

MEMORANDUM

Engineering

DATE: 5/15/2020

TO: Chris Scully
FROM: Nathan Mustafa

RE: Approval of Traffic Impact Analysis: AC Marriott Mission Inn

We have reviewed the Traffic Impact Analysis (TIA) prepared for the proposed AC Marriott to be located at Mission Inn Ave & Lime St. The project is proposed to consist of 219 hotel rooms, and 12 TSF of general office. The project can be presumed to have no significant impact on vehicle miles traveled because of its location within a Transit Priority Area and compliance with draft City thresholds & guidelines for VMT analysis approved by the City Planning Commission on 5/14/2020 (to be reviewed by the City Council on 6/16/2020 prior to the state mandated 7/1/2020 VMT adoption date.

The report methodology is consistent with current guidelines and practices for traffic impact studies:

Conditions of Approval:

1. The project shall install a diagonal crosswalk at the intersection of Mission Inn Ave./Lemon St. including all necessary signage, striping, ADA ramp, and traffic signal modifications. The crosswalk will allow patrons of the proposed hotel to efficiently cross Mission Inn Avenue while heading towards destinations such as the Convention Center.
2. During the City festivals, Mission Inn Ave. and Lemon St. will be closed and project traffic will be circulated through the project's secondary driveway at the alleyway. The rolling gates shall be opened for hotel traffic. Additionally, the hotel shall provide circulation information in the lobby area to inform guests of the appropriate detours.

MARRIOTT AC/RESIDENCE INN & CREATIVE OFFICE AT THE HISTORIC FIRE STATION TRAFFIC IMPACT ANALYSIS

CITY OF RIVERSIDE, CALIFORNIA

FEBRUARY 19, 2020

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TRAMES SOLUTIONS INC.

(0232-0003-02)

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AC MARRIOTT/RESIDENCE INN & CREATIVE OFFICE AT THE HISTORIC FIRE STATION

TRAFFIC IMPACT ANALYSIS

CITY OF RIVERSIDE, CALIFORNIA

1.0 INTRODUCTION

A. Purpose of the TIA and Study Objectives

The purpose of this traffic impact analysis (TIA) is to evaluate the traffic impacts of the proposed AC Marriott/Residence Inn & Creative Office at the Historic Fire Station (AC Marriott/Residence Inn) development. The project is proposed to be developed with a 219 room business hotel and 12,000 sf of office space. The site is located south of Mission Inn Avenue between Lemon Street and Lime Street in the City of Riverside.

Study objectives include the following:

Existing (2020) Traffic. Existing traffic will be counted to determine current conditions. This constitutes the environmental setting for a CEQA analysis at the time that the hearing body reviews the project. Traffic count data shall be new or recent. In some cases, data up to one year old may be acceptable with the approval of the City of Riverside Engineering Department. Any exception to this must be requested prior to approval of the scoping agreement

Existing (2020) Plus Project Traffic. Traffic generated by the proposed project will be added to existing traffic counts to identify and analyze impacts on the circulation system. This analysis has been conducted based on the CEQA requirements for evaluating direct project related impacts.

Existing + Ambient + Cumulative (EAC 2021). Traffic generated by other approved projects (or projects that are proposed and in the review process, but not yet fully approved) in the study area shall be identified and added to the baseline future conditions without the traffic due to the proposed project. This “no project” scenario will be analyzed, and a determination made if improvements funded through an approved funding mechanism (TUMF, DIF, CFD, RBBB etc.) can accommodate the cumulative traffic at the target Level of Service (LOS) identified in the General Plan. If the “funded” improvements can provide the target LOS, payment into the fee program will be considered as cumulative mitigation through the conditions of approval. Other improvements needed beyond the “funded” improvements (such as localized improvements to non-TUMF facilities) should be identified as such.

Existing + Ambient + Cumulative + Project (EACP 2021). Traffic generated by the proposed project shall be added to the EAC or “no project” condition identified above. Impacts identified beyond those required to address the “no project” conditions shall be considered direct impacts by the project and shall be the responsibility of the project.

B. Site Location and Study Area

The project site is generally located south of Mission Inn Avenue between Lemon Street and Lime Street in the City of Riverside. Figure 1-A illustrates the site location and the traffic analysis study area.

In general, the study area shall include any intersection of Collector or higher classification street with another Collector roadway or higher classification street, at which the proposed project will add 50 or more peak hour trips. Pursuant to the attached scoping agreement (see Appendix “A”) and discussions with City of Riverside staff, the study area include the following existing and future intersections:

STUDY AREA INTERSECTIONS	
1.	Lemon St./Mission Inn Ave.
2.	Lemon St./University Ave.
3.	Lime St./Mission Inn Ave.
4.	Lime St./University Ave.
5.	Lime St./Alleyway
6.	Lemon St./Alleyway
7.	Lemon St./Project Driveway

C. Development Project Identification

1. Project Size and Description

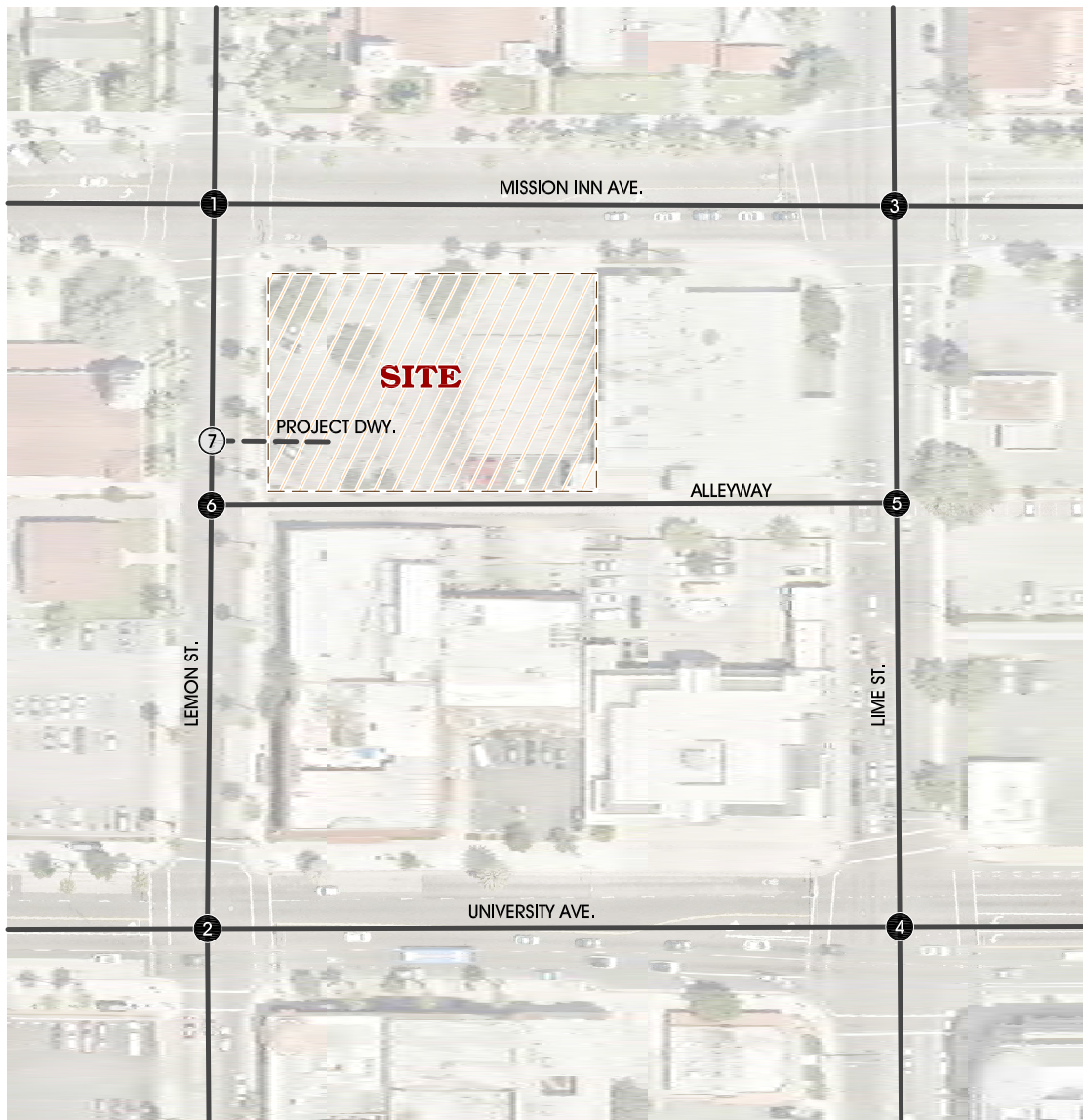
The AC Marriott/Residence Inn development is proposed to be developed with a 219 room business hotel and 12,000 sf of office space. It is anticipated that the project will be built by 2021.

2. Existing Land Use

The project site is currently occupied by a parking lot. Adjacent uses include the following:

- North – Commercial
- South –Commercial
- East –Commercial
- West – Church

**FIGURE 1-A
STUDY AREA**



LEGEND:

-  = EXISTING INTERSECTION ANALYSIS LOCATION
-  = FUTURE INTERSECTION ANALYSIS LOCATION
-  = FUTURE DRIVEWAY



3. Proposed Land Use

Proposed Land Use: Business Hotel and Office

4. Site Plan of Proposed Project

Figure 1-B illustrates the conceptual site plan. The project will take access off of one driveway along Lemon St.

5. Proposed Project Opening Year

The proposed project is anticipated to be completed in 2021. Future traffic analysis has been based upon one year of background (ambient) growth, at 2% per year, along with traffic generated by other future developments in the surrounding area.

6. Proposed Project Phasing

The project is expected to be completed in a single phase. Therefore, all traffic recommendations included in this report have not been separated into different development phases.

7. Sphere of Influence

The project is located within the Sphere of Influence of both Caltrans and Riverside County. However, since the project is anticipated to mainly serve the adjacent community, regional trips are anticipated to be minimal.

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2.0 AREA CONDITIONS

A. Study Area and Intersections

In general, the minimum area to be studied shall include any intersection of “Collector” or higher classification street, with “Collector” or higher classification streets, at which the proposed project will add 50 or more peak hour trips. The City of Riverside Engineering Department may require deviation from these requirements based on area conditions. The study area includes the following existing intersections (shown previously on Figure 1-A):

STUDY AREA INTERSECTIONS	
1.	Lemon St./Mission Inn Ave.
2.	Lemon St./University Ave.
3.	Lime St./Mission Inn Ave.
4.	Lime St./University Ave.
5.	Lime St./Alleyway
6.	Lemon St./Alleyway
7.	Lemon St./Project Driveway

B. Area Roadway System

Figure 2-A identifies the existing roadway conditions for study area roadways. The existing intersection traffic controls and geometrics are identified.

C. General Plan Circulation Element

The City of Riverside Master Plan of Roadways is depicted on Figure 2-B. Figure 2-B also illustrates the City of Riverside Roadway Cross-Sections.

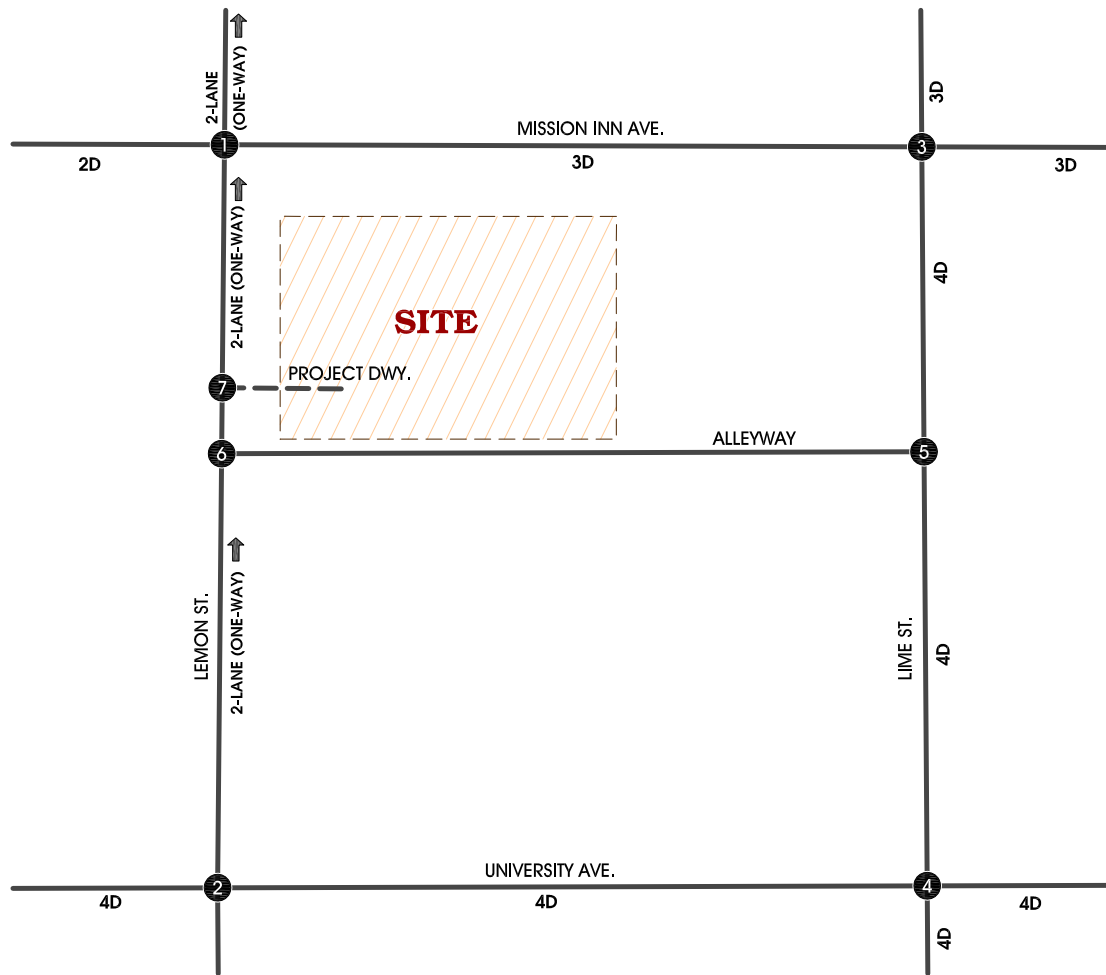
D. Existing (2020) Traffic Volumes

Existing intersection level of service calculations are based upon manual AM and PM peak hour turning movement counts conducted in January 2020 while schools were back in session. Existing AM and PM peak hour intersection turning movements are shown on Figure 2-C. Average daily traffic (ADT) volumes have been estimated. The traffic count worksheets are included in Appendix "B".

E. Existing Delay and Level of Service

The City of Riverside has established a Level of Service (LOS) “D” as the maximum acceptable threshold for the study intersections and roadways of Collector or higher

FIGURE 2-A EXISTING TRAFFIC CONTROLS AND INTERSECTION GEOMETRICS



1. Lemon St. / Mission Inn Av.	2. Lemon St. / University Av.	3. Lime St. / Mission Inn Av.	4. Lime St. / University Av.	5. Lime St. / Alleyway	6. Lemon St. / Alleyway	7. Lemon St. / Project Dwy.
						FUTURE INTERSECTION

LEGEND:

- = INTERSECTION ID
- = TRAFFIC SIGNAL
- = STOP SIGN
- DEF = DEFACTO RIGHT TURN LANE
- = PROJECT DRIVEWAY
- 4 = NUMBER OF LANES
- D = DIVIDED
- U = UNDIVIDED



FIGURE 2-B CITY OF RIVERSIDE MASTER PLAN OF ROADWAYS AND STANDARD ROADWAY CROSS-SECTIONS

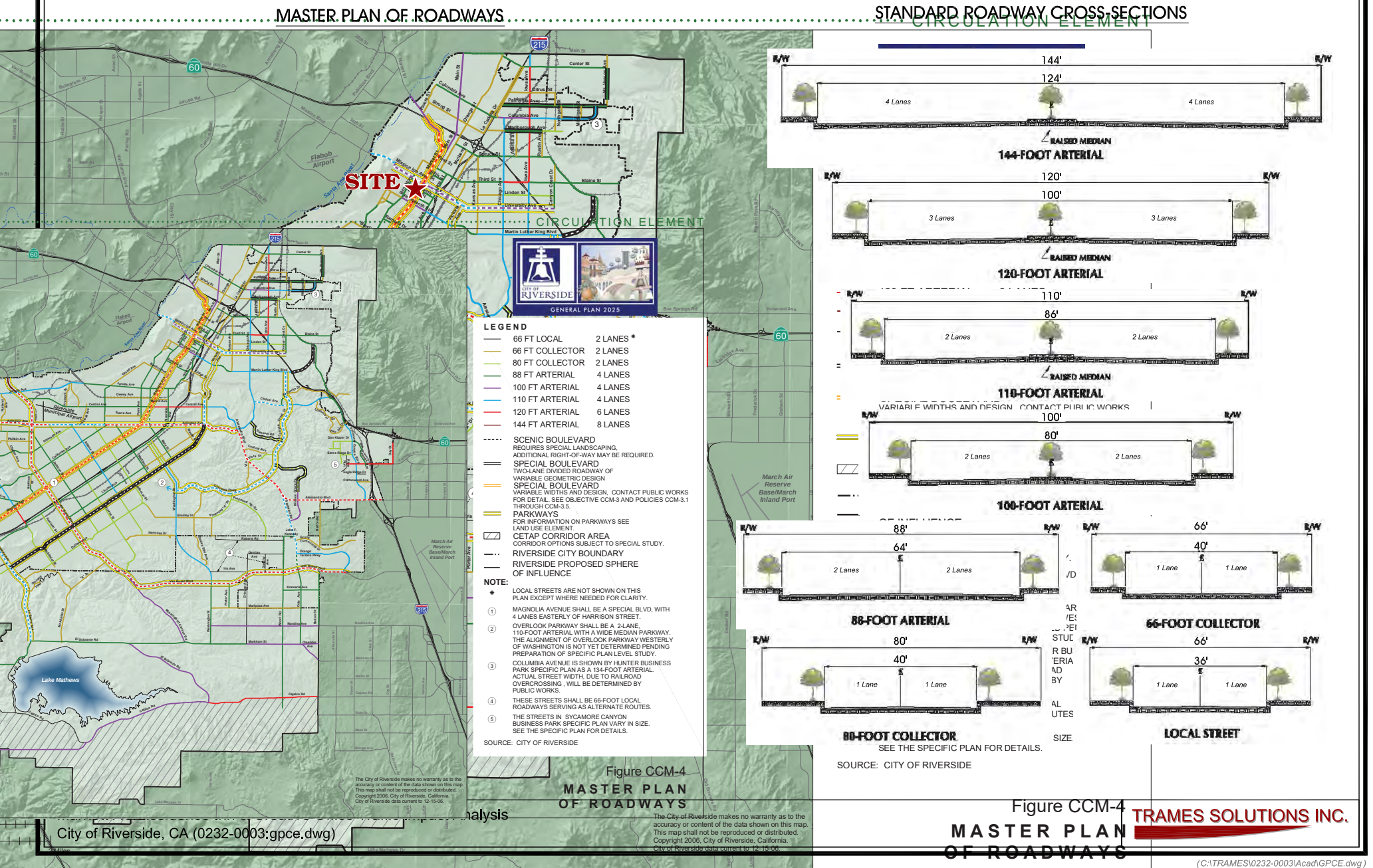
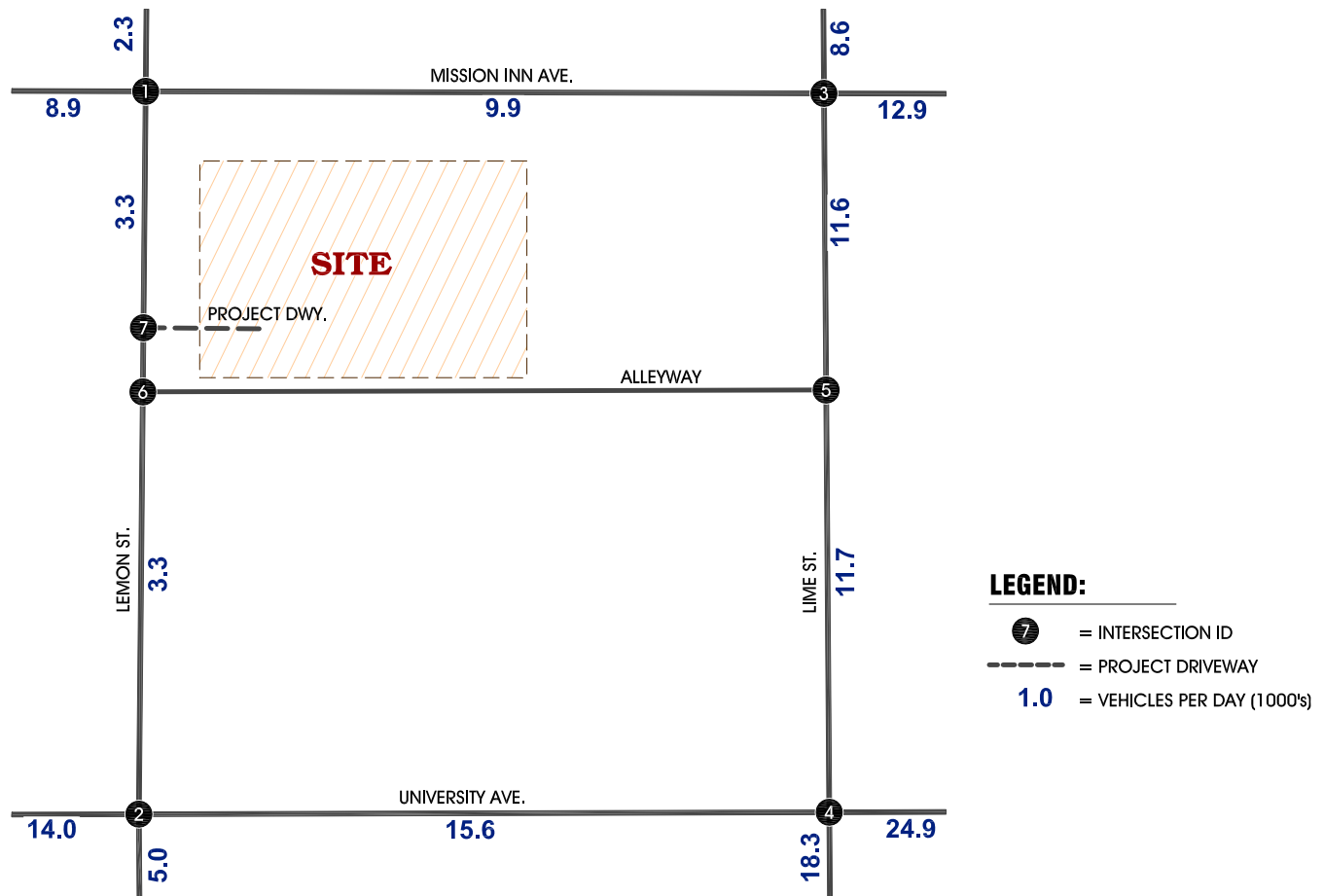


FIGURE 2-C EXISTING (2020) TRAFFIC VOLUMES



AM PEAK HOUR

1. Lemon St. / Mission Inn Av.	2. Lemon St. / University Av.	3. Lime St. / Mission Inn Av.	4. Lime St. / University Av.	5. Lime St. / Alleyway	6. Lemon St. / Alleyway	7. Lemon St. / Project Dwy.
← 23 ← 517 13 → 29 → 18 →	← 25 ← 548 9 → 13 → 37 → 52 →	← 12 ← 182 ← 56 ← 88 ← 487 ← 423	← 31 ← 624 ← 76 ← 93 ← 503 ← 313	← 3 ← 661 ← 2 ← 1 ← 1 ← 1	← 1 ← 0 0 → 0 → 63 → 4 →	FUTURE INTERSECTION
212 → 13 → 29 → 18 →	362 → 13 → 37 → 52 →	190 → 43 → 23 → 131 → 7 →	314 → 87 → 18 → 101 → 149 →	1 → 4 → 2 → 181 → 2 →	0 → 0 → 0 → 63 → 4 →	

PM PEAK HOUR

1. Lemon St. / Mission Inn Av.	2. Lemon St. / University Av.	3. Lime St. / Mission Inn Av.	4. Lime St. / University Av.	5. Lime St. / Alleyway	6. Lemon St. / Alleyway	7. Lemon St. / Project Dwy.
← 14 ← 384 14 → 22 → 160 → 92 →	← 26 ← 434 18 → 48 → 233 → 134 →	← 18 ← 285 ← 38 ← 89 ← 375 ← 209	← 30 ← 377 ← 144 ← 78 ← 419 ← 244	← 2 ← 583 ← 1 ← 2 ← 2 ← 2	← 3 ← 0 0 → 0 → 267 → 6 →	FUTURE INTERSECTION
14 → 22 → 160 → 92 →	663 → 48 → 233 → 134 →	15 → 306 → 87 → 21 → 273 → 60 →	5 → 721 → 89 → 33 → 312 → 473 →	1 → 7 → 1 → 375 → 4 →	0 → 0 → 0 → 267 → 6 →	



classification. LOS "C" is to be maintained on all street intersections. For projects in conformance with the General Plan, a significant impact occurs at a study intersection when the peak hour LOS falls below "C", or "D" per CCM-2.3 as noted below. For projects that propose uses or intensities above that contained in the General Plan, a significant impact at a study intersection is when the addition of project related trips causes either peak hour LOS to degrade from acceptable (LOS "A" thru "D") to unacceptable levels ("E" or "F") or the peak hour delay to increase as follows:

LOS A/B	= By 10.0 seconds
LOS C	= By 8.0 seconds
LOS D	= By 5.0 seconds
LOS E	= By 2.0 seconds
LOS F	= By 1.0 seconds

Policy CCM-2.3

Maintain LOS "D" or better on Arterial Streets whenever possible. At key locations, such as City Arterials that are used by regional freeway bypass traffic and at heavily traveled freeway interchanges, allow LOS "E" at peak hours as the acceptable standard on a case-by-case basis.

Operations Analysis Methodology

The City of Riverside Engineering Department requires the use of the Transportation Research Board - Highway Capacity Manual (HCM), 6th Edition. The levels of service for the HCM delay methodology, for signalized and unsignalized intersections, are summarized below:

LEVEL OF SERVICE	AVERAGE TOTAL DELAY PER VEHICLE (SECONDS)	
	SIGNALIZED	UNSIGNALIZED
A	0 to 10.00	0 to 10.00
B	10.01 to 20.00	10.01 to 15.00
C	20.01 to 35.00	15.01 to 25.00
D	35.01 to 55.00	25.01 to 35.00
E	55.01 to 80.00	35.01 to 50.00
F	80.01 and up	50.01 and up

The results of the existing conditions intersection analysis are summarized in Table 2-1. The existing condition operations analysis worksheets are provided in Appendix "C". As shown in Table 2-1, the study area intersections are operating at an acceptable level of service (LOS "D" or better during the peak hours with the existing geometry and traffic controls.

TABLE 2-1
INTERSECTION ANALYSIS FOR EXISTING CONDITIONS

ID	Intersection	Traffic Control ¹	Intersection Approach Lanes ²												Delay ³ (secs.)		Level of Service ³	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
			L	T	R	L	T	R	L	T	R	L	T	R				
1	Lemon St. / Mission Inn Av.	TS	0.5	1	0.5	0	0	0	1	1	0	0	1	0	5.9	13.6	A	B
2	Lemon St. / University Av.	TS	1.5	1.5	0	0	0	0	1	2	0	0	2	0	6.9	15.2	A	B
3	Lime St. / Mission Inn Av.	TS	1	1	1	1	2	d	1	2	0	1	1	1	41.1	34.4	D	C
4	Lime St. / University Av.	TS	1	2	1	1	2	0	1	2	1	2	2	1	36.1	33.0	D	C
5	Lime St. / Alleyway	CSS	0	2	0	0	2	0	0	1!	0	0	1!	0	13.7	14.2	B	B
6	Lemon St. / Alleyway	CSS	0	2	0	0	0	0	0.5	0.5	0	0	1	0	8.6	9.4	A	A
7	Lemon St. / Project Dwy.	-	Future Intersection												-	-	-	-

¹ TS = Traffic Signal; CSS = Cross Street Stop

² When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto right turn lane

³ Delay and level of service calculated using the following analysis software: Synchro 10 HCM6

F. Traffic Signal Warrant Analysis

The key study area intersections are all controlled with a traffic signal. Therefore, warrants were not conducted for the off-site locations. The proposed driveway and existing alleyway are too close to the intersections of Lemon St./Mission Inn Ave. and Lime St./Mission Inn Ave. to allow the construction of a traffic signal.

G. Transit Service

The Riverside Transit Agency (RTA) Routes 1, 10, 14, 22, 29, 49, 200, 208, and 210 currently services the study area.

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3.0 PROJECTED FUTURE TRAFFIC

This section of the report quantifies the number of trips generated by the proposed project and other known developments in the area.

A. Project Traffic

1. Ambient Growth Rate

Some traffic volume increases on roadways can be attributed to vehicles originating outside of the study area. These types of trips either end up within the study area or pass-through onto an outside destination. Therefore, to account for these trips (termed “ambient growth”), a growth rate can be applied to existing traffic volumes.

An annual ambient growth rate of 2% per year has been used in this study to account for traffic not attributed to the project or other planned developments within the study area. The City of Riverside Transportation Department staff has previously reviewed and approved this rate.

2. Project Trip Generation

Trip generation represents the amount of traffic which is attracted and produced by a development. The trip generation for the project is based upon the specific land use which has been planned for this development. For the purpose of this analysis, the following land use assumption is evaluated:

- 219 room business hotel
- 12,000 sf office

Trip generation rates for the proposed development are shown in Table 3-1. The trip generation rates are based upon data collected by the Institute of Transportation Engineers (ITE).

TABLE 3-1
PROJECT TRIP GENERATION RATES

Land Use	ITE Code	Quantity ²	Peak Hour Trip Rates ¹						Daily
			AM			PM			
			In	Out	Total	In	Out	Total	
Business Hotel	312	219 Room	0.16	0.23	0.39	0.18	0.14	0.32	4.02
General Office ³	710	12 TSF	2.71	0.44	3.15	0.20	1.06	1.26	11.31

¹ Source: ITE (Institute of Transportation Engineers) Trip Generation Manual, 10th Edition, 2017.

² TSF =Thousand Square Feet

³ Fitted Curve Equation

The daily and peak hour trip generations for the proposed project are shown on Table 3-2. The proposed development is projected to generate a total of approximately 1,016 trip-ends per day with 123 vehicles per hour during the AM peak hour and 85 vehicles per hour during the PM peak hour.

TABLE 3-2
PROJECT TRIP GENERATION SUMMARY

LAND USE	QUANTITY ¹	PEAK HOUR						DAILY
		AM			PM			
		IN	OUT	TOTAL	IN	OUT	TOTAL	
Business Hotel	219 Rooms	35	50	85	39	31	70	880
General Office	12 TSF	33	5	38	2	13	15	136
TOTAL PROJECT TRIPS		68	55	123	41	44	85	1016

¹ TSF = Thousand Square Feet

3. Project Trip Distribution and Assignment

Trip distribution represents the directional orientation of traffic to and from the project site. The project's trip distribution patterns are based on the proximity of the residential units to the proposed driveway locations, the surrounding trip attractors (employment bases, commercial opportunities, schools, recreation centers, etc.).

The proposed project will consist of a business hotel for those patrons that have meetings, conferences, and other events in the nearby surrounding areas. Therefore, the use of freeways is anticipated to be minimal during the peak hours. Some of the destinations include the following:

UCR – Events, classes, seminars and conferences. Route - Straight up University Ave.

Riverside Community Hospital – Professional medical staff and specialist doctors, support family and friends for those staying in hospital. Route - Mission Inn Avenue to Market Street

Riverside Community College District – District meetings, events, conferences and consultants to the district offices. Route - Mission Inn Avenue to Market Street

Federal, State and local judicial facilities - Access to jails, courthouses, sheriff, PD, County Prosecutor and District Attorney. Route - Mission Inn to Orange Street into court district.

Convention Center – Conferences and Gala events. Route - Lemon Street to Fifth Street.

The trip distribution pattern for the project is illustrated on Figure 3-A.

4. Other Trip Generation Factors

The project consists of commercial uses that do not generate a significant amount of pass-by trips. Pass-by trips are not new trips but those that are already on the roadway system but are anticipated to “pass-by” the project on their way to a primary destination.

5. Project Peak Hour Turning Movement Traffic

The assignment of traffic from the site to the adjoining roadway system has been based upon the site's trip generation, trip distribution, proposed arterial highway and local street systems, which would be in place by the time of initial occupancy of the site. Based on the identified project traffic generation and distribution, project peak hour intersection traffic volumes and average daily traffic (ADT) volumes are shown on Figure 3-B.

B. Existing Plus Project Traffic Conditions

Existing plus Project (EP) AM and PM peak hour intersection turning movement volumes are shown on Figure 3-C .

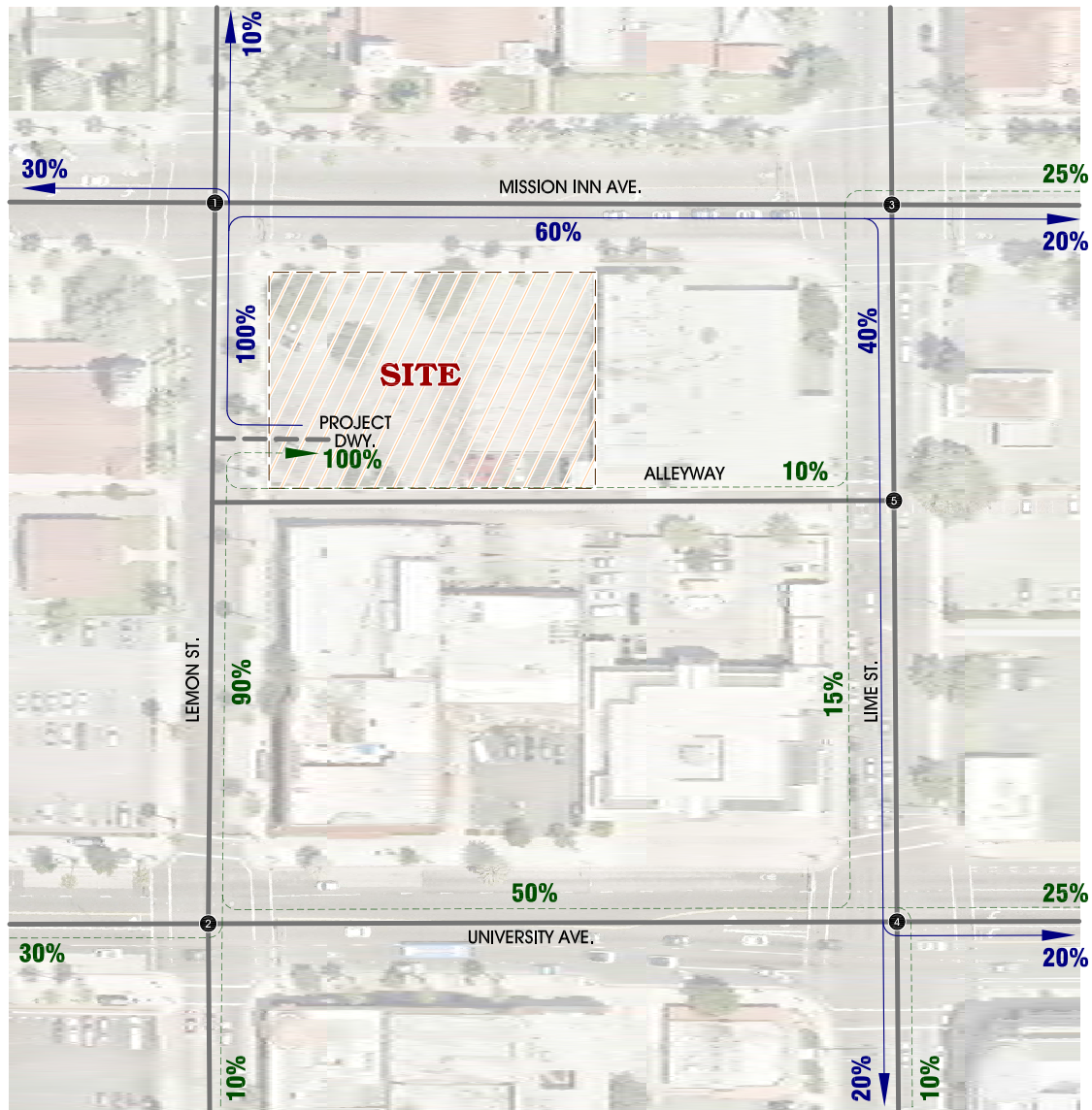
For access purposes, the intersection of Lemon Street/Project Driveway has been evaluated as a stop controlled intersection and restricted to a right-in/right-out only access.

The results of the EP conditions intersection are summarized in Table 3-3. The EP condition operations analysis worksheets are provided in Appendix "D". As shown on Table 3-3, the study area intersections are anticipated to continue to operate at an acceptable LOS (LOS “D” or better) during the peak hours with the existing geometry and traffic controls.

C. Cumulative Traffic (Background)

To assess existing plus ambient plus cumulative plus project traffic conditions, project traffic is combined with existing traffic, area-wide growth and other future developments which are approved or being processed concurrently in the study area. Developments which are being processed concurrently in the study area have been provided by City staff.

