.65	B	0.82	D	0.17	0.66	B	0.80	C	0.14
216. California Av. & Campus Dr.	AM	0.41	A	0.53	A	0.68	B	0.15	0.54	A	0.70	B	0.16
	PM	0.67	B	0.67	B	0.85	D	0.18	0.68	B	0.85	D	0.17
232. Culver Dr. & I-405 NB Ramp	AM	0.48	A	0.46	A	0.49	A	0.03	0.47	A	0.50	A	0.03
	PM	0.73	C	0.79	C	0.80	C	0.01	0.69	B	0.71	C	0.02
233. Culver Dr. & I-405 SB Ramps	AM	0.64	B	0.57	A	0.59	A	0.02	0.55	A	0.60	A	0.05
	PM	0.73	C	0.76	C	0.80	C	0.04	0.72	C	0.75	C	0.03
234. Culver Dr. & Michelson Dr.	AM	0.59	A	0.60	A	0.65	B	0.05	0.64	B	0.70	B	0.06
	PM	0.76	C	1.01	F	1.09	F	0.08	1.02	F	1.08	F	0.06
235. Culver Dr. & University Dr.	AM	0.56	A	0.68	B	0.75	C	0.07	0.64	B	0.70	B	0.06
	PM	0.78	C	0.94	E	1.03	F	0.09	0.98	E	1.06	F	0.08
236. Culver Dr. & Harvard Av.	AM	0.51	A	0.59	A	0.64	B	0.05	0.59	A	0.66	B	0.07
	PM	0.57	A	0.76	C	0.86	D	0.10	0.80	C	0.90	D	0.10
237. Culver Dr. & Campus Dr.	AM	0.64	B	0.80	C	0.79	C	-0.01	0.77	C	0.76	C	-0.01
	PM	0.66	B	0.66	B	0.66	B	0.00	0.64	B	0.66	B	0.02
238. Culver Dr. & Bonita Cyn. Rd.	AM	0.74	C	0.54	A	0.59	A	0.05	0.57	A	0.62	B	0.05
	PM	0.76	C	0.57	A	0.61	B	0.04	0.60	A	0.68	B	0.08
239. Bonita Cyn. Dr. & Newport Coast Dr.	AM	0.73	C	1.02	F	1.10	F	0.08	1.06	F	1.14	F	0.08
	PM	0.59	A	0.60	A	0.69	B	0.09	0.71	C	0.78	C	0.07
240. Bonita Cyn. Dr. & SR-73 NB Ramps	AM	0.51	A	0.64	B	0.65	B	0.01	0.63	B	0.64	B	0.01
	PM	0.47	A	0.63	B	0.65	B	0.02	0.58	A	0.60	A	0.02
241. Bonita Cyn. Dr. & SR-73 SB Ramps	AM	0.35	A	0.38	A	0.38	A	0.00	0.37	A	0.39	A	0.02
	PM	0.44	A	0.56	A	0.56	A	0.00	0.50	A	0.51	A	0.01
280. Newport Coast Dr. & SR-73 NB Ramps	AM	0.46	A	0.55	A	0.56	A	0.01	0.54	A	0.56	A	0.02
	PM	0.31	A	0.32	A	0.32	A	0.00	0.31	A	0.31	A	0.00

Notes:

a = This column is the difference between the "With Project" ICU and the "No Project" ICU.

* = LOS "E" is acceptable because intersection is located within the Irvine Business Complex (IBC).

Bold values indicate significant impacts.

Year 2025 and Post-2025 Freeway/Tollway Ramp and Mainline LOS

Year 2025. Table 4.13-12 summarizes Year 2025 AM and PM freeway/tollway peak-hour ramp volumes and V/C ratios for no-project and with-project conditions. Based on the peak-hour ramp performance criteria and impact thresholds identified in this section, no freeway/tollway ramp is forecast to be significantly impacted by traffic from implementation of the 2007 LRDP based on Year 2025 conditions.

Table 4.13-13 summarizes Year 2025 AM and PM freeway/tollway mainline peak-hour volumes and V/C ratios for no-project and with-project conditions. Based on the peak-hour mainline performance criteria and impact thresholds identified in this section, no freeway/tollway mainline segment is forecast to be significantly impacted by traffic from implementation of the 2007 LRDP based on Year 2025 conditions.

Post-2025. Table 4.13-14 summarizes Post-2025 AM and PM freeway/tollway peak-hour ramp volumes and V/C ratios for no-project and with-project conditions. Based on the peak-hour ramp performance criteria and impact thresholds identified in this section, no freeway/tollway ramp is forecast to be significantly impacted by traffic from implementation of the 2007 LRDP based on Post-2025 conditions.

Table 4.13-15 summarizes Post-2025 AM and PM freeway/tollway mainline peak-hour volumes and V/C ratios for no-project and with-project conditions. Based on the peak-hour mainline performance criteria and impact thresholds identified in this section, no freeway/tollway mainline segment is forecast to be significantly impacted by traffic from implementation of the 2007 LRDP based on Post-2025 conditions.