FIGURE 3-A PROJECT TRIP DISTRIBUTION

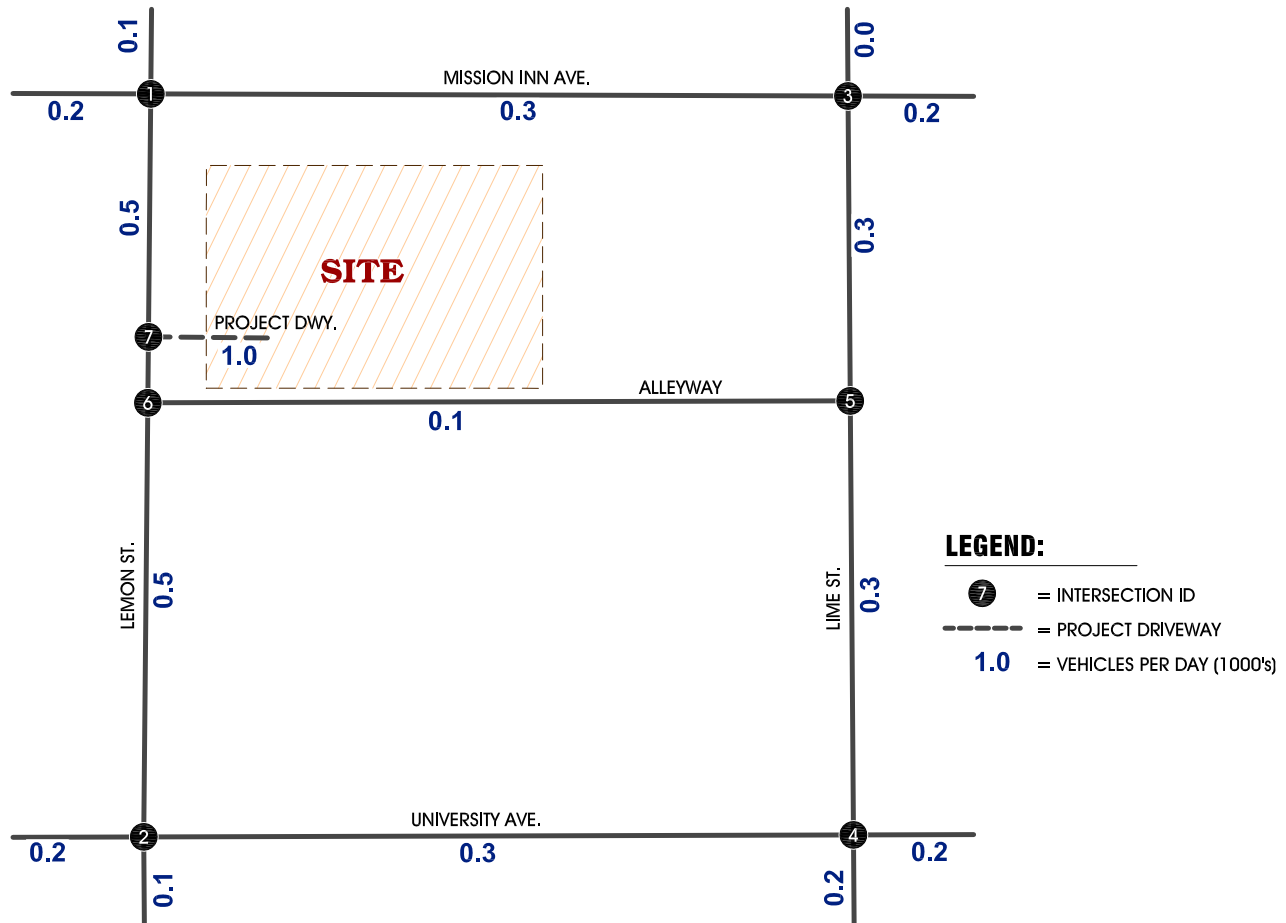


LEGEND:

- # = INTERSECTION ID
- = FUTURE DRIVEWAY
- 10% = PERCENT FROM PROJECT (OUTBOUND)
- 10% = PERCENT TO PROJECT (INBOUND)



FIGURE 3-B PROJECT ONLY TRAFFIC VOLUMES



AM PEAK HOUR

1. Lemon St. / Mission Inn Av.	2. Lemon St. / University Av.	3. Lime St. / Mission Inn Av.	4. Lime St. / University Av.	5. Lime St. / Alleyway	6. Lemon St. / Alleyway	7. Lemon St. / Project Dwy.
0 0 17 6 33	20 0 34 0	0 0 0 11 17	10 11 0 17 0	7 32 0 0 0 0	0 0 7 0	0 0 55 0 6

PM PEAK HOUR

1. Lemon St. / Mission Inn Av.	2. Lemon St. / University Av.	3. Lime St. / Mission Inn Av.	4. Lime St. / University Av.	5. Lime St. / Alleyway	6. Lemon St. / Alleyway	7. Lemon St. / Project Dwy.
0 0 13 4 26	12 0 21 0	0 0 0 9 10	6 9 0 10 0	4 24 0 0 0 0	0 0 4 0	0 0 44 0 41



TABLE 3-3
INTERSECTION ANALYSIS FOR EXISTING PLUS PROJECT CONDITIONS

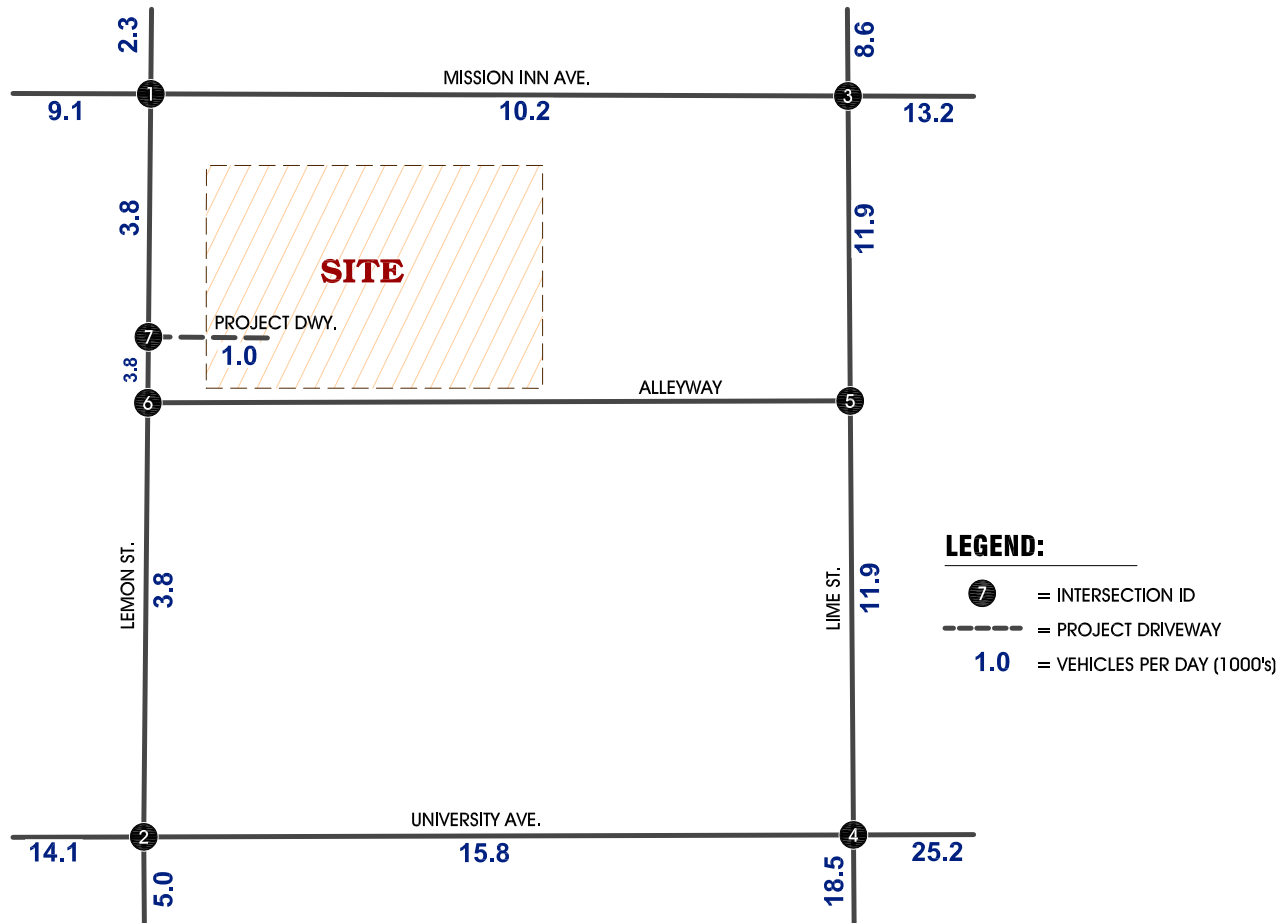
ID	Intersection	Traffic Control ¹	Intersection Approach Lanes ²												Delay ³ (secs.)		Level of Service ³	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
			L	T	R	L	T	R	L	T	R	L	T	R				
1	Lemon St. / Mission Inn Av.	TS	0.5	1	0.5	0	0	0	1	1	0	0	1	0	7.8	14.5	A	B
2	Lemon St. / University Av.	TS	1.5	1.5	0	0	0	0	1	2	0	0	2	0	7.0	15.3	A	B
3	Lime St. / Mission Inn Av.	TS	1	1	1	1	2	d	1	2	0	1	1	1	44.0	35.0	D	C
4	Lime St. / University Av.	TS	1	2	1	1	2	0	1	2	1	2	2	1	36.3	33.1	D	C
5	Lime St. / Alleyway	CSS	0	2	0	0	2	0	0	1!	0	0	1!	0	14.0	14.4	B	B
6	Lemon St. / Alleyway	CSS	0	2	0	0	0	0	0.5	0.5	0	0	1	0	8.8	9.6	A	A
7	Lemon St. / Project Dwy.	CSS	0	2	0	0	0	0	0	0	0	0	0	<u>1</u>	8.9	9.5	A	A

¹ TS = Traffic Signal; CSS = Cross Street Stop

² When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = Defacto right turn lane; 1 = Improvement

³ Delay and level of service calculated using the following analysis software: Synchro 10 HCM6

FIGURE 3-C EXISTING PLUS PROJECT TRAFFIC VOLUMES



AM PEAK HOUR

1. Lemon St. / Mission Inn Ave.	2. Lemon St. / University Ave.	3. Lime St. / Mission Inn Ave.	4. Lime St. / University Ave.	5. Lime St. / Alleyway	6. Lemon St. / Alleyway	7. Lemon St. / Project Dwy.
23 517	59 548	12 182 56 88 487 440	41 635 87 93 520 313	10 693 2 1 1 1	8 0	55
1 212 30 35 51	29 362 13 44 52	3 201 65 23 131 7	3 314 87 25 101 149	1 1 4 2 181 2	0 0 0 124 4	63 68

PM PEAK HOUR

1. Lemon St. / Mission Inn Ave.	2. Lemon St. / University Ave.	3. Lime St. / Mission Inn Ave.	4. Lime St. / University Ave.	5. Lime St. / Alleyway	6. Lemon St. / Alleyway	7. Lemon St. / Project Dwy.
14 384	47 434	18 285 38 89 375 219	36 386 153 78 429 244	6 607 1 2 2 2	7 0	44
14 322 35 164 118	30 663 48 237 134	15 315 105 21 273 60	5 721 89 37 312 473	1 1 7 1 375 4	0 0 0 304 6	270 41



1. Ambient Growth Rate

An ambient growth rate (2% growth per year) has been used in this study to account for traffic not attributed to the project or other planned developments within the study area. The City of Riverside Transportation Department staff has previously reviewed and approved this rate.

2. Other Approved or Proposed Development Projects

The cumulative developments have been included along with the land use associated with each project. The location of the cumulative projects provided by the county and nearby jurisdictions are shown on Figure 3-D.

3. Other Approved Projects Trip Generation

For cumulative projects, ITE Trip Generation Rates (10th Edition) were used. Table 3-4 presents the cumulative development land uses and trip generation summary. As presented in Table 3-4 Cumulative developments are projected to generate a total of approximately 20,269 trip-ends per day with 1,404 vehicles per hour during the AM peak hour and 1,731 vehicles per hour during the PM peak hour.

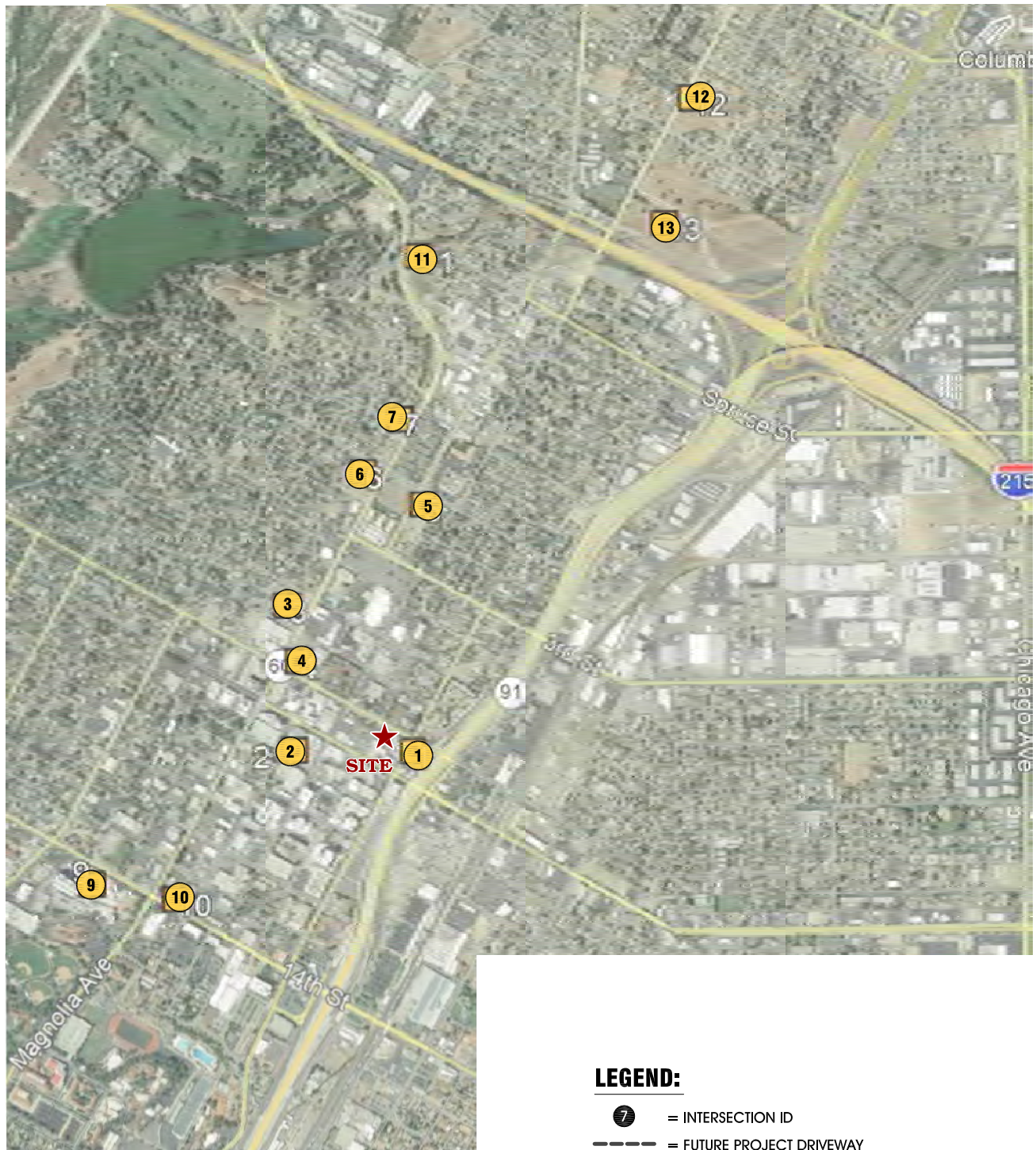
4. Total Background Peak Hour Turning Movement Volumes

Cumulative development peak hour intersection turning movement volumes and average daily traffic (ADT) volumes are shown on Figure 3-E.

Existing plus Ambient plus Cumulative (EAC 2021) AM and PM peak hour intersection turning movement volumes are shown on Figure 3-F .

Existing plus Ambient plus Cumulative plus Project (EACP 2021) AM and PM peak hour intersection turning movement volumes are shown on Figure 3-G .

FIGURE 3-D
CUMULATIVE DEVELOPMENTS LOCATION MAP



LEGEND:

- 7 = INTERSECTION ID
- = FUTURE PROJECT DRIVEWAY
- 13 = CUMULATIVE DEVELOPMENT ID
(SEE TABLE 3-4 FOR REFERENCE)



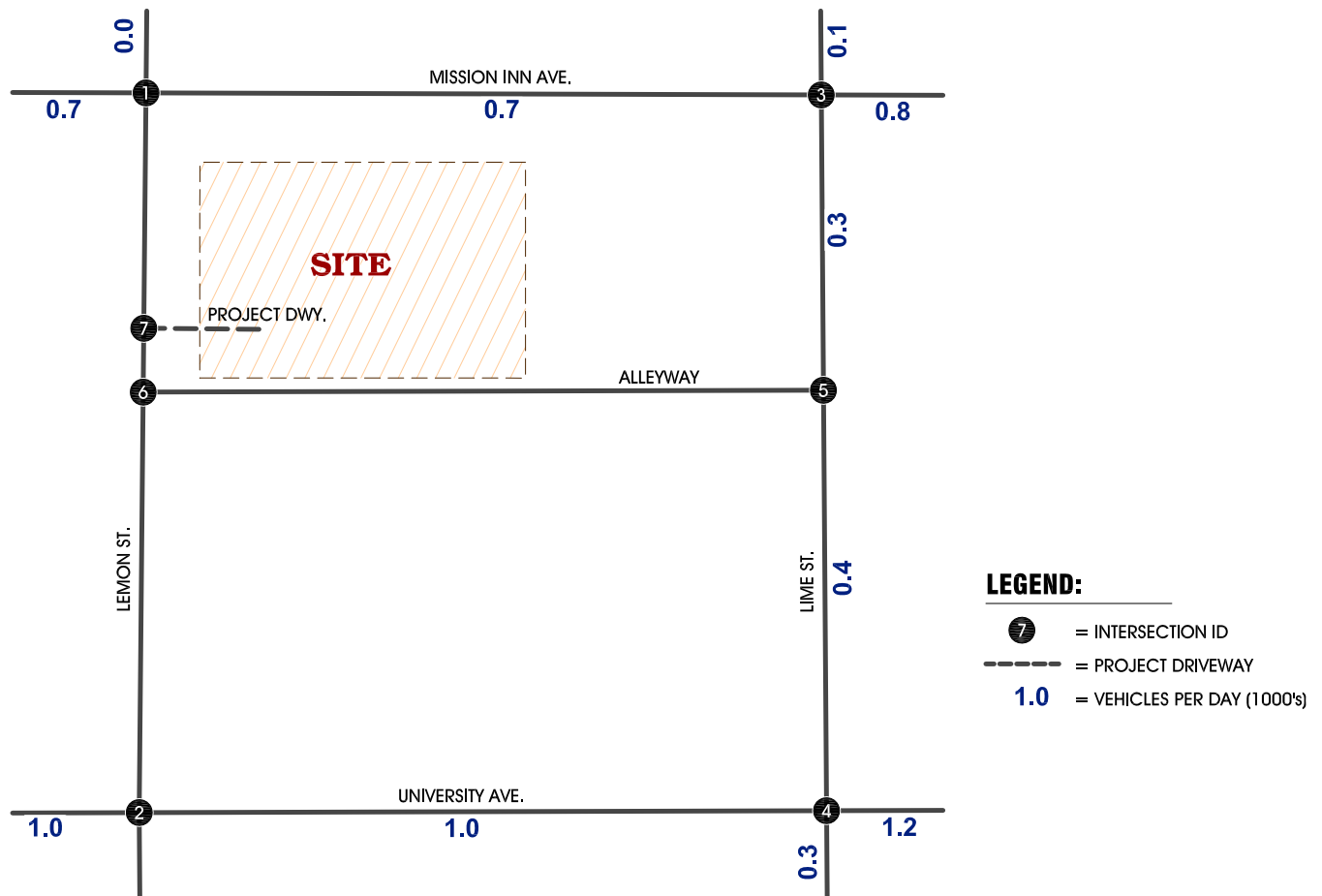
TABLE 3-4
CUMULATIVE DEVELOPMENT PROJECTS TRIP GENERATION SUMMARY

ID	PROJECT LOCATION	Land Use	ITE Code	Quantity ¹	Peak Hour						Daily
					AM			PM			
					In	Out	Total	In	Out	Total	
1	3393 Mission Inn	General Office Building	710	9.1 TSF	30	5	35	2	10	12	104
		Multifamily Housing (Low-Rise 1-2 floors)	220	72 DU	8	25	33	25	15	40	527
	Subtotal				38	30	68	27	25	52	631
2	3870 Main St	Shopping Center	820	8.197 TSF	5	3	8	15	16	31	309
		Multifamily Housing (Low-Rise 1-2 floors)	220	36 DU	4	13	17	13	8	21	264
	Subtotal				9	16	25	28	24	52	573
3	3558 Fairmount	Business Hotel	312	239 RM	38	55	93	43	33	76	961
4	3650 Market Street	Shopping Center	820	22 TSF	13	8	21	40	44	84	831
		Multifamily Housing (Low-Rise 1-2 floors)	220	165 DU	18	58	76	58	35	93	1,208
	Subtotal				69	121	190	141	112	253	3,000
5	3102 Main Street	Multifamily Housing (Low-Rise 1-2 floors)	220	116 DU	13	41	54	41	24	65	849
6	3105 Market St	Multifamily Housing (Low-Rise 1-2 floors)	220	146 DU	16	51	67	51	31	82	1,069
7	2941 Market Street	Multifamily Housing (Low-Rise 1-2 floors)	220	17 DU	2	6	8	6	4	10	124
	Subtotal				31	98	129	98	59	157	2,042
8	2719 Eleventh Street	Multifamily Housing (Low-Rise 1-2 floors)	220	8 DU	1	3	4	3	2	5	59
9	4445 Magnolia Ave	Hospital	610	251.5 TSF	153	70	223	78	166	244	2,696
10	4399 Main	High Turnover (Sit-Down) Restaurant	932	4.525 TSF	25	20	45	27	17	44	508
	Subtotal				178	90	268	105	183	288	3,204
11	2450 Market Street	Senior Adult Housing - Attached	252	67 DU	5	9	14	9	8	17	248
12	1606 Orange Street	Single Fam. Detached	210	7 DU	1	4	5	4	3	7	66
13	NEC Orange Street and Vista Avenue ³	Mixed-Use			385	316	701	507	393	900	10,446
	Subtotal				391	329	720	520	404	924	10,760
TOTAL CUMULATIVE TRIPS					717	687	1,404	922	809	1,731	20,269

¹ RM = Room; TSF = Thousand Square Feet

² Source: Northgate Center TIA (November 30, 2018). Prepared by Urban Crossroads, Inc.

FIGURE 3-E CUMULATIVE DEVELOPMENT ONLY TRAFFIC VOLUMES



AM PEAK HOUR

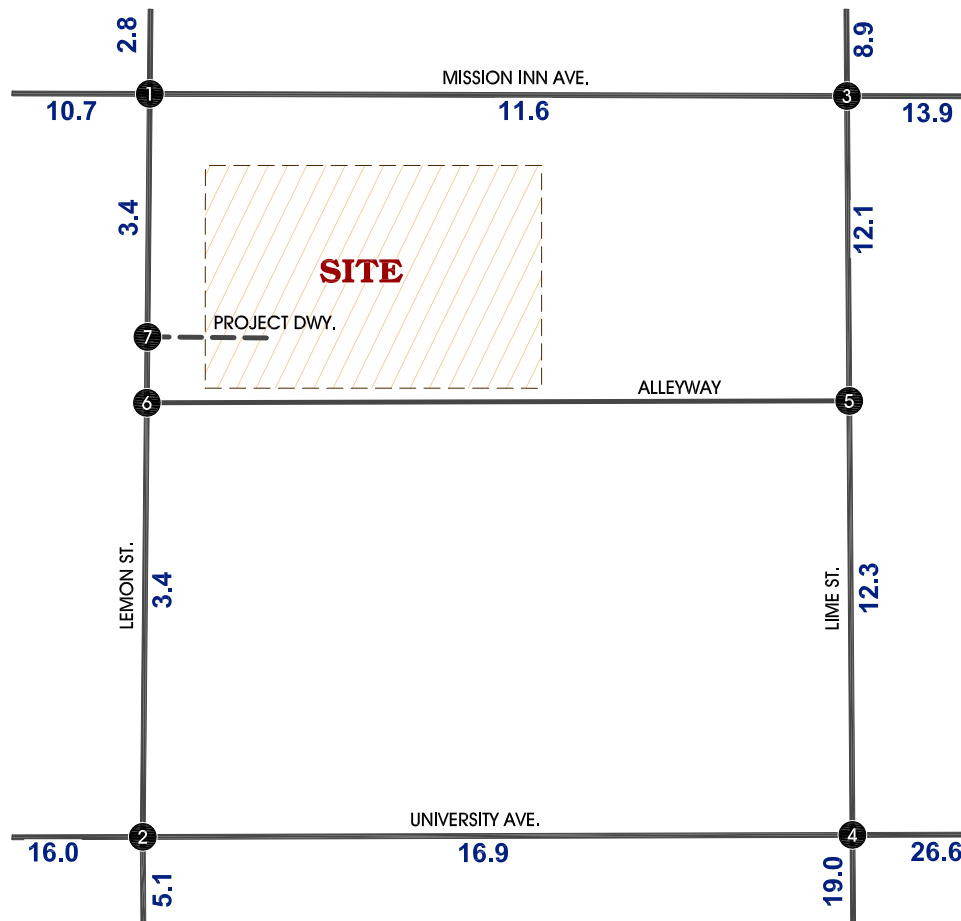
1. Lemon St. / Mission Inn Av.	2. Lemon St. / University Av.	3. Lime St. / Mission Inn Av.	4. Lime St. / University Av.	5. Lime St. / Alleyway	6. Lemon St. / Alleyway	7. Lemon St. / Project Dwy.
←0 ←31 0→ 20→	←0 ←33 0→ 45→	←0 ←22 ←9 0→ 20→ 0→	←8 ←33 ←2 0→ 11→ 34→ 0→	←0 ←0 ←0 0→ 0→ 0→	←0 ←0 0→ 0→	FUTURE INTERSECTION

PM PEAK HOUR

1. Lemon St. / Mission Inn Av.	2. Lemon St. / University Av.	3. Lime St. / Mission Inn Av.	4. Lime St. / University Av.	5. Lime St. / Alleyway	6. Lemon St. / Alleyway	7. Lemon St. / Project Dwy.
←0 ←31 0→ 27→	←0 ←39 0→ 50→	←0 ←23 ←8 0→ 27→ 0→	←5 ←39 ←6 0→ 8→ 42→ 0→	←0 ←0 ←0 0→ 0→ 0→	←0 ←0 0→ 0→	FUTURE INTERSECTION



FIGURE 3-F EAC (2021) TRAFFIC VOLUMES



AM PEAK HOUR

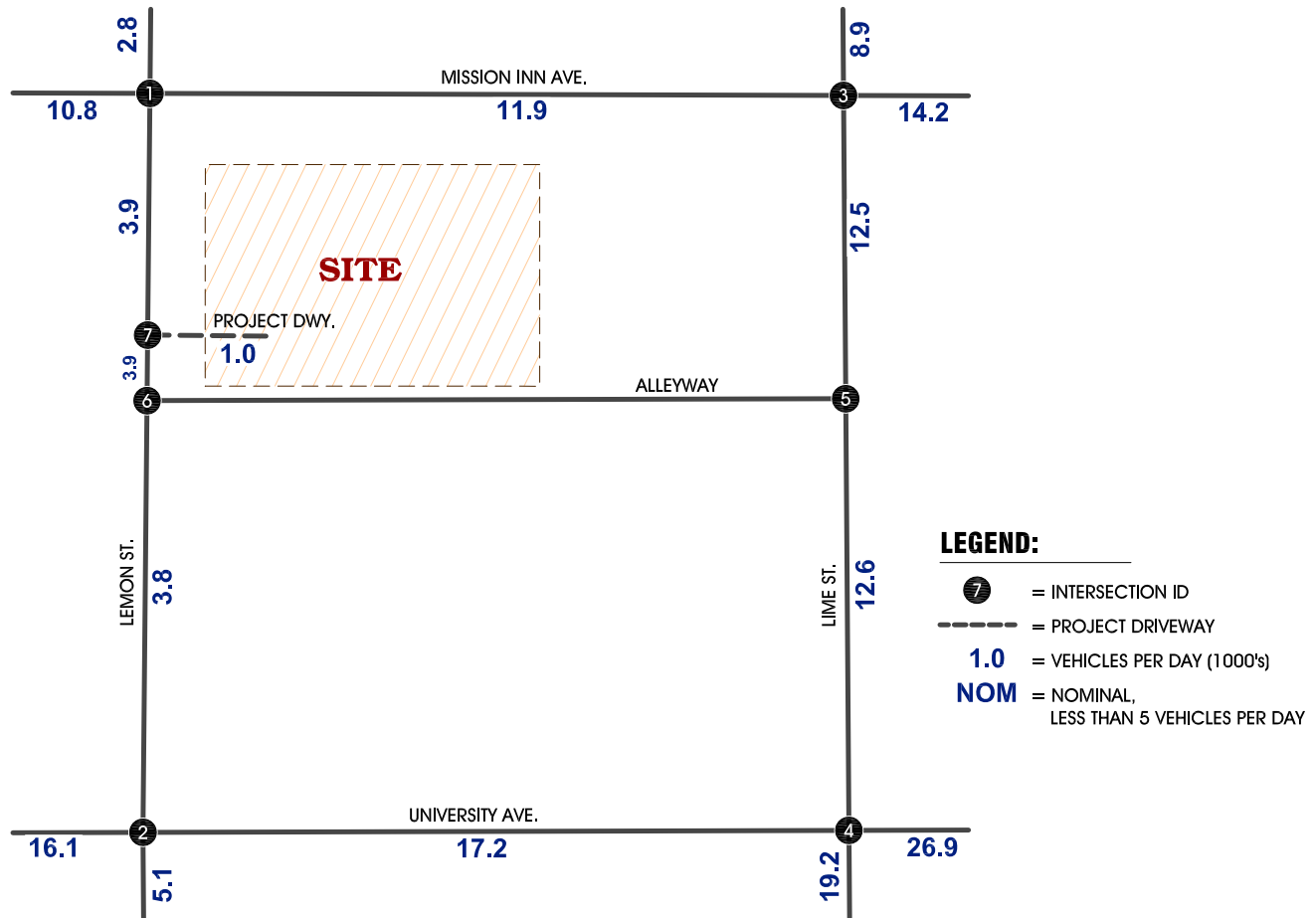
1. Lemon St. / Mission Inn Ave.	2. Lemon St. / University Ave.	3. Lime St. / Mission Inn Ave.	4. Lime St. / University Ave.	5. Lime St. / Alleyway	6. Lemon St. / Alleyway	7. Lemon St. / Project Dwy.
24 569	26 603	12 193 58	32 656 85	3 700 2	1 0	FUTURE INTERSECTION
14 30 19	14 38 54	33 139 15	19 114 158	2 16 2	0 6 4	

PM PEAK HOUR

1. Lemon St. / Mission Inn Ave.	2. Lemon St. / University Ave.	3. Lime St. / Mission Inn Ave.	4. Lime St. / University Ave.	5. Lime St. / Alleyway	6. Lemon St. / Alleyway	7. Lemon St. / Project Dwy.
15 430	27 490	19 299 40	31 400 155	2 619 1	3 0	FUTURE INTERSECTION
15 362	19 740	16 345 90	13 792 93	1 7	0 278 6	



FIGURE 3-G EACP (2021) TRAFFIC VOLUMES



AM PEAK HOUR

1. Lemon St. / Mission Inn Ave.	2. Lemon St. / University Ave.	3. Lime St. / Mission Inn Ave.	4. Lime St. / University Ave.	5. Lime St. / Alleyway	6. Lemon St. / Alleyway	7. Lemon St. / Project Dwy.
24 569	60 603	12 193 58	42 667 96	10 732 2	8 0	55
1 240	29 421	3 229 67	14 361 90	1 4	0 0	66 68

PM PEAK HOUR

1. Lemon St. / Mission Inn Ave.	2. Lemon St. / University Ave.	3. Lime St. / Mission Inn Ave.	4. Lime St. / University Ave.	5. Lime St. / Alleyway	6. Lemon St. / Alleyway	7. Lemon St. / Project Dwy.
15 430	48 490	19 299 40	37 409 164	6 643 1	7 0	44
15 362	31 740	16 354 108	13 792 93	1 7	0 0	281 41



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4.0 FUTURE TRAFFIC ANALYSIS

Peak hour intersection analysis has been performed at the study area intersections for each of the project scenarios and for projected future conditions. Improvements are recommended to satisfy the level of service requirements of the City of Riverside and if the following impacts are identified:

- 1) When existing traffic conditions (Analysis Scenario 1) exceed the General Plan target LOS.
- 2) When project traffic, when added to existing traffic (Analysis Scenario 2), will deteriorate the LOS to below the target LOS, and impacts cannot be mitigated through project conditions of approval.
- 3) When cumulative traffic (Analysis Scenario 3) exceeds the target LOS, and impacts cannot be mitigated through existing infrastructure funding mechanisms.

A. Delay and Level of Service Analysis Under Existing plus Ambient plus Cumulative (EAC 2021) Conditions

Intersection levels of service for the EAC traffic conditions are shown in Table 4-1. Table 4-1 shows HCM calculations based on the geometrics at the study area intersections. The operation analysis worksheets for EAC traffic conditions are provided in Appendix “E”.

For EAC traffic conditions, the study area intersections are anticipated to continue to operate at an acceptable level of service (LOS “D” or better) with existing geometry and traffic controls.

B. Delay and Level of Service Analysis Under Existing plus Ambient plus Cumulative plus Project (EACP 2021) Conditions

Intersection levels of service for the EACP traffic conditions are shown in Table 4-2. Table 4-2 shows HCM calculations based on the geometrics at the study area intersections and for conditions without and with intersection improvements. The operation analysis worksheets for EACP traffic conditions are provided in Appendix “F”.

For EACP traffic conditions, the study area intersections are projected to operate at an acceptable level of service in addition to the intersections previously identified under EAC conditions.

TABLE 4-1
INTERSECTION ANALYSIS FOR EAC (2021) CONDITIONS

ID	Intersection	Traffic Control ¹	Intersection Approach Lanes ²												Delay ³ (secs.)		Level of Service ³	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
			L	T	R	L	T	R	L	T	R	L	T	R				
1	Lemon St. / Mission Inn Av.	TS	0.5	1	0.5	0	0	0	1	1	0	0	1	0	6.0	13.6	A	B
2	Lemon St. / University Av.	TS	1.5	1.5	0	0	0	0	1	2	0	0	2	0	7.0	15.3	A	B
3	Lime St. / Mission Inn Av.	TS	1	1	1	1	2	d	1	2	0	1	1	1	45.0	35.2	D	D
4	Lime St. / University Av.	TS	1	2	1	1	2	0	1	2	1	2	2	1	36.9	34.9	D	C
5	Lime St. / Alleyway	CSS	0	2	0	0	2	0	0	1!	0	0	1!	0	14.5	15.0	B	B
6	Lemon St. / Alleyway	CSS	0	2	0	0	0	0	0.5	0.5	0	0	1	0	8.6	9.5	A	A
7	Lemon St. / Project Dwy.	-	Future Intersection														-	-

¹ TS = Traffic Signal; CSS = Cross Street Stop

² When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto right turn lane

³ Delay and level of service calculated using the following analysis software: Synchro 10 HCM6

TABLE 4-2
INTERSECTION ANALYSIS FOR EACP (2021) CONDITIONS

ID	Intersection	Traffic Control ¹	Intersection Approach Lanes ²												Delay ³ (secs.)		Level of Service ³	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
			L	T	R	L	T	R	L	T	R	L	T	R				
1	Lemon St. / Mission Inn Av.	TS	0.5	1	0.5	0	0	0	1	1	0	0	1	0	7.8	14.5	A	B
2	Lemon St. / University Av.	TS	1.5	1.5	0	0	0	0	1	2	0	0	2	0	7.1	15.4	A	B
3	Lime St. / Mission Inn Av.	TS	1	1	1	1	2	d	1	2	0	1	1	1	48.2	35.8	D	D
4	Lime St. / University Av.	TS	1	2	1	1	2	0	1	2	1	2	2	1	37.3	35.6	D	D
5	Lime St. / Alleyway	CSS	0	2	0	0	2	0	0	1!	0	0	1!	0	14.9	15.3	B	C
6	Lemon St. / Alleyway	CSS	0	2	0	0	0	0	0.5	0.5	0	0	1	0	8.8	9.7	A	A
7	Lemon St. / Project Dwy.	CSS	0	2	0	0	0	0	0	0	0	0	0	<u>1</u>	8.9	9.5	A	A

¹ TS = Traffic Signal; CSS = Cross Street Stop

² When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = Defacto right turn lane; 1 = Improvement

³ Delay and level of service calculated using the following analysis software: Synchro 10 HCM6

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5.0 FINDINGS AND RECOMMENDATIONS

A. Traffic Impacts, Level of Service Analysis, and Off-Site Improvements

For Existing (2020) and Existing plus Project (EP), EAC, and EACP traffic conditions, the study area intersections operate at an acceptable level of service (LOS “D” or better) during the peak hours with the existing geometry and traffic controls.

Project Mitigation

The project shall pay its fair share towards the installation of the recommended improvements necessary to bring the existing deficient intersections to an acceptable level of service (LOS “D” or better).

In addition, the following driveway configurations are recommended for site access purposes.

Lemon Street/ Project Driveway [#7]

- Install a stop sign control on the westbound approach.
- Restrict to right-in/right-out only access.
- Provide a westbound right turn lane.

Lemon Street/Alleyway [#6]

- Maintain a stop sign control on the westbound approach.
- Maintain a shared westbound through/right lane.

Lime Street/Alleyway [#5]

- Maintain a stop sign control on the eastbound approach.
- Maintain a shared eastbound left/through/right turn lane.

B. Funding Mechanisms

In order to address the cumulative traffic impacts from the proposed project and other developments in the area, the City has the following funding mechanisms available.

Transportation Uniform Mitigation Fee (TUMF)

The Transportation Uniform Mitigation Fee (TUMF) Program was established to assist in funding the Regional System of Highways and Arterials throughout Riverside County. TUMF allows developers to contribute toward sustaining the regional transportation system on a “fair share” basis. Managed by the Western Riverside Council of Governments (WRCOG), the program is not designed to be the only source of revenue

but would complement funds generated by Measure A, local transportation fee programs, etc.

Development Impact Fees (DIF)

The development impact fee (DIF) is intended to construct or acquire needed facilities, preserve open space, and habitat needed to serve new developments. The transportation facilities include roads, bridges, and traffic signals.

C. Circulation Recommendations

1. On-Site

Figure 5-A illustrates the on-site recommended roadway and intersection lane improvements. Construction of on-site improvements shall occur in conjunction with adjacent project development activity or as needed for project access purposes.

The recommended on-site roadway improvements are described below.

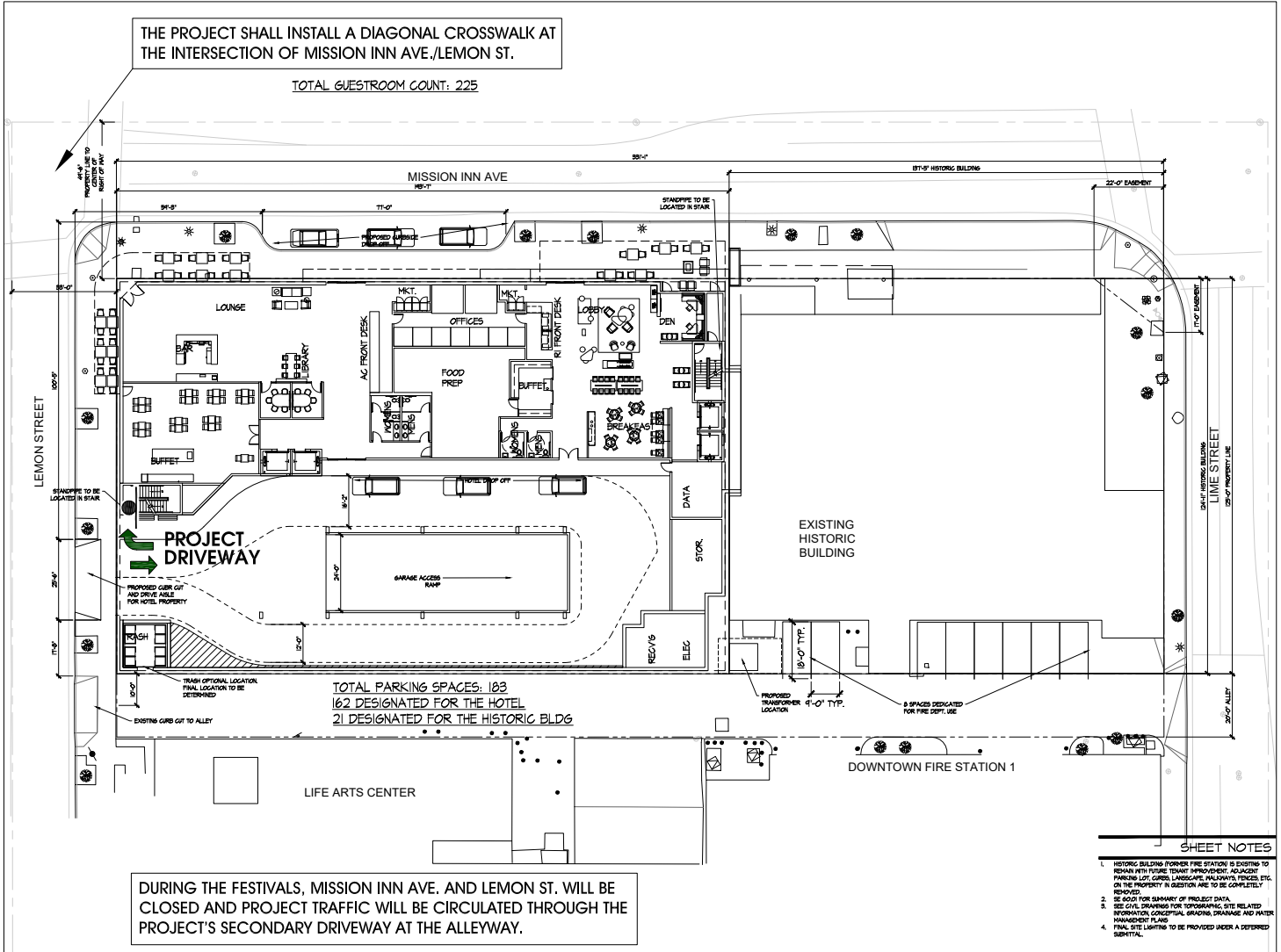
- Provide stop sign control at the project driveway.
- On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.
- Verify that minimum sight distance is provided at the project access points.

2. Off-Site

The project shall install a diagonal crosswalk at the intersection of Mission Inn Ave./Lemon St.

During the City festivals, Mission Inn Ave. and Lemon St. will be closed and project traffic will be circulated through the project's secondary driveway at the alleyway. The rolling gates shall be opened for hotel traffic. Additionally, the hotel should provide circulation information in the lobby area to inform guests of the appropriate detours.

FIGURE 5-A CIRCULATION RECOMMENDATIONS



DURING THE FESTIVALS, MISSION INN AVE. AND LEMON ST. WILL BE CLOSED AND PROJECT TRAFFIC WILL BE CIRCULATED THROUGH THE PROJECT'S SECONDARY DRIVEWAY AT THE ALLEYWAY.

ON SITE TRAFFIC SIGNING AND STRIPING SHOULD BE IMPLEMENTED IN CONJUNCTION WITH DETAILED CONSTRUCTION PLANS FOR THE PROJECT.

PROVIDE STOP SIGN CONTROL AT THE PROJECT DRIVEWAY.

VERIFY THAT MINIMUM SIGHT DISTANCE IS PROVIDED AT THE PROJECT ACCESS POINT.

LEGEND:

- = STOP SIGN
- ➡ = LANE IMPROVEMENT (PROJECT ACCESS)



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APPENDIX A
SCOPING AGREEMENT

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the City of Riverside Public Works Traffic Engineering Division requirements for traffic impact analysis of the following project. The analysis must follow the City Traffic Impact Analysis Preparation Guide dated April 2019.

Case No. _____
 Related Cases - _____
 SP No. n/a
 EIR No. n/a
 GPA No. n/a
 CZ No. n/a
 Project Name: Mariott AC/Residence Inn & Creative Office at the Historic Fire Station
 Project Address: South of Mission Inn between Lemon and Lime
 Project Description: 219 room hotel with 12,000 sf of office space

	<u>Consultant</u>	<u>Developer</u>
Name:	<u>Trames Solutions, Inc.</u>	<u>Atman Kadakia</u>
Address:	<u>Scott Sato</u> <u>4225 Oceanside Blvd., #354H</u> <u>Oceanside, CA 92056</u>	<u>Greens Group</u> <u>9289 Research Dr.</u> <u>Irvine, CA 92618</u>
Phone No:	<u>(949) 244-2436</u>	
Date:	<u>12/4/2019</u>	

A. Trip Generation Source: _____ ITE 10th Edition (See Tables 1 & 2)

Existing Land Use: <u>Parking lot/Fire Station</u>	Proposed Land Use: <u>Business Hotel/Office Space</u>
Existing Zoning: <u>DSP-RC</u>	Proposed Zoning: <u>DSP-RC</u>
Total Daily Trips <u>1,016</u>	

	<u>In</u>	<u>Out</u>	<u>Total</u>
AM Trips	<u>68</u>	<u>55</u>	<u>123</u>
PM Trips	<u>41</u>	<u>44</u>	<u>85</u>

Internal Trip Allowance No (0 % Trip Discount)
 Pass-By Trip Allowance No (0 % Trip Discount)
 (Attach additional sheet if this is a multi-use site with a breakdown of trips generated)

B. Trip Geographic Distribution: (See attached exhibit for detailed assignment). See Figure C
 N 10% S 20% E 40% W 30%

The proposed project will consist of a business hotel for those patrons that have meetings, conferences, and other events in the nearby surrounding areas. Therefore, the use of freeways are anticipated to be minimal during the peak hours. Some of the destinations include the following:

UCR – Events, classes, seminars and conferences. Route - Straight up University Ave

Riverside Community Hospital – Professional medical staff and specialist doctors, support family and friends for those staying in hospital. Route - Mission Inn Avenue to Market Street

Riverside Community College District – District meetings, events, conferences and consultants to the district offices. Route - Mission Inn Avenue to Market Street

Federal, State and local judicial facilities - Access to jails, courthouses, sheriff, PD, County Prosecutor and District Attorney. Route - Mission Inn to Orange Street into court district.