Table 4.13-12. Year 2025 Peak Hour Ramp Volumes and V/C Ratios

Ramp	Lanes	Peak Hour Capacity	2025 - With 2006 UCI Trips						2025 Revised LRDP					
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
			Vol	V/C	LOS	Vol	V/C	LOS	Vol	V/C	LOS	Vol	V/C	LOS
Irvine Transportation Analysis Model (ITAM)														
I-405 at Jamboree														
SB Direct On	2	3,600	607	.17	A	1,270	.35	A	622	.17	A	1,310	.36	A
SB Loop On	1	1,800	172	.10	A	280	.16	A	170	.09	A	280	.16	A
NB Direct On	2	3,600	1,160	.32	A	1,150	.32	A	1,160	.32	A	1,150	.32	A
NB Loop On	1	1,800	360	.20	A	900	.50	A	370	.21	A	900	.50	A
SB Off	3	5,400	2,750	.51	A	2,033	.38	A	2,749	.51	A	2,024	.37	A
NB Off	2	3,600	1,970	.55	A	1,182	.33	A	1,994	.55	A	1,187	.33	A
SR-73 at Bison														
SB On	1	1,800	150	.08	A	349	.19	A	170	.09	A	403	.22	A
NB On	1	1,800	162	.09	A	556	.31	A	190	.11	A	722	.40	A
SB Off	1	1,800	655	.36	A	214	.12	A	715	.40	A	244	.14	A
NB Off	1	1,800	370	.21	A	169	.09	A	455	.25	A	201	.11	A
I-405 at Culver														
SB Direct On	1	1,800	340	.19	A	610	.34	A	360	.20	A	730	.41	A
SB Loop On	1	1,800	360	.20	A	410	.23	A	360	.20	A	420	.23	A
NB Direct On	1	1,800	1,052	.58	A	469	.26	A	1,050	.58	A	471	.26	A
NB Loop On	1	1,800	1,142	.63	B	428	.24	A	1,170	.65	B	481	.27	A
SB Off	1.5	2,700	941	.35	A	1,745	.65	B	988	.37	A	1,783	.66	B
NB Off	1	1,800	549	.31	A	831	.46	A	551	.31	A	833	.46	A

Table 4.13-12. Continued

Ramp	Lanes	Peak Hour Capacity	2025 - With 2006 UCI Trips						2025 Revised LRDP					
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
			Vol	V/C	LOS	Vol	V/C	LOS	Vol	V/C	LOS	Vol	V/C	LOS
SR-73 at Bonita Cyn														
SB On	1	1,800	203	.11	A	590	.33	A	200	.11	A	620	.34	A
NB On	1	1,800	427	.24	A	160	.09	A	423	.24	A	180	.10	A
SB Off	1	1,800	242	.13	A	415	.23	A	243	.14	A	401	.22	A
NB Off	1	1,800	639	.36	A	205	.11	A	649	.36	A	206	.11	A
Newport Beach														
SR-73 at Newport Coast														
NB On	1	1,800	500	.28	A	293	.16	A	520	.29	A	307	.17	A
NB Off	1	1,800	320	.18	A	189	.11	A	343	.19	A	198	.11	A
SR-73 at Bison														
SB On	1	1,800	1,293	.72	C	586	.33	A	1,312	.73	C	661	.37	A
NB On	1	1,800	312	.17	A	961	.53	A	340	.19	A	1,056	.59	A
SB Off	1	1,800	385	.21	A	423	.24	A	427	.24	A	453	.25	A
NB Off	1	1,800	253	.14	A	1,559	.87	D	359	.20	A	1,570	.87	D
SR-73 at Bonita Cyn														
SB On	1	1,800	237	.13	A	304	.17	A	231	.13	A	334	.19	A
NB On	1	1,800	617	.34	A	203	.11	A	613	.34	A	210	.12	A
SB Off	1	1,800	145	.08	A	277	.15	A	142	.08	A	263	.15	A
NB Off	1	1,800	691	.38	A	412	.23	A	693	.39	A	401	.22	A
SR-73 at Newport Coast														
NB On	1	1,800	460	.26	A	304	.17	A	480	.27	A	318	.18	A
NB Off	1	1,800	549	.31	A	299	.17	A	572	.32	A	308	.17	A

Table 4.13-13. Year 2025 Freeway/Tollway Mainline Peak Hour Volumes and V/C Ratios

Location	Dir	Lanes	Capacity	Year 2025 No Project						Year 2025 With Proposed LRDP					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Vol	V/C	LOS	Vol	V/C	LOS	Vol	V/C	LOS	Vol	V/C	LOS
I-405 n/o Culver	NB	5+1H	11,600	15,750	1.36	F	11,140	.96	E	15,800	1.36	F	11,240	.97	E
I-405 n/o Culver	SB	4+1H	9,600	10,030	1.04	F	12,470	1.30	F	10,060	1.05	F	12,510	1.30	F
SR-73 s/o Bison	NB	5+1H	11,600	11580	1.00	E	7130	.61	C	11580	1.00	E	7180	.62	C
SR-73 s/o Bison	SB	5+1H	11,600	5560	.48	B	9580	.83	D	5600	.48	B	9590	.83	D
SR-73 s/o Bonita Canyon	NB	5+1H	11,600	11410	.98	E	6980	.60	C	11430	.99	E	6970	.60	C
SR-73 s/o Bonita Canyon	SB	5+1H	11,600	5290	.46	B	9120	.79	D	5320	.46	B	9190	.79	D

Table 4.13-14. Post-2025 Peak Hour Ramp Volumes and V/C Ratios

Ramp	Lanes	Peak Hour Capacity	Post-2025 - With 2006 UCI Trips						Post-2025 Revised LRDP					
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
			Vol	V/C	LOS	Vol	V/C	LOS	Vol	V/C	LOS	Vol	V/C	LOS
Irvine Transportation Analysis Model (ITAM)														
I-405 at Jamboree														
SB Direct On	2	3,600	587	.16	A	1,240	.34	A	594	.17	A	1,240	.34	A
SB Loop On	1	1,800	175	.10	A	280	.16	A	174	.10	A	280	.16	A
NB Direct On	2	3,600	1,163	.32	A	1,110	.31	A	1,160	.32	A	1,110	.31	A
NB Loop On	1	1,800	341	.19	A	860	.48	A	350	.19	A	860	.48	A
SB Off	3	5,400	2,751	.51	A	1,799	.33	A	2,749	.51	A	1,788	.33	A
NB Off	2	3,600	1,959	.54	A	1,163	.32	A	1,965	.55	A	1,174	.33	A
SR-73 at Bison														
SB On	1	1,800	150	.08	A	434	.24	A	160	.09	A	501	.28	A
NB On	1	1,800	151	.08	A	510	.28	A	160	.09	A	666	.37	A
SB Off	1	1,800	661	.37	A	212	.12	A	683	.38	A	212	.12	A
NB Off	1	1,800	450	.25	A	200	.11	A	533	.30	A	230	.13	A
I-405 at Culver														
SB Direct On	1	1,800	310	.17	A	680	.38	A	320	.18	A	720	.40	A
SB Loop On	1	1,800	360	.20	A	430	.24	A	360	.20	A	440	.24	A
NB Direct On	1	1,800	1,050	.58	A	466	.26	A	1,050	.58	A	467	.26	A
NB Loop On	1	1,800	1,060	.59	A	395	.22	A	1,100	.61	B	427	.24	A
SB Off	1.5	2,700	928	.34	A	1,685	.62	B	948	.35	A	1,704	.63	B
NB Off	1	1,800	553	.31	A	830	.46	A	603	.34	A	832	.46	A
SR-73 at Bonita Cyn														
SB On	1	1,800	215	.12	A	660	.37	A	210	.12	A	660	.37	A
NB On	1	1,800	413	.23	A	160	.09	A	413	.23	A	170	.09	A
SB Off	1	1,800	232	.13	A	370	.21	A	245	.14	A	356	.20	A
NB Off	1	1,800	659	.37	A	239	.13	A	669	.37	A	230	.13	A
Newport Beach														
SR-73 at Newport Coast														
NB On	1	1,800	500	.28	A	298	.17	A	510	.28	A	329	.18	A
NB Off	1	1,800	317	.18	A	170	.09	A	331	.18	A	180	.10	A
SR-73 at Bison														
SB On	1	1,800	1,294	.72	C	637	.35	A	1,301	.72	C	711	.40	A
NB On	1	1,800	311	.17	A	961	.53	A	310	.17	A	1,000	.56	A
SB Off	1	1,800	384	.21	A	421	.23	A	395	.22	A	421	.23	A
NB Off	1	1,800	321	.18	A	1,564	.87	D	408	.23	A	1,581	.88	D
SR-73 at Bonita Cyn														
SB On	1	1,800	243	.14	A	351	.20	A	238	.13	A	353	.20	A
NB On	1	1,800	603	.34	A	200	.11	A	603	.34	A	200	.11	A
SB Off	1	1,800	141	.08	A	232	.13	A	141	.08	A	230	.13	A
NB Off	1	1,800	694	.39	A	419	.23	A	701	.39	A	410	.23	A
SR-73 at Newport Coast														
NB On	1	1,800	460	.26	A	309	.17	A	470	.26	A	340	.19	A
NB Off	1	1,800	546	.30	A	280	.16	A	560	.31	A	290	.16	A

Table 4.13-15. Post-2025 Freeway/Tollway Mainline Peak Hour Volumes and V/C Ratios

Location	Dir	Lanes	Capacity	Post-2025 No Project						Post-2025 With Proposed LRDP					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Vol	V/C	LOS	Vol	V/C	LOS	Vol	V/C	LOS	Vol	V/C	LOS
I-405 n/o Culver	NB	5+1H	11,600	14,910	1.29	F	10,580	.91	E	14,930	1.29	F	10,650	.92	E
I-405 n/o Culver	SB	4+1H	9,600	9,390	.98	E	11,670	1.22	F	9,400	.98	E	11,690	1.22	F
SR-73 s/o Bison	NB	5+1H	11,600	12900	1.11	F	8010	.69	C	12970	1.12	F	8040	.69	C
SR-73 s/o Bison	SB	5+1H	11,600	6190	.53	C	10750	.93	E	6210	.54	C	10790	.93	E
SR-73 s/o Bonita Canyon	NB	5+1H	11,600	12790	1.10	F	7900	.68	C	12860	1.11	F	7910	.68	C
SR-73 s/o Bonita Canyon	SB	5+1H	11,600	5960	.51	C	10470	.90	E	5950	.51	C	10530	.91	E

On-Campus Circulation Analysis

Because full implementation of the 2007 LRDP is expected to occur by 2025-26, the trip generation assumptions used to analyze the impact of the 2007 LRDP on the on-campus roadway system apply to both Year 2025 and Post-2025 conditions. Figure 4.13-11 illustrates the estimated ADT volumes for the Main Campus circulation system under the 2007 LRDP. To verify the adequacy of existing and future on-campus intersections to accommodate LRDP traffic volumes, peak-hour ICU values were calculated for 19 intersections that are signalized or may be candidates for future signalization. As identified in Table 4.13-16, all on-campus intersections would operate at LOS D or better under the 2007 LRDP. Therefore, impacts to the on-campus circulation system due to 2007 LRDP traffic would be less than significant.