Convention Center – Conferences and Gala events. Route - Lemon Street to Fifth Street

The check in starts at 3:00 PM with check out at 11:00 AM. It is anticipated that most of the check in/out traffic will occur outside of the peak hours.

The hotel will have approximately 28 total employees. The day shift will have 10 employees working between 7 AM and 3:30 PM. The night shift will have 10 employees working between 3 PM and 11 PM. es. The graveyard shift between 7PM and 7 AM will have 4 employees. The employees are anticipated to be local residents of the City.

C. Background Traffic

Project Completion Year 2020

Annual Ambient Growth Rate: 2.0 %

Other projects to be analyzed: The Oct 2019 list. All projects within a 1.5 mile radius will be evaluated. See Attached List

Model/Forecast methodology: _____

D. Build-out Studies: Does this project require a Build-out Study per TIA guidelines Section 7.2?

☐ Yes ☒ No

E. Study Intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies).

See Figure A

1 <u>Lemon and Mission Inn</u>	7 _____
2 <u>Lemon and University</u>	8 _____
3 <u>Lime and Mission Inn</u>	9 _____
4 <u>Lime and University</u>	10 _____
5 <u>Lime and Alleyway</u>	11 _____
6 <u>Lemon and Project Driveway</u>	12 _____

F. Study Roadway Segments (For Build-out Studies):

1 _____
2 _____

3 _____
4 _____

G. Other Jurisdictional Impacts

Is this project within a City's Sphere of influence or one mile radius of boundaries?

NO

If so, name of jurisdiction: _____

H. Site Plan See Figure B

I. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Public Works Traffic Department)

Existing

Existing+Project

Existing+Ambient Growth+Cumulative

Existing+Ambient Growth+Cumulative+Project

Project shall install diagonal crosswalk at the intersection of Mission Inn/Lemon St.

During the festivals, Mission Inn and Lemon St will be closed and project traffic will be circulated through the project's secondary driveway at the alleyway. A conceptual striping plan will be provided in the traffic study.

Recommended by:

Scott Sato

Consultant's Representative

Scoping Agreement Submitted on

10/2/2019, 11/26/19

Date

Scoping Agreement Resubmitted on

12/4/2019

Date

Approved Scoping Agreement:

[Signature]

City of Riverside

Traffic Engineering Division

12/17/19

Date

TABLE 1
TRIP GENERATION RATES¹

LAND USE	ITE CODE	QUANTITY ²	PEAK HOUR TRIP RATES						DAILY
			AM			PM			
			IN	OUT	TOTAL	IN	OUT	TOTAL	
Business Hotel	312	219 RM	0.16	0.23	0.39	0.18	0.14	0.32	4.02
General Office Building ³	710	12 TSF	2.71	0.44	3.15	0.20	1.06	1.26	11.31

¹ Source: ITE (Institute of Transportation Engineers) Trip Generation Manual, 10th Edition.

² RM = Rooms, TSF = Thousand Square Feet

³ Fitted Curve Equation

TABLE 2
TRIP GENERATION SUMMARY

LAND USE	QUANTITY ¹	PEAK HOUR						DAILY
		AM			PM			
		IN	OUT	TOTAL	IN	OUT	TOTAL	
Business Hotel	219 RM	35	50	85	39	31	70	880
General Office Building	12 TSF	33	5	38	2	13	15	136
TOTAL		68	55	123	41	44	85	1,016

¹ RM = Rooms; TSF = Thousand Square Feet

FIGURE A STUDY AREA

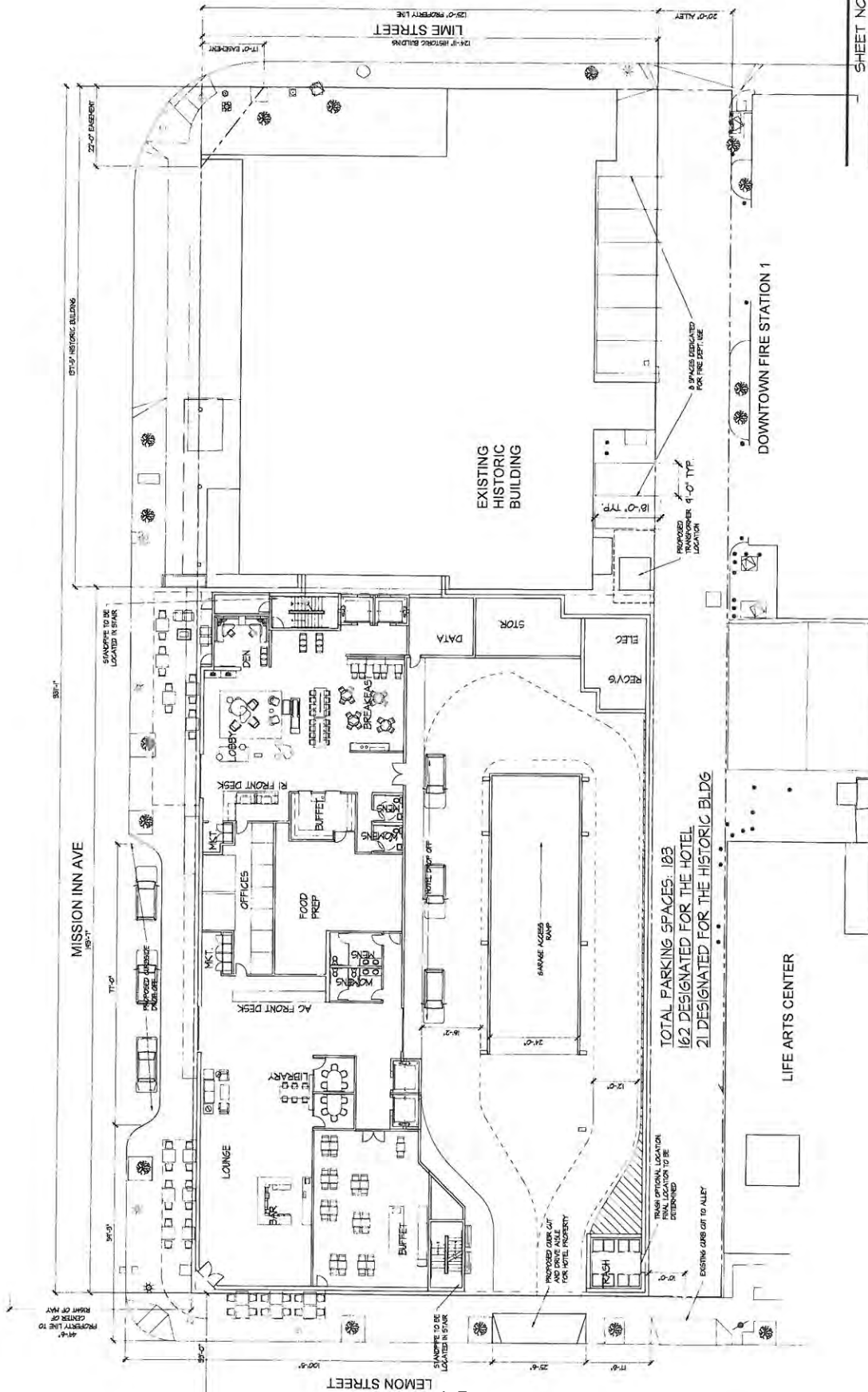


LEGEND:

- = EXISTING INTERSECTION ANALYSIS LOCATION
- = FUTURE INTERSECTION ANALYSIS LOCATION
- = FUTURE DRIVEWAY



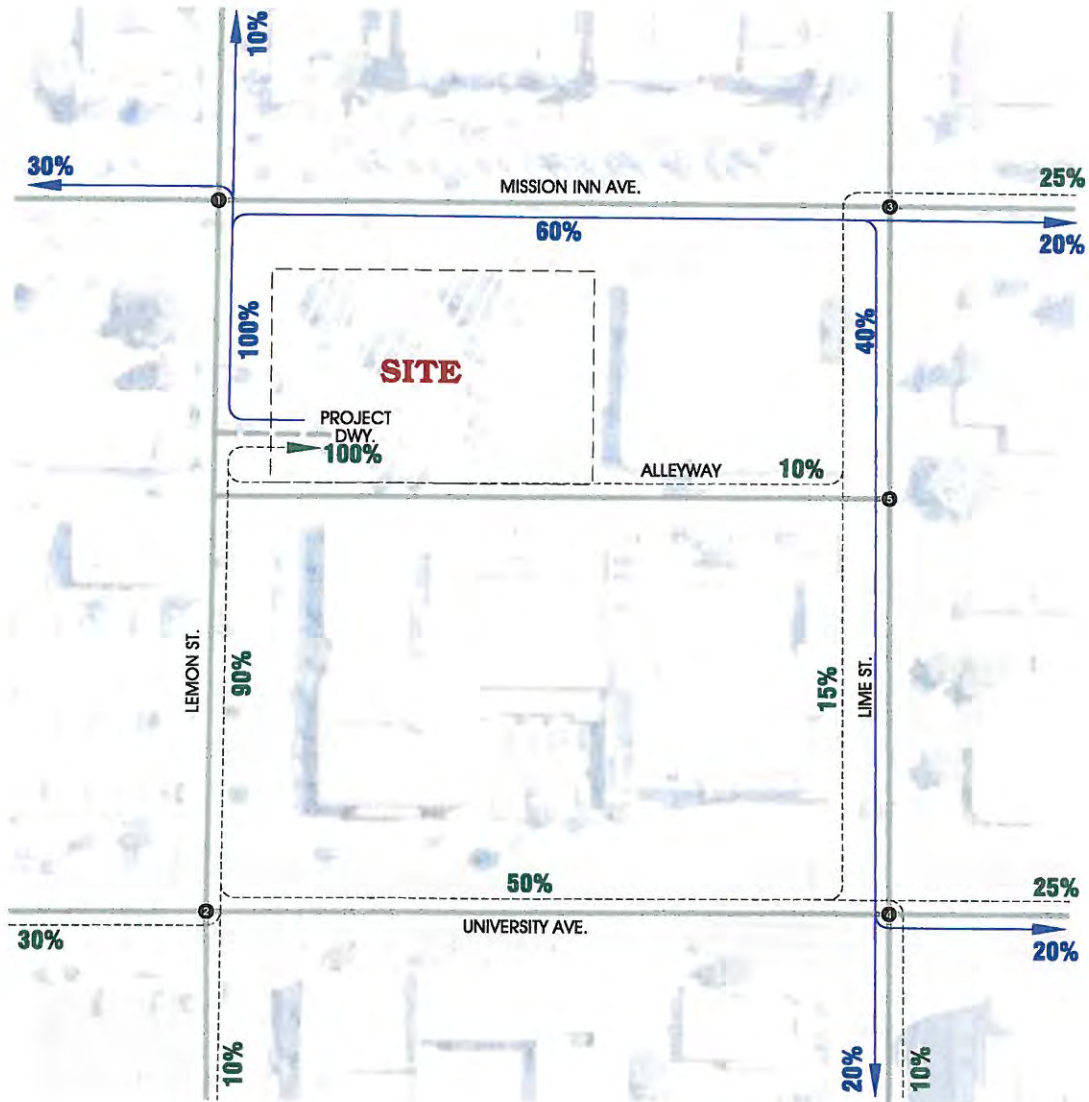
TOTAL GUESTROOM COUNT: 225



SHEET NOTES

1. HISTORIC BUILDING FORMER FIRE STATION IS EXISTING TO REMAIN. THE PROPOSED HOTEL BUILDING WILL BE ADJACENT TO THE HISTORIC BUILDING. THE PROPOSED HOTEL BUILDING WILL BE ADJACENT TO THE HISTORIC BUILDING. THE PROPOSED HOTEL BUILDING WILL BE ADJACENT TO THE HISTORIC BUILDING.
2. SEE 6020 FOR SUMMARY OF PROJECT DATA.
3. SEE 6020 FOR SUMMARY OF PROJECT DATA.
4. SEE 6020 FOR SUMMARY OF PROJECT DATA.

FIGURE C
PROJECT TRIP DISTRIBUTION



LEGEND:

- # = INTERSECTION ID
 = FUTURE DRIVEWAY
 **10%** = PERCENT FROM PROJECT (OUTBOUND)
 **10%** = PERCENT TO PROJECT (INBOUND)

C02	P13-0087 P13-0082	2400 Market Street	CLIP, CLIP, and/or a 15' wide access driveway facility within an existing three-story, approximately 13,311 square foot building, on an approximately 1.7-acre site. Located at 2400 Market Street situated on the westerly side of Market Street between Ogden Way and Northland Street, across from Fairmount Park.	Riverside	CA		1.7		67	CC AP 06/29/2015
O4	P13-0097 P13-0098 P13-0100 P13-0101	4445 Magnolia Ave		Riverside	CA		0.16	251,500		CC AP 06/29/2014
D19	P13-0249	3105 Market St	Dr. Contingency Agreement.	Riverside	CA		2.31		146	CA AP 01/26/2013
C09	P13-0535	3050/3040/3030 Fairmount & 3050/2947/3040/3020 Market	CLIP A NEW HOTEL DEVELOPMENT WITH TWO PHASES. PHASE 1: 4 104 ROOM, 62,452 S.F., 75'-0" HIGH, 6-STORY HOTEL. PHASE 2: A 135 ROOM, 76,275 S.F., 91'-4" HIGH, 6-STORY HOTEL AND A 67' HIGH 6-STORY PARKING GARAGE WITH 135 PARKING SPACES.	Riverside	CA		1.40		239 guest rooms	OPC 04/13/2018
C23	P13-0221 P13-0223 P13-0234 P13-0235	3600 Market Street	CLIP, COA, VPI, PHS, Station Plaza 108 residential units, 22,000 sq ft retail and subterranean parking, 60,000 sq ft retail and subterranean parking, where 35 feet is required. Commercial Aerospace Condominium Map.	Riverside	CA		0.53	72,000	165	OPC 04/09/2017
C10	P13-0717 P13-0718 P13-0719 P13-0720	1870 Main St	Overlays a 42,774 square foot, five-story mixed-use building containing 100 residential units, 100,000 square feet of commercial space and parking facilities on a 0.26-acre parcel developed with a building that was previously used for the construction of a mixed-use project with a density greater than 40 dwelling units per acre. 2) Parking Variance to allow fewer parking stalls than required by Code, reduced internal drive aisle widths, and the use of tandem parking stalls; and 3) Building Setback Variance to allow encroachment of the structure into the required 15-foot rear yard setback, and encroachment of the residential portion of the structure into the required 15-foot interior side yard setback.	Riverside	CA		0.86	8,197	99	OPC AP 03/09/2017
C13A	P13-0903 P13-0901 P13-0904	6399 Main	The following setbacks for the establishment of a 1,425 square foot restaurant with 3,100 square feet of outdoor dining area on a 0.26-acre parcel, developed with a building, abandoned vehicle fuel station: 1) A Minor Conditional Use Permit to permit a restaurant larger than 1,500 square feet, with outdoor dining and on-sale of alcoholic beverages; 2) Design Review for the conversion of an existing 825 square-foot vehicle fuel station building to a restaurant, construction of a 500-square-foot addition and a 2,175 square foot attached canopy, and reconfiguration of an existing parking lot; and 3) A Variance to allow the on-sale of alcohol within 100 feet of a public park and playground.	Riverside	CA		0.3	4,535		DAC AP 12/27/2018
C15	P13-0230 P13-0231	3333 Mission Inn Avenue	Conditional Use Permit to permit the construction of a mixed-use project containing: 72 affordable housing units, 5,500 square feet of office and meeting space, 3,300 square feet of museum/exhibition space, and 77 parking spaces.	Riverside	CA		1.38	9,100	72	CHB AP 10/14/2017
	P13-0238	1808 Orange Street	Proposed by B. G. Chuan of Go Man Construction and Investments Inc. To consider Tentative First Map 27146 to subdivide a partially developed 1.06-acre parcel into seven single-family residential parcels, located on the corner of Orange Street and Yucca Street, bounded at 1406' on the west by Orange Street, 1406' on the south by Yucca Street, intersection of Orange Street and Yucca Street, in the R-1 7000 - Single Family Residential Zone, Ward 1.	Riverside	CA		1.96		1	OPC AP 11/01/2019
	P13-0251 P13-0252 P13-0253 P13-0254 P13-0255 P13-0256 P13-0257 P13-0258 P13-0259 P13-0260 P13-0261 P13-0262	NEC Orange Street and Vista Avenue	THE EXCHANGE - Master-planned mixed-use development with 422 multi-family residential units, 44,500 square feet of retail and restaurant space, fuel station with 4,000 of convenience store and 8 MPD/116 pumps, two hotels totaling 220 rooms and 27 RV camping spaces. General Plan Amendment, Regional Site Plan Review, Conditional Use Permits (CUP), Tentative Parcel Map, Minor CLIP and Design Review. APN's: 209-020-040, 209-020-041, 209-020-042, 209-020-043, 209-020-044, 209-020-045, 209-020-046, 209-020-047, 209-020-048, 209-020-049, 209-020-050, 209-020-051, 209-020-052, 209-020-053, 209-020-054, 209-020-055, 209-020-056, 209-020-057, 209-020-058, 209-020-059, 209-020-060, 209-020-061, 209-020-062, 209-020-063, 209-020-064, 209-020-065, 209-020-066, 209-020-067, 209-020-068, 209-020-069, 209-020-070, 209-020-071, 209-020-072, 209-020-073, 209-020-074, 209-020-075, 209-020-076, 209-020-077, 209-020-078, 209-020-079, 209-020-080, 209-020-081, 209-020-082, 209-020-083, 209-020-084, 209-020-085, 209-020-086, 209-020-087, 209-020-088, 209-020-089, 209-020-090, 209-020-091, 209-020-092, 209-020-093, 209-020-094, 209-020-095, 209-020-096, 209-020-097, 209-020-098, 209-020-099, 209-020-100, 209-020-101, 209-020-102, 209-020-103, 209-020-104, 209-020-105, 209-020-106, 209-020-107, 209-020-108, 209-020-109, 209-020-110, 209-020-111, 209-020-112, 209-020-113, 209-020-114, 209-020-115, 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P19-0064 P19-0095 P19-0096 P19-0097 P19-0098 P19-0099	3101 Main Street	Conditional Use Permit, Design Review, Variances, and Certificate of Appropriateness to establish a 116-unit multi-family development and construction of a 745 SF commercial building	Revenue	CA	1.32	116	
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APPENDIX B

TRAFFIC COUNT WORKSHEETS

City of Riverside
N/S: Lemon Street
E/W: Mission Inn Avenue
Weather: Clear

File Name : 01_RIV_Lemon_MI AM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 1

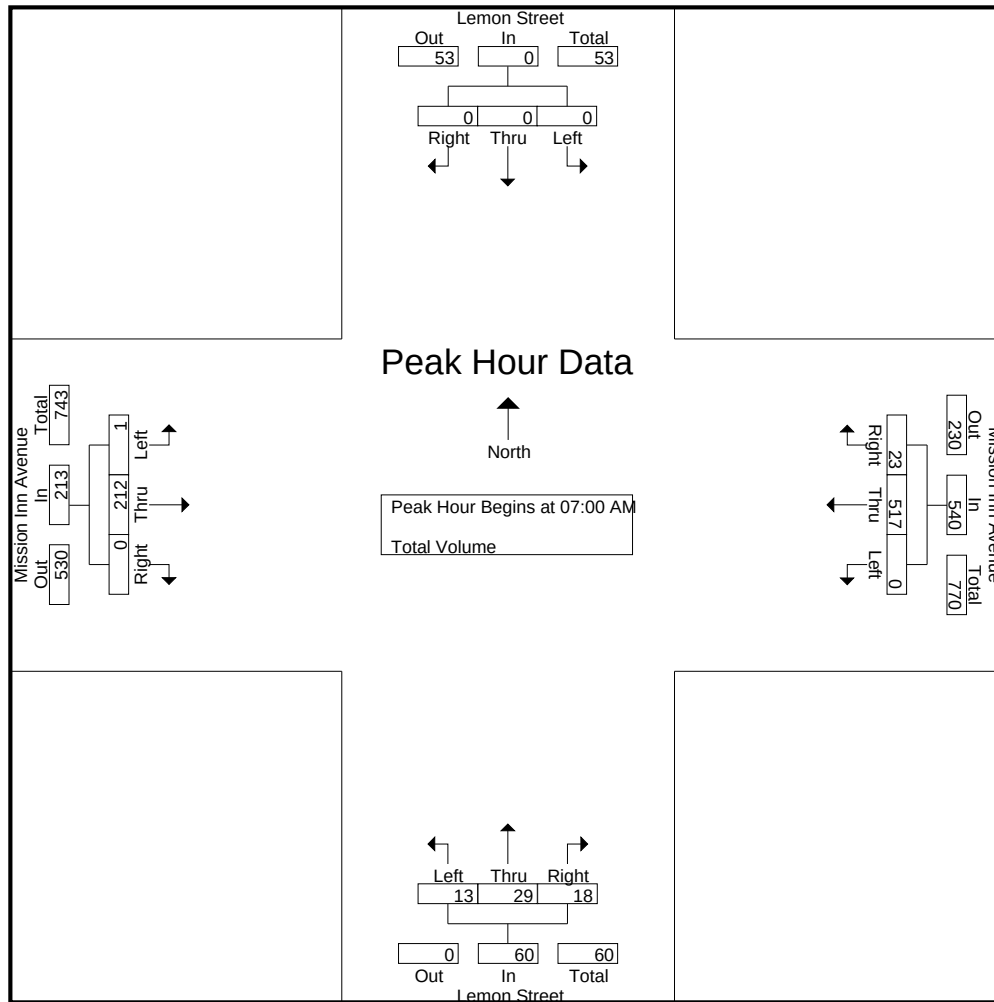
Groups Printed- Total Volume

	Lemon Street Southbound				Mission Inn Avenue Westbound				Lemon Street Northbound				Mission Inn Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	132	9	141	3	3	3	9	0	52	0	52	202
07:15 AM	0	0	0	0	0	110	9	119	4	11	7	22	1	47	0	48	189
07:30 AM	0	0	0	0	0	128	3	131	2	6	4	12	0	45	0	45	188
07:45 AM	0	0	0	0	0	147	2	149	4	9	4	17	0	68	0	68	234
Total	0	0	0	0	0	517	23	540	13	29	18	60	1	212	0	213	813
08:00 AM	0	0	0	0	0	126	2	128	1	7	5	13	2	55	0	57	198
08:15 AM	0	0	0	0	0	99	0	99	3	7	3	13	1	47	0	48	160
08:30 AM	0	0	0	0	0	97	2	99	2	15	7	24	1	56	0	57	180
08:45 AM	0	0	0	0	0	99	5	104	2	6	2	10	2	45	0	47	161
Total	0	0	0	0	0	421	9	430	8	35	17	60	6	203	0	209	699
Grand Total	0	0	0	0	0	938	32	970	21	64	35	120	7	415	0	422	1512
Apprch %	0	0	0		0	96.7	3.3		17.5	53.3	29.2		1.7	98.3	0		
Total %	0	0	0	0	0	62	2.1	64.2	1.4	4.2	2.3	7.9	0.5	27.4	0	27.9	

	Lemon Street Southbound				Mission Inn Avenue Westbound				Lemon Street Northbound				Mission Inn Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	132	9	141	3	3	3	9	0	52	0	52	202
07:15 AM	0	0	0	0	0	110	9	119	4	11	7	22	1	47	0	48	189
07:30 AM	0	0	0	0	0	128	3	131	2	6	4	12	0	45	0	45	188
07:45 AM	0	0	0	0	0	147	2	149	4	9	4	17	0	68	0	68	234
Total Volume	0	0	0	0	0	517	23	540	13	29	18	60	1	212	0	213	813
% App. Total	0	0	0		0	95.7	4.3		21.7	48.3	30		0.5	99.5	0		
PHF	.000	.000	.000	.000	.000	.879	.639	.906	.813	.659	.643	.682	.250	.779	.000	.783	.869

City of Riverside
N/S: Lemon Street
E/W: Mission Inn Avenue
Weather: Clear

File Name : 01_RIV_Lemon_MI AM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	132	9	141	4	9	4	17	0	68	0	68
+15 mins.	0	0	0	0	0	110	9	119	1	7	5	13	2	55	0	57
+30 mins.	0	0	0	0	0	128	3	131	3	7	3	13	1	47	0	48
+45 mins.	0	0	0	0	0	147	2	149	2	15	7	24	1	56	0	57
Total Volume	0	0	0	0	0	517	23	540	10	38	19	67	4	226	0	230
% App. Total	0	0	0	0	0	95.7	4.3		14.9	56.7	28.4		1.7	98.3	0	
PHF	.000	.000	.000	.000	.000	.879	.639	.906	.625	.633	.679	.698	.500	.831	.000	.846

City of Riverside
N/S: Lemon Street
E/W: Mission Inn Avenue
Weather: Clear

File Name : 01_RIV_Lemon_MI PM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 1

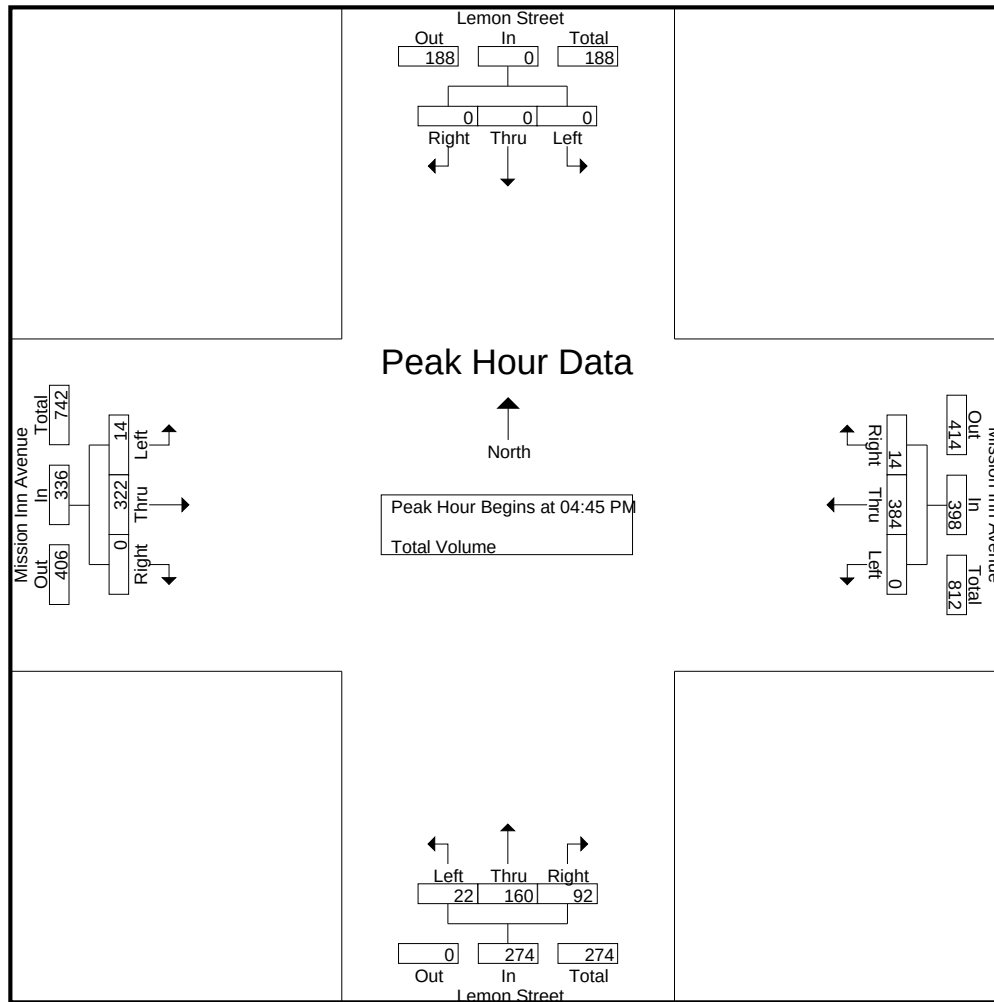
Groups Printed- Total Volume

	Lemon Street Southbound				Mission Inn Avenue Westbound				Lemon Street Northbound				Mission Inn Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	60	8	68	4	24	12	40	6	100	0	106	214
04:15 PM	0	0	0	0	0	66	4	70	3	15	16	34	3	94	0	97	201
04:30 PM	0	0	0	0	0	77	1	78	4	27	19	50	5	102	0	107	235
04:45 PM	0	0	0	0	0	93	4	97	6	32	19	57	2	86	0	88	242
Total	0	0	0	0	0	296	17	313	17	98	66	181	16	382	0	398	892
05:00 PM	0	0	0	0	0	85	2	87	4	67	28	99	6	87	0	93	279
05:15 PM	0	0	0	0	0	103	7	110	5	28	25	58	4	66	0	70	238
05:30 PM	0	0	0	0	0	103	1	104	7	33	20	60	2	83	0	85	249
05:45 PM	0	0	0	0	0	100	3	103	4	13	9	26	2	80	0	82	211
Total	0	0	0	0	0	391	13	404	20	141	82	243	14	316	0	330	977
Grand Total	0	0	0	0	0	687	30	717	37	239	148	424	30	698	0	728	1869
Apprch %	0	0	0		0	95.8	4.2		8.7	56.4	34.9		4.1	95.9	0		
Total %	0	0	0	0	0	36.8	1.6	38.4	2	12.8	7.9	22.7	1.6	37.3	0	39	

	Lemon Street Southbound				Mission Inn Avenue Westbound				Lemon Street Northbound				Mission Inn Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	93	4	97	6	32	19	57	2	86	0	88	242
05:00 PM	0	0	0	0	0	85	2	87	4	67	28	99	6	87	0	93	279
05:15 PM	0	0	0	0	0	103	7	110	5	28	25	58	4	66	0	70	238
05:30 PM	0	0	0	0	0	103	1	104	7	33	20	60	2	83	0	85	249
Total Volume	0	0	0	0	0	384	14	398	22	160	92	274	14	322	0	336	1008
% App. Total	0	0	0		0	96.5	3.5		8	58.4	33.6		4.2	95.8	0		
PHF	.000	.000	.000	.000	.000	.932	.500	.905	.786	.597	.821	.692	.583	.925	.000	.903	.903

City of Riverside
N/S: Lemon Street
E/W: Mission Inn Avenue
Weather: Clear

File Name : 01_RIV_Lemon_MI PM
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				04:45 PM				04:00 PM			
+0 mins.	0	0	0	0	0	85	2	87	6	32	19	57	6	100	0	106
+15 mins.	0	0	0	0	0	103	7	110	4	67	28	99	3	94	0	97
+30 mins.	0	0	0	0	0	103	1	104	5	28	25	58	5	102	0	107
+45 mins.	0	0	0	0	0	100	3	103	7	33	20	60	2	86	0	88
Total Volume	0	0	0	0	0	391	13	404	22	160	92	274	16	382	0	398
% App. Total	0	0	0	0	0	96.8	3.2		8	58.4	33.6		4	96	0	
PHF	.000	.000	.000	.000	.000	.949	.464	.918	.786	.597	.821	.692	.667	.936	.000	.930

City of Riverside
N/S: Lemon Street
E/W: University Avenue
Weather: Clear

File Name : 02_RIV_Lemon_University AM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 1

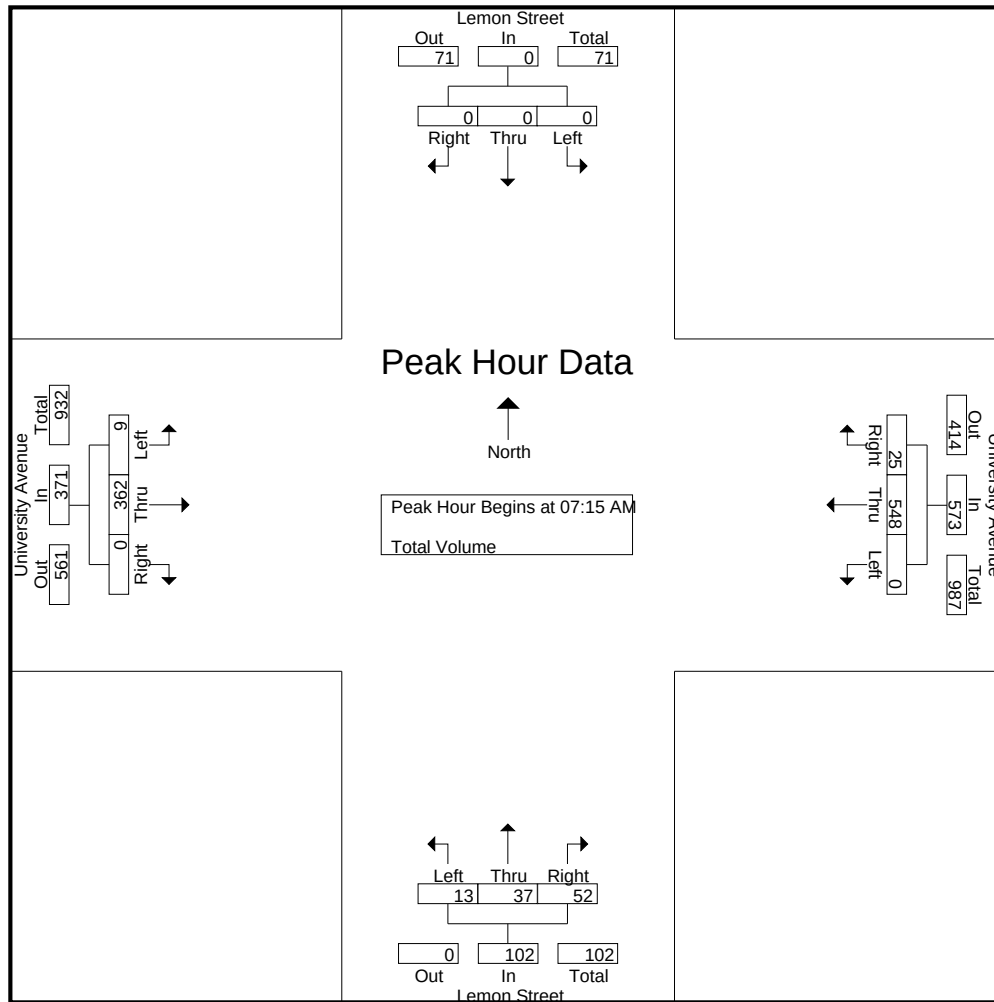
Groups Printed- Total Volume

	Lemon Street Southbound				University Avenue Westbound				Lemon Street Northbound				University Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	110	2	112	4	12	4	20	0	62	0	62	194
07:15 AM	0	0	0	0	0	151	7	158	2	15	13	30	2	98	0	100	288
07:30 AM	0	0	0	0	0	120	5	125	2	6	21	29	1	77	0	78	232
07:45 AM	0	0	0	0	0	140	7	147	3	7	12	22	3	95	0	98	267
Total	0	0	0	0	0	521	21	542	11	40	50	101	6	332	0	338	981
08:00 AM	0	0	0	0	0	137	6	143	6	9	6	21	3	92	0	95	259
08:15 AM	0	0	0	0	0	115	8	123	2	8	9	19	0	57	0	57	199
08:30 AM	0	0	0	0	0	110	8	118	5	14	8	27	2	78	0	80	225
08:45 AM	0	0	0	0	0	112	4	116	9	7	16	32	4	60	0	64	212
Total	0	0	0	0	0	474	26	500	22	38	39	99	9	287	0	296	895
Grand Total	0	0	0	0	0	995	47	1042	33	78	89	200	15	619	0	634	1876
Apprch %	0	0	0		0	95.5	4.5		16.5	39	44.5		2.4	97.6	0		
Total %	0	0	0	0	0	53	2.5	55.5	1.8	4.2	4.7	10.7	0.8	33	0	33.8	

	Lemon Street Southbound				University Avenue Westbound				Lemon Street Northbound				University Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	151	7	158	2	15	13	30	2	98	0	100	288
07:30 AM	0	0	0	0	0	120	5	125	2	6	21	29	1	77	0	78	232
07:45 AM	0	0	0	0	0	140	7	147	3	7	12	22	3	95	0	98	267
08:00 AM	0	0	0	0	0	137	6	143	6	9	6	21	3	92	0	95	259
Total Volume	0	0	0	0	0	548	25	573	13	37	52	102	9	362	0	371	1046
% App. Total	0	0	0		0	95.6	4.4		12.7	36.3	51		2.4	97.6	0		
PHF	.000	.000	.000	.000	.000	.907	.893	.907	.542	.617	.619	.850	.750	.923	.000	.928	.908

City of Riverside
N/S: Lemon Street
E/W: University Avenue
Weather: Clear

File Name : 02_RIV_Lemon_University AM
Site Code : 20120014
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	151	7	158	2	15	13	30	2	98	0	100
+15 mins.	0	0	0	0	0	120	5	125	2	6	21	29	1	77	0	78
+30 mins.	0	0	0	0	0	140	7	147	3	7	12	22	3	95	0	98
+45 mins.	0	0	0	0	0	137	6	143	6	9	6	21	3	92	0	95
Total Volume	0	0	0	0	0	548	25	573	13	37	52	102	9	362	0	371
% App. Total	0	0	0	0	0	95.6	4.4		12.7	36.3	51		2.4	97.6	0	
PHF	.000	.000	.000	.000	.000	.907	.893	.907	.542	.617	.619	.850	.750	.923	.000	.928

City of Riverside
N/S: Lemon Street
E/W: University Avenue
Weather: Clear

File Name : 02_RIV_Lemon_University PM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 1

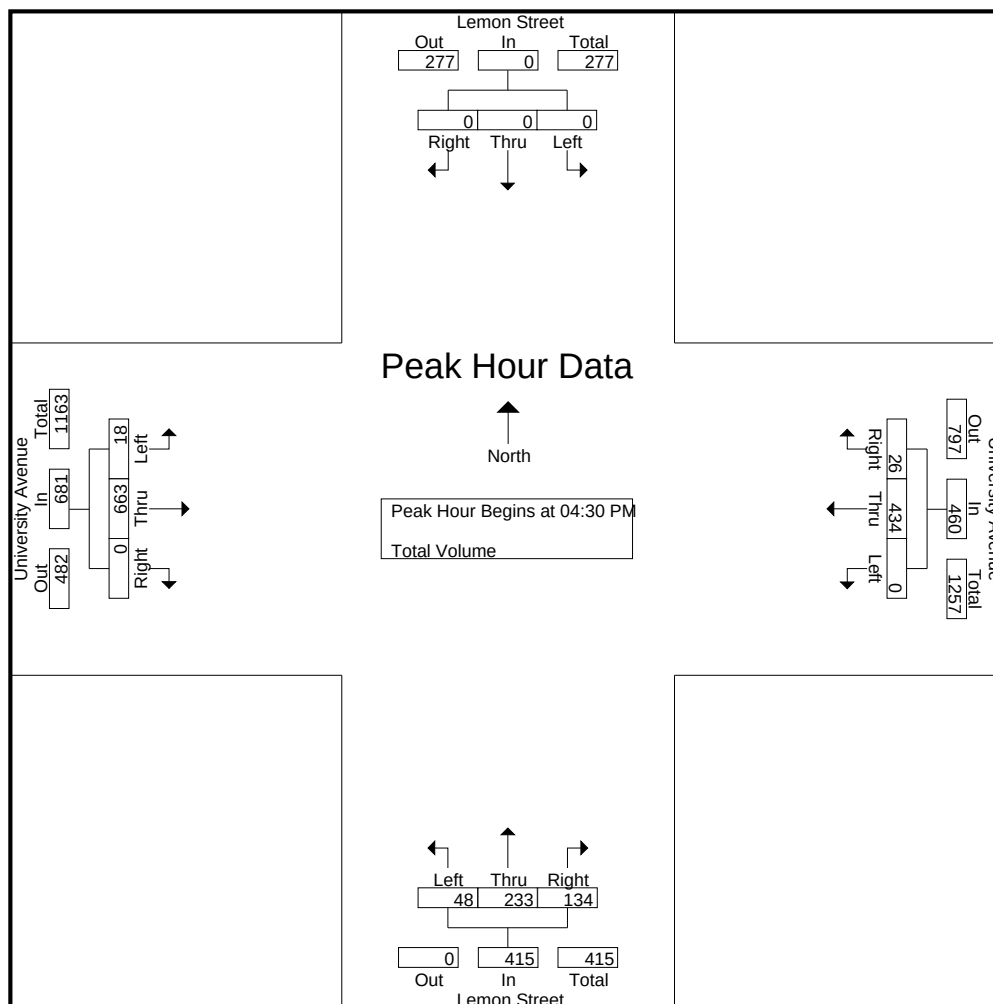
Groups Printed- Total Volume

	Lemon Street Southbound				University Avenue Westbound				Lemon Street Northbound				University Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	118	4	122	8	33	26	67	2	140	0	142	331
04:15 PM	0	0	0	0	0	101	10	111	10	23	24	57	4	135	0	139	307
04:30 PM	0	0	0	0	0	95	3	98	13	49	36	98	5	178	0	183	379
04:45 PM	0	0	0	0	0	119	4	123	14	50	27	91	6	166	0	172	386
Total	0	0	0	0	0	433	21	454	45	155	113	313	17	619	0	636	1403
05:00 PM	0	0	0	0	0	110	8	118	11	88	44	143	2	171	0	173	434
05:15 PM	0	0	0	0	0	110	11	121	10	46	27	83	5	148	0	153	357
05:30 PM	0	0	0	0	0	123	7	130	4	40	16	60	3	146	0	149	339
05:45 PM	0	0	0	0	0	153	4	157	4	17	25	46	1	149	0	150	353
Total	0	0	0	0	0	496	30	526	29	191	112	332	11	614	0	625	1483
Grand Total	0	0	0	0	0	929	51	980	74	346	225	645	28	1233	0	1261	2886
Apprch %	0	0	0		0	94.8	5.2		11.5	53.6	34.9		2.2	97.8	0		
Total %	0	0	0	0	0	32.2	1.8	34	2.6	12	7.8	22.3	1	42.7	0	43.7	

	Lemon Street Southbound				University Avenue Westbound				Lemon Street Northbound				University Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	95	3	98	13	49	36	98	5	178	0	183	379
04:45 PM	0	0	0	0	0	119	4	123	14	50	27	91	6	166	0	172	386
05:00 PM	0	0	0	0	0	110	8	118	11	88	44	143	2	171	0	173	434
05:15 PM	0	0	0	0	0	110	11	121	10	46	27	83	5	148	0	153	357
Total Volume	0	0	0	0	0	434	26	460	48	233	134	415	18	663	0	681	1556
% App. Total	0	0	0		0	94.3	5.7		11.6	56.1	32.3		2.6	97.4	0		
PHF	.000	.000	.000	.000	.000	.912	.591	.935	.857	.662	.761	.726	.750	.931	.000	.930	.896

City of Riverside
N/S: Lemon Street
E/W: University Avenue
Weather: Clear

File Name : 02_RIV_Lemon_University PM
Site Code : 20120014
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	110	8	118	13	49	36	98	5	178	0	183
+15 mins.	0	0	0	0	0	110	11	121	14	50	27	91	6	166	0	172
+30 mins.	0	0	0	0	0	123	7	130	11	88	44	143	2	171	0	173
+45 mins.	0	0	0	0	0	153	4	157	10	46	27	83	5	148	0	153
Total Volume	0	0	0	0	0	496	30	526	48	233	134	415	18	663	0	681
% App. Total	0	0	0	0	0	94.3	5.7		11.6	56.1	32.3		2.6	97.4	0	
PHF	.000	.000	.000	.000	.000	.810	.682	.838	.857	.662	.761	.726	.750	.931	.000	.930

City of Riverside
N/S: Lime Street
E/W: Mission Inn Avenue
Weather: Clear

File Name : 03_RIV_Lime_MI AM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 1

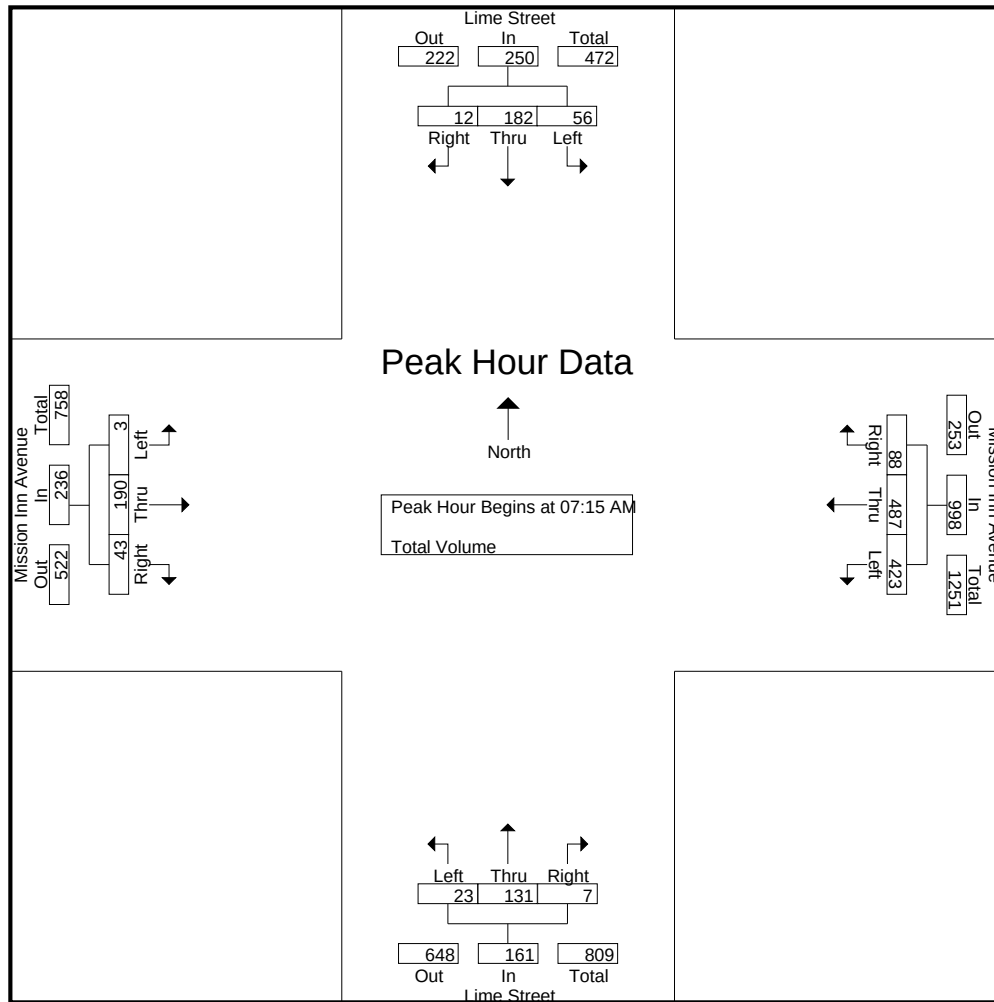
Groups Printed- Total Volume

	Lime Street Southbound				Mission Inn Avenue Westbound				Lime Street Northbound				Mission Inn Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	14	31	3	48	102	132	35	269	2	23	3	28	1	46	10	57	402
07:15 AM	11	43	1	55	98	107	30	235	9	17	2	28	1	34	10	45	363
07:30 AM	15	42	4	61	116	131	24	271	7	27	2	36	0	45	13	58	426
07:45 AM	19	43	5	67	105	128	19	252	3	41	1	45	0	56	9	65	429
Total	59	159	13	231	421	498	108	1027	21	108	8	137	2	181	42	225	1620
08:00 AM	11	54	2	67	104	121	15	240	4	46	2	52	2	55	11	68	427
08:15 AM	7	40	2	49	93	95	32	220	3	40	6	49	1	30	11	42	360
08:30 AM	11	33	4	48	86	89	49	224	7	39	5	51	3	44	11	58	381
08:45 AM	10	35	4	49	78	92	34	204	8	32	8	48	3	36	17	56	357
Total	39	162	12	213	361	397	130	888	22	157	21	200	9	165	50	224	1525
Grand Total	98	321	25	444	782	895	238	1915	43	265	29	337	11	346	92	449	3145
Apprch %	22.1	72.3	5.6		40.8	46.7	12.4		12.8	78.6	8.6		2.4	77.1	20.5		
Total %	3.1	10.2	0.8	14.1	24.9	28.5	7.6	60.9	1.4	8.4	0.9	10.7	0.3	11	2.9	14.3	

	Lime Street Southbound				Mission Inn Avenue Westbound				Lime Street Northbound				Mission Inn Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	11	43	1	55	98	107	30	235	9	17	2	28	1	34	10	45	363
07:30 AM	15	42	4	61	116	131	24	271	7	27	2	36	0	45	13	58	426
07:45 AM	19	43	5	67	105	128	19	252	3	41	1	45	0	56	9	65	429
08:00 AM	11	54	2	67	104	121	15	240	4	46	2	52	2	55	11	68	427
Total Volume	56	182	12	250	423	487	88	998	23	131	7	161	3	190	43	236	1645
% App. Total	22.4	72.8	4.8		42.4	48.8	8.8		14.3	81.4	4.3		1.3	80.5	18.2		
PHF	.737	.843	.600	.933	.912	.929	.733	.921	.639	.712	.875	.774	.375	.848	.827	.868	.959

City of Riverside
N/S: Lime Street
E/W: Mission Inn Avenue
Weather: Clear

File Name : 03_RIV_Lime_MI AM
Site Code : 20120014
Start Date : 1/7/2020
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				08:00 AM				07:15 AM			
+0 mins.	11	43	1	55	102	132	35	269	4	46	2	52	1	34	10	45
+15 mins.	15	42	4	61	98	107	30	235	3	40	6	49	0	45	13	58
+30 mins.	19	43	5	67	116	131	24	271	7	39	5	51	0	56	9	65
+45 mins.	11	54	2	67	105	128	19	252	8	32	8	48	2	55	11	68
Total Volume	56	182	12	250	421	498	108	1027	22	157	21	200	3	190	43	236
% App. Total	22.4	72.8	4.8		41	48.5	10.5		11	78.5	10.5		1.3	80.5	18.2	
PHF	.737	.843	.600	.933	.907	.943	.771	.947	.688	.853	.656	.962	.375	.848	.827	.868

City of Riverside
N/S: Lime Street
E/W: Mission Inn Avenue
Weather: Clear

File Name : 03_RIV_Lime_MI PM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 1

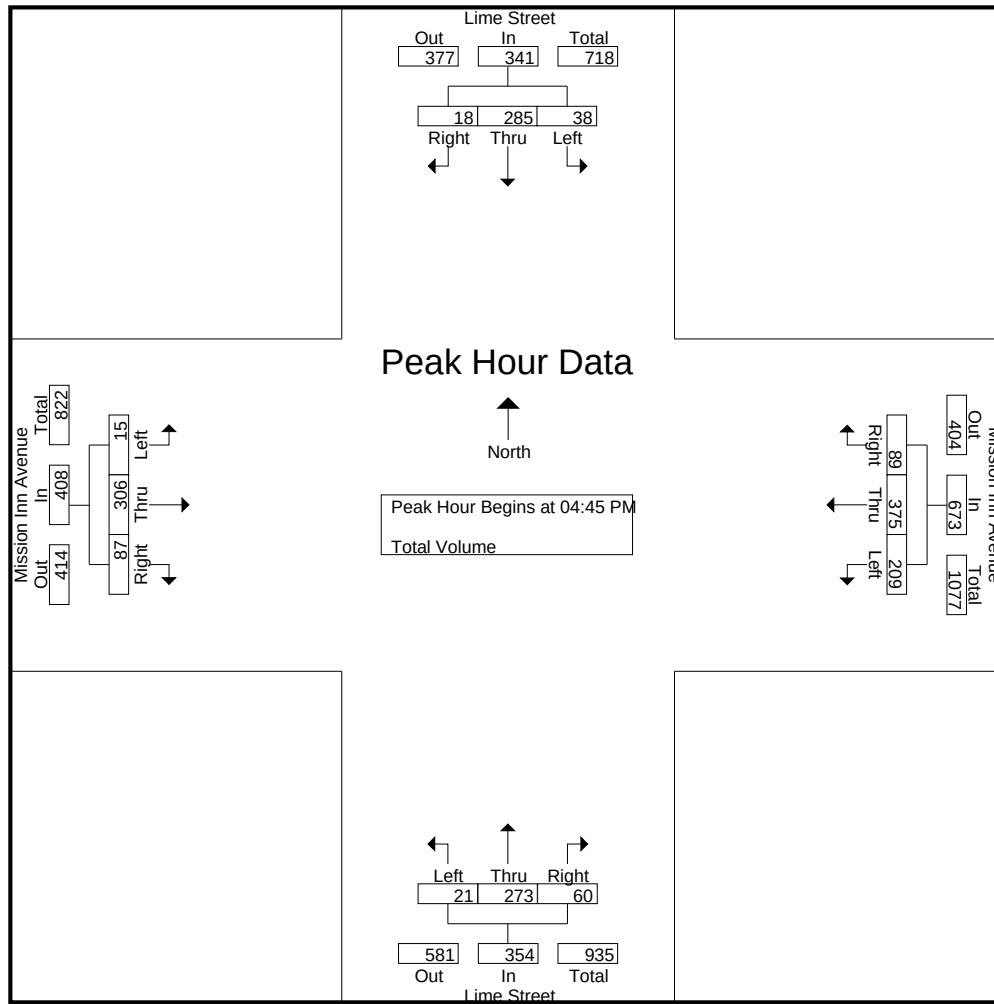
Groups Printed- Total Volume

	Lime Street Southbound				Mission Inn Avenue Westbound				Lime Street Northbound				Mission Inn Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	18	83	18	119	38	55	16	109	8	47	19	74	7	76	35	118	420
04:15 PM	9	65	4	78	31	63	28	122	5	38	17	60	4	81	28	113	373
04:30 PM	18	71	5	94	48	74	20	142	6	56	16	78	3	89	28	120	434
04:45 PM	9	56	5	70	41	85	33	159	5	53	15	73	8	75	31	114	416
Total	54	275	32	361	158	277	97	532	24	194	67	285	22	321	122	465	1643
05:00 PM	17	88	5	110	48	84	26	158	10	75	19	104	2	80	18	100	472
05:15 PM	4	69	5	78	47	109	12	168	5	95	10	110	3	70	21	94	450
05:30 PM	8	72	3	83	73	97	18	188	1	50	16	67	2	81	17	100	438
05:45 PM	13	50	5	68	56	109	21	186	3	41	16	60	2	61	19	82	396
Total	42	279	18	339	224	399	77	700	19	261	61	341	9	292	75	376	1756
Grand Total	96	554	50	700	382	676	174	1232	43	455	128	626	31	613	197	841	3399
Apprch %	13.7	79.1	7.1		31	54.9	14.1		6.9	72.7	20.4		3.7	72.9	23.4		
Total %	2.8	16.3	1.5	20.6	11.2	19.9	5.1	36.2	1.3	13.4	3.8	18.4	0.9	18	5.8	24.7	

	Lime Street Southbound				Mission Inn Avenue Westbound				Lime Street Northbound				Mission Inn Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	9	56	5	70	41	85	33	159	5	53	15	73	8	75	31	114	416
05:00 PM	17	88	5	110	48	84	26	158	10	75	19	104	2	80	18	100	472
05:15 PM	4	69	5	78	47	109	12	168	5	95	10	110	3	70	21	94	450
05:30 PM	8	72	3	83	73	97	18	188	1	50	16	67	2	81	17	100	438
Total Volume	38	285	18	341	209	375	89	673	21	273	60	354	15	306	87	408	1776
% App. Total	11.1	83.6	5.3		31.1	55.7	13.2		5.9	77.1	16.9		3.7	75	21.3		
PHF	.559	.810	.900	.775	.716	.860	.674	.895	.525	.718	.789	.805	.469	.944	.702	.895	.941

City of Riverside
N/S: Lime Street
E/W: Mission Inn Avenue
Weather: Clear

File Name : 03_RIV_Lime_MI PM
Site Code : 20120014
Start Date : 1/7/2020
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				04:30 PM				04:00 PM			
+0 mins.	18	83	18	119	48	84	26	158	6	56	16	78	7	76	35	118
+15 mins.	9	65	4	78	47	109	12	168	5	53	15	73	4	81	28	113
+30 mins.	18	71	5	94	73	97	18	188	10	75	19	104	3	89	28	120
+45 mins.	9	56	5	70	56	109	21	186	5	95	10	110	8	75	31	114
Total Volume	54	275	32	361	224	399	77	700	26	279	60	365	22	321	122	465
% App. Total	15	76.2	8.9		32	57	11		7.1	76.4	16.4		4.7	69	26.2	
PHF	.750	.828	.444	.758	.767	.915	.740	.931	.650	.734	.789	.830	.688	.902	.871	.969

City of Riverside
N/S: Lime Street
E/W: University Avenue
Weather: Clear

File Name : 04_RIV_Lime_University AM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 1

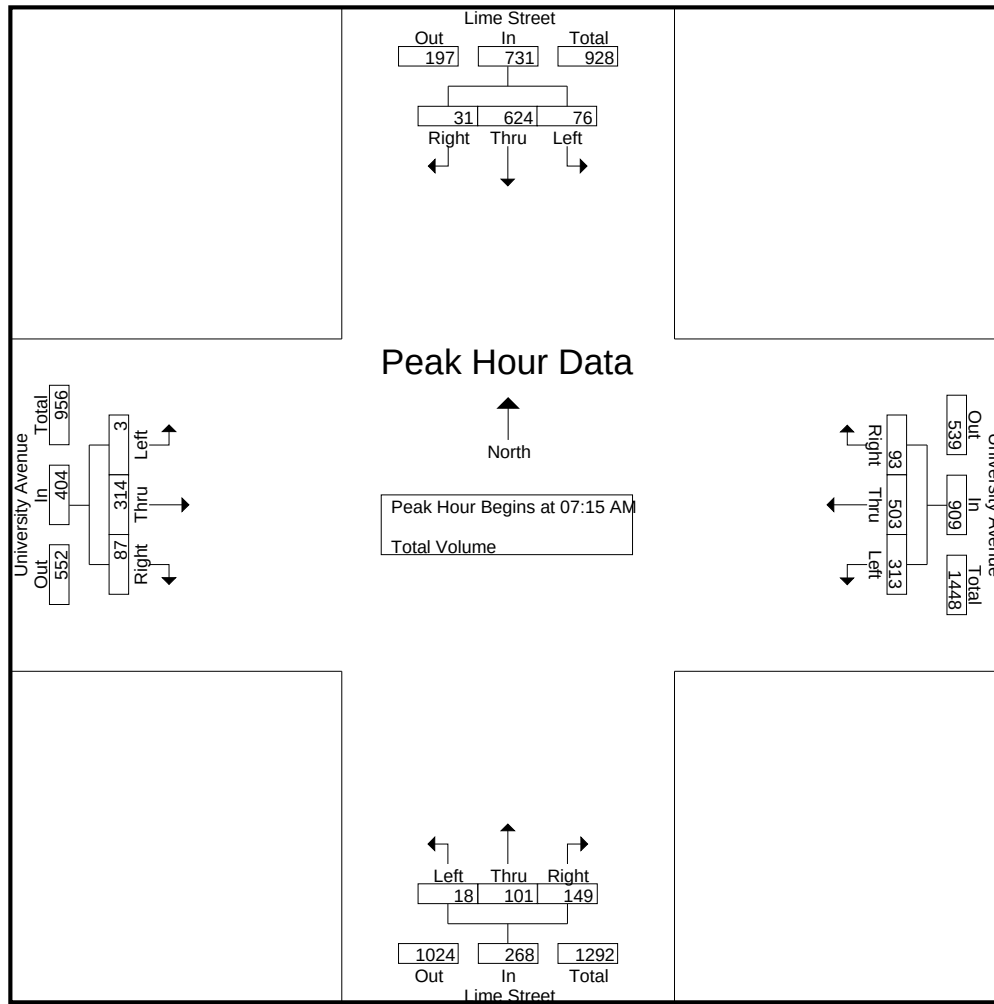
Groups Printed- Total Volume

	Lime Street Southbound				University Avenue Westbound				Lime Street Northbound				University Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	6	129	7	142	59	107	14	180	5	18	18	41	1	53	14	68	431
07:15 AM	26	138	6	170	71	131	22	224	6	12	46	64	2	77	30	109	567
07:30 AM	14	167	10	191	78	110	19	207	4	23	44	71	1	75	17	93	562
07:45 AM	15	157	6	178	79	148	24	251	2	32	32	66	0	89	24	113	608
Total	61	591	29	681	287	496	79	862	17	85	140	242	4	294	85	383	2168
08:00 AM	21	162	9	192	85	114	28	227	6	34	27	67	0	73	16	89	575
08:15 AM	13	112	9	134	67	115	29	211	3	24	24	51	0	59	20	79	475
08:30 AM	12	118	12	142	50	101	19	170	6	29	16	51	0	64	20	84	447
08:45 AM	15	113	4	132	56	112	24	192	3	25	21	49	0	62	16	78	451
Total	61	505	34	600	258	442	100	800	18	112	88	218	0	258	72	330	1948
Grand Total	122	1096	63	1281	545	938	179	1662	35	197	228	460	4	552	157	713	4116
Apprch %	9.5	85.6	4.9		32.8	56.4	10.8		7.6	42.8	49.6		0.6	77.4	22		
Total %	3	26.6	1.5	31.1	13.2	22.8	4.3	40.4	0.9	4.8	5.5	11.2	0.1	13.4	3.8	17.3	

	Lime Street Southbound				University Avenue Westbound				Lime Street Northbound				University Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	26	138	6	170	71	131	22	224	6	12	46	64	2	77	30	109	567
07:30 AM	14	167	10	191	78	110	19	207	4	23	44	71	1	75	17	93	562
07:45 AM	15	157	6	178	79	148	24	251	2	32	32	66	0	89	24	113	608
08:00 AM	21	162	9	192	85	114	28	227	6	34	27	67	0	73	16	89	575
Total Volume	76	624	31	731	313	503	93	909	18	101	149	268	3	314	87	404	2312
% App. Total	10.4	85.4	4.2		34.4	55.3	10.2		6.7	37.7	55.6		0.7	77.7	21.5		
PHF	.731	.934	.775	.952	.921	.850	.830	.905	.750	.743	.810	.944	.375	.882	.725	.894	.951

City of Riverside
N/S: Lime Street
E/W: University Avenue
Weather: Clear

File Name : 04_RIV_Lime_University AM
Site Code : 20120014
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	26	138	6	170	71	131	22	224	6	12	46	64	2	77	30	109
+15 mins.	14	167	10	191	78	110	19	207	4	23	44	71	1	75	17	93
+30 mins.	15	157	6	178	79	148	24	251	2	32	32	66	0	89	24	113
+45 mins.	21	162	9	192	85	114	28	227	6	34	27	67	0	73	16	89
Total Volume	76	624	31	731	313	503	93	909	18	101	149	268	3	314	87	404
% App. Total	10.4	85.4	4.2		34.4	55.3	10.2		6.7	37.7	55.6		0.7	77.7	21.5	
PHF	.731	.934	.775	.952	.921	.850	.830	.905	.750	.743	.810	.944	.375	.882	.725	.894

City of Riverside
N/S: Lime Street
E/W: University Avenue
Weather: Clear

File Name : 04_RIV_Lime_University PM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 1

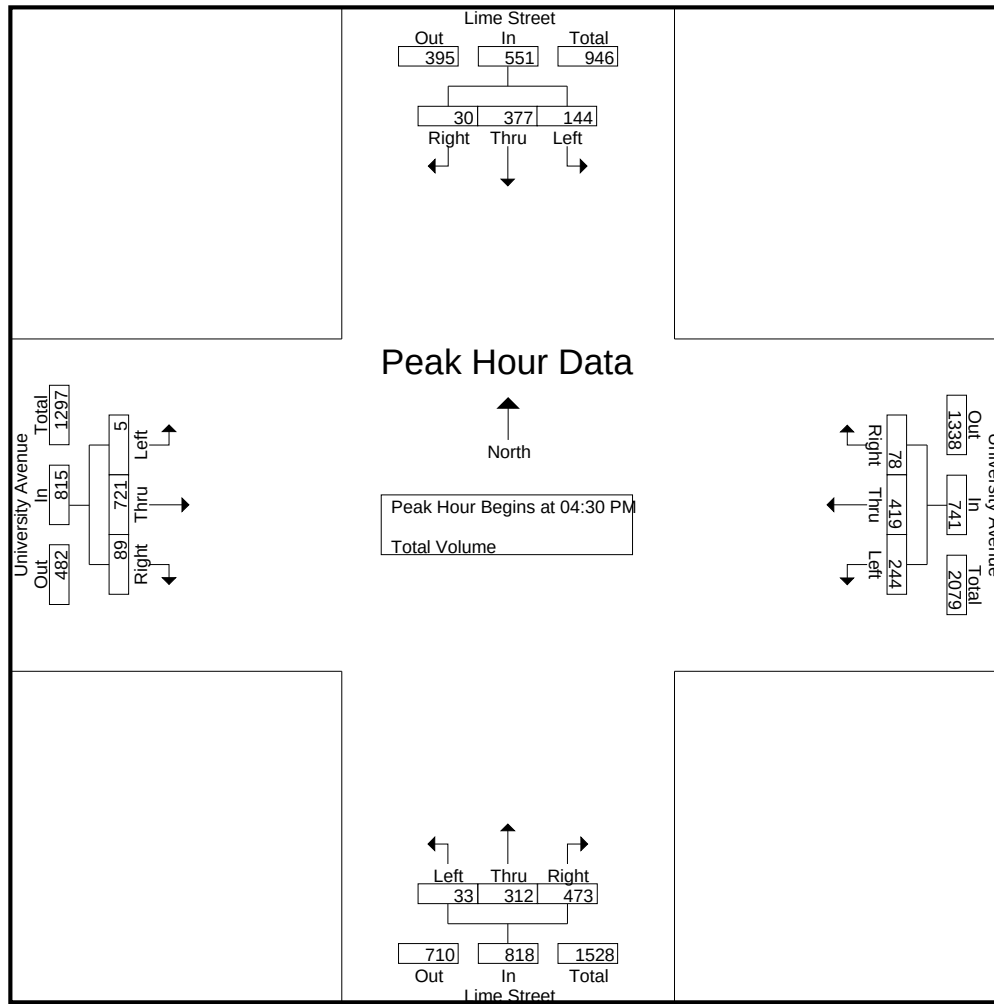
Groups Printed- Total Volume

	Lime Street Southbound				University Avenue Westbound				Lime Street Northbound				University Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	39	117	7	163	57	115	25	197	5	52	80	137	2	132	18	152	649
04:15 PM	35	91	4	130	56	103	13	172	9	41	63	113	8	148	16	172	587
04:30 PM	32	101	6	139	72	89	16	177	6	72	121	199	2	179	28	209	724
04:45 PM	36	78	11	125	67	105	22	194	11	48	100	159	0	170	19	189	667
Total	142	387	28	557	252	412	76	740	31	213	364	608	12	629	81	722	2627
05:00 PM	33	98	8	139	54	107	19	180	12	88	127	227	2	204	18	224	770
05:15 PM	43	100	5	148	51	118	21	190	4	104	125	233	1	168	24	193	764
05:30 PM	30	133	10	173	50	103	17	170	8	54	76	138	0	128	15	143	624
05:45 PM	25	95	16	136	58	129	9	196	6	47	69	122	1	153	16	170	624
Total	131	426	39	596	213	457	66	736	30	293	397	720	4	653	73	730	2782
Grand Total	273	813	67	1153	465	869	142	1476	61	506	761	1328	16	1282	154	1452	5409
Apprch %	23.7	70.5	5.8		31.5	58.9	9.6		4.6	38.1	57.3		1.1	88.3	10.6		
Total %	5	15	1.2	21.3	8.6	16.1	2.6	27.3	1.1	9.4	14.1	24.6	0.3	23.7	2.8	26.8	

	Lime Street Southbound				University Avenue Westbound				Lime Street Northbound				University Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	32	101	6	139	72	89	16	177	6	72	121	199	2	179	28	209	724
04:45 PM	36	78	11	125	67	105	22	194	11	48	100	159	0	170	19	189	667
05:00 PM	33	98	8	139	54	107	19	180	12	88	127	227	2	204	18	224	770
05:15 PM	43	100	5	148	51	118	21	190	4	104	125	233	1	168	24	193	764
Total Volume	144	377	30	551	244	419	78	741	33	312	473	818	5	721	89	815	2925
% App. Total	26.1	68.4	5.4		32.9	56.5	10.5		4	38.1	57.8		0.6	88.5	10.9		
PHF	.837	.933	.682	.931	.847	.888	.886	.955	.688	.750	.931	.878	.625	.884	.795	.910	.950

City of Riverside
N/S: Lime Street
E/W: University Avenue
Weather: Clear

File Name : 04_RIV_Lime_University PM
Site Code : 20120014
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	33	98	8	139	72	89	16	177	6	72	121	199	2	179	28	209
+15 mins.	43	100	5	148	67	105	22	194	11	48	100	159	0	170	19	189
+30 mins.	30	133	10	173	54	107	19	180	12	88	127	227	2	204	18	224
+45 mins.	25	95	16	136	51	118	21	190	4	104	125	233	1	168	24	193
Total Volume	131	426	39	596	244	419	78	741	33	312	473	818	5	721	89	815
% App. Total	22	71.5	6.5		32.9	56.5	10.5		4	38.1	57.8		0.6	88.5	10.9	
PHF	.762	.801	.609	.861	.847	.888	.886	.955	.688	.750	.931	.878	.625	.884	.795	.910

City of Riverside
N/S: Lime Street
E/W: Alleyway
Weather: Clear

File Name : 05_RIV_Lime_Alleyway AM
Site Code : 20120014
Start Date : 1/7/2020
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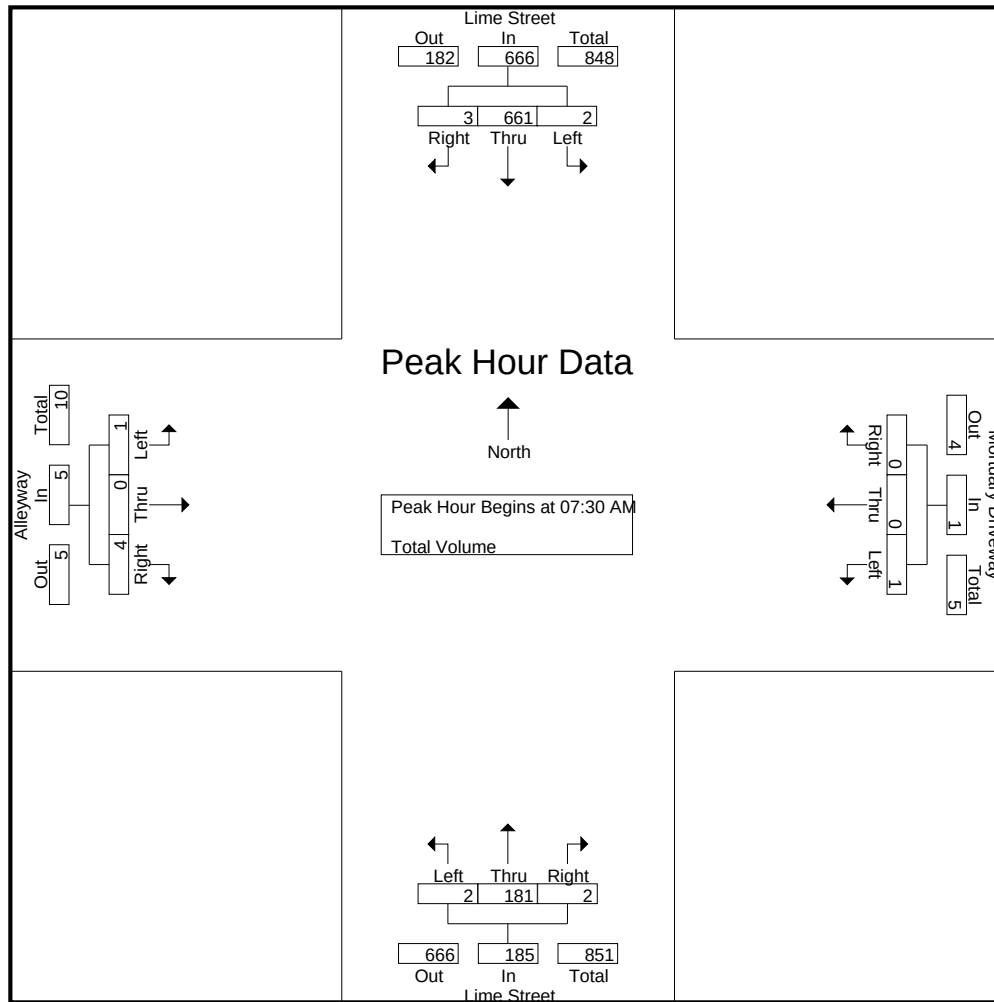
Groups Printed- Total Volume

	Lime Street Southbound				Mortuary Driveway Westbound				Lime Street Northbound				Alleyway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	138	1	139	0	0	0	0	3	29	0	32	0	0	2	2	173
07:15 AM	0	155	0	155	0	0	0	0	0	34	0	34	1	0	2	3	192
07:30 AM	0	178	1	179	0	0	0	0	1	33	1	35	1	0	0	1	215
07:45 AM	0	165	1	166	0	0	0	0	1	48	0	49	0	0	1	1	216
Total	0	636	3	639	0	0	0	0	5	144	1	150	2	0	5	7	796
08:00 AM	1	175	0	176	0	0	0	0	0	51	1	52	0	0	0	0	228
08:15 AM	1	143	1	145	1	0	0	1	0	49	0	49	0	0	3	3	198
08:30 AM	0	131	1	132	1	0	0	1	0	57	1	58	0	0	0	0	191
08:45 AM	0	135	0	135	0	0	0	0	0	41	1	42	0	0	1	1	178
Total	2	584	2	588	2	0	0	2	0	198	3	201	0	0	4	4	795
Grand Total	2	1220	5	1227	2	0	0	2	5	342	4	351	2	0	9	11	1591
Apprch %	0.2	99.4	0.4		100	0	0		1.4	97.4	1.1		18.2	0	81.8		
Total %	0.1	76.7	0.3	77.1	0.1	0	0	0.1	0.3	21.5	0.3	22.1	0.1	0	0.6	0.7	

	Lime Street Southbound				Mortuary Driveway Westbound				Lime Street Northbound				Alleyway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	178	1	179	0	0	0	0	1	33	1	35	1	0	0	1	215
07:45 AM	0	165	1	166	0	0	0	0	1	48	0	49	0	0	1	1	216
08:00 AM	1	175	0	176	0	0	0	0	0	51	1	52	0	0	0	0	228
08:15 AM	1	143	1	145	1	0	0	1	0	49	0	49	0	0	3	3	198
Total Volume	2	661	3	666	1	0	0	1	2	181	2	185	1	0	4	5	857
% App. Total	0.3	99.2	0.5		100	0	0		1.1	97.8	1.1		20	0	80		
PHF	.500	.928	.750	.930	.250	.000	.000	.250	.500	.887	.500	.889	.250	.000	.333	.417	.940

City of Riverside
N/S: Lime Street
E/W: Alleyway
Weather: Clear

File Name : 05_RIV_Lime_Alleyway AM
Site Code : 20120014
Start Date : 1/7/2020
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:45 AM				07:45 AM				07:00 AM			
+0 mins.	0	155	0	155	0	0	0	0	1	48	0	49	0	0	2	2
+15 mins.	0	178	1	179	0	0	0	0	0	51	1	52	1	0	2	3
+30 mins.	0	165	1	166	1	0	0	1	0	49	0	49	1	0	0	1
+45 mins.	1	175	0	176	1	0	0	1	0	57	1	58	0	0	1	1
Total Volume	1	673	2	676	2	0	0	2	1	205	2	208	2	0	5	7
% App. Total	0.1	99.6	0.3		100	0	0		0.5	98.6	1		28.6	0	71.4	
PHF	.250	.945	.500	.944	.500	.000	.000	.500	.250	.899	.500	.897	.500	.000	.625	.583

City of Riverside
N/S: Lime Street
E/W: Alleyway
Weather: Clear

File Name : 05_RIV_Lime_Alleyway PM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 1

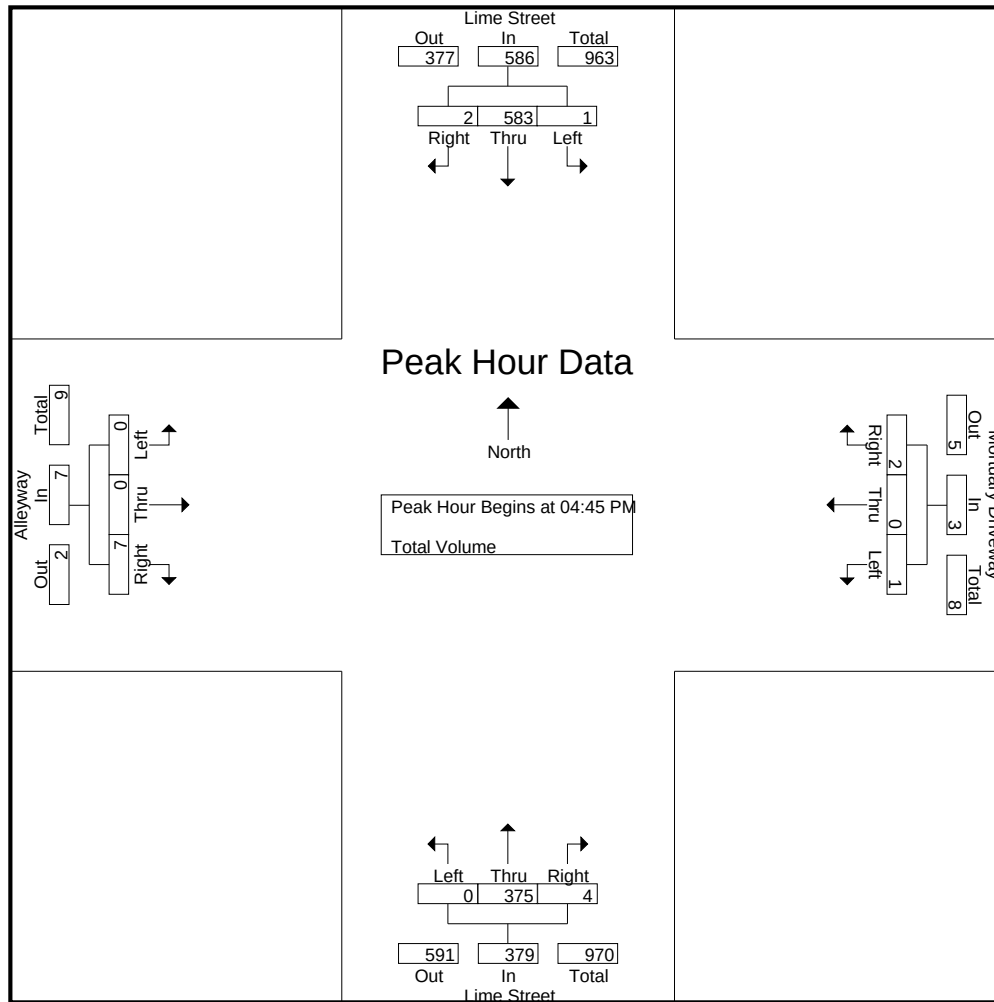
Groups Printed- Total Volume

	Lime Street Southbound				Mortuary Driveway Westbound				Lime Street Northbound				Alleyway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	150	0	150	0	0	0	0	0	81	1	82	0	0	0	0	232
04:15 PM	0	129	0	129	1	0	2	3	0	61	0	61	0	0	1	1	194
04:30 PM	0	145	0	145	2	0	0	2	0	79	0	79	0	0	0	0	226
04:45 PM	0	129	1	130	0	0	0	0	0	77	2	79	0	0	1	1	210
Total	0	553	1	554	3	0	2	5	0	298	3	301	0	0	2	2	862
05:00 PM	0	149	0	149	1	0	2	3	0	106	1	107	0	0	1	1	260
05:15 PM	0	144	0	144	0	0	0	0	0	116	1	117	0	0	2	2	263
05:30 PM	1	161	1	163	0	0	0	0	0	76	0	76	0	0	3	3	242
05:45 PM	0	124	0	124	1	0	1	2	0	65	1	66	0	0	1	1	193
Total	1	578	1	580	2	0	3	5	0	363	3	366	0	0	7	7	958
Grand Total	1	1131	2	1134	5	0	5	10	0	661	6	667	0	0	9	9	1820
Apprch %	0.1	99.7	0.2		50	0	50		0	99.1	0.9		0	0	100		
Total %	0.1	62.1	0.1	62.3	0.3	0	0.3	0.5	0	36.3	0.3	36.6	0	0	0.5	0.5	

	Lime Street Southbound				Mortuary Driveway Westbound				Lime Street Northbound				Alleyway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	129	1	130	0	0	0	0	0	77	2	79	0	0	1	1	210
05:00 PM	0	149	0	149	1	0	2	3	0	106	1	107	0	0	1	1	260
05:15 PM	0	144	0	144	0	0	0	0	0	116	1	117	0	0	2	2	263
05:30 PM	1	161	1	163	0	0	0	0	0	76	0	76	0	0	3	3	242
Total Volume	1	583	2	586	1	0	2	3	0	375	4	379	0	0	7	7	975
% App. Total	0.2	99.5	0.3		33.3	0	66.7		0	98.9	1.1		0	0	100		
PHF	.250	.905	.500	.899	.250	.000	.250	.250	.000	.808	.500	.810	.000	.000	.583	.583	.927

City of Riverside
N/S: Lime Street
E/W: Alleyway
Weather: Clear

File Name : 05_RIV_Lime_Alleyway PM
Site Code : 20120014
Start Date : 1/7/2020
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:15 PM				04:30 PM				04:45 PM			
+0 mins.	0	129	1	130	1	0	2	3	0	79	0	79	0	0	1	1
+15 mins.	0	149	0	149	2	0	0	2	0	77	2	79	0	0	1	1
+30 mins.	0	144	0	144	0	0	0	0	0	106	1	107	0	0	2	2
+45 mins.	1	161	1	163	1	0	2	3	0	116	1	117	0	0	3	3
Total Volume	1	583	2	586	4	0	4	8	0	378	4	382	0	0	7	7
% App. Total	0.2	99.5	0.3		50	0	50		0	99	1		0	0	100	
PHF	.250	.905	.500	.899	.500	.000	.500	.667	.000	.815	.500	.816	.000	.000	.583	.583