Implementation of the 2007 LRDP Circulation Element would include traffic signal improvements, roadway median modifications, intersection improvements, additional turning lanes, and roadway widening involving modifications to curb and gutter, sidewalks, parkway and median landscaping, streetlights and the installation or relocation of underground utilities. These improvements would occur within or directly adjacent to existing campus roadways, and the scope of environmental impacts resulting from these improvements and enhancements are addressed within the environmental analysis included in this document.

UCI will continue to monitor the on-campus circulation network LOS to determine if on-campus intersection or roadway improvements are needed as a result of additional traffic generated by the 2007 LRDP. UCI will continue to implement transportation policy changes or physical improvements to maintain performance to acceptable levels. Consistent with LRDP Circulation Element goals to enhance vehicle access and campus mobility while retaining a pedestrian-friendly campus environment, UCI will continue to pursue TDM measures including restrictive parking policies; promoting bicycling, walking, shuttles, and other alternative transportation modes; and signal and intersection enhancements to improve on-campus circulation system LOS prior to adding travel lanes to existing campus roadways.

Future projects under the 2007 LRDP that serve special event needs, including an arena or other large assembly functions, would undergo project-specific special event traffic analyses as a part of the project-level environmental review process to identify physical improvements and management systems required to serve event-generated traffic.

Impact Tra-1A

Implementation of the 2007 LRDP would result in significant direct traffic impacts at two off-campus intersections in Year 2025 and at two off-campus intersections Post-2025.

Impact Tra-1B

Implementation of the 2007 LRDP would result in significant cumulative traffic impacts at 11 off-campus intersections in Year 2025, and at one off-campus arterial roadway and 10 off-campus intersections Post-2025 (refer to Section 4.13.4 below).

Mitigation Measures

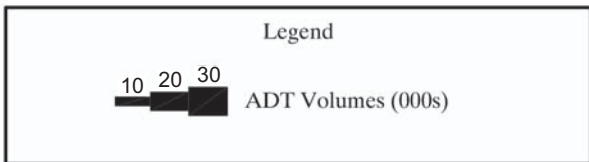
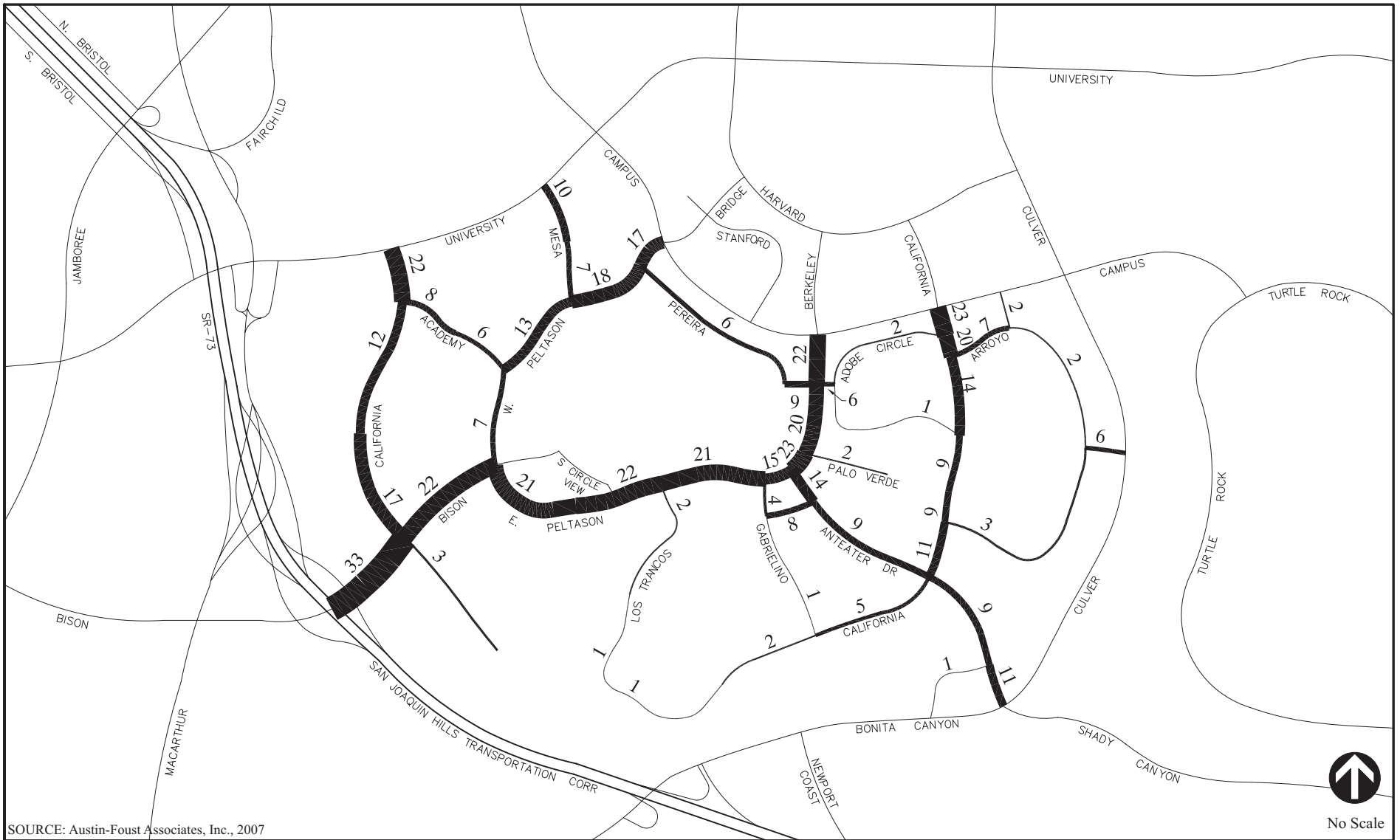
A series of mitigation measures is described below to reduce the direct and cumulative impacts resulting from 2007 LRDP traffic to a level of Less than Significant. LRDP traffic volumes are projected to increase incrementally over a long planning horizon (2007-2025). The following measures identify a program to monitor LRDP traffic generation, reduce peak-hour trips, and/or participate in roadway improvements to mitigate off-campus impacts (Table 3.13-17).

CEQA provides that an agency can mitigate its contribution to local and regional environmental impacts by contributing its “fair share” of funding to mitigation measures designed to alleviate the identified impact (CEQA Guidelines §15130(a)(3)). The UCITP has been formulated as UCI’s “fair share” mechanism for funding its proportional share of the transportation improvements identified in Table 4.13-17. The UCITP establishes the “fair share” mechanism through which off-campus transportation improvements will be funded by UCI to mitigate significant impacts resulting from 2007 LRDP traffic. UCITP improvements are “tiered” as described below:

- Tier 1 - Financial participation in improvements at locations shown to have a significant direct impact from 2007 LRDP traffic.
- Tier 2 - Financial participation in improvements at locations shown to have significant cumulative impacts, for which the 2007 LRDP traffic contribution is considerable.

The UCITP will be administered by UCI through the collection and management of transportation fees from on-campus “for-profit” development or other campus development as determined by UCI. UCI will contribute UCITP fees to the cities of Irvine and Newport Beach to fund UCI’s share of costs of UCITP transportation improvements identified in Table 4.13-17. UCI’s share of funding will be determined by the proportional share of LRDP traffic volumes as a percentage of total traffic volumes at the impacted UCITP intersections. UCI will monitor UCITP fee levels and adjust fees accordingly to reflect the cost of needed improvements and to be commensurate with transportation fee levels established by local jurisdictions. UCITP fee levels will be established with the objective of maintaining fee levels that are equivalent to fees collected for similar development projects off-campus. The existing Mitigation Measure 123 traffic fee program (developed as a result of the 1989 LRDP) will be updated and replaced by the UCITP (with similar objectives), as enforced by Mitigation Measures Tra-1D and Tra-1E below.

In addition to funding for off-campus roadway improvements provided through UCITP fees, UCI also generates approximately \$2 million per year in Measure M Transportation Funds which are used to fund off-campus transportation improvements to serve City and regional transportation needs. UCI will generate in excess of \$37 million in Measure M transportation funds between 2007 and 2025. In addition, UCI has contributed over \$3 million in fees to the Transportation Corridors Agencies (TCA) to fund Toll Road improvements to serve the campus and region, and UCI will continue to pay Toll Road fees throughout implementation of the 2007 LRDP as enforced through Mitigation Measure Tra-1H below. Finally, UCI “for-profit” development on the North Campus will pay UCITP fees equivalent to the City of Irvine IBC Fee Program.



ON-CAMPUS ADT VOLUMES WITH 2007 LRDP

FIGURE 4.13-11

Table 4.13-16. On-Campus Intersection Analysis Summary

Intersection	Peak Hour	Existing Condition		2007 LRDP 2025-26	
		ICU	LOS	ICU	LOS
6. E. Peltason Dr. & Pereira Dr.	AM	0.41	A	0.53	A
	PM	0.48	A	0.53	A
7. Palo Verde Rd. & E. Peltason Dr.	AM	0.39	A	0.40	A
	PM	0.50	A	0.59	A
8. Gabrielino Dr. & E. Peltason Dr.	AM	0.47	A	0.33	A
	PM	0.60	A	0.43	A
9. Los Trancos & E. Peltason Dr.	AM	0.42	A	0.68	B
	PM	0.47	A	0.84	D
10. Peltason Dr. & Bison Ave.	AM	0.57	A	0.60	A
	PM	0.66	B	0.64	B
11. W. Peltason Dr. & Academy Way	AM	0.40	A	0.29	A
	PM	0.58	A	0.50	A
12. Mesa Rd. & W. Peltason Dr.	AM	0.36	A	0.41	A
	PM	0.52	A	0.60	A
13. Pereira Dr. & W. Peltason Dr.	AM	0.32	A	0.31	A
	PM	0.54	A	0.45	A
16. California Ave. & Bison Ave.	AM	0.44	A	0.72	C
	PM	0.73	C	0.81	D
17. California Ave. & Academy Way	AM	0.51	A	0.45	A
	PM	0.46	A	0.46	A
18. S. Circle View & E. Peltason Dr.	AM	0.43	A	0.38	A
	PM	0.47	A	0.48	A
19. Pereira Dr. & Pereira Dr.	AM	0.33	A	0.34	A
	PM	0.38	A	0.40	A
20. California Ave. & Adobe Circle N.	AM	0.25	A	0.41	A
	PM	0.59	A	0.68	B
22. California Ave. & Arroyo Dr N.	AM	0.24	A	0.43	A
	PM	0.43	A	0.79	C
23. California Ave. & Adobe Circle S.	AM	-	-	0.61	B
	PM	-	-	0.61	B
25. California Ave. & Arroyo Dr S.	AM	-	-	0.27	A
	PM	-	-	0.23	A
26. Arroyo Dr. & Palo Verde Rd.	AM	-	-	0.17	A
	PM	-	-	0.20	A
27. Anteater Dr. & E. Peltason Dr.	AM	-	-	0.61	B
	PM	-	-	0.90	D
28. California Ave. & Anteater Dr.	AM	-	-	0.47	A
	PM	-	-	0.49	A