City of Riverside
N/S: Lemon Street
E/W: Mission Inn Avenue
Weather: Clear

File Name : 06_RIV_Lemon_Alleyway AM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 1

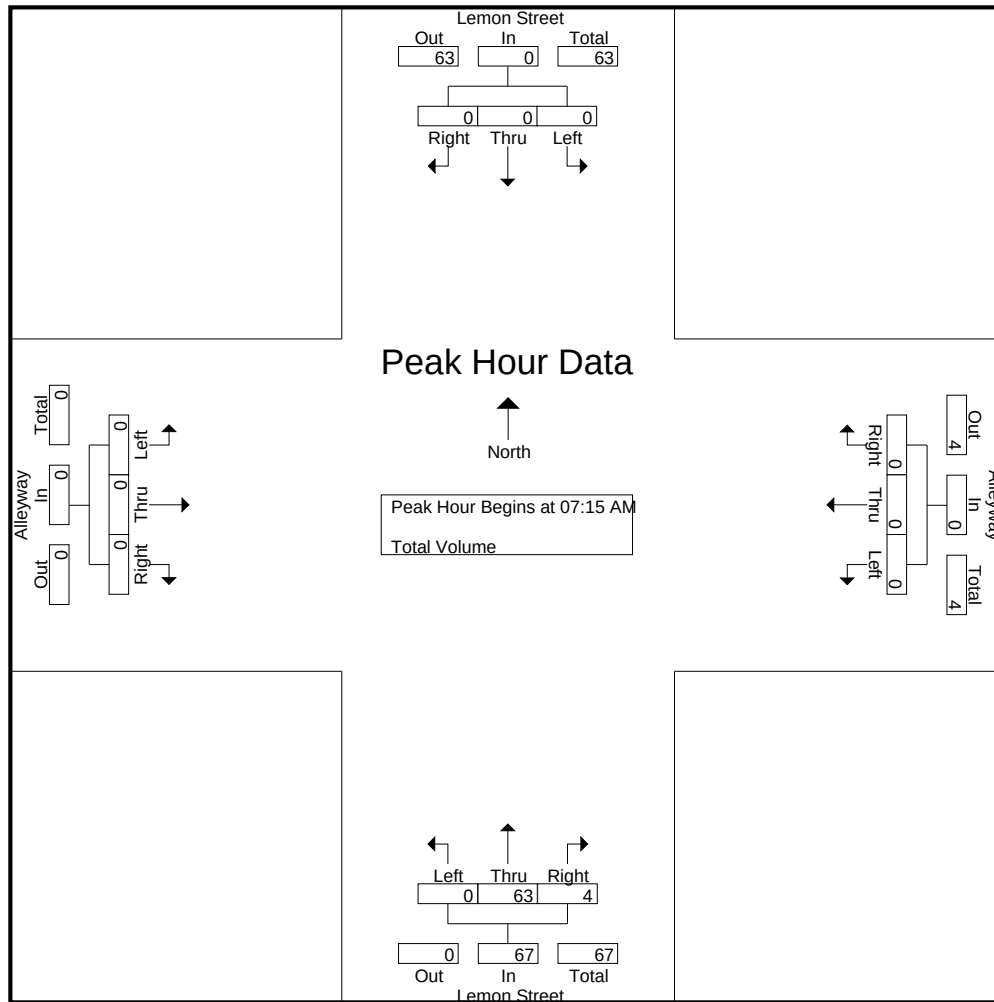
Groups Printed- Total Volume

	Lemon Street Southbound				Alleyway Westbound				Lemon Street Northbound				Alleyway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	10	0	10	0	0	0	0	10
07:15 AM	0	0	0	0	0	0	0	0	0	21	2	23	0	0	0	0	23
07:30 AM	0	0	0	0	0	0	0	0	0	14	1	15	0	0	0	0	15
07:45 AM	0	0	0	0	0	0	0	0	0	15	0	15	0	0	0	0	15
Total	0	0	0	0	0	0	0	0	0	60	3	63	0	0	0	0	63
08:00 AM	0	0	0	0	0	0	0	0	0	13	1	14	0	0	0	0	14
08:15 AM	0	0	0	0	0	0	0	0	0	10	1	11	0	0	0	0	11
08:30 AM	0	0	0	0	0	0	0	0	0	24	0	24	0	0	0	0	24
08:45 AM	0	0	0	0	0	0	0	0	0	12	0	12	0	0	0	0	12
Total	0	0	0	0	0	0	0	0	0	59	2	61	0	0	0	0	61
Grand Total	0	0	0	0	0	0	0	0	0	119	5	124	0	0	0	0	124
Apprch %	0	0	0		0	0	0		0	96	4		0	0	0		
Total %	0	0	0	0	0	0	0	0	0	96	4	100	0	0	0	0	

	Lemon Street Southbound				Alleyway Westbound				Lemon Street Northbound				Alleyway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	21	2	23	0	0	0	0	23
07:30 AM	0	0	0	0	0	0	0	0	0	14	1	15	0	0	0	0	15
07:45 AM	0	0	0	0	0	0	0	0	0	15	0	15	0	0	0	0	15
08:00 AM	0	0	0	0	0	0	0	0	0	13	1	14	0	0	0	0	14
Total Volume	0	0	0	0	0	0	0	0	0	63	4	67	0	0	0	0	67
% App. Total	0	0	0		0	0	0		0	94	6		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750	.500	.728	.000	.000	.000	.000	.728

City of Riverside
N/S: Lemon Street
E/W: Mission Inn Avenue
Weather: Clear

File Name : 06_RIV_Lemon_Alleyway AM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:15 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	21	2	23	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	14	1	15	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	15	0	15	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	13	1	14	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	63	4	67	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	94	6		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750	.500	.728	.000	.000	.000	.000

City of Riverside
N/S: Lemon Street
E/W: Mission Inn Avenue
Weather: Clear

File Name : 06_RIV_Lemon_Alleyway PM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 1

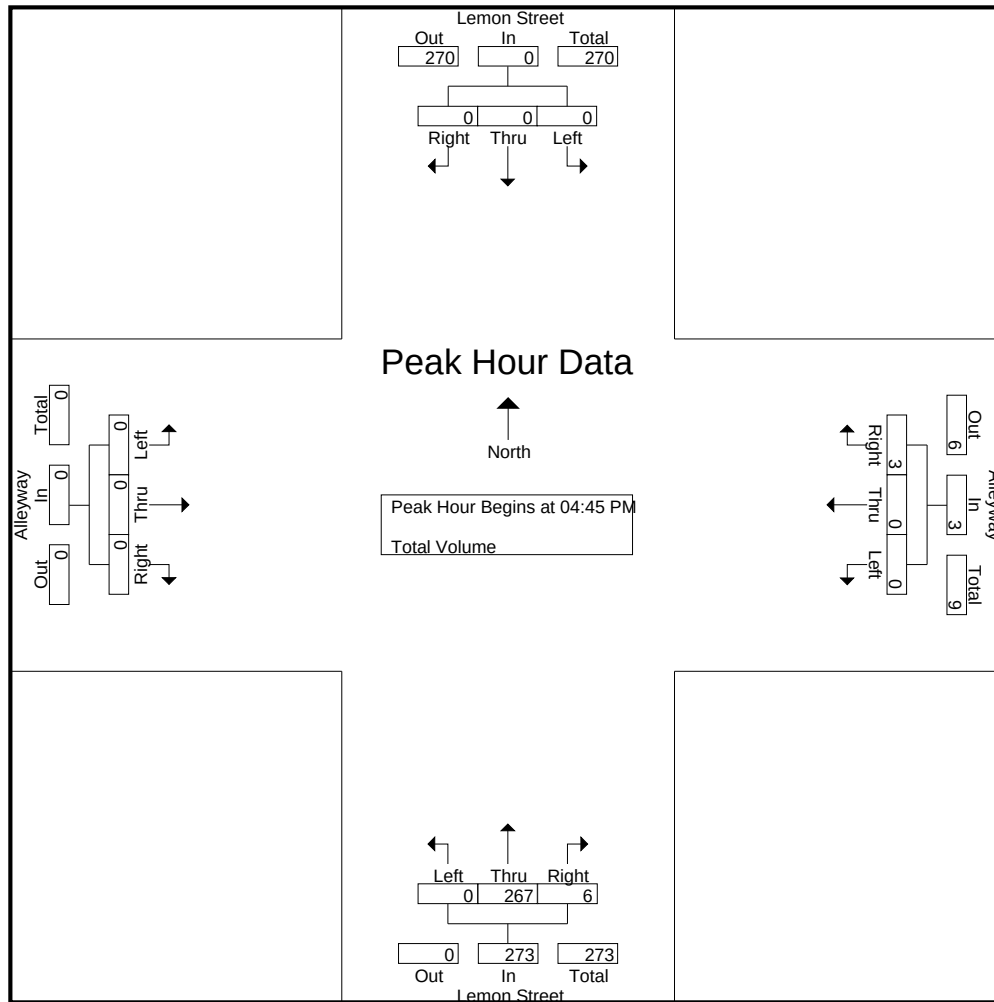
Groups Printed- Total Volume

	Lemon Street Southbound				Alleyway Westbound				Lemon Street Northbound				Alleyway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	1	2	0	38	0	38	0	0	0	0	40
04:15 PM	0	0	0	0	0	0	0	0	0	34	0	34	0	1	0	1	35
04:30 PM	0	0	0	0	0	0	0	0	0	54	0	54	0	0	0	0	54
04:45 PM	0	0	0	0	0	0	1	1	0	59	2	61	0	0	0	0	62
Total	0	0	0	0	0	1	2	3	0	185	2	187	0	1	0	1	191
05:00 PM	0	0	0	0	0	0	2	2	0	94	1	95	0	0	0	0	97
05:15 PM	0	0	0	0	0	0	0	0	0	57	1	58	0	0	0	0	58
05:30 PM	0	0	0	0	0	0	0	0	0	57	2	59	0	0	0	0	59
05:45 PM	0	0	0	0	0	0	0	0	0	20	0	20	0	0	0	0	20
Total	0	0	0	0	0	0	2	2	0	228	4	232	0	0	0	0	234
Grand Total	0	0	0	0	0	1	4	5	0	413	6	419	0	1	0	1	425
Apprch %	0	0	0		0	20	80		0	98.6	1.4		0	100	0		
Total %	0	0	0	0	0	0.2	0.9	1.2	0	97.2	1.4	98.6	0	0.2	0	0.2	

	Lemon Street Southbound				Alleyway Westbound				Lemon Street Northbound				Alleyway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	1	1	0	59	2	61	0	0	0	0	62
05:00 PM	0	0	0	0	0	0	2	2	0	94	1	95	0	0	0	0	97
05:15 PM	0	0	0	0	0	0	0	0	0	57	1	58	0	0	0	0	58
05:30 PM	0	0	0	0	0	0	0	0	0	57	2	59	0	0	0	0	59
Total Volume	0	0	0	0	0	0	3	3	0	267	6	273	0	0	0	0	276
% App. Total	0	0	0		0	0	100		0	97.8	2.2		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.375	.375	.000	.710	.750	.718	.000	.000	.000	.000	.711

City of Riverside
N/S: Lemon Street
E/W: Mission Inn Avenue
Weather: Clear

File Name : 06_RIV_Lemon_Alleyway PM
Site Code : 20120014
Start Date : 1/7/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:45 PM				04:00 PM			
+0 mins.	0	0	0	0	0	1	1	2	0	59	2	61	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	94	1	95	0	1	0	1
+30 mins.	0	0	0	0	0	0	0	0	0	57	1	58	0	0	0	0
+45 mins.	0	0	0	0	0	0	1	1	0	57	2	59	0	0	0	0
Total Volume	0	0	0	0	0	1	2	3	0	267	6	273	0	1	0	1
% App. Total	0	0	0	0	0	33.3	66.7		0	97.8	2.2		0	100	0	
PHF	.000	.000	.000	.000	.000	.250	.500	.375	.000	.710	.750	.718	.000	.250	.000	.250

APPENDIX C

EXISTING (2020) CONDITIONS INTERSECTION ANALYSIS CALCULATION WORKSHEETS

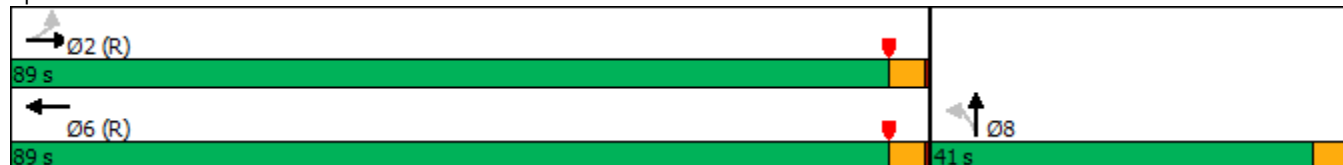
Timings

Existing AM Peak Hour

1: Lemon St. & Mission Inn

				
Lane Group	EBL	EBT	WBT	NBT
Lane Configurations				
Traffic Volume (vph)	1	212	517	29
Future Volume (vph)	1	212	517	29
Turn Type	Perm	NA	NA	NA
Protected Phases		2	6	8
Permitted Phases	2			
Detector Phase	2	2	6	8
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	41.0	41.0	41.0	41.0
Total Split (s)	89.0	89.0	89.0	41.0
Total Split (%)	68.5%	68.5%	68.5%	31.5%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Max
Act Efect Green (s)	85.0	85.0	85.0	37.0
Actuated g/C Ratio	0.65	0.65	0.65	0.28
v/c Ratio	0.00	0.20	0.51	0.07
Control Delay	8.0	9.5	6.1	23.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.0	9.5	6.1	23.1
LOS	A	A	A	C
Approach Delay		9.4	6.1	23.1
Approach LOS		A	A	C
Intersection Summary				
Cycle Length: 130				
Actuated Cycle Length: 130				
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow				
Natural Cycle: 85				
Control Type: Actuated-Coordinated				
Maximum v/c Ratio: 0.51				
Intersection Signal Delay: 8.2			Intersection LOS: A	
Intersection Capacity Utilization 39.4%			ICU Level of Service A	
Analysis Period (min) 15				

Splits and Phases: 1: Lemon St. & Mission Inn



HCM 6th Signalized Intersection Summary

1: Lemon St. & Mission Inn

Existing AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (veh/h)	1	212	0	0	517	23	13	29	18	0	0	0
Future Volume (veh/h)	1	212	0	0	517	23	13	29	18	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	1	244	0	0	594	26	15	33	21			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	581	1223	0	0	1163	51	215	477	307			
Arrive On Green	0.65	0.65	0.00	0.00	1.00	1.00	0.28	0.28	0.28			
Sat Flow, veh/h	804	1870	0	0	1779	78	756	1674	1078			
Grp Volume(v), veh/h	1	244	0	0	0	620	36	0	33			
Grp Sat Flow(s),veh/h/ln	804	1870	0	0	0	1856	1833	0	1676			
Q Serve(g_s), s	0.1	6.8	0.0	0.0	0.0	0.0	1.9	0.0	1.8			
Cycle Q Clear(g_c), s	0.1	6.8	0.0	0.0	0.0	0.0	1.9	0.0	1.8			
Prop In Lane	1.00		0.00	0.00		0.04	0.41		0.64			
Lane Grp Cap(c), veh/h	581	1223	0	0	0	1214	522	0	477			
V/C Ratio(X)	0.00	0.20	0.00	0.00	0.00	0.51	0.07	0.00	0.07			
Avail Cap(c_a), veh/h	581	1223	0	0	0	1214	522	0	477			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	0.90	1.00	0.00	1.00			
Uniform Delay (d), s/veh	7.8	9.0	0.0	0.0	0.0	0.0	33.9	0.0	33.9			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.0	1.4	0.3	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	2.8	0.0	0.0	0.0	0.5	0.9	0.0	0.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	9.3	0.0	0.0	0.0	1.4	34.2	0.0	34.2			
LnGrp LOS	A	A	A	A	A	A	C	A	C			
Approach Vol, veh/h	245			620			69					
Approach Delay, s/veh	9.3			1.4			34.2					
Approach LOS	A			A			C					
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	89.0			89.0			41.0					
Change Period (Y+Rc), s	4.0			4.0			4.0					
Max Green Setting (Gmax), s	85.0			85.0			37.0					
Max Q Clear Time (g_c+I1), s	8.8			2.0			3.9					
Green Ext Time (p_c), s	1.5			4.8			0.3					
Intersection Summary												
HCM 6th Ctrl Delay	5.9											
HCM 6th LOS	A											

Timings 2: Lemon St. & University Av

Existing AM Peak Hour

					
Lane Group	EBL	EBT	WBT	NBL	NBT
Lane Configurations					
Traffic Volume (vph)	9	362	548	13	37
Future Volume (vph)	9	362	548	13	37
Turn Type	pm+pt	NA	NA	Perm	NA
Protected Phases	5	2	6		8
Permitted Phases	2			8	
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	4.0	5.0	5.0	5.0	5.0
Minimum Split (s)	14.0	41.0	41.0	41.0	41.0
Total Split (s)	17.0	89.0	72.0	41.0	41.0
Total Split (%)	13.1%	68.5%	55.4%	31.5%	31.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	Max	Max
Act Effect Green (s)	85.0	85.0	82.9	37.0	37.0
Actuated g/C Ratio	0.65	0.65	0.64	0.28	0.28
v/c Ratio	0.02	0.17	0.28	0.03	0.11
Control Delay	8.0	9.0	5.1	33.9	16.4
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	8.0	9.0	5.2	33.9	16.4
LOS	A	A	A	C	B
Approach Delay		9.0	5.2		18.5
Approach LOS		A	A		B

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.28
 Intersection Signal Delay: 7.8
 Intersection Capacity Utilization 26.8%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 2: Lemon St. & University Av



HCM 6th Signalized Intersection Summary

2: Lemon St. & University Av

Existing AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	362	0	0	548	25	13	37	52	0	0	0
Future Volume (veh/h)	9	362	0	0	548	25	13	37	52	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	10	398	0	0	602	27	14	41	57			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	561	2324	0	0	2126	95	507	532	451			
Arrive On Green	0.01	0.65	0.00	0.00	1.00	1.00	0.28	0.28	0.28			
Sat Flow, veh/h	1781	3647	0	0	3558	155	1781	1870	1585			
Grp Volume(v), veh/h	10	398	0	0	309	320	14	41	57			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1842	1781	1870	1585			
Q Serve(g_s), s	0.3	5.7	0.0	0.0	0.0	0.0	0.7	2.1	3.5			
Cycle Q Clear(g_c), s	0.3	5.7	0.0	0.0	0.0	0.0	0.7	2.1	3.5			
Prop In Lane	1.00		0.00	0.00		0.08	1.00		1.00			
Lane Grp Cap(c), veh/h	561	2324	0	0	1091	1131	507	532	451			
V/C Ratio(X)	0.02	0.17	0.00	0.00	0.28	0.28	0.03	0.08	0.13			
Avail Cap(c_a), veh/h	723	2324	0	0	1091	1131	507	532	451			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.97	0.97	1.00	1.00	1.00			
Uniform Delay (d), s/veh	8.6	8.8	0.0	0.0	0.0	0.0	33.5	34.0	34.5			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.6	0.6	0.1	0.3	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	2.2	0.0	0.0	0.2	0.2	0.3	1.0	1.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.6	8.9	0.0	0.0	0.6	0.6	33.6	34.3	35.1			
LnGrp LOS	A	A	A	A	A	A	C	C	D			
Approach Vol, veh/h	408			629			112					
Approach Delay, s/veh	8.9			0.6			34.6					
Approach LOS	A			A			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	89.0			5.2			83.8			41.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	85.0			13.0			68.0			37.0		
Max Q Clear Time (g_c+I1), s	7.7			2.3			2.0			5.5		
Green Ext Time (p_c), s	2.8			0.0			4.2			0.6		
Intersection Summary												
HCM 6th Ctrl Delay				6.9								
HCM 6th LOS				A								
Notes												

Timings 3: Lime St. & Mission Inn

Existing AM Peak Hour

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	3	190	423	487	88	23	131	7	56	182	12
Future Volume (vph)	3	190	423	487	88	23	131	7	56	182	12
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases					6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	8.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5
Total Split (s)	8.5	42.0	38.0	71.5	71.5	8.5	41.5	41.5	8.5	41.5	41.5
Total Split (%)	6.5%	32.3%	29.2%	55.0%	55.0%	6.5%	31.9%	31.9%	6.5%	31.9%	31.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	4.0	37.8	33.2	73.8	73.8	41.9	38.7	38.7	42.8	40.4	40.4
Actuated g/C Ratio	0.03	0.29	0.26	0.57	0.57	0.32	0.30	0.30	0.33	0.31	0.31
v/c Ratio	0.06	0.24	0.97	0.47	0.10	0.06	0.24	0.01	0.15	0.17	0.02
Control Delay	73.7	26.7	82.7	19.0	3.1	21.7	26.0	0.0	30.0	34.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.7	26.7	82.7	19.0	3.1	21.7	26.0	0.0	30.0	34.2	0.1
LOS	E	C	F	B	A	C	C	A	C	C	A
Approach Delay		27.2		44.6			24.3			31.6	
Approach LOS		C		D			C			C	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 38.2

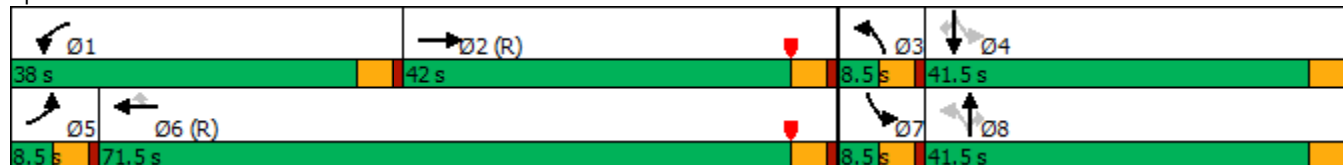
Intersection LOS: D

Intersection Capacity Utilization 55.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Lime St. & Mission Inn



HCM 6th Signalized Intersection Summary

3: Lime St. & Mission Inn

Existing AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	190	43	423	487	88	23	131	7	56	182	12
Future Volume (veh/h)	3	190	43	423	487	88	23	131	7	56	182	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	196	44	436	502	91	24	135	7	58	188	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	839	184	457	1016	861	393	532	451	420	1057	472
Arrive On Green	0.00	0.10	0.10	0.26	0.54	0.54	0.04	0.57	0.57	0.03	0.30	0.30
Sat Flow, veh/h	1781	2896	636	1781	1870	1585	1781	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	3	119	121	436	502	91	24	135	7	58	188	12
Grp Sat Flow(s),veh/h/ln	1781	1777	1756	1781	1870	1585	1781	1870	1585	1781	1777	1585
Q Serve(g_s), s	0.2	8.0	8.3	31.3	21.8	3.6	1.2	4.7	0.2	3.0	5.1	0.7
Cycle Q Clear(g_c), s	0.2	8.0	8.3	31.3	21.8	3.6	1.2	4.7	0.2	3.0	5.1	0.7
Prop In Lane	1.00		0.36	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	6	515	508	457	1016	861	393	532	451	420	1057	472
V/C Ratio(X)	0.53	0.23	0.24	0.95	0.49	0.11	0.06	0.25	0.02	0.14	0.18	0.03
Avail Cap(c_a), veh/h	55	515	508	459	1016	861	416	532	451	420	1057	472
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	45.4	45.5	47.6	18.6	14.4	31.5	21.0	20.1	31.6	33.9	32.3
Incr Delay (d2), s/veh	60.6	1.0	1.1	30.4	1.7	0.2	0.1	1.1	0.1	0.1	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.9	4.0	17.6	9.7	1.4	0.5	2.1	0.1	1.3	2.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.5	46.4	46.6	78.0	20.3	14.6	31.6	22.2	20.1	31.7	34.2	32.4
LnGrp LOS	F	D	D	E	C	B	C	C	C	C	C	C
Approach Vol, veh/h		243			1029			166			258	
Approach Delay, s/veh		47.5			44.2			23.5			33.6	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	37.9	42.1	6.8	43.2	4.9	75.1	8.5	41.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	33.5	37.5	4.0	37.0	4.0	67.0	4.0	37.0				
Max Q Clear Time (g_c+I1), s	33.3	10.3	3.2	7.1	2.2	23.8	5.0	6.7				
Green Ext Time (p_c), s	0.0	1.3	0.0	1.2	0.0	3.8	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay			41.1									
HCM 6th LOS			D									

Timings 4: Lime St. & University Av

Existing AM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	3	314	87	313	503	93	18	101	149	76	624
Future Volume (vph)	3	314	87	313	503	93	18	101	149	76	624
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6	8		8	4	
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0
Minimum Split (s)	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5
Total Split (s)	9.0	47.0	47.0	27.0	65.0	65.0	9.0	45.0	45.0	11.0	47.0
Total Split (%)	6.9%	36.2%	36.2%	20.8%	50.0%	50.0%	6.9%	34.6%	34.6%	8.5%	36.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max
Act Effect Green (s)	4.5	47.4	47.4	17.6	67.7	67.7	46.3	42.7	42.7	50.5	47.9
Actuated g/C Ratio	0.03	0.36	0.36	0.14	0.52	0.52	0.36	0.33	0.33	0.39	0.37
v/c Ratio	0.05	0.26	0.14	0.71	0.29	0.11	0.08	0.09	0.25	0.16	0.53
Control Delay	57.3	24.8	8.5	62.1	18.5	4.7	25.1	31.6	5.9	39.0	49.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Total Delay	57.3	24.8	8.5	62.1	18.5	4.7	25.1	31.6	5.9	39.0	50.4
LOS	E	C	A	E	B	A	C	C	A	D	D
Approach Delay		21.5			32.1			16.9			49.2
Approach LOS		C			C			B			D

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 33.9

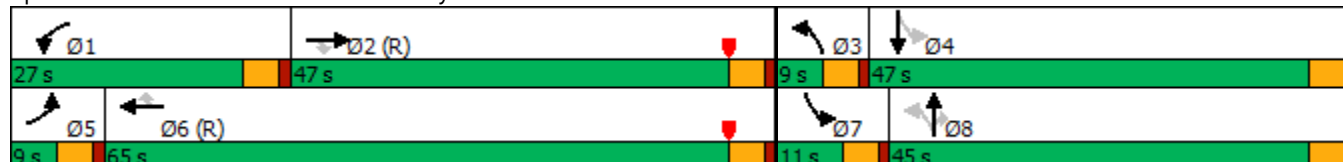
Intersection LOS: C

Intersection Capacity Utilization 47.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Lime St. & University Av



HCM 6th Signalized Intersection Summary 4: Lime St. & University Av

Existing AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	314	87	313	503	93	18	101	149	76	624	31
Future Volume (veh/h)	3	314	87	313	503	93	18	101	149	76	624	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	331	92	329	529	98	19	106	157	80	657	33
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	1396	623	395	1791	799	221	1107	494	456	1168	59
Arrive On Green	0.00	0.13	0.13	0.11	0.50	0.50	0.02	0.31	0.31	0.04	0.34	0.34
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3443	173
Grp Volume(v), veh/h	3	331	92	329	529	98	19	106	157	80	339	351
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1839
Q Serve(g_s), s	0.2	10.9	6.7	12.1	11.3	4.2	0.9	2.8	9.8	3.9	20.2	20.3
Cycle Q Clear(g_c), s	0.2	10.9	6.7	12.1	11.3	4.2	0.9	2.8	9.8	3.9	20.2	20.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	6	1396	623	395	1791	799	221	1107	494	456	603	624
V/C Ratio(X)	0.53	0.24	0.15	0.83	0.30	0.12	0.09	0.10	0.32	0.18	0.56	0.56
Avail Cap(c_a), veh/h	62	1396	623	598	1791	799	255	1107	494	469	603	624
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	39.1	37.3	56.4	18.8	17.0	30.9	31.8	34.2	27.7	35.1	35.1
Incr Delay (d2), s/veh	60.6	0.4	0.5	6.2	0.4	0.3	0.2	0.2	1.7	0.2	3.8	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.2	2.8	5.6	4.7	1.6	0.4	1.2	4.0	1.7	9.3	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.5	39.5	37.8	62.5	19.2	17.4	31.0	31.9	35.9	27.9	38.8	38.7
LnGrp LOS	F	D	D	E	B	B	C	C	D	C	D	D
Approach Vol, veh/h	426			956			282			770		
Approach Delay, s/veh	39.7			33.9			34.1			37.7		
Approach LOS	D			C			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.4	55.6	6.5	48.6	4.9	70.0	10.1	45.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	22.5	42.5	4.5	42.5	4.5	60.5	6.5	40.5				
Max Q Clear Time (g_c+I1), s	14.1	12.9	2.9	22.3	2.2	13.3	5.9	11.8				
Green Ext Time (p_c), s	0.7	2.5	0.0	4.1	0.0	4.2	0.0	1.1				
Intersection Summary												
HCM 6th Ctrl Delay	36.1											
HCM 6th LOS	D											

HCM 6th TWSC
5: Lime St. & Alleyway

Existing AM Peak Hour

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	4	1	1	1	2	181	2	2	661	3
Future Vol, veh/h	1	1	4	1	1	1	2	181	2	2	661	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	4	1	1	1	2	193	2	2	703	3

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	810	908	353	554	908	98	706	0	0	195	0	0
Stage 1	709	709	-	198	198	-	-	-	-	-	-	-
Stage 2	101	199	-	356	710	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	271	274	643	415	274	939	888	-	-	1375	-	-
Stage 1	391	435	-	785	736	-	-	-	-	-	-	-
Stage 2	894	735	-	634	435	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	269	273	643	410	273	939	888	-	-	1375	-	-
Mov Cap-2 Maneuver	269	273	-	410	273	-	-	-	-	-	-	-
Stage 1	390	434	-	783	734	-	-	-	-	-	-	-
Stage 2	889	733	-	627	434	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.3		13.7		0.1		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	888	-	-	441	419	1375	-
HCM Lane V/C Ratio	0.002	-	-	0.014	0.008	0.002	-
HCM Control Delay (s)	9.1	0	-	13.3	13.7	7.6	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-

HCM 6th TWSC
6: Lemon St. & Alleyway

Existing AM Peak Hour

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕↕				
Traffic Vol, veh/h	0	0	0	0	0	1	0	63	4	0	0	0
Future Vol, veh/h	0	0	0	0	0	1	0	63	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	1	0	86	5	0	0	0
Major/Minor	Minor2		Minor1		Major1							
Conflicting Flow All	43	91	-	-	89	46	0	0	0			
Stage 1	0	0	-	-	89	-	-	-	-			
Stage 2	43	91	-	-	0	-	-	-	-			
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-			
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-			
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-			
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-			
Pot Cap-1 Maneuver	954	798	0	0	800	1014	-	-	-			
Stage 1	-	-	0	0	820	-	-	-	-			
Stage 2	966	819	0	0	-	-	-	-	-			
Platoon blocked, %								-	-			
Mov Cap-1 Maneuver	953	798	-	-	800	1014	-	-	-			
Mov Cap-2 Maneuver	953	798	-	-	800	-	-	-	-			
Stage 1	-	-	-	-	820	-	-	-	-			
Stage 2	965	819	-	-	-	-	-	-	-			
Approach	EB		WB		NB							
HCM Control Delay, s	0		8.6		0							
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL		NBT		NBR		EBLn1WBLn1					
Capacity (veh/h)	-		-		-		1014					
HCM Lane V/C Ratio	-		-		-		0.001					
HCM Control Delay (s)	0		-		0		8.6					
HCM Lane LOS	A		-		A		A					
HCM 95th %tile O(veh)	-		-		-		0					

Timings
1: Lime St. & Mission Inn

Existing PM Peak Hour

				
Lane Group	EBL	EBT	WBT	NBT
Lane Configurations				
Traffic Volume (vph)	14	322	384	160
Future Volume (vph)	14	322	384	160
Turn Type	Perm	NA	NA	NA
Protected Phases		2	6	8
Permitted Phases	2			
Detector Phase	2	2	6	8
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	41.0	41.0	41.0	41.0
Total Split (s)	80.0	80.0	80.0	50.0
Total Split (%)	61.5%	61.5%	61.5%	38.5%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Max
Act Effect Green (s)	76.0	76.0	76.0	46.0
Actuated g/C Ratio	0.58	0.58	0.58	0.35
v/c Ratio	0.04	0.33	0.41	0.25
Control Delay	11.8	14.9	5.6	12.5
Queue Delay	0.0	0.0	0.2	0.0
Total Delay	11.8	14.9	5.7	12.5
LOS	B	B	A	B
Approach Delay		14.8	5.7	12.5
Approach LOS		B	A	B

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.41
 Intersection Signal Delay: 10.6
 Intersection Capacity Utilization 35.7%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Lime St. & Mission Inn



HCM 6th Signalized Intersection Summary

1: Lime St. & Mission Inn

Existing PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (veh/h)	14	322	0	0	384	14	22	160	92	0	0	0
Future Volume (veh/h)	14	322	0	0	384	14	22	160	92	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	16	358	0	0	427	16	24	178	102			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	609	1093	0	0	1047	39	96	720	426			
Arrive On Green	0.58	0.58	0.00	0.00	1.00	1.00	0.35	0.35	0.35			
Sat Flow, veh/h	947	1870	0	0	1791	67	272	2034	1204			
Grp Volume(v), veh/h	16	358	0	0	0	443	164	0	140			
Grp Sat Flow(s),veh/h/ln	947	1870	0	0	0	1858	1857	0	1654			
Q Serve(g_s), s	0.9	12.8	0.0	0.0	0.0	0.0	8.1	0.0	7.8			
Cycle Q Clear(g_c), s	0.9	12.8	0.0	0.0	0.0	0.0	8.1	0.0	7.8			
Prop In Lane	1.00		0.00	0.00		0.04	0.15		0.73			
Lane Grp Cap(c), veh/h	609	1093	0	0	0	1086	657	0	585			
V/C Ratio(X)	0.03	0.33	0.00	0.00	0.00	0.41	0.25	0.00	0.24			
Avail Cap(c_a), veh/h	609	1093	0	0	0	1086	657	0	585			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	0.94	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.4	13.9	0.0	0.0	0.0	0.0	29.8	0.0	29.7			
Incr Delay (d2), s/veh	0.1	0.8	0.0	0.0	0.0	1.1	0.9	0.0	1.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.2	5.5	0.0	0.0	0.0	0.3	3.8	0.0	3.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.5	14.7	0.0	0.0	0.0	1.1	30.7	0.0	30.6			
LnGrp LOS	B	B	A	A	A	A	C	A	C			
Approach Vol, veh/h	374			443			304					
Approach Delay, s/veh	14.5			1.1			30.6					
Approach LOS	B			A			C					
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	80.0			80.0			50.0					
Change Period (Y+Rc), s	4.0			4.0			4.0					
Max Green Setting (Gmax), s	76.0			76.0			46.0					
Max Q Clear Time (g_c+I1), s	14.8			2.0			10.1					
Green Ext Time (p_c), s	2.4			3.0			1.9					
Intersection Summary												
HCM 6th Ctrl Delay	13.6											
HCM 6th LOS	B											

Timings 2: Lime St. & University Av

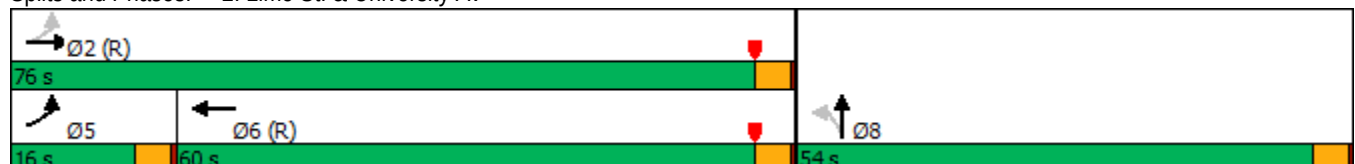
Existing PM Peak Hour

					
Lane Group	EBL	EBT	WBT	NBL	NBT
Lane Configurations					
Traffic Volume (vph)	18	663	434	48	233
Future Volume (vph)	18	663	434	48	233
Turn Type	pm+pt	NA	NA	Perm	NA
Protected Phases	5	2	6		8
Permitted Phases	2			8	
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	4.0	5.0	5.0	5.0	5.0
Minimum Split (s)	14.0	41.0	41.0	41.0	41.0
Total Split (s)	16.0	76.0	60.0	54.0	54.0
Total Split (%)	12.3%	58.5%	46.2%	41.5%	41.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	Max	Max
Act Effect Green (s)	72.0	72.0	65.7	50.0	50.0
Actuated g/C Ratio	0.55	0.55	0.51	0.38	0.38
v/c Ratio	0.04	0.38	0.29	0.08	0.32
Control Delay	13.4	17.0	8.6	26.0	22.7
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay	13.4	17.1	8.6	26.0	22.7
LOS	B	B	A	C	C
Approach Delay		17.0	8.6		23.0
Approach LOS		B	A		C

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.38
Intersection Signal Delay: 16.1
Intersection LOS: B
Intersection Capacity Utilization 33.1%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Lime St. & University Av



HCM 6th Signalized Intersection Summary

2: Lime St. & University Av

Existing PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	663	0	0	434	26	48	233	134	0	0	0
Future Volume (veh/h)	18	663	0	0	434	26	48	233	134	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	20	737	0	0	482	29	53	259	149			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	535	1968	0	0	1728	104	685	869	483			
Arrive On Green	0.02	0.55	0.00	0.00	1.00	1.00	0.38	0.38	0.38			
Sat Flow, veh/h	1781	3647	0	0	3499	204	1781	2259	1256			
Grp Volume(v), veh/h	20	737	0	0	251	260	53	213	195			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1834	1781	1870	1644			
Q Serve(g_s), s	0.7	15.2	0.0	0.0	0.0	0.0	2.5	10.3	10.8			
Cycle Q Clear(g_c), s	0.7	15.2	0.0	0.0	0.0	0.0	2.5	10.3	10.8			
Prop In Lane	1.00		0.00	0.00		0.11	1.00		0.76			
Lane Grp Cap(c), veh/h	535	1968	0	0	901	930	685	719	632			
V/C Ratio(X)	0.04	0.37	0.00	0.00	0.28	0.28	0.08	0.30	0.31			
Avail Cap(c_a), veh/h	671	1968	0	0	901	930	685	719	632			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.98	0.98	1.00	1.00	1.00			
Uniform Delay (d), s/veh	14.0	16.3	0.0	0.0	0.0	0.0	25.4	27.8	27.9			
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.8	0.7	0.2	1.0	1.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.3	6.2	0.0	0.0	0.2	0.2	1.1	4.8	4.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	16.9	0.0	0.0	0.8	0.7	25.6	28.8	29.2			
LnGrp LOS	B	B	A	A	A	A	C	C	C			
Approach Vol, veh/h	757			511			461					
Approach Delay, s/veh	16.8			0.7			28.6					
Approach LOS	B			A			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	76.0			6.1			69.9			54.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	72.0			12.0			56.0			50.0		
Max Q Clear Time (g_c+I1), s	17.2			2.7			2.0			12.8		
Green Ext Time (p_c), s	5.9			0.0			3.3			2.7		
Intersection Summary												
HCM 6th Ctrl Delay	15.2											
HCM 6th LOS	B											
Notes												

Timings

3: Lemon St. & Mission Inn

Existing PM Peak Hour

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	15	306	209	375	89	21	273	60	38	285	18
Future Volume (vph)	15	306	209	375	89	21	273	60	38	285	18
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases					6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	8.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5
Total Split (s)	10.0	46.0	32.0	68.0	68.0	8.5	43.0	43.0	9.0	43.5	43.5
Total Split (%)	7.7%	35.4%	24.6%	52.3%	52.3%	6.5%	33.1%	33.1%	6.9%	33.5%	33.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	5.5	47.8	21.2	69.5	69.5	43.5	40.3	40.3	45.1	42.4	42.4
Actuated g/C Ratio	0.04	0.37	0.16	0.53	0.53	0.33	0.31	0.31	0.35	0.33	0.33
v/c Ratio	0.22	0.33	0.77	0.40	0.11	0.06	0.50	0.11	0.14	0.26	0.03
Control Delay	95.5	24.0	69.1	20.3	3.7	15.2	21.7	0.4	28.2	33.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	95.5	24.0	69.1	20.3	3.7	15.2	22.0	0.4	28.2	33.9	0.1
LOS	F	C	E	C	A	B	C	A	C	C	A
Approach Delay		26.7		33.2			17.9			31.5	
Approach LOS		C		C			B			C	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 28.3

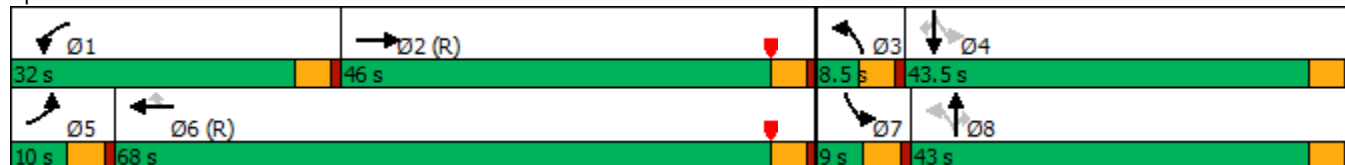
Intersection LOS: C

Intersection Capacity Utilization 55.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Lemon St. & Mission Inn



HCM 6th Signalized Intersection Summary

3: Lemon St. & Mission Inn

Existing PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	306	87	209	375	89	21	273	60	38	285	18
Future Volume (veh/h)	15	306	87	209	375	89	21	273	60	38	285	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	326	93	222	399	95	22	290	64	40	303	19
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	24	1098	308	251	988	837	337	554	469	308	1077	480
Arrive On Green	0.00	0.13	0.13	0.14	0.53	0.53	0.03	0.59	0.59	0.02	0.30	0.30
Sat Flow, veh/h	1781	2739	769	1781	1870	1585	1781	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	16	210	209	222	399	95	22	290	64	40	303	19
Grp Sat Flow(s),veh/h/ln	1781	1777	1732	1781	1870	1585	1781	1870	1585	1781	1777	1585
Q Serve(g_s), s	1.2	13.8	14.2	15.9	16.6	3.9	1.1	11.9	2.3	2.0	8.4	1.1
Cycle Q Clear(g_c), s	1.2	13.8	14.2	15.9	16.6	3.9	1.1	11.9	2.3	2.0	8.4	1.1
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	24	712	694	251	988	837	337	554	469	308	1077	480
V/C Ratio(X)	0.67	0.29	0.30	0.88	0.40	0.11	0.07	0.52	0.14	0.13	0.28	0.04
Avail Cap(c_a), veh/h	75	712	694	377	988	837	362	554	469	327	1077	480
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	39.8	40.0	54.8	18.4	15.4	30.7	21.1	19.1	31.3	34.5	32.0
Incr Delay (d2), s/veh	26.0	1.0	1.1	15.2	1.2	0.3	0.1	3.5	0.6	0.2	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	6.8	6.8	8.1	7.4	1.5	0.5	4.7	0.9	0.9	3.8	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.4	40.8	41.0	70.0	19.6	15.7	30.8	24.6	19.7	31.5	35.2	32.1
LnGrp LOS	F	D	D	E	B	B	C	C	B	C	D	C
Approach Vol, veh/h		435			716			376			362	
Approach Delay, s/veh		42.7			34.7			24.1			34.6	
Approach LOS		D			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.8	56.6	6.7	43.9	6.3	73.2	7.6	43.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	27.5	41.5	4.0	39.0	5.5	63.5	4.5	38.5				
Max Q Clear Time (g_c+I1), s	17.9	16.2	3.1	10.4	3.2	18.6	4.0	13.9				
Green Ext Time (p_c), s	0.4	2.5	0.0	2.0	0.0	2.9	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			34.4									
HCM 6th LOS			C									

Timings 4: Lemon St. & University Av

Existing PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	5	721	89	244	419	78	33	312	473	144	377
Future Volume (vph)	5	721	89	244	419	78	33	312	473	144	377
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6	8		8	4	
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0
Minimum Split (s)	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5
Total Split (s)	8.6	46.0	46.0	21.0	58.4	58.4	8.6	49.0	49.0	14.0	54.4
Total Split (%)	6.6%	35.4%	35.4%	16.2%	44.9%	44.9%	6.6%	37.7%	37.7%	10.8%	41.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max
Act Effect Green (s)	4.1	43.5	43.5	14.5	60.8	60.8	48.8	44.7	44.7	58.5	53.3
Actuated g/C Ratio	0.03	0.33	0.33	0.11	0.47	0.47	0.38	0.34	0.34	0.45	0.41
v/c Ratio	0.09	0.64	0.15	0.67	0.27	0.10	0.09	0.27	0.67	0.34	0.30
Control Delay	85.8	31.3	4.5	64.5	22.1	1.2	21.2	31.7	18.9	29.7	31.5
Queue Delay	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.8	32.0	4.5	64.5	22.1	1.2	21.2	31.7	18.9	29.7	31.5
LOS	F	C	A	E	C	A	C	C	B	C	C
Approach Delay		29.3			33.8			23.9			31.1
Approach LOS		C			C			C			C

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 29.3

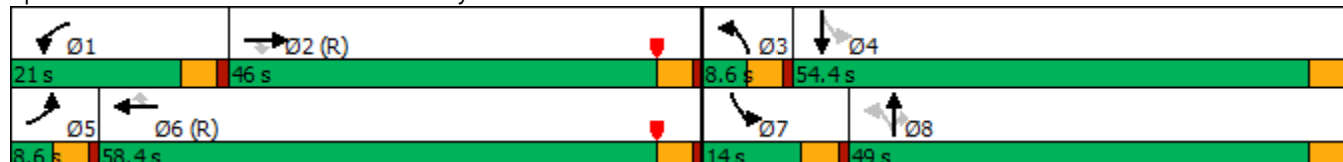
Intersection LOS: C

Intersection Capacity Utilization 68.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Lemon St. & University Av



HCM 6th Signalized Intersection Summary 4: Lemon St. & University Av

Existing PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	721	89	244	419	78	33	312	473	144	377	30
Future Volume (veh/h)	5	721	89	244	419	78	33	312	473	144	377	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	759	94	257	441	82	35	328	498	152	397	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	1276	569	316	1583	706	388	1216	543	361	1296	104
Arrive On Green	0.01	0.72	0.72	0.09	0.45	0.45	0.02	0.34	0.34	0.07	0.39	0.39
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3332	267
Grp Volume(v), veh/h	5	759	94	257	441	82	35	328	498	152	211	218
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1822
Q Serve(g_s), s	0.4	13.7	2.5	9.5	10.2	3.9	1.7	8.7	39.2	7.0	10.7	10.8
Cycle Q Clear(g_c), s	0.4	13.7	2.5	9.5	10.2	3.9	1.7	8.7	39.2	7.0	10.7	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	9	1276	569	316	1583	706	388	1216	543	361	691	709
V/C Ratio(X)	0.55	0.59	0.17	0.81	0.28	0.12	0.09	0.27	0.92	0.42	0.31	0.31
Avail Cap(c_a), veh/h	56	1276	569	439	1583	706	405	1216	543	368	691	709
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.2	13.7	12.1	58.0	22.8	21.1	26.9	31.0	41.0	23.9	27.5	27.6
Incr Delay (d2), s/veh	40.9	1.9	0.6	8.0	0.4	0.3	0.1	0.5	22.9	0.8	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.0	0.9	4.5	4.4	1.5	0.7	3.8	18.4	3.0	4.8	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	105.1	15.6	12.7	66.0	23.3	21.4	27.0	31.5	63.9	24.7	28.7	28.7
LnGrp LOS	F	B	B	E	C	C	C	C	E	C	C	C
Approach Vol, veh/h	858			780			861			581		
Approach Delay, s/veh	15.8			37.2			50.1			27.6		
Approach LOS	B			D			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	51.2	7.4	55.1	5.2	62.4	13.4	49.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	41.5	4.1	49.9	4.1	53.9	9.5	44.5				
Max Q Clear Time (g_c+I1), s	11.5	15.7	3.7	12.8	2.4	12.2	9.0	41.2				
Green Ext Time (p_c), s	0.4	5.8	0.0	2.6	0.0	3.4	0.0	1.3				
Intersection Summary												
HCM 6th Ctrl Delay	33.0											
HCM 6th LOS	C											

HCM 6th TWSC
5: Lemon St. & Alleyway

Existing PM Peak Hour

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	7	1	1	2	1	375	4	1	583	2
Future Vol, veh/h	1	1	7	1	1	2	1	375	4	1	583	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	8	1	1	2	1	403	4	1	627	2
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	834	1039	315	723	1038	204	629	0	0	407	0	0
Stage 1	630	630	-	407	407	-	-	-	-	-	-	-
Stage 2	204	409	-	316	631	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	261	229	681	314	229	803	949	-	-	1148	-	-
Stage 1	436	473	-	592	596	-	-	-	-	-	-	-
Stage 2	779	594	-	670	473	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	259	229	681	309	229	803	949	-	-	1148	-	-
Mov Cap-2 Maneuver	259	229	-	309	229	-	-	-	-	-	-	-
Stage 1	436	473	-	591	595	-	-	-	-	-	-	-
Stage 2	775	593	-	660	473	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.6		14.2		0		0					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	949	-	-	486	396	1148	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.02	0.011	0.001	-	-				
HCM Control Delay (s)	8.8	0	-	12.6	14.2	8.1	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0.1	0	0	-	-				

HCM 6th TWSC
6: Lime St. & Alleyway

Existing PM Peak Hour

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱			↰↱				
Traffic Vol, veh/h	0	0	0	0	0	3	0	267	6	0	0	0
Future Vol, veh/h	0	0	0	0	0	3	0	267	6	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	4	0	376	8	0	0	0

Major/Minor	Minor2		Minor1		Major1						
Conflicting Flow All	188	384	-	-	380	192	0	0	0		
Stage 1	0	0	-	-	380	-	-	-	-		
Stage 2	188	384	-	-	0	-	-	-	-		
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-		
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-		
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-		
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-		
Pot Cap-1 Maneuver	755	548	0	0	551	817	-	-	-		
Stage 1	-	-	0	0	612	-	-	-	-		
Stage 2	796	610	0	0	-	-	-	-	-		
Platoon blocked, %								-	-		
Mov Cap-1 Maneuver	751	548	-	-	551	817	-	-	-		
Mov Cap-2 Maneuver	751	548	-	-	551	-	-	-	-		
Stage 1	-	-	-	-	612	-	-	-	-		
Stage 2	792	610	-	-	-	-	-	-	-		

Approach	EB	WB	NB
HCM Control Delay, s	0	9.4	0
HCM LOS	A	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	
Capacity (veh/h)	-	-	-	-	817
HCM Lane V/C Ratio	-	-	-	-	0.005
HCM Control Delay (s)	0	-	-	0	9.4
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-	0

APPENDIX D

EXISTING PLUS PROJECT (EP) CONDITIONS ANALYSIS CALCULATION WORKSHEETS

Timings

E+P AM Peak Hour

1: Lemon St. & Mission Inn

				
Lane Group	EBL	EBT	WBT	NBT
Lane Configurations				
Traffic Volume (vph)	1	212	517	35
Future Volume (vph)	1	212	517	35
Turn Type	Perm	NA	NA	NA
Protected Phases		2	6	8
Permitted Phases	2			
Detector Phase	2	2	6	8
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	41.0	41.0	41.0	41.0
Total Split (s)	89.0	89.0	89.0	41.0
Total Split (%)	68.5%	68.5%	68.5%	31.5%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Max
Act Efect Green (s)	85.0	85.0	85.0	37.0
Actuated g/C Ratio	0.65	0.65	0.65	0.28
v/c Ratio	0.00	0.20	0.51	0.14
Control Delay	8.0	9.5	6.1	21.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.0	9.5	6.1	21.3
LOS	A	A	A	C
Approach Delay		9.4	6.1	21.3
Approach LOS		A	A	C
Intersection Summary				
Cycle Length: 130				
Actuated Cycle Length: 130				
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow				
Natural Cycle: 85				
Control Type: Actuated-Coordinated				
Maximum v/c Ratio: 0.51				
Intersection Signal Delay: 8.9			Intersection LOS: A	
Intersection Capacity Utilization 39.4%			ICU Level of Service A	
Analysis Period (min) 15				

Splits and Phases: 1: Lemon St. & Mission Inn



HCM 6th Signalized Intersection Summary

1: Lemon St. & Mission Inn

E+P AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (veh/h)	1	212	0	0	517	23	30	35	51	0	0	0
Future Volume (veh/h)	1	212	0	0	517	23	30	35	51	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	1	244	0	0	594	26	34	40	59			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	581	1223	0	0	1163	51	249	293	432			
Arrive On Green	0.65	0.65	0.00	0.00	1.00	1.00	0.28	0.28	0.28			
Sat Flow, veh/h	804	1870	0	0	1779	78	877	1031	1516			
Grp Volume(v), veh/h	1	244	0	0	0	620	71	0	62			
Grp Sat Flow(s),veh/h/ln	804	1870	0	0	0	1856	1827	0	1597			
Q Serve(g_s), s	0.1	6.8	0.0	0.0	0.0	0.0	3.8	0.0	3.8			
Cycle Q Clear(g_c), s	0.1	6.8	0.0	0.0	0.0	0.0	3.8	0.0	3.8			
Prop In Lane	1.00		0.00	0.00		0.04	0.48		0.95			
Lane Grp Cap(c), veh/h	581	1223	0	0	0	1214	520	0	455			
V/C Ratio(X)	0.00	0.20	0.00	0.00	0.00	0.51	0.14	0.00	0.14			
Avail Cap(c_a), veh/h	581	1223	0	0	0	1214	520	0	455			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	0.90	1.00	0.00	1.00			
Uniform Delay (d), s/veh	7.8	9.0	0.0	0.0	0.0	0.0	34.6	0.0	34.6			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.0	1.4	0.5	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	2.8	0.0	0.0	0.0	0.5	1.8	0.0	1.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	9.3	0.0	0.0	0.0	1.4	35.2	0.0	35.2			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h	245			620			133					
Approach Delay, s/veh	9.3			1.4			35.2					
Approach LOS	A			A			D					
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	89.0			89.0			41.0					
Change Period (Y+Rc), s	4.0			4.0			4.0					
Max Green Setting (Gmax), s	85.0			85.0			37.0					
Max Q Clear Time (g_c+I1), s	8.8			2.0			5.8					
Green Ext Time (p_c), s	1.5			4.8			0.7					
Intersection Summary												
HCM 6th Ctrl Delay	7.8											
HCM 6th LOS	A											

Timings 2: Lemon St. & University Av

E+P AM Peak Hour

					
Lane Group	EBL	EBT	WBT	NBL	NBT
Lane Configurations					
Traffic Volume (vph)	29	362	548	13	44
Future Volume (vph)	29	362	548	13	44
Turn Type	pm+pt	NA	NA	Perm	NA
Protected Phases	5	2	6		8
Permitted Phases	2			8	
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	4.0	5.0	5.0	5.0	5.0
Minimum Split (s)	14.0	41.0	41.0	41.0	41.0
Total Split (s)	18.0	88.0	70.0	42.0	42.0
Total Split (%)	13.8%	67.7%	53.8%	32.3%	32.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	Max	Max
Act Effect Green (s)	84.0	84.0	77.5	38.0	38.0
Actuated g/C Ratio	0.65	0.65	0.60	0.29	0.29
v/c Ratio	0.07	0.17	0.32	0.03	0.11
Control Delay	8.7	9.4	6.4	33.2	17.0
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	8.7	9.4	6.5	33.2	17.0
LOS	A	A	A	C	B
Approach Delay		9.3	6.5		18.7
Approach LOS		A	A		B

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.32
Intersection Signal Delay: 8.7
Intersection LOS: A
Intersection Capacity Utilization 34.5%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Lemon St. & University Av



HCM 6th Signalized Intersection Summary

2: Lemon St. & University Av

E+P AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	362	0	0	548	59	13	44	52	0	0	0
Future Volume (veh/h)	29	362	0	0	548	59	13	44	52	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	32	398	0	0	602	65	14	48	57			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	550	2296	0	0	1923	207	521	547	463			
Arrive On Green	0.02	0.65	0.00	0.00	1.00	1.00	0.29	0.29	0.29			
Sat Flow, veh/h	1781	3647	0	0	3329	349	1781	1870	1585			
Grp Volume(v), veh/h	32	398	0	0	330	337	14	48	57			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1808	1781	1870	1585			
Q Serve(g_s), s	0.9	5.8	0.0	0.0	0.0	0.0	0.7	2.4	3.4			
Cycle Q Clear(g_c), s	0.9	5.8	0.0	0.0	0.0	0.0	0.7	2.4	3.4			
Prop In Lane	1.00		0.00	0.00		0.19	1.00		1.00			
Lane Grp Cap(c), veh/h	550	2296	0	0	1056	1074	521	547	463			
V/C Ratio(X)	0.06	0.17	0.00	0.00	0.31	0.31	0.03	0.09	0.12			
Avail Cap(c_a), veh/h	704	2296	0	0	1056	1074	521	547	463			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.97	0.97	1.00	1.00	1.00			
Uniform Delay (d), s/veh	9.0	9.2	0.0	0.0	0.0	0.0	32.8	33.4	33.8			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.8	0.7	0.1	0.3	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.3	2.2	0.0	0.0	0.2	0.2	0.3	1.2	1.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	9.3	0.0	0.0	0.8	0.7	32.9	33.7	34.3			
LnGrp LOS	A	A	A	A	A	A	C	C	C			
Approach Vol, veh/h	430			667			119					
Approach Delay, s/veh	9.3			0.7			33.9					
Approach LOS	A			A			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	88.0			6.7			81.3			42.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	84.0			14.0			66.0			38.0		
Max Q Clear Time (g_c+I1), s	7.8			2.9			2.0			5.4		
Green Ext Time (p_c), s	2.8			0.0			4.5			0.6		
Intersection Summary												
HCM 6th Ctrl Delay				7.0								
HCM 6th LOS				A								
Notes												

Timings 3: Lime St. & Mission Inn

E+P AM Peak Hour

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	3	201	440	487	88	23	131	7	56	182	12
Future Volume (vph)	3	201	440	487	88	23	131	7	56	182	12
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases					6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	8.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5
Total Split (s)	8.5	42.0	38.0	71.5	71.5	8.5	41.5	41.5	8.5	41.5	41.5
Total Split (%)	6.5%	32.3%	29.2%	55.0%	55.0%	6.5%	31.9%	31.9%	6.5%	31.9%	31.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	4.0	37.5	33.5	73.8	73.8	41.9	38.7	38.7	42.8	40.4	40.4
Actuated g/C Ratio	0.03	0.29	0.26	0.57	0.57	0.32	0.30	0.30	0.33	0.31	0.31
v/c Ratio	0.06	0.27	1.00	0.47	0.10	0.06	0.24	0.01	0.15	0.17	0.02
Control Delay	70.7	29.3	89.3	19.0	3.1	21.7	26.0	0.0	30.0	34.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.7	29.3	89.3	19.0	3.1	21.7	26.0	0.0	30.0	34.2	0.1
LOS	E	C	F	B	A	C	C	A	C	C	A
Approach Delay		29.7		48.1			24.3			31.6	
Approach LOS		C		D			C			C	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 40.5

Intersection LOS: D

Intersection Capacity Utilization 57.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Lime St. & Mission Inn



HCM 6th Signalized Intersection Summary 3: Lime St. & Mission Inn

E+P AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	201	65	440	487	88	23	131	7	56	182	12
Future Volume (veh/h)	3	201	65	440	487	88	23	131	7	56	182	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	207	67	454	502	91	24	135	7	58	188	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	767	241	459	1016	861	393	532	451	420	1057	472
Arrive On Green	0.00	0.10	0.10	0.26	0.54	0.54	0.04	0.57	0.57	0.03	0.30	0.30
Sat Flow, veh/h	1781	2660	837	1781	1870	1585	1781	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	3	136	138	454	502	91	24	135	7	58	188	12
Grp Sat Flow(s),veh/h/ln	1781	1777	1720	1781	1870	1585	1781	1870	1585	1781	1777	1585
Q Serve(g_s), s	0.2	9.3	9.7	33.0	21.8	3.6	1.2	4.7	0.2	3.0	5.1	0.7
Cycle Q Clear(g_c), s	0.2	9.3	9.7	33.0	21.8	3.6	1.2	4.7	0.2	3.0	5.1	0.7
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	6	513	496	459	1016	861	393	532	451	420	1057	472
V/C Ratio(X)	0.53	0.27	0.28	0.99	0.49	0.11	0.06	0.25	0.02	0.14	0.18	0.03
Avail Cap(c_a), veh/h	55	513	496	459	1016	861	416	532	451	420	1057	472
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	46.0	46.2	48.1	18.6	14.4	31.5	21.0	20.1	31.6	33.9	32.3
Incr Delay (d2), s/veh	60.6	1.3	1.4	39.0	1.7	0.2	0.1	1.1	0.1	0.1	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.5	4.6	19.4	9.7	1.4	0.5	2.1	0.1	1.3	2.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.5	47.3	47.6	87.1	20.3	14.6	31.6	22.2	20.1	31.7	34.2	32.4
LnGrp LOS	F	D	D	F	C	B	C	C	C	C	C	C
Approach Vol, veh/h		277			1047			166			258	
Approach Delay, s/veh		48.3			48.8			23.5			33.6	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	38.0	42.0	6.8	43.2	4.9	75.1	8.5	41.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	33.5	37.5	4.0	37.0	4.0	67.0	4.0	37.0				
Max Q Clear Time (g_c+I1), s	35.0	11.7	3.2	7.1	2.2	23.8	5.0	6.7				
Green Ext Time (p_c), s	0.0	1.5	0.0	1.2	0.0	3.8	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay			44.0									
HCM 6th LOS			D									

Timings
4: Lime St. & University Av

E+P AM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	3	314	87	313	520	93	25	101	149	87	635
Future Volume (vph)	3	314	87	313	520	93	25	101	149	87	635
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6	8		8	4	
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0
Minimum Split (s)	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5
Total Split (s)	9.0	47.0	47.0	27.0	65.0	65.0	9.0	45.0	45.0	11.0	47.0
Total Split (%)	6.9%	36.2%	36.2%	20.8%	50.0%	50.0%	6.9%	34.6%	34.6%	8.5%	36.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max
Act Effect Green (s)	4.5	47.4	47.4	17.6	67.7	67.7	45.0	40.5	40.5	50.0	46.1
Actuated g/C Ratio	0.03	0.36	0.36	0.14	0.52	0.52	0.35	0.31	0.31	0.38	0.35
v/c Ratio	0.05	0.26	0.14	0.71	0.30	0.11	0.12	0.10	0.26	0.19	0.57
Control Delay	57.0	24.6	8.4	62.1	18.6	4.7	25.6	32.1	6.0	39.5	51.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Total Delay	57.0	24.6	8.4	62.1	18.6	4.7	25.6	32.1	6.0	39.5	52.5
LOS	E	C	A	E	B	A	C	C	A	D	D
Approach Delay		21.3			31.9			17.4			51.0
Approach LOS		C			C			B			D

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 34.6

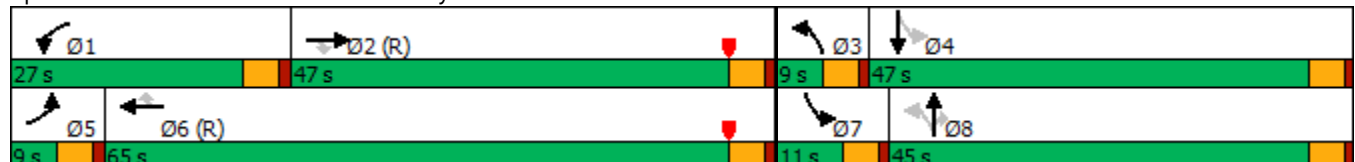
Intersection LOS: C

Intersection Capacity Utilization 49.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Lime St. & University Av



HCM 6th Signalized Intersection Summary 4: Lime St. & University Av

E+P AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	314	87	313	520	93	25	101	149	87	635	41
Future Volume (veh/h)	3	314	87	313	520	93	25	101	149	87	635	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	331	92	329	547	98	26	106	157	92	668	43
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	1378	615	395	1773	791	221	1107	494	465	1155	74
Arrive On Green	0.00	0.13	0.13	0.11	0.50	0.50	0.02	0.31	0.31	0.05	0.34	0.34
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3390	218
Grp Volume(v), veh/h	3	331	92	329	547	98	26	106	157	92	350	361
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1831
Q Serve(g_s), s	0.2	10.9	6.7	12.1	11.9	4.3	1.3	2.8	9.8	4.5	21.0	21.1
Cycle Q Clear(g_c), s	0.2	10.9	6.7	12.1	11.9	4.3	1.3	2.8	9.8	4.5	21.0	21.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	6	1378	615	395	1773	791	221	1107	494	465	605	624
V/C Ratio(X)	0.53	0.24	0.15	0.83	0.31	0.12	0.12	0.10	0.32	0.20	0.58	0.58
Avail Cap(c_a), veh/h	62	1378	615	598	1773	791	249	1107	494	469	605	624
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	39.5	37.6	56.4	19.3	17.4	30.8	31.8	34.2	27.3	35.2	35.2
Incr Delay (d2), s/veh	60.6	0.4	0.5	6.2	0.5	0.3	0.2	0.2	1.7	0.2	4.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.2	2.8	5.6	5.0	1.6	0.6	1.2	4.0	1.9	9.7	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.5	39.9	38.1	62.5	19.7	17.7	31.0	31.9	35.9	27.5	39.2	39.1
LnGrp LOS	F	D	D	E	B	B	C	C	D	C	D	D
Approach Vol, veh/h	426			974			289			803		
Approach Delay, s/veh	40.1			34.0			34.0			37.8		
Approach LOS	D			C			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.4	54.9	6.9	48.8	4.9	69.4	10.7	45.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	22.5	42.5	4.5	42.5	4.5	60.5	6.5	40.5				
Max Q Clear Time (g_c+I1), s	14.1	12.9	3.3	23.1	2.2	13.9	6.5	11.8				
Green Ext Time (p_c), s	0.7	2.5	0.0	4.2	0.0	4.4	0.0	1.1				
Intersection Summary												
HCM 6th Ctrl Delay	36.3											
HCM 6th LOS	D											

HCM 6th TWSC
5: Lime St. & Alleyway

E+P AM Peak Hour

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	4	1	1	1	2	181	2	2	693	10
Future Vol, veh/h	1	1	4	1	1	1	2	181	2	2	693	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	4	1	1	1	2	193	2	2	737	11
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	848	946	374	571	950	98	748	0	0	195	0	0
Stage 1	747	747	-	198	198	-	-	-	-	-	-	-
Stage 2	101	199	-	373	752	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	255	260	623	404	259	939	856	-	-	1375	-	-
Stage 1	371	418	-	785	736	-	-	-	-	-	-	-
Stage 2	894	735	-	620	416	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	253	259	623	398	258	939	856	-	-	1375	-	-
Mov Cap-2 Maneuver	253	259	-	398	258	-	-	-	-	-	-	-
Stage 1	370	417	-	783	734	-	-	-	-	-	-	-
Stage 2	889	733	-	613	415	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	13.7		14		0.1		0					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	856	-	-	422	402	1375	-	-				
HCM Lane V/C Ratio	0.002	-	-	0.015	0.008	0.002	-	-				
HCM Control Delay (s)	9.2	0	-	13.7	14	7.6	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0	0	0	-	-				

HCM 6th TWSC
6: Lemon St. & Alleyway

E+P AM Peak Hour

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱			↰↱				
Traffic Vol, veh/h	0	0	0	0	0	8	0	124	4	0	0	0
Future Vol, veh/h	0	0	0	0	0	8	0	124	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	11	0	170	5	0	0	0

Major/Minor	Minor2		Minor1		Major1					
Conflicting Flow All	85	175	-	-	173	88	0	0	0	0
Stage 1	0	0	-	-	173	-	-	-	-	-
Stage 2	85	175	-	-	0	-	-	-	-	-
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	892	717	0	0	719	953	-	-	-	-
Stage 1	-	-	0	0	755	-	-	-	-	-
Stage 2	913	753	0	0	-	-	-	-	-	-
Platoon blocked, %								-	-	-
Mov Cap-1 Maneuver	882	717	-	-	719	953	-	-	-	-
Mov Cap-2 Maneuver	882	717	-	-	719	-	-	-	-	-
Stage 1	-	-	-	-	755	-	-	-	-	-
Stage 2	903	753	-	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	8.8	0
HCM LOS	A	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1
Capacity (veh/h)	-	-	-	953
HCM Lane V/C Ratio	-	-	-	0.011
HCM Control Delay (s)	0	-	-	8.8
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection

Int Delay, s/veh 2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	55	63	68	0	0
Future Vol, veh/h	0	55	63	68	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	60	68	74	0	0

Major/Minor	Minor1	Major1
Conflicting Flow All	-	71
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	6.94
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	3.32
Pot Cap-1 Maneuver	0	977
Stage 1	0	-
Stage 2	0	-
Platoon blocked, %		-
Mov Cap-1 Maneuver	-	977
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	WB	NB
HCM Control Delay, s	8.9	0
HCM LOS	A	

Minor Lane/Major Mvmt	NBT	NBRWBLn1
Capacity (veh/h)	-	977
HCM Lane V/C Ratio	-	0.061
HCM Control Delay (s)	-	8.9
HCM Lane LOS	-	A
HCM 95th %tile Q(veh)	-	0.2

Timings

E+P PM Peak Hour

1: Lemon St. & Mission Inn

				
Lane Group	EBL	EBT	WBT	NBT
Lane Configurations				
Traffic Volume (vph)	14	322	384	164
Future Volume (vph)	14	322	384	164
Turn Type	Perm	NA	NA	NA
Protected Phases		2	6	8
Permitted Phases	2			
Detector Phase	2	2	6	8
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	41.0	41.0	41.0	41.0
Total Split (s)	80.0	80.0	80.0	50.0
Total Split (%)	61.5%	61.5%	61.5%	38.5%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Max
Act Efect Green (s)	76.0	76.0	76.0	46.0
Actuated g/C Ratio	0.58	0.58	0.58	0.35
v/c Ratio	0.04	0.33	0.41	0.28
Control Delay	11.8	14.9	5.6	15.2
Queue Delay	0.0	0.0	0.2	0.0
Total Delay	11.8	14.9	5.7	15.2
LOS	B	B	A	B
Approach Delay		14.8	5.7	15.2
Approach LOS		B	A	B
Intersection Summary				
Cycle Length: 130				
Actuated Cycle Length: 130				
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow				
Natural Cycle: 85				
Control Type: Actuated-Coordinated				
Maximum v/c Ratio: 0.41				
Intersection Signal Delay: 11.5			Intersection LOS: B	
Intersection Capacity Utilization 37.1%			ICU Level of Service A	
Analysis Period (min) 15				

Splits and Phases: 1: Lemon St. & Mission Inn



HCM 6th Signalized Intersection Summary

1: Lemon St. & Mission Inn

E+P PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (veh/h)	14	322	0	0	384	14	35	164	118	0	0	0
Future Volume (veh/h)	14	322	0	0	384	14	35	164	118	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	16	358	0	0	427	16	39	182	131			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	609	1093	0	0	1047	39	134	629	470			
Arrive On Green	0.58	0.58	0.00	0.00	1.00	1.00	0.35	0.35	0.35			
Sat Flow, veh/h	947	1870	0	0	1791	67	378	1777	1328			
Grp Volume(v), veh/h	16	358	0	0	0	443	191	0	161			
Grp Sat Flow(s),veh/h/ln	947	1870	0	0	0	1858	1851	0	1631			
Q Serve(g_s), s	0.9	12.8	0.0	0.0	0.0	0.0	9.7	0.0	9.2			
Cycle Q Clear(g_c), s	0.9	12.8	0.0	0.0	0.0	0.0	9.7	0.0	9.2			
Prop In Lane	1.00		0.00	0.00		0.04	0.20		0.81			
Lane Grp Cap(c), veh/h	609	1093	0	0	0	1086	655	0	577			
V/C Ratio(X)	0.03	0.33	0.00	0.00	0.00	0.41	0.29	0.00	0.28			
Avail Cap(c_a), veh/h	609	1093	0	0	0	1086	655	0	577			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	0.94	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.4	13.9	0.0	0.0	0.0	0.0	30.3	0.0	30.1			
Incr Delay (d2), s/veh	0.1	0.8	0.0	0.0	0.0	1.1	1.1	0.0	1.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.2	5.5	0.0	0.0	0.0	0.3	4.5	0.0	3.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.5	14.7	0.0	0.0	0.0	1.1	31.4	0.0	31.3			
LnGrp LOS	B	B	A	A	A	A	C	A	C			
Approach Vol, veh/h	374			443			352					
Approach Delay, s/veh	14.5			1.1			31.4					
Approach LOS	B			A			C					
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	80.0			80.0			50.0					
Change Period (Y+Rc), s	4.0			4.0			4.0					
Max Green Setting (Gmax), s	76.0			76.0			46.0					
Max Q Clear Time (g_c+I1), s	14.8			2.0			11.7					
Green Ext Time (p_c), s	2.4			3.0			2.2					
Intersection Summary												
HCM 6th Ctrl Delay	14.5											
HCM 6th LOS	B											

Timings
2: Lemon St. & University Av

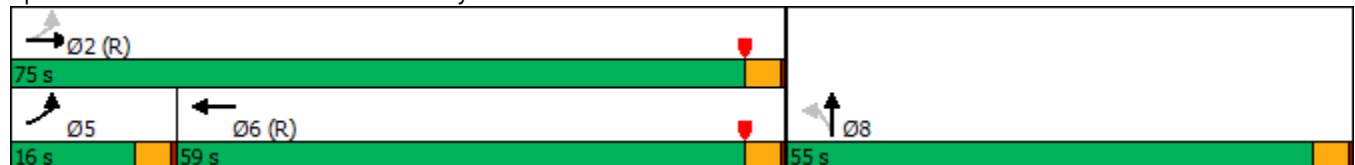
E+P PM Peak Hour

					
Lane Group	EBL	EBT	WBT	NBL	NBT
Lane Configurations					
Traffic Volume (vph)	30	663	434	48	237
Future Volume (vph)	30	663	434	48	237
Turn Type	pm+pt	NA	NA	Perm	NA
Protected Phases	5	2	6		8
Permitted Phases	2			8	
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	4.0	5.0	5.0	5.0	5.0
Minimum Split (s)	14.0	41.0	41.0	41.0	41.0
Total Split (s)	16.0	75.0	59.0	55.0	55.0
Total Split (%)	12.3%	57.7%	45.4%	42.3%	42.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	Max	Max
Act Effect Green (s)	71.0	71.0	64.3	51.0	51.0
Actuated g/C Ratio	0.55	0.55	0.49	0.39	0.39
v/c Ratio	0.08	0.38	0.31	0.08	0.32
Control Delay	14.1	17.6	9.2	25.3	22.3
Queue Delay	0.0	0.1	0.1	0.0	0.0
Total Delay	14.1	17.7	9.3	25.3	22.3
LOS	B	B	A	C	C
Approach Delay		17.5	9.3		22.6
Approach LOS		B	A		C

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.38
 Intersection Signal Delay: 16.4
 Intersection LOS: B
 Intersection Capacity Utilization 35.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: Lemon St. & University Av



HCM 6th Signalized Intersection Summary 2: Lemon St. & University Av

E+P PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	663	0	0	434	47	48	237	134	0	0	0
Future Volume (veh/h)	30	663	0	0	434	47	48	237	134	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	33	737	0	0	482	52	53	263	149			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	521	1941	0	0	1599	172	699	891	488			
Arrive On Green	0.02	0.55	0.00	0.00	0.99	0.99	0.39	0.39	0.39			
Sat Flow, veh/h	1781	3647	0	0	3330	348	1781	2272	1245			
Grp Volume(v), veh/h	33	737	0	0	264	270	53	215	197			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1808	1781	1870	1646			
Q Serve(g_s), s	1.2	15.4	0.0	0.0	0.3	0.3	2.4	10.3	10.7			
Cycle Q Clear(g_c), s	1.2	15.4	0.0	0.0	0.3	0.3	2.4	10.3	10.7			
Prop In Lane	1.00		0.00	0.00		0.19	1.00		0.76			
Lane Grp Cap(c), veh/h	521	1941	0	0	878	893	699	734	646			
V/C Ratio(X)	0.06	0.38	0.00	0.00	0.30	0.30	0.08	0.29	0.31			
Avail Cap(c_a), veh/h	647	1941	0	0	878	893	699	734	646			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.98	0.98	1.00	1.00	1.00			
Uniform Delay (d), s/veh	14.6	16.9	0.0	0.0	0.4	0.4	24.7	27.1	27.3			
Incr Delay (d2), s/veh	0.1	0.6	0.0	0.0	0.9	0.9	0.2	1.0	1.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.5	6.3	0.0	0.0	0.3	0.3	1.1	4.8	4.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.7	17.5	0.0	0.0	1.3	1.3	25.0	28.1	28.5			
LnGrp LOS	B	B	A	A	A	A	C	C	C			
Approach Vol, veh/h	770			534			465					
Approach Delay, s/veh	17.3			1.3			27.9					
Approach LOS	B			A			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	75.0			6.8			68.2			55.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	71.0			12.0			55.0			51.0		
Max Q Clear Time (g_c+I1), s	17.4			3.2			2.3			12.7		
Green Ext Time (p_c), s	5.9			0.0			3.5			2.8		
Intersection Summary												
HCM 6th Ctrl Delay	15.3											
HCM 6th LOS	B											
Notes												

Timings 3: Lime St. & Mission Inn

E+P PM Peak Hour

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	15	315	219	375	89	21	273	60	38	285	18
Future Volume (vph)	15	315	219	375	89	21	273	60	38	285	18
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases					6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	8.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5
Total Split (s)	10.0	45.0	33.0	68.0	68.0	8.5	43.0	43.0	9.0	43.5	43.5
Total Split (%)	7.7%	34.6%	25.4%	52.3%	52.3%	6.5%	33.1%	33.1%	6.9%	33.5%	33.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	5.5	46.9	22.1	69.5	69.5	43.5	40.3	40.3	45.1	42.4	42.4
Actuated g/C Ratio	0.04	0.36	0.17	0.53	0.53	0.33	0.31	0.31	0.35	0.33	0.33
v/c Ratio	0.22	0.36	0.78	0.40	0.11	0.06	0.50	0.11	0.14	0.26	0.03
Control Delay	91.5	26.3	68.7	20.3	3.7	15.3	21.8	0.4	28.2	33.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	91.5	26.3	68.7	20.3	3.7	15.3	22.1	0.4	28.2	33.9	0.1
LOS	F	C	E	C	A	B	C	A	C	C	A
Approach Delay		28.6		33.7			18.0			31.5	
Approach LOS		C		C			B			C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 29.0
 Intersection Capacity Utilization 56.9%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 3: Lime St. & Mission Inn



HCM 6th Signalized Intersection Summary

3: Lime St. & Mission Inn

E+P PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									 	
Traffic Volume (veh/h)	15	315	105	219	375	89	21	273	60	38	285	18
Future Volume (veh/h)	15	315	105	219	375	89	21	273	60	38	285	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	335	112	233	399	95	22	290	64	40	303	19
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	24	1037	341	262	988	837	337	554	469	308	1077	480
Arrive On Green	0.00	0.13	0.13	0.15	0.53	0.53	0.03	0.59	0.59	0.02	0.30	0.30
Sat Flow, veh/h	1781	2628	864	1781	1870	1585	1781	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	16	225	222	233	399	95	22	290	64	40	303	19
Grp Sat Flow(s),veh/h/ln	1781	1777	1715	1781	1870	1585	1781	1870	1585	1781	1777	1585
Q Serve(g_s), s	1.2	14.9	15.3	16.7	16.6	3.9	1.1	11.9	2.3	2.0	8.4	1.1
Cycle Q Clear(g_c), s	1.2	14.9	15.3	16.7	16.6	3.9	1.1	11.9	2.3	2.0	8.4	1.1
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	24	701	677	262	988	837	337	554	469	308	1077	480
V/C Ratio(X)	0.67	0.32	0.33	0.89	0.40	0.11	0.07	0.52	0.14	0.13	0.28	0.04
Avail Cap(c_a), veh/h	75	701	677	391	988	837	362	554	469	327	1077	480
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	40.7	40.9	54.4	18.4	15.4	30.7	21.1	19.1	31.3	34.5	32.0
Incr Delay (d2), s/veh	26.0	1.1	1.2	15.4	1.2	0.3	0.1	3.5	0.6	0.2	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	7.4	7.3	8.5	7.4	1.5	0.5	4.7	0.9	0.9	3.8	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.4	41.9	42.1	69.8	19.6	15.7	30.8	24.6	19.7	31.5	35.2	32.1
LnGrp LOS	F	D	D	E	B	B	C	C	B	C	D	C
Approach Vol, veh/h	463				727				376		362	
Approach Delay, s/veh	43.7				35.2				24.1		34.6	
Approach LOS	D				D				C		C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.6	55.8	6.7	43.9	6.3	73.2	7.6	43.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	28.5	40.5	4.0	39.0	5.5	63.5	4.5	38.5				
Max Q Clear Time (g_c+I1), s	18.7	17.3	3.1	10.4	3.2	18.6	4.0	13.9				
Green Ext Time (p_c), s	0.5	2.6	0.0	2.0	0.0	2.9	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			35.0									
HCM 6th LOS			C									

Timings 4: Lime St. & University Av

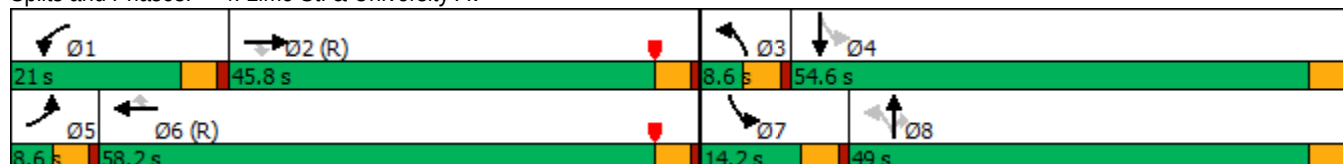
E+P PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	5	721	89	244	429	78	37	312	473	153	386
Future Volume (vph)	5	721	89	244	429	78	37	312	473	153	386
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6	8		8	4	
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0
Minimum Split (s)	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5
Total Split (s)	8.6	45.8	45.8	21.0	58.2	58.2	8.6	49.0	49.0	14.2	54.6
Total Split (%)	6.6%	35.2%	35.2%	16.2%	44.8%	44.8%	6.6%	37.7%	37.7%	10.9%	42.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max
Act Effect Green (s)	4.1	43.3	43.3	14.5	60.6	60.6	48.8	44.7	44.7	58.7	51.8
Actuated g/C Ratio	0.03	0.33	0.33	0.11	0.47	0.47	0.38	0.34	0.34	0.45	0.40
v/c Ratio	0.09	0.64	0.15	0.67	0.27	0.10	0.11	0.27	0.67	0.36	0.32
Control Delay	88.2	31.0	4.3	64.5	22.3	1.2	21.2	31.7	19.0	30.5	33.4
Queue Delay	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.2	31.7	4.3	64.5	22.3	1.2	21.2	31.7	19.0	30.5	33.4
LOS	F	C	A	E	C	A	C	C	B	C	C
Approach Delay		29.0			33.8			23.9			32.6
Approach LOS		C			C			C			C