Table 4.13-17 presents the intersection and roadway links included in UCITP for Year 2025 and Post-2025 conditions. Feasible measures are identified to mitigate the significant direct and cumulative traffic impacts associated with the 2007 LRDP to an acceptable LOS based on City of Irvine or City of Newport Beach LOS standards for the impacted facilities, as appropriate. As the identified improvements are not within the jurisdiction of UCI, and would be planned, designed, and implemented by other entities including the City of Irvine and City of Newport Beach, the final configuration of future transportation improvements may vary from those identified in Table 4.13-7. Detailed planning, environmental analysis and engineering studies for some of these improvements, including evaluation of secondary effects related to right-of-way acquisition and other impacts, has not been completed; therefore, the implementing agency has not committed to all identified improvements. If any improvement described herein is found to be ineffective or infeasible, and alternative measures are determined to be required to achieve an acceptable LOS, UCI will work in collaboration with the public agency to implement alternative improvements.

Table 4.13-17. UCITP Improvements

Tier 1. Off-Site Locations with LRDP Project Impacts	Traffic Model Year	Measures identified to mitigate project impacts to acceptable LOS
Carlson Avenue at Campus Drive (Irvine)	Post 2025	Construct additional eastbound left turn lane
University Drive at Campus Drive (Irvine)	2025/Post 2025	Construct additional northbound right turn lane and an additional westbound left turn lane
University Drive at California Avenue (Irvine)	2025	Convert 2 nd westbound left to shared 2 nd westbound left/2 nd westbound right,

Tier 2. Off-campus locations with cumulative impacts to which LRDP is contributing		Measures identified to mitigate cumulative impacts to “without project” levels
Harvard Avenue at Michelson Drive (Irvine)	2025/Post 2025	Construct de facto northbound right turn lane
Carlson Avenue at Michelson Drive (Irvine)	2025	Construct additional westbound through lane.
Culver Drive at Michelson Drive (Irvine)	2025/Post 2025	Construct additional northbound through lane and an additional eastbound through lane and eastbound de facto right turn lane
Culver Drive at University Drive (Irvine)	2025/Post 2025	For year 2025, construct an additional northbound left turn lane and an additional southbound through lane, and for Post-2025 construct an additional northbound through lane
Bonita Canyon Drive at Newport Coast Drive (Irvine)	2025/Post 2025	Construct additional westbound right turn lane
University Drive link between Culver Drive and Ridgeline Drive (Irvine)	Post 2025	Construct additional westbound travel lane
Von Karman Avenue at Campus Drive (Newport Beach))	2025/Post 2025	Construct additional eastbound left turn lane and remove free eastbound right
Jamboree Road at Campus Drive (Newport Beach)	2025/Post 2025	Construct westbound and northbound right turn lanes with right turn overlap and for year 2025 only construct an additional southbound right turn lane
Jamboree Road at Birch Street (Newport Beach)	2025/Post 2025	Construct additional southbound through lane
Jamboree Road at Bristol Street South (Newport Beach)	Post 2025	Construct additional eastbound left turn lane
MacArthur Boulevard at Jamboree Road (Newport Beach)	2025/Post 2025	Construct additional eastbound through lane
MacArthur Boulevard at San Joaquin Hills Road (Newport Beach)	2025/Post 2025	Construct additional southbound left turn lane

Funding UCI's share of the improvements identified in Table 4.13-17 through implementation of the UCITP would mitigate 2007 LRDP off-campus traffic impacts. If UCITP fees collected are insufficient to fund UCI's share of improvements to an impacted facility, then implementation of Mitigation Measure Tra-1F would reduce LRDP traffic impacts to a level of Less than Significant.

- 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 policies 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.
- Tra-1B** UCI will continue to pursue the implementation of affordable on-campus housing to reduce peak-hour commuter trips to the 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.
- 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.
- Tra-1E** UCI will collect UCITP traffic fees from "for-profit" development projects on campus or other campus development as determined by the University. Fees will be provided to the City of Irvine, City of Newport Beach, or other public agencies to fund UCI's share of UCITP improvements when the improvements are implemented, as provided in mitigation measure Tra-1D.
- 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.
- 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.

- 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.
- 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.
- 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.

4.13.3.2 ISSUE 2 – PARKING CAPACITY

Transportation, Traffic, and Parking Issue 2 Summary

Would implementation of the 2007 LRDP result in inadequate parking capacity or impact off-campus parking supply?

Impact: With implementation of mitigation measures Tra-1A, Tra-1B, Tra-1C, and Tra-1I, the 2007 LRDP would not impact the on-campus parking supply.

Mitigation: No additional mitigation is required.

Significance Before Mitigation: Less than significant.

Significance After Mitigation: Not applicable.