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 29.5	Intersection LOS: C
Intersection Capacity Utilization 68.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Lime St. & University Av



HCM 6th Signalized Intersection Summary 4: Lime St. & University Av

E+P PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	721	89	244	429	78	37	312	473	153	386	36
Future Volume (veh/h)	5	721	89	244	429	78	37	312	473	153	386	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	759	94	257	452	82	39	328	498	161	406	38
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	1265	564	316	1571	701	385	1216	543	366	1285	120
Arrive On Green	0.01	0.71	0.71	0.09	0.44	0.44	0.02	0.34	0.34	0.07	0.39	0.39
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3286	306
Grp Volume(v), veh/h	5	759	94	257	452	82	39	328	498	161	219	225
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1815
Q Serve(g_s), s	0.4	14.0	2.5	9.5	10.6	4.0	1.8	8.7	39.2	7.4	11.1	11.2
Cycle Q Clear(g_c), s	0.4	14.0	2.5	9.5	10.6	4.0	1.8	8.7	39.2	7.4	11.1	11.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	9	1265	564	316	1571	701	385	1216	543	366	695	710
V/C Ratio(X)	0.55	0.60	0.17	0.81	0.29	0.12	0.10	0.27	0.92	0.44	0.31	0.32
Avail Cap(c_a), veh/h	56	1265	564	439	1571	701	400	1216	543	371	695	710
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.2	14.1	12.4	58.0	23.2	21.3	26.8	31.0	41.0	23.8	27.5	27.5
Incr Delay (d2), s/veh	40.9	2.0	0.6	8.0	0.5	0.3	0.1	0.5	22.9	0.8	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.1	1.0	4.5	4.5	1.5	0.8	3.8	18.4	3.2	4.9	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	105.1	16.0	13.0	66.0	23.6	21.7	27.0	31.5	63.9	24.7	28.7	28.7
LnGrp LOS	F	B	B	E	C	C	C	C	E	C	C	C
Approach Vol, veh/h	858			791			865			605		
Approach Delay, s/veh	16.2			37.2			49.9			27.6		
Approach LOS	B			D			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	50.8	7.5	55.3	5.2	62.0	13.9	49.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	41.3	4.1	50.1	4.1	53.7	9.7	44.5				
Max Q Clear Time (g_c+I1), s	11.5	16.0	3.8	13.2	2.4	12.6	9.4	41.2				
Green Ext Time (p_c), s	0.4	5.8	0.0	2.7	0.0	3.5	0.0	1.3				
Intersection Summary												
HCM 6th Ctrl Delay	33.1											
HCM 6th LOS	C											

HCM 6th TWSC
5: Lime St. & Alleyway

E+P PM Peak Hour

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	7	1	1	2	1	375	4	1	607	6
Future Vol, veh/h	1	1	7	1	1	2	1	375	4	1	607	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	8	1	1	2	1	403	4	1	653	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	862	1067	330	736	1068	204	659	0	0	407	0	0
Stage 1	658	658	-	407	407	-	-	-	-	-	-	-
Stage 2	204	409	-	329	661	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	249	221	666	307	220	803	925	-	-	1148	-	-
Stage 1	420	459	-	592	596	-	-	-	-	-	-	-
Stage 2	779	594	-	658	458	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	247	221	666	302	220	803	925	-	-	1148	-	-
Mov Cap-2 Maneuver	247	221	-	302	220	-	-	-	-	-	-	-
Stage 1	420	459	-	591	595	-	-	-	-	-	-	-
Stage 2	775	593	-	648	458	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	14.4	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	925	-	-	472	387	1148	-
HCM Lane V/C Ratio	0.001	-	-	0.021	0.011	0.001	-
HCM Control Delay (s)	8.9	0	-	12.8	14.4	8.1	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

HCM 6th TWSC
6: Lemon St. & Alleyway

E+P PM Peak Hour

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱			↰↱				
Traffic Vol, veh/h	0	0	0	0	0	7	0	304	6	0	0	0
Future Vol, veh/h	0	0	0	0	0	7	0	304	6	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	10	0	428	8	0	0	0

Major/Minor	Minor2		Minor1		Major1				
Conflicting Flow All	214	436	-	-	432	218	0	0	0
Stage 1	0	0	-	-	432	-	-	-	-
Stage 2	214	436	-	-	0	-	-	-	-
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	724	512	0	0	515	786	-	-	-
Stage 1	-	-	0	0	581	-	-	-	-
Stage 2	768	578	0	0	-	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	715	512	-	-	515	786	-	-	-
Mov Cap-2 Maneuver	715	512	-	-	515	-	-	-	-
Stage 1	-	-	-	-	581	-	-	-	-
Stage 2	758	578	-	-	-	-	-	-	-

Approach	EB		WB		NB		
HCM Control Delay, s	0		9.6		0		
HCM LOS	A		A				

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1			
Capacity (veh/h)	-	-	-	-	786		
HCM Lane V/C Ratio	-	-	-	-	0.013		
HCM Control Delay (s)	0	-	-	0	9.6		
HCM Lane LOS	A	-	-	A	A		
HCM 95th %tile Q(veh)	-	-	-	-	0		

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	44	270	41	0	0
Future Vol, veh/h	0	44	270	41	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	46	284	43	0	0
Major/Minor	Minor1		Major1			
Conflicting Flow All	-	164	0	0		
Stage 1	-	-	-	-		
Stage 2	-	-	-	-		
Critical Hdwy	-	6.94	-	-		
Critical Hdwy Stg 1	-	-	-	-		
Critical Hdwy Stg 2	-	-	-	-		
Follow-up Hdwy	-	3.32	-	-		
Pot Cap-1 Maneuver	0	852	-	-		
Stage 1	0	-	-	-		
Stage 2	0	-	-	-		
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	-	852	-	-		
Mov Cap-2 Maneuver	-	-	-	-		
Stage 1	-	-	-	-		
Stage 2	-	-	-	-		
Approach	WB		NB			
HCM Control Delay, s	9.5		0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT		NBRWBLn1			
Capacity (veh/h)	-		852			
HCM Lane V/C Ratio	-		0.054			
HCM Control Delay (s)	-		9.5			
HCM Lane LOS	-		A			
HCM 95th %tile Q(veh)	-		0.2			

APPENDIX E

EXISTING PLUS AMBIENT PLUS CUMULATIVE (EAC 2021) INTERSECTION ANALYSIS CALCULATION WORKSHEETS

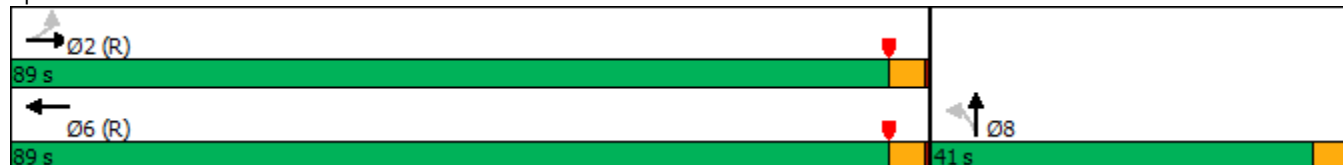
Timings

EAC AM Peak Hour

1: Lemon St. & Mission Inn

				
Lane Group	EBL	EBT	WBT	NBT
Lane Configurations				
Traffic Volume (vph)	1	240	569	30
Future Volume (vph)	1	240	569	30
Turn Type	Perm	NA	NA	NA
Protected Phases		2	6	8
Permitted Phases	2			
Detector Phase	2	2	6	8
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	41.0	41.0	41.0	41.0
Total Split (s)	89.0	89.0	89.0	41.0
Total Split (%)	68.5%	68.5%	68.5%	31.5%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Max
Act Efect Green (s)	85.0	85.0	85.0	37.0
Actuated g/C Ratio	0.65	0.65	0.65	0.28
v/c Ratio	0.00	0.23	0.56	0.07
Control Delay	8.0	9.7	6.8	22.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.0	9.7	6.8	22.4
LOS	A	A	A	C
Approach Delay		9.7	6.8	22.4
Approach LOS		A	A	C
Intersection Summary				
Cycle Length: 130				
Actuated Cycle Length: 130				
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow				
Natural Cycle: 85				
Control Type: Actuated-Coordinated				
Maximum v/c Ratio: 0.56				
Intersection Signal Delay: 8.7			Intersection LOS: A	
Intersection Capacity Utilization 42.2%			ICU Level of Service A	
Analysis Period (min) 15				

Splits and Phases: 1: Lemon St. & Mission Inn



HCM 6th Signalized Intersection Summary

1: Lemon St. & Mission Inn

EAC AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (veh/h)	1	240	0	0	569	24	14	30	19	0	0	0
Future Volume (veh/h)	1	240	0	0	569	24	14	30	19	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	1	276	0	0	654	28	16	34	22			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	551	1223	0	0	1164	50	220	470	308			
Arrive On Green	0.65	0.65	0.00	0.00	1.00	1.00	0.28	0.28	0.28			
Sat Flow, veh/h	759	1870	0	0	1780	76	773	1653	1082			
Grp Volume(v), veh/h	1	276	0	0	0	682	38	0	34			
Grp Sat Flow(s),veh/h/ln	759	1870	0	0	0	1857	1832	0	1676			
Q Serve(g_s), s	0.1	7.8	0.0	0.0	0.0	0.0	2.0	0.0	1.9			
Cycle Q Clear(g_c), s	0.1	7.8	0.0	0.0	0.0	0.0	2.0	0.0	1.9			
Prop In Lane	1.00		0.00	0.00		0.04	0.42		0.65			
Lane Grp Cap(c), veh/h	551	1223	0	0	0	1214	521	0	477			
V/C Ratio(X)	0.00	0.23	0.00	0.00	0.00	0.56	0.07	0.00	0.07			
Avail Cap(c_a), veh/h	551	1223	0	0	0	1214	521	0	477			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	0.87	1.00	0.00	1.00			
Uniform Delay (d), s/veh	7.8	9.1	0.0	0.0	0.0	0.0	34.0	0.0	34.0			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.0	1.6	0.3	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	3.2	0.0	0.0	0.0	0.6	0.9	0.0	0.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	9.6	0.0	0.0	0.0	1.6	34.2	0.0	34.2			
LnGrp LOS	A	A	A	A	A	A	C	A	C			
Approach Vol, veh/h	277			682			72					
Approach Delay, s/veh	9.6			1.6			34.2					
Approach LOS	A			A			C					
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	89.0			89.0			41.0					
Change Period (Y+Rc), s	4.0			4.0			4.0					
Max Green Setting (Gmax), s	85.0			85.0			37.0					
Max Q Clear Time (g_c+I1), s	9.8			2.0			4.0					
Green Ext Time (p_c), s	1.7			5.5			0.3					
Intersection Summary												
HCM 6th Ctrl Delay	6.0											
HCM 6th LOS	A											

Timings 2: Lemon St. & University Av

EAC AM Peak Hour

					
Lane Group	EBL	EBT	WBT	NBL	NBT
Lane Configurations					
Traffic Volume (vph)	9	421	603	14	38
Future Volume (vph)	9	421	603	14	38
Turn Type	pm+pt	NA	NA	Perm	NA
Protected Phases	5	2	6		8
Permitted Phases	2			8	
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	4.0	5.0	5.0	5.0	5.0
Minimum Split (s)	14.0	41.0	41.0	41.0	41.0
Total Split (s)	16.0	88.0	72.0	42.0	42.0
Total Split (%)	12.3%	67.7%	55.4%	32.3%	32.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	Max	Max
Act Effect Green (s)	84.0	84.0	81.9	38.0	38.0
Actuated g/C Ratio	0.65	0.65	0.63	0.29	0.29
v/c Ratio	0.02	0.20	0.31	0.03	0.11
Control Delay	8.3	9.6	5.1	33.2	16.1
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	8.3	9.6	5.2	33.2	16.1
LOS	A	A	A	C	B
Approach Delay		9.6	5.2		18.0
Approach LOS		A	A		B

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.31
Intersection Signal Delay: 8.0
Intersection Capacity Utilization 28.3%
Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service A

Splits and Phases: 2: Lemon St. & University Av



HCM 6th Signalized Intersection Summary

2: Lemon St. & University Av

EAC AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	421	0	0	603	26	14	38	54	0	0	0
Future Volume (veh/h)	9	421	0	0	603	26	14	38	54	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	10	463	0	0	663	29	15	42	59			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	528	2296	0	0	2102	92	521	547	463			
Arrive On Green	0.01	0.65	0.00	0.00	1.00	1.00	0.29	0.29	0.29			
Sat Flow, veh/h	1781	3647	0	0	3562	152	1781	1870	1585			
Grp Volume(v), veh/h	10	463	0	0	339	353	15	42	59			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1843	1781	1870	1585			
Q Serve(g_s), s	0.3	6.9	0.0	0.0	0.0	0.0	0.8	2.1	3.6			
Cycle Q Clear(g_c), s	0.3	6.9	0.0	0.0	0.0	0.0	0.8	2.1	3.6			
Prop In Lane	1.00		0.00	0.00		0.08	1.00		1.00			
Lane Grp Cap(c), veh/h	528	2296	0	0	1077	1117	521	547	463			
V/C Ratio(X)	0.02	0.20	0.00	0.00	0.32	0.32	0.03	0.08	0.13			
Avail Cap(c_a), veh/h	675	2296	0	0	1077	1117	521	547	463			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.96	0.96	1.00	1.00	1.00			
Uniform Delay (d), s/veh	8.9	9.4	0.0	0.0	0.0	0.0	32.8	33.3	33.8			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.7	0.7	0.1	0.3	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	2.6	0.0	0.0	0.2	0.2	0.4	1.0	1.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.9	9.6	0.0	0.0	0.7	0.7	32.9	33.6	34.4			
LnGrp LOS	A	A	A	A	A	A	C	C	C			
Approach Vol, veh/h	473			692			116					
Approach Delay, s/veh	9.5			0.7			33.9					
Approach LOS	A			A			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	88.0			5.2			82.8			42.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	84.0			12.0			68.0			38.0		
Max Q Clear Time (g_c+I1), s	8.9			2.3			2.0			5.6		
Green Ext Time (p_c), s	3.4			0.0			4.7			0.6		
Intersection Summary												
HCM 6th Ctrl Delay			7.0									
HCM 6th LOS			A									
Notes												

Timings 3: Lime St. & Mission Inn

EAC AM Peak Hour

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	3	218	449	528	92	33	139	15	58	193	12
Future Volume (vph)	3	218	449	528	92	33	139	15	58	193	12
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases					6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	8.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5
Total Split (s)	8.5	42.0	38.0	71.5	71.5	8.5	41.5	41.5	8.5	41.5	41.5
Total Split (%)	6.5%	32.3%	29.2%	55.0%	55.0%	6.5%	31.9%	31.9%	6.5%	31.9%	31.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	4.0	37.5	33.5	73.8	73.8	41.9	38.7	38.7	42.8	40.4	40.4
Actuated g/C Ratio	0.03	0.29	0.26	0.57	0.57	0.32	0.30	0.30	0.33	0.31	0.31
v/c Ratio	0.06	0.27	1.02	0.51	0.10	0.09	0.26	0.03	0.16	0.18	0.02
Control Delay	77.3	27.6	93.7	19.9	3.1	24.2	28.8	0.1	30.1	34.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.3	27.6	93.7	19.9	3.1	24.2	28.8	0.1	30.1	34.3	0.1
LOS	E	C	F	B	A	C	C	A	C	C	A
Approach Delay		28.1		49.5			25.7			31.8	
Approach LOS		C		D			C			C	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 41.2

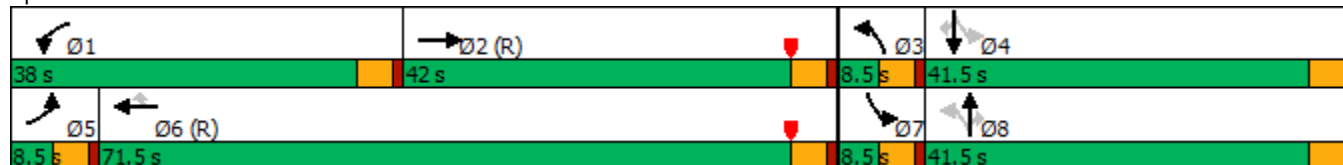
Intersection LOS: D

Intersection Capacity Utilization 58.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Lime St. & Mission Inn



HCM 6th Signalized Intersection Summary

3: Lime St. & Mission Inn

EAC AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	218	45	449	528	92	33	139	15	58	193	12
Future Volume (veh/h)	3	218	45	449	528	92	33	139	15	58	193	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	225	46	463	544	95	34	143	15	60	199	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	851	171	459	1016	861	389	532	451	412	1043	465
Arrive On Green	0.00	0.10	0.10	0.26	0.54	0.54	0.04	0.57	0.57	0.03	0.29	0.29
Sat Flow, veh/h	1781	2949	592	1781	1870	1585	1781	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	3	134	137	463	544	95	34	143	15	60	199	12
Grp Sat Flow(s),veh/h/ln	1781	1777	1764	1781	1870	1585	1781	1870	1585	1781	1777	1585
Q Serve(g_s), s	0.2	9.1	9.4	33.5	24.4	3.8	1.7	5.1	0.5	3.1	5.4	0.7
Cycle Q Clear(g_c), s	0.2	9.1	9.4	33.5	24.4	3.8	1.7	5.1	0.5	3.1	5.4	0.7
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	6	513	509	459	1016	861	389	532	451	412	1043	465
V/C Ratio(X)	0.53	0.26	0.27	1.01	0.54	0.11	0.09	0.27	0.03	0.15	0.19	0.03
Avail Cap(c_a), veh/h	55	513	509	459	1016	861	405	532	451	412	1043	465
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	46.0	46.1	48.3	19.1	14.4	31.2	21.1	20.1	31.6	34.4	32.7
Incr Delay (d2), s/veh	60.1	1.2	1.3	44.2	2.0	0.3	0.1	1.2	0.1	0.2	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.4	4.5	20.3	10.9	1.4	0.8	2.2	0.2	1.4	2.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.0	47.2	47.4	92.4	21.2	14.7	31.3	22.4	20.3	31.8	34.8	32.8
LnGrp LOS	F	D	D	F	C	B	C	C	C	C	C	C
Approach Vol, veh/h		274			1102			192			271	
Approach Delay, s/veh		48.1			50.6			23.8			34.0	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	38.0	42.0	7.3	42.7	4.9	75.1	8.5	41.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	33.5	37.5	4.0	37.0	4.0	67.0	4.0	37.0				
Max Q Clear Time (g_c+I1), s	35.5	11.4	3.7	7.4	2.2	26.4	5.1	7.1				
Green Ext Time (p_c), s	0.0	1.5	0.0	1.3	0.0	4.2	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			45.0									
HCM 6th LOS			D									

Timings
4: Lime St. & University Av

EAC AM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	14	361	90	328	556	105	19	114	158	85	656
Future Volume (vph)	14	361	90	328	556	105	19	114	158	85	656
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6	8		8	4	
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0
Minimum Split (s)	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5
Total Split (s)	11.0	47.0	47.0	27.0	63.0	63.0	10.0	45.0	45.0	11.0	46.0
Total Split (%)	8.5%	36.2%	36.2%	20.8%	48.5%	48.5%	7.7%	34.6%	34.6%	8.5%	35.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max
Act Effect Green (s)	6.1	46.8	46.8	18.2	65.1	65.1	46.0	40.5	40.5	49.4	45.5
Actuated g/C Ratio	0.05	0.36	0.36	0.14	0.50	0.50	0.35	0.31	0.31	0.38	0.35
v/c Ratio	0.18	0.30	0.15	0.72	0.33	0.13	0.09	0.11	0.27	0.19	0.59
Control Delay	56.3	24.9	8.7	62.1	20.8	6.4	25.2	32.3	5.9	39.4	52.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Total Delay	56.3	24.9	8.7	62.1	20.8	6.4	25.2	32.3	5.9	39.4	53.1
LOS	E	C	A	E	C	A	C	C	A	D	D
Approach Delay		22.7			33.0			17.5			51.6
Approach LOS		C			C			B			D

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 35.0

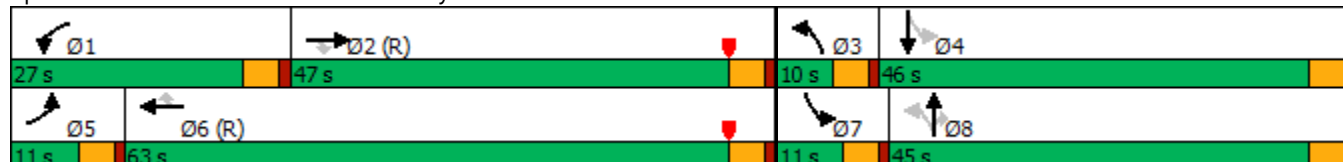
Intersection LOS: C

Intersection Capacity Utilization 49.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Lime St. & University Av



HCM 6th Signalized Intersection Summary 4: Lime St. & University Av

EAC AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	361	90	328	556	105	19	114	158	85	656	32
Future Volume (veh/h)	14	361	90	328	556	105	19	114	158	85	656	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	380	95	345	585	111	20	120	166	89	691	34
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	1366	609	411	1743	778	213	1107	494	453	1180	58
Arrive On Green	0.00	0.13	0.13	0.12	0.49	0.49	0.02	0.31	0.31	0.05	0.34	0.34
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3447	170
Grp Volume(v), veh/h	15	380	95	345	585	111	20	120	166	89	356	369
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1840
Q Serve(g_s), s	1.1	12.6	6.9	12.7	13.1	5.0	1.0	3.1	10.5	4.3	21.4	21.5
Cycle Q Clear(g_c), s	1.1	12.6	6.9	12.7	13.1	5.0	1.0	3.1	10.5	4.3	21.4	21.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	23	1366	609	411	1743	778	213	1107	494	453	608	630
V/C Ratio(X)	0.65	0.28	0.16	0.84	0.34	0.14	0.09	0.11	0.34	0.20	0.59	0.59
Avail Cap(c_a), veh/h	89	1366	609	598	1743	778	260	1107	494	459	608	630
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	40.4	38.0	56.1	20.2	18.1	30.9	31.9	34.4	27.3	35.2	35.2
Incr Delay (d2), s/veh	27.1	0.5	0.5	7.0	0.5	0.4	0.2	0.2	1.8	0.2	4.1	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	6.1	2.9	5.9	5.5	1.9	0.4	1.4	4.3	1.9	9.9	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.5	40.9	38.5	63.1	20.7	18.5	31.1	32.1	36.2	27.5	39.2	39.1
LnGrp LOS	F	D	D	E	C	B	C	C	D	C	D	D
Approach Vol, veh/h	490			1041			306			814		
Approach Delay, s/veh	42.0			34.5			34.3			37.9		
Approach LOS	D			C			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	54.5	6.6	49.0	6.2	68.3	10.6	45.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	22.5	42.5	5.5	41.5	6.5	58.5	6.5	40.5				
Max Q Clear Time (g_c+I1), s	14.7	14.6	3.0	23.5	3.1	15.1	6.3	12.5				
Green Ext Time (p_c), s	0.8	2.8	0.0	4.1	0.0	4.7	0.0	1.3				
Intersection Summary												
HCM 6th Ctrl Delay	36.9											
HCM 6th LOS	D											

HCM 6th TWSC
5: Lime St. & Alleyway

EAC AM Peak Hour

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	4	1	1	1	2	216	2	2	700	3
Future Vol, veh/h	1	1	4	1	1	1	2	216	2	2	700	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	4	1	1	1	2	230	2	2	745	3

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	871	987	374	612	987	116	748	0	0	232	0	0
Stage 1	751	751	-	235	235	-	-	-	-	-	-	-
Stage 2	120	236	-	377	752	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	245	246	623	377	246	914	856	-	-	1333	-	-
Stage 1	369	416	-	747	709	-	-	-	-	-	-	-
Stage 2	872	708	-	616	416	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	243	245	623	371	245	914	856	-	-	1333	-	-
Mov Cap-2 Maneuver	243	245	-	371	245	-	-	-	-	-	-	-
Stage 1	368	415	-	745	707	-	-	-	-	-	-	-
Stage 2	867	706	-	608	415	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.9		14.5		0.1		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	856	-	-	410	381	1333	-
HCM Lane V/C Ratio	0.002	-	-	0.016	0.008	0.002	-
HCM Control Delay (s)	9.2	0	-	13.9	14.5	7.7	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-

HCM 6th TWSC
6: Lemon St. & Alleyway

EAC AM Peak Hour

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱			↰↱				
Traffic Vol, veh/h	0	0	0	0	0	1	0	66	4	0	0	0
Future Vol, veh/h	0	0	0	0	0	1	0	66	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	1	0	90	5	0	0	0

Major/Minor	Minor2		Minor1		Major1						
Conflicting Flow All	45	95	-	-	93	48	0	0	0		
Stage 1	0	0	-	-	93	-	-	-	-		
Stage 2	45	95	-	-	0	-	-	-	-		
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-		
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-		
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-		
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-		
Pot Cap-1 Maneuver	951	794	0	0	796	1011	-	-	-		
Stage 1	-	-	0	0	817	-	-	-	-		
Stage 2	963	815	0	0	-	-	-	-	-		
Platoon blocked, %								-	-		
Mov Cap-1 Maneuver	950	794	-	-	796	1011	-	-	-		
Mov Cap-2 Maneuver	950	794	-	-	796	-	-	-	-		
Stage 1	-	-	-	-	817	-	-	-	-		
Stage 2	962	815	-	-	-	-	-	-	-		

Approach	EB	WB	NB
HCM Control Delay, s	0	8.6	0
HCM LOS	A	A	

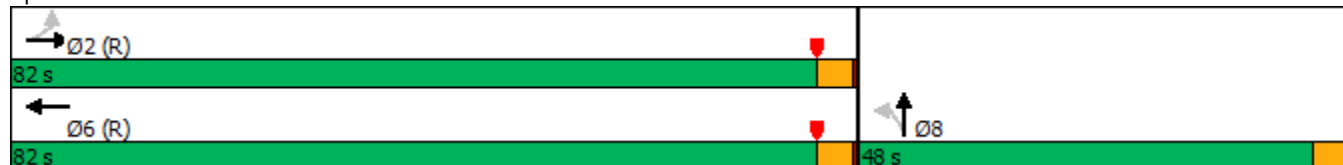
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1
Capacity (veh/h)	-	-	-	1011
HCM Lane V/C Ratio	-	-	-	0.001
HCM Control Delay (s)	0	-	-	8.6
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Timings
1: Lime St. & Mission Inn

EAC PM Peak Hour

				
Lane Group	EBL	EBT	WBT	NBT
Lane Configurations				
Traffic Volume (vph)	15	362	430	166
Future Volume (vph)	15	362	430	166
Turn Type	Perm	NA	NA	NA
Protected Phases		2	6	8
Permitted Phases	2			
Detector Phase	2	2	6	8
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	41.0	41.0	41.0	41.0
Total Split (s)	82.0	82.0	82.0	48.0
Total Split (%)	63.1%	63.1%	63.1%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Max
Act Efect Green (s)	78.0	78.0	78.0	44.0
Actuated g/C Ratio	0.60	0.60	0.60	0.34
v/c Ratio	0.04	0.36	0.45	0.27
Control Delay	11.1	14.4	5.9	13.6
Queue Delay	0.0	0.0	0.1	0.0
Total Delay	11.1	14.4	6.0	13.6
LOS	B	B	A	B
Approach Delay		14.3	6.0	13.6
Approach LOS		B	A	B
Intersection Summary				
Cycle Length: 130				
Actuated Cycle Length: 130				
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow				
Natural Cycle: 85				
Control Type: Actuated-Coordinated				
Maximum v/c Ratio: 0.45				
Intersection Signal Delay: 10.8			Intersection LOS: B	
Intersection Capacity Utilization 38.5%			ICU Level of Service A	
Analysis Period (min) 15				

Splits and Phases: 1: Lime St. & Mission Inn



HCM 6th Signalized Intersection Summary

1: Lime St. & Mission Inn

EAC PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (veh/h)	15	362	0	0	430	15	23	166	96	0	0	0
Future Volume (veh/h)	15	362	0	0	430	15	23	166	96	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	17	402	0	0	478	17	26	184	107			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	597	1122	0	0	1077	38	95	682	410			
Arrive On Green	0.60	0.60	0.00	0.00	1.00	1.00	0.34	0.34	0.34			
Sat Flow, veh/h	902	1870	0	0	1795	64	282	2014	1212			
Grp Volume(v), veh/h	17	402	0	0	0	495	171	0	146			
Grp Sat Flow(s),veh/h/ln	902	1870	0	0	0	1859	1856	0	1652			
Q Serve(g_s), s	1.0	14.2	0.0	0.0	0.0	0.0	8.7	0.0	8.3			
Cycle Q Clear(g_c), s	1.0	14.2	0.0	0.0	0.0	0.0	8.7	0.0	8.3			
Prop In Lane	1.00		0.00	0.00		0.03	0.15		0.73			
Lane Grp Cap(c), veh/h	597	1122	0	0	0	1115	628	0	559			
V/C Ratio(X)	0.03	0.36	0.00	0.00	0.00	0.44	0.27	0.00	0.26			
Avail Cap(c_a), veh/h	597	1122	0	0	0	1115	628	0	559			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	0.92	1.00	0.00	1.00			
Uniform Delay (d), s/veh	10.6	13.2	0.0	0.0	0.0	0.0	31.3	0.0	31.2			
Incr Delay (d2), s/veh	0.1	0.9	0.0	0.0	0.0	1.2	1.1	0.0	1.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.2	6.1	0.0	0.0	0.0	0.4	4.1	0.0	3.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.7	14.1	0.0	0.0	0.0	1.2	32.4	0.0	32.3			
LnGrp LOS	B	B	A	A	A	A	C	A	C			
Approach Vol, veh/h	419			495			317					
Approach Delay, s/veh	14.0			1.2			32.4					
Approach LOS	B			A			C					
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	82.0			82.0			48.0					
Change Period (Y+Rc), s	4.0			4.0			4.0					
Max Green Setting (Gmax), s	78.0			78.0			44.0					
Max Q Clear Time (g_c+I1), s	16.2			2.0			10.7					
Green Ext Time (p_c), s	2.8			3.5			1.9					
Intersection Summary												
HCM 6th Ctrl Delay	13.6											
HCM 6th LOS	B											

Timings 2: Lime St. & University Av

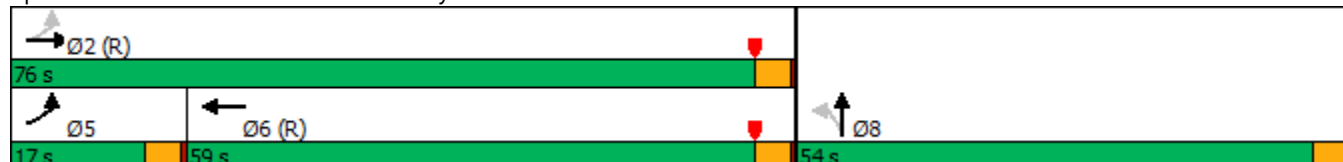
EAC PM Peak Hour

					
Lane Group	EBL	EBT	WBT	NBL	NBT
Lane Configurations		 	 		 
Traffic Volume (vph)	19	740	490	50	242
Future Volume (vph)	19	740	490	50	242
Turn Type	pm+pt	NA	NA	Perm	NA
Protected Phases	5	2	6		8
Permitted Phases	2			8	
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	4.0	5.0	5.0	5.0	5.0
Minimum Split (s)	14.0	41.0	41.0	41.0	41.0
Total Split (s)	17.0	76.0	59.0	54.0	54.0
Total Split (%)	13.1%	58.5%	45.4%	41.5%	41.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	Max	Max
Act Effect Green (s)	72.0	72.0	65.6	50.0	50.0
Actuated g/C Ratio	0.55	0.55	0.50	0.38	0.38
v/c Ratio	0.05	0.42	0.32	0.08	0.33
Control Delay	13.5	17.7	8.4	26.0	23.1
Queue Delay	0.0	0.1	0.1	0.0	0.0
Total Delay	13.5	17.8	8.5	26.0	23.1
LOS	B	B	A	C	C
Approach Delay		17.7	8.5		23.4
Approach LOS		B	A		C

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.42
Intersection Signal Delay: 16.4
Intersection LOS: B
Intersection Capacity Utilization 35.5%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Lime St. & University Av



HCM 6th Signalized Intersection Summary 2: Lime St. & University Av

EAC PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	740	0	0	490	27	50	242	139	0	0	0
Future Volume (veh/h)	19	740	0	0	490	27	50	242	139	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	21	822	0	0	544	30	56	269	154			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	510	1968	0	0	1735	96	685	870	482			
Arrive On Green	0.02	0.55	0.00	0.00	1.00	1.00	0.38	0.38	0.38			
Sat Flow, veh/h	1781	3647	0	0	3518	189	1781	2262	1253			
Grp Volume(v), veh/h	21	822	0	0	282	292	56	221	202			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1836	1781	1870	1645			
Q Serve(g_s), s	0.7	17.5	0.0	0.0	0.0	0.0	2.6	10.7	11.2			
Cycle Q Clear(g_c), s	0.7	17.5	0.0	0.0	0.0	0.0	2.6	10.7	11.2			
Prop In Lane	1.00		0.00	0.00		0.10	1.00		0.76			
Lane Grp Cap(c), veh/h	510	1968	0	0	900	931	685	719	633			
V/C Ratio(X)	0.04	0.42	0.00	0.00	0.31	0.31	0.08	0.31	0.32			
Avail Cap(c_a), veh/h	659	1968	0	0	900	931	685	719	633			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.97	0.97	1.00	1.00	1.00			
Uniform Delay (d), s/veh	14.0	16.8	0.0	0.0	0.0	0.0	25.4	27.9	28.1			
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	0.9	0.9	0.2	1.1	1.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.3	7.1	0.0	0.0	0.2	0.2	1.1	5.0	4.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.1	17.5	0.0	0.0	0.9	0.9	25.6	29.0	29.4			
LnGrp LOS	B	B	A	A	A	A	C	C	C			
Approach Vol, veh/h	843			574			479					
Approach Delay, s/veh	17.4			0.9			28.8					
Approach LOS	B			A			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	76.0			6.1			69.9			54.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	72.0			13.0			55.0			50.0		
Max Q Clear Time (g_c+I1), s	19.5			2.7			2.0			13.2		
Green Ext Time (p_c), s	6.8			0.0			3.7			2.8		
Intersection Summary												
HCM 6th Ctrl Delay	15.3											
HCM 6th LOS	B											
Notes												

Timings

EAC PM Peak Hour

3: Lemon St. & Mission Inn

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	16	345	225	413	93	30	287	69	40	299	19
Future Volume (vph)	16	345	225	413	93	30	287	69	40	299	19
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases					6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	8.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5
Total Split (s)	10.0	45.0	34.0	69.0	69.0	9.0	42.0	42.0	9.0	42.0	42.0
Total Split (%)	7.7%	34.6%	26.2%	53.1%	53.1%	6.9%	32.3%	32.3%	6.9%	32.3%	32.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	5.5	47.4	22.6	70.5	70.5	42.9	39.3	39.3	43.8	41.1	41.1
Actuated g/C Ratio	0.04	0.36	0.17	0.54	0.54	0.33	0.30	0.30	0.34	0.32	0.32
v/c Ratio	0.23	0.37	0.78	0.43	0.11	0.09	0.54	0.13	0.16	0.28	0.03
Control Delay	93.0	25.6	68.1	20.4	3.5	17.3	24.1	0.5	29.1	35.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	93.0	25.6	68.1	20.4	3.5	17.3	24.4	0.5	29.1	35.1	0.1
LOS	F	C	E	C	A	B	C	A	C	D	A
Approach Delay		28.0		32.9			19.6			32.6	
Approach LOS		C		C			B			C	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 29.0

Intersection LOS: C

Intersection Capacity Utilization 58.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Lemon St. & Mission Inn



HCM 6th Signalized Intersection Summary

3: Lemon St. & Mission Inn

EAC PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	345	90	225	413	93	30	287	69	40	299	19
Future Volume (veh/h)	16	345	90	225	413	93	30	287	69	40	299	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	367	96	239	439	99	32	305	73	43	318	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	1109	287	268	998	846	326	540	457	288	1041	464
Arrive On Green	0.00	0.13	0.13	0.15	0.53	0.53	0.04	0.58	0.58	0.03	0.29	0.29
Sat Flow, veh/h	1781	2795	722	1781	1870	1585	1781	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	17	232	231	239	439	99	32	305	73	43	318	20
Grp Sat Flow(s),veh/h/ln	1781	1777	1740	1781	1870	1585	1781	1870	1585	1781	1777	1585
Q Serve(g_s), s	1.2	15.4	15.7	17.1	18.6	4.0	1.6	13.3	2.8	2.2	9.0	1.2
Cycle Q Clear(g_c), s	1.2	15.4	15.7	17.1	18.6	4.0	1.6	13.3	2.8	2.2	9.0	1.2
Prop In Lane	1.00		0.41	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	25	705	691	268	998	846	326	540	457	288	1041	464
V/C Ratio(X)	0.68	0.33	0.33	0.89	0.44	0.12	0.10	0.57	0.16	0.15	0.31	0.04
Avail Cap(c_a), veh/h	75	705	691	404	998	846	350	540	457	304	1041	464
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	40.8	40.9	54.2	18.5	15.1	31.2	22.4	20.2	32.1	35.7	32.9
Incr Delay (d2), s/veh	25.8	1.2	1.2	15.0	1.4	0.3	0.1	4.2	0.7	0.2	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	7.6	7.6	8.7	8.3	1.5	0.7	5.2	1.1	1.0	4.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.2	41.9	42.1	69.2	19.9	15.4	31.3	26.6	20.9	32.3	36.5	33.1
LnGrp LOS	F	D	D	E	B	B	C	C	C	C	D	C
Approach Vol, veh/h	480			777			410			381		
Approach Delay, s/veh	43.7			34.5			26.0			35.8		
Approach LOS	D			C			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.1	56.1	7.2	42.6	6.3	73.8	7.8	42.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	29.5	40.5	4.5	37.5	5.5	64.5	4.5	37.5				
Max Q Clear Time (g_c+I1), s	19.1	17.7	3.6	11.0	3.2	20.6	4.2	15.3				
Green Ext Time (p_c), s	0.5	2.7	0.0	2.1	0.0	3.3	0.0	1.9				
Intersection Summary												
HCM 6th Ctrl Delay	35.2											
HCM 6th LOS	D											

Timings 4: Lemon St. & University Av

EAC PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	13	792	93	260	475	86	34	332	497	155	400
Future Volume (vph)	13	792	93	260	475	86	34	332	497	155	400
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6	8		8	4	
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0
Minimum Split (s)	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5
Total Split (s)	9.8	47.0	47.0	21.0	58.2	58.2	8.6	49.0	49.0	13.0	53.4
Total Split (%)	7.5%	36.2%	36.2%	16.2%	44.8%	44.8%	6.6%	37.7%	37.7%	10.0%	41.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max
Act Effect Green (s)	5.3	44.2	44.2	14.8	59.6	59.6	48.6	44.5	44.5	57.4	52.3
Actuated g/C Ratio	0.04	0.34	0.34	0.11	0.46	0.46	0.37	0.34	0.34	0.44	0.40
v/c Ratio	0.19	0.69	0.16	0.70	0.31	0.12	0.10	0.29	0.72	0.38	0.32
Control Delay	85.8	31.4	4.8	65.5	23.6	5.3	21.7	32.0	23.0	30.8	32.1
Queue Delay	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.8	32.1	4.8	65.5	23.6	5.3	21.7	32.0	23.0	30.8	32.1
LOS	F	C	A	E	C	A	C	C	C	C	C
Approach Delay		30.1			34.9			26.4			31.7
Approach LOS		C			C			C			C

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 30.7

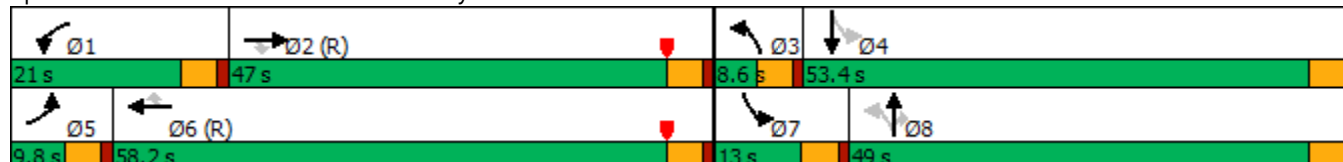
Intersection LOS: C

Intersection Capacity Utilization 72.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Lemon St. & University Av