Standards of Significance

Based on Appendix G of the CEQA Guidelines, implementation of the 2007 LRDP may have a significant adverse impact if it would result in inadequate parking capacity. UCI maintains a 90 percent peak parking occupancy based on parking space utilization and other factors that are monitored on an annual basis. Therefore, inadequate parking capacity would occur if the on-campus parking supply were reduced to below the 90 percent peak parking occupancy.

Impact Analysis

On-Campus Parking Capacity. On-campus housing is served with parking supply that is distinct from the commuter parking supply. With projected increases in student enrollment and employment of additional faculty and staff, the 2007 LRDP would result in an increase in commuter parking demand. At full implementation, the number of commuter and visitor parking spaces accommodated in the LRDP

would be 16,500 (see Figure 4.13-5). In accordance with UC Sustainable Transportation Policy, a business case analysis would be conducted for any proposed on-campus parking structure. Several factors may influence target parking space ratios in the future, including parking space utilization, TDM participation and objectives, and other factors. If it is determined that projects implemented under the 2007 LRDP have the potential to result in temporary and localized reductions in on-campus parking supply, then operational and policy measures would be implemented by UCI (e.g. changes in parking permit allocation, higher parking lot utilization, including additional TDM measures, perimeter parking with expanded shuttle service) to increase supply and/or reduce the demand for parking and to maintain an overall 90 percent peak parking occupancy throughout the campus. Therefore, no significant on-campus parking impact is anticipated to occur with implementation of the 2007 LRDP.

During the 2007 LRDP planning horizon, construction of new facilities could result in the elimination of parking spaces in existing parking lots and/or structures to provide construction access, parking or material staging. Due to limited land area within the academic core, parking for construction employees is generally provided in outer campus staging areas. Prior to UCI approval of construction documents for projects implemented under the 2007 LRDP, construction parking and staging areas would be identified and approved to ensure that adequate staging and parking areas are provided to limit impacts on accessibility and parking for the general campus community. Therefore, no significant parking impact is anticipated to occur as a result of construction activities associated with implementation of the 2007 LRDP.

Off-Campus Parking Capacity. The 2007 LRDP parking space program would accommodate all campus parking needs on site and would not rely on off-campus locations to meet campus parking demand. Areas adjacent to the campus consist of master planned residential communities, including housing and commercial retail areas. Parking within these off-campus areas is controlled by permit or other regulation, and there is no significant on-street parking allowed in the campus vicinity. As a result, there is no off-campus parking capacity available to serve the LRDP.

Mitigation Measures

With implementation of mitigation measures Tra-1A, Tra-1B, Tra-1C, and Tra-1I, impacts to parking supply associated with implementation of the 2007 LRDP would be reduced to a level of Less than Significant. Therefore, no additional mitigation measures are required.

4.13.3.3 ISSUE 3 – ALTERNATIVE TRANSPORTATION PLANS, POLICIES, AND PROGRAMS

Transportation, Traffic, and Parking Issue 3 Summary

Would implementation of the 2007 LRDP conflict with applicable policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Impact: With implementation of mitigation measures Tra-1A, Tra-1B, Tra-1C, and Tra-1I, the 2007 LRDP is not likely to conflict with adopted policies, plans, or programs supporting alternative transportation.

Mitigation: No additional mitigation is required.

Significance Before Mitigation: Less than significant

Significance After Mitigation: Not applicable.

Standards of Significance

For the purposes of this EIR, implementation of the 2007 LRDP may have a significant adverse impact if it would conflict with applicable UC and UCI policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Impact Analysis

As discussed in Section 4.13.1.3 above, UCI administers an extensive program of TDM measures that have been successful in achieving AVR of 1.9, which exceeds the AQMD regional standard of 1.7. UCI will continue to operate and expand its TDM program to 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. All LRDP development would comply with the UC Sustainable Transportation Policy as described in 4.13.2.2 above. Implementation of campus-wide TDM programs would be enforced and monitored through mitigation measures Tra-1A, Tra-1B, Tra-1C, and Tra-1I. Therefore, no significant impact would occur.

Mitigation Measures

With implementation of mitigation measures Tra-1A, Tra-1B, Tra-1C, and Tra-1I, impacts to UCI's alternative transportation plans, policies and programs from commuter traffic associated with implementation of the 2007 LRDP would be reduced to a level of Less than Significant. Therefore, no additional mitigation measures are required.

4.13.4 CUMULATIVE IMPACTS AND MITIGATION

Transportation, Traffic, and Parking Cumulative Issue Summary

Would implementation of the 2007 LRDP have a cumulatively considerable contribution to a cumulative transportation, traffic, or parking impact in light of General Plan buildout?

<u>Cumulative Impact</u>	<u>Significance</u>	<u>LRDP Contribution</u>
Traffic Increases: Regional decreases in traffic LOS.	Significant.	Not cumulatively considerable with implementation of mitigation measures Tra-1A through Tra-1J.
Parking Capacity: Because the 2007 LRDP would not result in inadequate parking capacity in the surrounding vicinity, there is no analysis of cumulative impacts.	Significant.	Not cumulatively considerable.
Alternative Transportation Programs: Because the 2007 LRDP would not result in regional conflicts with alternative transportation plans and policies, there is no analysis of cumulative impacts.	Significant.	Not cumulatively considerable

4.13.4.1 TRAFFIC INCREASES

The geographic context for the analysis of cumulative traffic impacts includes the LRDP Traffic Study Area (Figure 4.13-1), which receives traffic volumes resulting from buildout of the cities of Irvine and Newport Beach. In addition, cumulative impacts are based on the future traffic volumes estimated by SCAG, which includes population and socio-economic projections for all of Orange County. According to Tables 4.13-10 and 4.13-11, significant cumulative traffic impacts are projected for the following segments and intersections under the Year 2025 and Post-2025 “Without Project” scenarios:

Year 2025 Intersections

Carlson Avenue and Michelson Drive
 Carlson Avenue and Campus Drive
 Harvard Avenue and Michelson Drive
 Culver Drive and Michelson Drive
 Culver Drive and University Drive
 Bonita Canyon Drive and Newport Coast Drive
 Von Karman Avenue and Campus Drive
 Jamboree Road and Campus Drive
 Jamboree Road and Birch Street
 MacArthur Boulevard and Jamboree Road
 MacArthur Boulevard and San Joaquin Hills Road

Post-2025 Segments

University Drive from Ridgeline Drive to Culver Drive

Post-2025 Intersections

Harvard Avenue and Michelson Drive
 Culver Drive and Michelson Drive
 Culver Drive and University Drive
 Bonita Canyon Drive and Newport Coast Drive
 Von Karman Avenue and Campus Drive

Jamboree Road and Campus Drive
Jamboree Road and Birch Street
MacArthur Boulevard and Jamboree Road
Jamboree Road and Bristol Street South
MacArthur Boulevard and San Joaquin Hills Road

Cumulative impacts associated with increases in traffic and exceedence of LOS standards due to on- and off-campus projects under the Year 2025 and Post-2025 “With Project” scenarios are discussed in detail in Section 4.13.3.1. The contribution of traffic from implementation of the 2007 LRDP would be cumulatively considerable at the locations listed above; however, UCI’s contribution to these significant cumulative impacts would be reduced to a level of Less than Significant by implementation of the mitigation measures identified in Section 4.13.3.1 above, including the proposed UCITP and UCI’s contributions to regional mitigation programs, such as Toll Road fee programs and Measure M Transportation Program Sales Tax generation.

UCI also would continue to operate and expand its alternative transportation programs to reduce vehicle trips to campus, as required by mitigation measure Tra-1A, Tra-1B, Tra-1C, Tra-1D, Tra-1I and Tra-2; therefore, implementation of the 2007 LRDP would not have a cumulatively considerable contribution to these issues.

4.13.4.2 PARKING CAPACITY

The geographic context for the analysis of cumulative parking impacts includes all available public parking areas in the developed communities surrounding UCI. It is not necessary to establish whether there is a regional parking demand deficiency in the vicinity of UCI resulting in a significant cumulative impact because, as discussed in Section 4.13.3.2 above, the 2007 LRDP parking space program would accommodate all campus parking needs on site and would not rely on off-campus locations to meet campus parking demand. Areas adjacent to the campus consist of master planned residential communities, including housing and commercial retail areas. Parking within these off-campus areas is controlled by permit or other regulation, and there is no significant on-street parking allowed in the campus vicinity. As a result, there is no off-campus parking capacity available to serve the LRDP. Therefore, implementation of the 2007 LRDP would not have a cumulatively considerable contribution to significant cumulative impacts related to off-campus parking demand.

4.13.4.3 ALTERNATIVE TRANSPORTATION PROGRAMS

The geographic context for the analysis of cumulative impacts to alternative transportation programs includes the LRDP Traffic Study Area (Figure 4.13-1). It is not necessary to establish whether there is a regional deficiency in the ability of the communities surrounding UCI to meet their alternative transportation goals resulting in a significant cumulative impact because, as discussed in Sections 4.13.1.3 and 4.13.3.3 above, UCI administers an extensive program of TDM measures that have been successful in achieving AVR of 1.9, which exceeds the AQMD regional standard of 1.7. UCI will continue to operate and expand its TDM program to 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. All LRDP development would comply with the UC Sustainable Transportation Policy as described in 4.13.2.2 above. Implementation of campus-wide TDM programs would be enforced and monitored through mitigation measures Tra-1A, Tra-1B, Tra-1C, and Tra-1I. Therefore, implementation of the 2007 LRDP would not have a cumulatively considerable contribution to significant cumulative impacts related to regional alternative transportation program deficiencies.

4.13.5 CEQA CHECKLIST ITEMS ADEQUATELY ADDRESSED IN INITIAL STUDY

Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Development associated with the 2007 LRDP would not change existing air traffic volumes nor affect existing air traffic patterns in any measurable way. No impact would occur and no further analysis is required.

Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Implementation of the 2007 LRDP is anticipated to increase vehicular traffic on-and off-campus. However, design features would be compatible with existing campus transportation plans and adjacent land uses. Therefore, no impacts would occur from hazards due to design features or incompatible land uses.

Would the project result in inadequate emergency access?

Development associated with implementation of the 2007 LRDP is subject to review by the UCI Fire Marshal. Prior to final plan approval, the Fire Marshal reviews all projects to ensure, among other things, that adequate fire and emergency access is designed into the projects. Projects cannot be bid for construction until the Fire Marshal signs off on the plans. Therefore, no impact would occur and no further analysis is required; however, emergency access is addressed further in Section 4.6 of this EIR.

4.13.6 REFERENCES

Austin-Foust Associates, Inc. 2007. University of California, Irvine Long Range Development Plan 2007 Update Traffic Study. Prepared for University of California, Irvine. May 11, 2007.

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