HCM 6th Signalized Intersection Summary

4: Lemon St. & University Av

EAC PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	792	93	260	475	86	34	332	497	155	400	31
Future Volume (veh/h)	13	792	93	260	475	86	34	332	497	155	400	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	834	98	274	500	91	36	349	523	163	421	33
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	22	1271	567	332	1569	700	373	1216	543	344	1287	100
Arrive On Green	0.02	0.72	0.72	0.10	0.44	0.44	0.02	0.34	0.34	0.07	0.39	0.39
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3339	261
Grp Volume(v), veh/h	14	834	98	274	500	91	36	349	523	163	223	231
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1823
Q Serve(g_s), s	1.0	16.4	2.6	10.1	11.9	4.4	1.7	9.3	42.1	7.6	11.5	11.6
Cycle Q Clear(g_c), s	1.0	16.4	2.6	10.1	11.9	4.4	1.7	9.3	42.1	7.6	11.5	11.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	22	1271	567	332	1569	700	373	1216	543	344	685	703
V/C Ratio(X)	0.64	0.66	0.17	0.83	0.32	0.13	0.10	0.29	0.96	0.47	0.33	0.33
Avail Cap(c_a), veh/h	73	1271	567	439	1569	700	389	1216	543	344	685	703
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.1	14.2	12.2	57.7	23.6	21.5	26.9	31.2	42.0	24.5	28.1	28.1
Incr Delay (d2), s/veh	25.4	2.4	0.6	9.4	0.5	0.4	0.1	0.6	30.7	1.0	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.6	1.0	4.8	5.1	1.7	0.7	4.1	20.7	3.3	5.1	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.5	16.6	12.9	67.1	24.1	21.9	27.0	31.8	72.6	25.5	29.4	29.4
LnGrp LOS	F	B	B	E	C	C	C	C	E	C	C	C
Approach Vol, veh/h		946			865			908			617	
Approach Delay, s/veh		17.3			37.5			55.1			28.3	
Approach LOS		B			D			E			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	51.0	7.4	54.6	6.1	61.9	13.0	49.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	42.5	4.1	48.9	5.3	53.7	8.5	44.5				
Max Q Clear Time (g_c+I1), s	12.1	18.4	3.7	13.6	3.0	13.9	9.6	44.1				
Green Ext Time (p_c), s	0.4	6.4	0.0	2.8	0.0	3.9	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			34.9									
HCM 6th LOS			C									

HCM 6th TWSC
5: Lemon St. & Alleyway

EAC PM Peak Hour

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	7	1	1	2	1	411	4	1	619	2
Future Vol, veh/h	1	1	7	1	1	2	1	411	4	1	619	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	8	1	1	2	1	442	4	1	666	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	893	1117	334	782	1116	223	668	0	0	446	0	0
Stage 1	669	669	-	446	446	-	-	-	-	-	-	-
Stage 2	224	448	-	336	670	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	236	206	662	284	206	780	918	-	-	1111	-	-
Stage 1	413	454	-	561	572	-	-	-	-	-	-	-
Stage 2	758	571	-	652	454	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	234	206	662	279	206	780	918	-	-	1111	-	-
Mov Cap-2 Maneuver	234	206	-	279	206	-	-	-	-	-	-	-
Stage 1	413	454	-	560	571	-	-	-	-	-	-	-
Stage 2	754	570	-	642	454	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13		15		0		0	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	918	-	-	457	364	1111	-
HCM Lane V/C Ratio	0.001	-	-	0.021	0.012	0.001	-
HCM Control Delay (s)	8.9	0	-	13	15	8.2	0
HCM Lane LOS	A	A	-	B	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

HCM 6th TWSC
6: Lime St. & Alleyway

EAC PM Peak Hour

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱			↰↱				
Traffic Vol, veh/h	0	0	0	0	0	3	0	278	6	0	0	0
Future Vol, veh/h	0	0	0	0	0	3	0	278	6	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	4	0	392	8	0	0	0

Major/Minor	Minor2		Minor1		Major1					
Conflicting Flow All	196	400	-	-	396	200	0	0	0	0
Stage 1	0	0	-	-	396	-	-	-	-	-
Stage 2	196	400	-	-	0	-	-	-	-	-
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	745	537	0	0	540	808	-	-	-	-
Stage 1	-	-	0	0	602	-	-	-	-	-
Stage 2	787	600	0	0	-	-	-	-	-	-
Platoon blocked, %								-	-	-
Mov Cap-1 Maneuver	741	537	-	-	540	808	-	-	-	-
Mov Cap-2 Maneuver	741	537	-	-	540	-	-	-	-	-
Stage 1	-	-	-	-	602	-	-	-	-	-
Stage 2	783	600	-	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	9.5	0
HCM LOS	A	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1
Capacity (veh/h)	-	-	-	808
HCM Lane V/C Ratio	-	-	-	0.005
HCM Control Delay (s)	0	-	-	9.5
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

APPENDIX F

EXISTING PLUS AMBIENT PLUS CUMULATIVE PLUS PROJECT (EACP 2021) INTERSECTION ANALYSIS CALCULATION WORKSHEETS

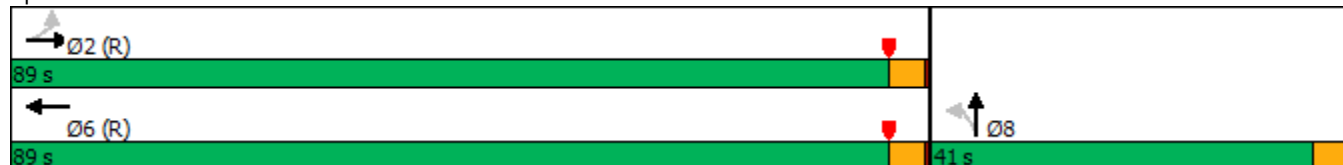
Timings

EAPC AM Peak Hour

1: Lemon St. & Mission Inn

				
Lane Group	EBL	EBT	WBT	NBT
Lane Configurations				
Traffic Volume (vph)	1	240	569	36
Future Volume (vph)	1	240	569	36
Turn Type	Perm	NA	NA	NA
Protected Phases		2	6	8
Permitted Phases	2			
Detector Phase	2	2	6	8
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	41.0	41.0	41.0	41.0
Total Split (s)	89.0	89.0	89.0	41.0
Total Split (%)	68.5%	68.5%	68.5%	31.5%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Max
Act Efect Green (s)	85.0	85.0	85.0	37.0
Actuated g/C Ratio	0.65	0.65	0.65	0.28
v/c Ratio	0.00	0.23	0.56	0.14
Control Delay	8.0	9.7	6.8	21.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.0	9.7	6.8	21.1
LOS	A	A	A	C
Approach Delay		9.7	6.8	21.1
Approach LOS		A	A	C
Intersection Summary				
Cycle Length: 130				
Actuated Cycle Length: 130				
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow				
Natural Cycle: 85				
Control Type: Actuated-Coordinated				
Maximum v/c Ratio: 0.56				
Intersection Signal Delay: 9.3			Intersection LOS: A	
Intersection Capacity Utilization 42.2%			ICU Level of Service A	
Analysis Period (min) 15				

Splits and Phases: 1: Lemon St. & Mission Inn



HCM 6th Signalized Intersection Summary

1: Lemon St. & Mission Inn

EAPC AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (veh/h)	1	240	0	0	569	24	31	36	52	0	0	0
Future Volume (veh/h)	1	240	0	0	569	24	31	36	52	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	1	276	0	0	654	28	36	41	60			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	551	1223	0	0	1164	50	256	292	427			
Arrive On Green	0.65	0.65	0.00	0.00	1.00	1.00	0.28	0.28	0.28			
Sat Flow, veh/h	759	1870	0	0	1780	76	900	1025	1500			
Grp Volume(v), veh/h	1	276	0	0	0	682	73	0	64			
Grp Sat Flow(s),veh/h/ln	759	1870	0	0	0	1857	1825	0	1600			
Q Serve(g_s), s	0.1	7.8	0.0	0.0	0.0	0.0	3.9	0.0	3.9			
Cycle Q Clear(g_c), s	0.1	7.8	0.0	0.0	0.0	0.0	3.9	0.0	3.9			
Prop In Lane	1.00		0.00	0.00		0.04	0.49		0.94			
Lane Grp Cap(c), veh/h	551	1223	0	0	0	1214	520	0	455			
V/C Ratio(X)	0.00	0.23	0.00	0.00	0.00	0.56	0.14	0.00	0.14			
Avail Cap(c_a), veh/h	551	1223	0	0	0	1214	520	0	455			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	0.87	1.00	0.00	1.00			
Uniform Delay (d), s/veh	7.8	9.1	0.0	0.0	0.0	0.0	34.7	0.0	34.7			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.0	1.6	0.6	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	3.2	0.0	0.0	0.0	0.6	1.8	0.0	1.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	9.6	0.0	0.0	0.0	1.6	35.2	0.0	35.3			
LnGrp LOS	A	A	A	A	A	A	D	A	D			
Approach Vol, veh/h	277			682			137					
Approach Delay, s/veh	9.6			1.6			35.3					
Approach LOS	A			A			D					
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	89.0			89.0			41.0					
Change Period (Y+Rc), s	4.0			4.0			4.0					
Max Green Setting (Gmax), s	85.0			85.0			37.0					
Max Q Clear Time (g_c+l1), s	9.8			2.0			5.9					
Green Ext Time (p_c), s	1.7			5.5			0.8					
Intersection Summary												
HCM 6th Ctrl Delay	7.8											
HCM 6th LOS	A											

Timings
2: Lemon St. & University Av

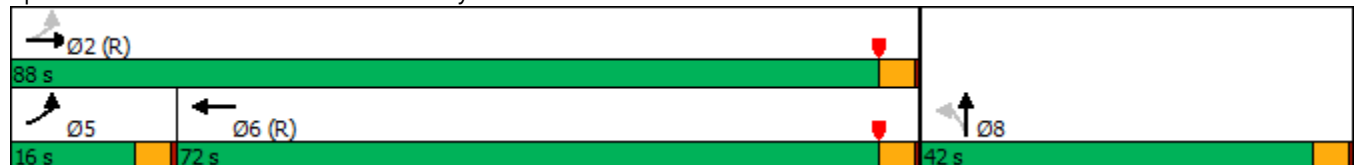
EAPC AM Peak Hour

					
Lane Group	EBL	EBT	WBT	NBL	NBT
Lane Configurations					
Traffic Volume (vph)	29	421	603	14	45
Future Volume (vph)	29	421	603	14	45
Turn Type	pm+pt	NA	NA	Perm	NA
Protected Phases	5	2	6		8
Permitted Phases	2			8	
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	4.0	5.0	5.0	5.0	5.0
Minimum Split (s)	14.0	41.0	41.0	41.0	41.0
Total Split (s)	16.0	88.0	72.0	42.0	42.0
Total Split (%)	12.3%	67.7%	55.4%	32.3%	32.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	Max	Max
Act Effect Green (s)	84.0	84.0	77.5	38.0	38.0
Actuated g/C Ratio	0.65	0.65	0.60	0.29	0.29
v/c Ratio	0.08	0.20	0.35	0.03	0.12
Control Delay	8.7	9.6	6.4	33.2	17.0
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	8.7	9.6	6.5	33.2	17.0
LOS	A	A	A	C	B
Approach Delay		9.6	6.5		18.7
Approach LOS		A	A		B

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.35
 Intersection Signal Delay: 8.7
 Intersection LOS: A
 Intersection Capacity Utilization 34.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: Lemon St. & University Av



HCM 6th Signalized Intersection Summary 2: Lemon St. & University Av

EAPC AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	421	0	0	603	60	14	45	54	0	0	0
Future Volume (veh/h)	29	421	0	0	603	60	14	45	54	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	32	463	0	0	663	66	15	49	59			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	525	2296	0	0	1940	193	521	547	463			
Arrive On Green	0.02	0.65	0.00	0.00	1.00	1.00	0.29	0.29	0.29			
Sat Flow, veh/h	1781	3647	0	0	3358	325	1781	1870	1585			
Grp Volume(v), veh/h	32	463	0	0	361	368	15	49	59			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1812	1781	1870	1585			
Q Serve(g_s), s	0.9	6.9	0.0	0.0	0.0	0.0	0.8	2.5	3.6			
Cycle Q Clear(g_c), s	0.9	6.9	0.0	0.0	0.0	0.0	0.8	2.5	3.6			
Prop In Lane	1.00		0.00	0.00		0.18	1.00		1.00			
Lane Grp Cap(c), veh/h	525	2296	0	0	1056	1077	521	547	463			
V/C Ratio(X)	0.06	0.20	0.00	0.00	0.34	0.34	0.03	0.09	0.13			
Avail Cap(c_a), veh/h	651	2296	0	0	1056	1077	521	547	463			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.95	0.95	1.00	1.00	1.00			
Uniform Delay (d), s/veh	9.0	9.4	0.0	0.0	0.0	0.0	32.8	33.4	33.8			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.8	0.8	0.1	0.3	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.3	2.6	0.0	0.0	0.2	0.2	0.4	1.2	1.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	9.6	0.0	0.0	0.8	0.8	32.9	33.8	34.4			
LnGrp LOS	A	A	A	A	A	A	C	C	C			
Approach Vol, veh/h	495			729			123					
Approach Delay, s/veh	9.5			0.8			34.0					
Approach LOS	A			A			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	88.0			6.7			81.3			42.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	84.0			12.0			68.0			38.0		
Max Q Clear Time (g_c+I1), s	8.9			2.9			2.0			5.6		
Green Ext Time (p_c), s	3.4			0.0			5.1			0.6		
Intersection Summary												
HCM 6th Ctrl Delay				7.1								
HCM 6th LOS				A								
Notes												

Timings 3: Lime St. & Mission Inn

EAPC AM Peak Hour

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	3	229	466	528	92	33	139	15	58	193	12
Future Volume (vph)	3	229	466	528	92	33	139	15	58	193	12
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases					6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	8.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5
Total Split (s)	8.5	42.0	38.0	71.5	71.5	8.5	41.5	41.5	8.5	41.5	41.5
Total Split (%)	6.5%	32.3%	29.2%	55.0%	55.0%	6.5%	31.9%	31.9%	6.5%	31.9%	31.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	4.0	37.5	33.5	73.8	73.8	41.9	38.7	38.7	42.8	40.4	40.4
Actuated g/C Ratio	0.03	0.29	0.26	0.57	0.57	0.32	0.30	0.30	0.33	0.31	0.31
v/c Ratio	0.06	0.30	1.05	0.51	0.10	0.09	0.26	0.03	0.16	0.18	0.02
Control Delay	72.7	30.2	103.0	19.9	3.1	24.1	28.6	0.1	30.1	34.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.7	30.2	103.0	19.9	3.1	24.1	28.6	0.1	30.1	34.3	0.1
LOS	E	C	F	B	A	C	C	A	C	C	A
Approach Delay		30.6		54.1			25.6			31.8	
Approach LOS		C		D			C			C	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 44.2

Intersection LOS: D

Intersection Capacity Utilization 59.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Lime St. & Mission Inn



HCM 6th Signalized Intersection Summary 3: Lime St. & Mission Inn

EAPC AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	229	67	466	528	92	33	139	15	58	193	12
Future Volume (veh/h)	3	229	67	466	528	92	33	139	15	58	193	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	236	69	480	544	95	34	143	15	60	199	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	787	225	459	1016	861	389	532	451	412	1043	465
Arrive On Green	0.00	0.10	0.10	0.26	0.54	0.54	0.04	0.57	0.57	0.03	0.29	0.29
Sat Flow, veh/h	1781	2728	779	1781	1870	1585	1781	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	3	152	153	480	544	95	34	143	15	60	199	12
Grp Sat Flow(s),veh/h/ln	1781	1777	1730	1781	1870	1585	1781	1870	1585	1781	1777	1585
Q Serve(g_s), s	0.2	10.3	10.7	33.5	24.4	3.8	1.7	5.1	0.5	3.1	5.4	0.7
Cycle Q Clear(g_c), s	0.2	10.3	10.7	33.5	24.4	3.8	1.7	5.1	0.5	3.1	5.4	0.7
Prop In Lane	1.00		0.45	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	6	513	499	459	1016	861	389	532	451	412	1043	465
V/C Ratio(X)	0.53	0.30	0.31	1.05	0.54	0.11	0.09	0.27	0.03	0.15	0.19	0.03
Avail Cap(c_a), veh/h	55	513	499	459	1016	861	405	532	451	412	1043	465
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	46.5	46.7	48.3	19.1	14.4	31.2	21.1	20.1	31.6	34.4	32.7
Incr Delay (d2), s/veh	60.1	1.4	1.6	54.4	2.0	0.3	0.1	1.2	0.1	0.2	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.1	5.2	21.6	10.9	1.4	0.8	2.2	0.2	1.4	2.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.0	48.0	48.3	102.7	21.2	14.7	31.3	22.4	20.3	31.8	34.8	32.8
LnGrp LOS	F	D	D	F	C	B	C	C	C	C	C	C
Approach Vol, veh/h		308			1119			192			271	
Approach Delay, s/veh		48.9			55.6			23.8			34.0	
Approach LOS		D			E			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	38.0	42.0	7.3	42.7	4.9	75.1	8.5	41.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	33.5	37.5	4.0	37.0	4.0	67.0	4.0	37.0				
Max Q Clear Time (g_c+I1), s	35.5	12.7	3.7	7.4	2.2	26.4	5.1	7.1				
Green Ext Time (p_c), s	0.0	1.7	0.0	1.3	0.0	4.2	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			48.2									
HCM 6th LOS			D									

Timings
4: Lime St. & University Av

EAPC AM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	14	361	90	328	573	105	26	114	158	96	667
Future Volume (vph)	14	361	90	328	573	105	26	114	158	96	667
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6	8		8	4	
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0
Minimum Split (s)	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5
Total Split (s)	11.0	48.0	48.0	27.0	64.0	64.0	9.0	44.0	44.0	11.0	46.0
Total Split (%)	8.5%	36.9%	36.9%	20.8%	49.2%	49.2%	6.9%	33.8%	33.8%	8.5%	35.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max
Act Effect Green (s)	6.1	47.8	47.8	18.2	66.1	66.1	44.0	39.5	39.5	49.0	45.1
Actuated g/C Ratio	0.05	0.37	0.37	0.14	0.51	0.51	0.34	0.30	0.30	0.38	0.35
v/c Ratio	0.18	0.29	0.14	0.72	0.34	0.13	0.14	0.11	0.28	0.22	0.61
Control Delay	56.4	24.3	8.4	62.1	20.3	6.2	26.7	33.0	6.1	40.0	52.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	56.4	24.3	8.4	62.1	20.3	6.2	26.7	33.0	6.1	40.0	53.6
LOS	E	C	A	E	C	A	C	C	A	D	D
Approach Delay		22.2			32.4			18.2			52.0
Approach LOS		C			C			B			D

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 35.0

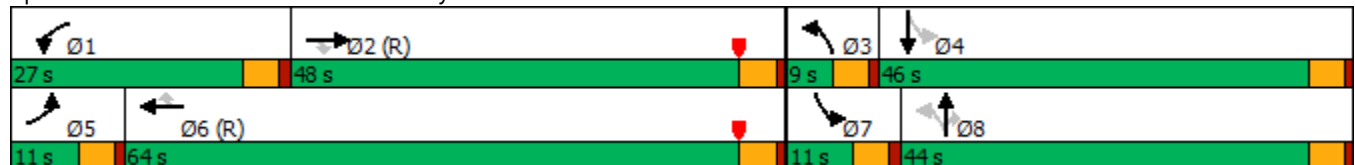
Intersection LOS: D

Intersection Capacity Utilization 52.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Lime St. & University Av



HCM 6th Signalized Intersection Summary 4: Lime St. & University Av

EAPC AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	361	90	328	573	105	26	114	158	96	667	42
Future Volume (veh/h)	14	361	90	328	573	105	26	114	158	96	667	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	380	95	345	603	111	27	120	166	101	702	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	1382	616	411	1758	784	205	1080	482	450	1137	71
Arrive On Green	0.00	0.13	0.13	0.12	0.49	0.49	0.02	0.30	0.30	0.05	0.33	0.33
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3396	213
Grp Volume(v), veh/h	15	380	95	345	603	111	27	120	166	101	367	379
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1832
Q Serve(g_s), s	1.1	12.6	6.9	12.7	13.4	4.9	1.4	3.2	10.6	5.0	22.5	22.6
Cycle Q Clear(g_c), s	1.1	12.6	6.9	12.7	13.4	4.9	1.4	3.2	10.6	5.0	22.5	22.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	23	1382	616	411	1758	784	205	1080	482	450	595	613
V/C Ratio(X)	0.65	0.28	0.15	0.84	0.34	0.14	0.13	0.11	0.34	0.22	0.62	0.62
Avail Cap(c_a), veh/h	89	1382	616	598	1758	784	232	1080	482	450	595	613
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	40.1	37.7	56.1	20.0	17.8	31.6	32.6	35.2	27.8	36.3	36.3
Incr Delay (d2), s/veh	27.1	0.5	0.5	7.0	0.5	0.4	0.3	0.2	2.0	0.2	4.8	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	6.1	2.9	5.9	5.6	1.9	0.6	1.4	4.3	2.1	10.5	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.5	40.6	38.2	63.1	20.5	18.2	31.9	32.8	37.1	28.1	41.0	40.9
LnGrp LOS	F	D	D	E	C	B	C	C	D	C	D	D
Approach Vol, veh/h	490			1059			313			847		
Approach Delay, s/veh	41.7			34.1			35.0			39.4		
Approach LOS	D			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	55.0	7.0	48.0	6.2	68.8	11.0	44.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	22.5	43.5	4.5	41.5	6.5	59.5	6.5	39.5				
Max Q Clear Time (g_c+I1), s	14.7	14.6	3.4	24.6	3.1	15.4	7.0	12.6				
Green Ext Time (p_c), s	0.8	2.8	0.0	4.2	0.0	4.9	0.0	1.3				
Intersection Summary												
HCM 6th Ctrl Delay	37.3											
HCM 6th LOS	D											

HCM 6th TWSC
5: Lime St. & Alleyway

EAPC AM Peak Hour

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	4	1	1	1	2	216	2	2	732	10
Future Vol, veh/h	1	1	4	1	1	1	2	216	2	2	732	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	4	1	1	1	2	230	2	2	779	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	909	1025	395	629	1029	116	790	0	0	232	0	0
Stage 1	789	789	-	235	235	-	-	-	-	-	-	-
Stage 2	120	236	-	394	794	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	230	234	604	367	232	914	826	-	-	1333	-	-
Stage 1	350	400	-	747	709	-	-	-	-	-	-	-
Stage 2	872	708	-	602	398	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	228	233	604	361	231	914	826	-	-	1333	-	-
Mov Cap-2 Maneuver	228	233	-	361	231	-	-	-	-	-	-	-
Stage 1	349	399	-	745	707	-	-	-	-	-	-	-
Stage 2	867	706	-	594	397	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.3	14.9	0.1	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	826	-	-	392	366	1333	-
HCM Lane V/C Ratio	0.003	-	-	0.016	0.009	0.002	-
HCM Control Delay (s)	9.4	0	-	14.3	14.9	7.7	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱			↰↱				
Traffic Vol, veh/h	0	0	0	0	0	8	0	127	4	0	0	0
Future Vol, veh/h	0	0	0	0	0	8	0	127	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	11	0	174	5	0	0	0

Major/Minor	Minor2		Minor1		Major1						
Conflicting Flow All	87	179	-	-	177	90	0	0	0		
Stage 1	0	0	-	-	177	-	-	-	-		
Stage 2	87	179	-	-	0	-	-	-	-		
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-		
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-		
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-		
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-		
Pot Cap-1 Maneuver	889	714	0	0	716	950	-	-	-		
Stage 1	-	-	0	0	752	-	-	-	-		
Stage 2	911	750	0	0	-	-	-	-	-		
Platoon blocked, %								-	-		
Mov Cap-1 Maneuver	878	714	-	-	716	950	-	-	-		
Mov Cap-2 Maneuver	878	714	-	-	716	-	-	-	-		
Stage 1	-	-	-	-	752	-	-	-	-		
Stage 2	900	750	-	-	-	-	-	-	-		

Approach	EB	WB	NB
HCM Control Delay, s	0	8.8	0
HCM LOS	A	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	
Capacity (veh/h)	-	-	-	-	950
HCM Lane V/C Ratio	-	-	-	-	0.012
HCM Control Delay (s)	0	-	-	0	8.8
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-	0

Intersection

Int Delay, s/veh 2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	55	66	68	0	0
Future Vol, veh/h	0	55	66	68	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	60	72	74	0	0

Major/Minor	Minor1	Major1		
Conflicting Flow All	-	73	0	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.94	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.32	-	-
Pot Cap-1 Maneuver	0	974	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	974	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	8.9	0
HCM LOS	A	

Minor Lane/Major Mvmt	NBT	NBRWBLn1
Capacity (veh/h)	-	- 974
HCM Lane V/C Ratio	-	- 0.061
HCM Control Delay (s)	-	- 8.9
HCM Lane LOS	-	- A
HCM 95th %tile Q(veh)	-	- 0.2

Timings

EAPC PM Peak Hour

1: Lemon St. & Mission Inn



Lane Group	EBL	EBT	WBT	NBT
Lane Configurations	↰	↱	↰	↱
Traffic Volume (vph)	15	362	430	170
Future Volume (vph)	15	362	430	170
Turn Type	Perm	NA	NA	NA
Protected Phases		2	6	8
Permitted Phases	2			
Detector Phase	2	2	6	8
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	41.0	41.0	41.0	41.0
Total Split (s)	81.0	81.0	81.0	49.0
Total Split (%)	62.3%	62.3%	62.3%	37.7%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	Max
Act Effect Green (s)	77.0	77.0	77.0	45.0
Actuated g/C Ratio	0.59	0.59	0.59	0.35
v/c Ratio	0.04	0.36	0.45	0.30
Control Delay	11.5	15.0	6.1	15.9
Queue Delay	0.0	0.0	0.1	0.0
Total Delay	11.5	15.0	6.2	15.9
LOS	B	B	A	B
Approach Delay		14.8	6.2	15.9
Approach LOS		B	A	B

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.45

Intersection Signal Delay: 11.8

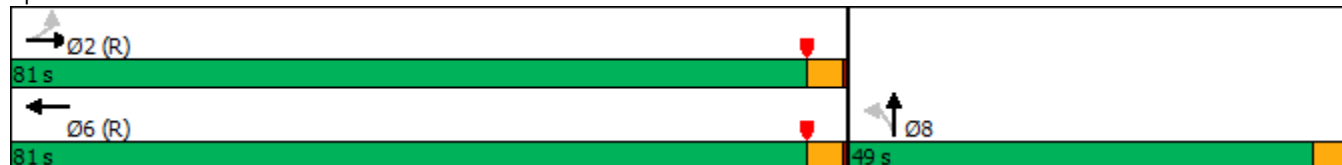
Intersection LOS: B

Intersection Capacity Utilization 39.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Lemon St. & Mission Inn



HCM 6th Signalized Intersection Summary

1: Lemon St. & Mission Inn

EAPC PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (veh/h)	15	362	0	0	430	15	36	170	122	0	0	0
Future Volume (veh/h)	15	362	0	0	430	15	36	170	122	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	17	402	0	0	478	17	40	189	136			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	590	1108	0	0	1063	38	129	616	461			
Arrive On Green	0.59	0.59	0.00	0.00	1.00	1.00	0.35	0.35	0.35			
Sat Flow, veh/h	902	1870	0	0	1795	64	373	1778	1331			
Grp Volume(v), veh/h	17	402	0	0	0	495	198	0	167			
Grp Sat Flow(s),veh/h/ln	902	1870	0	0	0	1859	1852	0	1631			
Q Serve(g_s), s	1.0	14.5	0.0	0.0	0.0	0.0	10.2	0.0	9.7			
Cycle Q Clear(g_c), s	1.0	14.5	0.0	0.0	0.0	0.0	10.2	0.0	9.7			
Prop In Lane	1.00		0.00	0.00		0.03	0.20		0.82			
Lane Grp Cap(c), veh/h	590	1108	0	0	0	1101	641	0	565			
V/C Ratio(X)	0.03	0.36	0.00	0.00	0.00	0.45	0.31	0.00	0.30			
Avail Cap(c_a), veh/h	590	1108	0	0	0	1101	641	0	565			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	0.93	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.0	13.8	0.0	0.0	0.0	0.0	31.1	0.0	31.0			
Incr Delay (d2), s/veh	0.1	0.9	0.0	0.0	0.0	1.2	1.3	0.0	1.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.2	6.2	0.0	0.0	0.0	0.4	4.8	0.0	4.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.1	14.7	0.0	0.0	0.0	1.2	32.4	0.0	32.3			
LnGrp LOS	B	B	A	A	A	A	C	A	C			
Approach Vol, veh/h	419			495			365					
Approach Delay, s/veh	14.5			1.2			32.3					
Approach LOS	B			A			C					
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	81.0			81.0			49.0					
Change Period (Y+Rc), s	4.0			4.0			4.0					
Max Green Setting (Gmax), s	77.0			77.0			45.0					
Max Q Clear Time (g_c+I1), s	16.5			2.0			12.2					
Green Ext Time (p_c), s	2.8			3.5			2.3					
Intersection Summary												
HCM 6th Ctrl Delay	14.5											
HCM 6th LOS	B											

Timings
2: Lemon St. & University Av

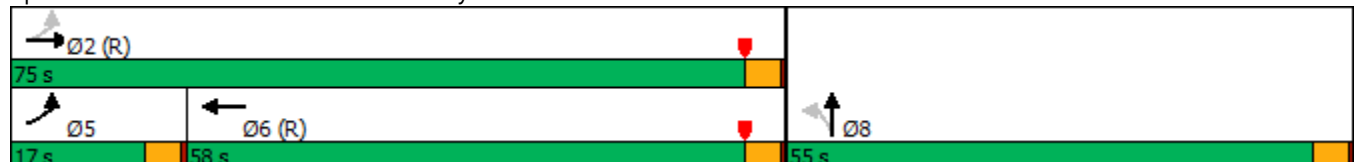
EAPC PM Peak Hour

					
Lane Group	EBL	EBT	WBT	NBL	NBT
Lane Configurations		 	 		 
Traffic Volume (vph)	31	740	490	50	246
Future Volume (vph)	31	740	490	50	246
Turn Type	pm+pt	NA	NA	Perm	NA
Protected Phases	5	2	6		8
Permitted Phases	2			8	
Detector Phase	5	2	6	8	8
Switch Phase					
Minimum Initial (s)	4.0	5.0	5.0	5.0	5.0
Minimum Split (s)	14.0	41.0	41.0	41.0	41.0
Total Split (s)	17.0	75.0	58.0	55.0	55.0
Total Split (%)	13.1%	57.7%	44.6%	42.3%	42.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	Max	Max
Act Effect Green (s)	71.0	71.0	64.2	51.0	51.0
Actuated g/C Ratio	0.55	0.55	0.49	0.39	0.39
v/c Ratio	0.09	0.43	0.34	0.08	0.33
Control Delay	14.2	18.3	9.1	25.4	22.7
Queue Delay	0.0	0.1	0.1	0.0	0.0
Total Delay	14.2	18.4	9.2	25.4	22.7
LOS	B	B	A	C	C
Approach Delay		18.2	9.2		23.0
Approach LOS		B	A		C

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 16.6
 Intersection LOS: B
 Intersection Capacity Utilization 36.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: Lemon St. & Univerty Av



HCM 6th Signalized Intersection Summary

2: Lemon St. & University Av

EAPC PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	740	0	0	490	48	50	246	139	0	0	0
Future Volume (veh/h)	31	740	0	0	490	48	50	246	139	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	34	822	0	0	544	53	56	273	154			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	497	1941	0	0	1615	157	699	892	488			
Arrive On Green	0.02	0.55	0.00	0.00	0.99	0.99	0.39	0.39	0.39			
Sat Flow, veh/h	1781	3647	0	0	3365	318	1781	2274	1243			
Grp Volume(v), veh/h	34	822	0	0	295	302	56	223	204			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1813	1781	1870	1647			
Q Serve(g_s), s	1.2	17.8	0.0	0.0	0.4	0.4	2.6	10.7	11.2			
Cycle Q Clear(g_c), s	1.2	17.8	0.0	0.0	0.4	0.4	2.6	10.7	11.2			
Prop In Lane	1.00		0.00	0.00		0.18	1.00		0.75			
Lane Grp Cap(c), veh/h	497	1941	0	0	877	895	699	734	646			
V/C Ratio(X)	0.07	0.42	0.00	0.00	0.34	0.34	0.08	0.30	0.32			
Avail Cap(c_a), veh/h	636	1941	0	0	877	895	699	734	646			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.97	0.97	1.00	1.00	1.00			
Uniform Delay (d), s/veh	14.6	17.4	0.0	0.0	0.4	0.4	24.8	27.3	27.4			
Incr Delay (d2), s/veh	0.1	0.7	0.0	0.0	1.0	1.0	0.2	1.1	1.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.5	7.3	0.0	0.0	0.4	0.4	1.1	5.0	4.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.7	18.1	0.0	0.0	1.4	1.4	25.0	28.3	28.7			
LnGrp LOS	B	B	A	A	A	A	C	C	C			
Approach Vol, veh/h	856			597			483					
Approach Delay, s/veh	18.0			1.4			28.1					
Approach LOS	B			A			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	75.0			6.8			68.2			55.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	71.0			13.0			54.0			51.0		
Max Q Clear Time (g_c+I1), s	19.8			3.2			2.4			13.2		
Green Ext Time (p_c), s	6.8			0.0			3.9			2.9		
Intersection Summary												
HCM 6th Ctrl Delay	15.4											
HCM 6th LOS	B											
Notes												

Timings
3: Lime St. & Mission Inn

EAPC PM Peak Hour

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	16	354	235	413	93	30	287	69	40	299	19
Future Volume (vph)	16	354	235	413	93	30	287	69	40	299	19
Turn Type	Prot	NA	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases					6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Split (s)	8.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5
Total Split (s)	10.0	45.4	34.0	69.4	69.4	8.6	42.0	42.0	8.6	42.0	42.0
Total Split (%)	7.7%	34.9%	26.2%	53.4%	53.4%	6.6%	32.3%	32.3%	6.6%	32.3%	32.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effect Green (s)	5.5	47.2	23.2	70.9	70.9	42.5	39.2	39.2	43.4	40.9	40.9
Actuated g/C Ratio	0.04	0.36	0.18	0.55	0.55	0.33	0.30	0.30	0.33	0.31	0.31
v/c Ratio	0.23	0.39	0.79	0.43	0.11	0.10	0.54	0.13	0.16	0.29	0.03
Control Delay	90.9	26.9	68.7	20.1	3.5	17.2	23.9	0.5	29.6	35.2	0.1
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	90.9	27.3	68.7	20.1	3.5	17.2	24.2	0.5	29.6	35.2	0.1
LOS	F	C	E	C	A	B	C	A	C	D	A
Approach Delay		29.4		33.4			19.4			32.7	
Approach LOS		C		C			B			C	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 29.6

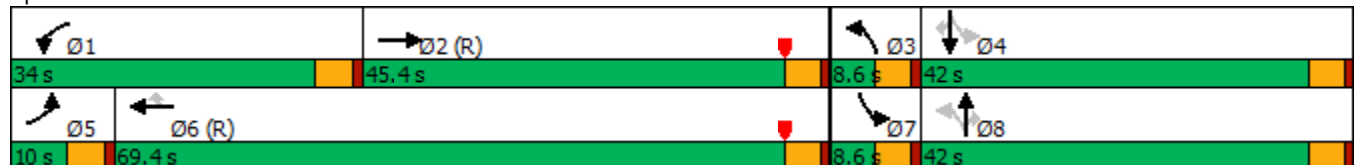
Intersection LOS: C

Intersection Capacity Utilization 59.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Lime St. & Mission Inn



HCM 6th Signalized Intersection Summary

3: Lime St. & Mission Inn

EAPC PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									 	
Traffic Volume (veh/h)	16	354	108	235	413	93	30	287	69	40	299	19
Future Volume (veh/h)	16	354	108	235	413	93	30	287	69	40	299	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	377	115	250	439	99	32	305	73	43	318	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	1051	317	279	998	846	326	540	457	288	1041	464
Arrive On Green	0.00	0.13	0.13	0.16	0.53	0.53	0.04	0.58	0.58	0.03	0.29	0.29
Sat Flow, veh/h	1781	2691	810	1781	1870	1585	1781	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	17	247	245	250	439	99	32	305	73	43	318	20
Grp Sat Flow(s),veh/h/ln	1781	1777	1724	1781	1870	1585	1781	1870	1585	1781	1777	1585
Q Serve(g_s), s	1.2	16.5	16.9	17.9	18.6	4.0	1.6	13.3	2.8	2.2	9.0	1.2
Cycle Q Clear(g_c), s	1.2	16.5	16.9	17.9	18.6	4.0	1.6	13.3	2.8	2.2	9.0	1.2
Prop In Lane	1.00		0.47	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	25	694	674	279	998	846	326	540	457	288	1041	464
V/C Ratio(X)	0.68	0.36	0.36	0.90	0.44	0.12	0.10	0.57	0.16	0.15	0.31	0.04
Avail Cap(c_a), veh/h	75	694	674	404	998	846	344	540	457	299	1041	464
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	41.7	41.8	53.8	18.5	15.1	31.2	22.4	20.2	32.1	35.7	32.9
Incr Delay (d2), s/veh	25.8	1.3	1.4	16.4	1.4	0.3	0.1	4.2	0.7	0.2	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.1	8.1	9.2	8.3	1.5	0.7	5.2	1.1	1.0	4.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.2	43.0	43.3	70.2	19.9	15.4	31.3	26.6	20.9	32.3	36.5	33.1
LnGrp LOS	F	D	D	E	B	B	C	C	C	C	D	C
Approach Vol, veh/h	509			788			410			381		
Approach Delay, s/veh	44.7			35.3			26.0			35.8		
Approach LOS	D			D			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.9	55.3	7.2	42.6	6.3	73.8	7.8	42.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	29.5	40.9	4.1	37.5	5.5	64.9	4.1	37.5				
Max Q Clear Time (g_c+I1), s	19.9	18.9	3.6	11.0	3.2	20.6	4.2	15.3				
Green Ext Time (p_c), s	0.5	2.9	0.0	2.1	0.0	3.3	0.0	1.9				
Intersection Summary												
HCM 6th Ctrl Delay	35.8											
HCM 6th LOS	D											

Timings 4: Lime St. & University Av

EAPC PM Peak Hour

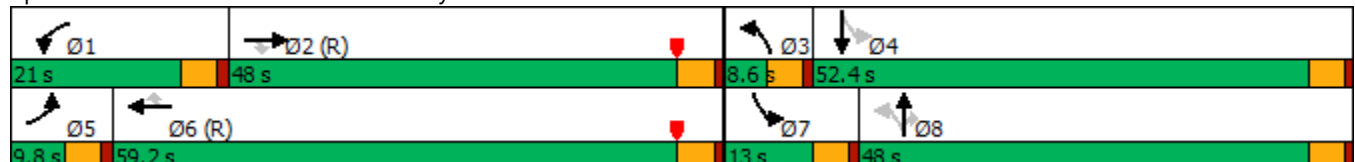
											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	13	792	93	260	485	86	38	332	497	164	409
Future Volume (vph)	13	792	93	260	485	86	38	332	497	164	409
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6	8		8	4	
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0
Minimum Split (s)	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5	41.5	8.5	41.5
Total Split (s)	9.8	48.0	48.0	21.0	59.2	59.2	8.6	48.0	48.0	13.0	52.4
Total Split (%)	7.5%	36.9%	36.9%	16.2%	45.5%	45.5%	6.6%	36.9%	36.9%	10.0%	40.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max
Act Effect Green (s)	5.3	45.2	45.2	14.8	60.6	60.6	47.6	43.5	43.5	56.4	49.6
Actuated g/C Ratio	0.04	0.35	0.35	0.11	0.47	0.47	0.37	0.33	0.33	0.43	0.38
v/c Ratio	0.19	0.68	0.16	0.70	0.31	0.12	0.12	0.29	0.73	0.42	0.35
Control Delay	91.0	29.8	4.2	65.5	23.0	5.2	22.6	32.8	24.2	32.0	34.4
Queue Delay	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.0	30.4	4.2	65.5	23.0	5.2	22.6	32.8	24.2	32.0	34.4
LOS	F	C	A	E	C	A	C	C	C	C	C
Approach Delay		28.5			34.5			27.4			33.8
Approach LOS		C			C			C			C

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 30.8
 Intersection Capacity Utilization 73.0%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 4: Lime St. & University Av



HCM 6th Signalized Intersection Summary 4: Lime St. & University Av

EAPC PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	792	93	260	485	86	38	332	497	164	409	37
Future Volume (veh/h)	13	792	93	260	485	86	38	332	497	164	409	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	834	98	274	511	91	40	349	523	173	431	39
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	22	1299	579	332	1597	712	358	1189	530	338	1241	112
Arrive On Green	0.02	0.73	0.73	0.10	0.45	0.45	0.02	0.33	0.33	0.07	0.38	0.38
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3297	297
Grp Volume(v), veh/h	14	834	98	274	511	91	40	349	523	173	231	239
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1817
Q Serve(g_s), s	1.0	15.5	2.5	10.1	12.0	4.4	1.9	9.4	42.6	8.2	12.1	12.2
Cycle Q Clear(g_c), s	1.0	15.5	2.5	10.1	12.0	4.4	1.9	9.4	42.6	8.2	12.1	12.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	22	1299	579	332	1597	712	358	1189	530	338	669	684
V/C Ratio(X)	0.64	0.64	0.17	0.83	0.32	0.13	0.11	0.29	0.99	0.51	0.35	0.35
Avail Cap(c_a), veh/h	73	1299	579	439	1597	712	372	1189	530	338	669	684
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.1	13.2	11.4	57.7	23.0	20.9	27.6	31.9	42.9	25.3	29.1	29.1
Incr Delay (d2), s/veh	25.4	2.2	0.6	9.4	0.5	0.4	0.1	0.6	35.8	1.3	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.3	0.9	4.8	5.1	1.7	0.8	4.2	21.6	3.6	5.4	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.5	15.4	12.0	67.1	23.6	21.3	27.7	32.5	78.8	26.6	30.5	30.5
LnGrp LOS	F	B	B	E	C	C	C	C	E	C	C	C
Approach Vol, veh/h		946			876			912			643	
Approach Delay, s/veh		16.1			36.9			58.8			29.4	
Approach LOS		B			D			E			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	52.0	7.6	53.4	6.1	62.9	13.0	48.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	43.5	4.1	47.9	5.3	54.7	8.5	43.5				
Max Q Clear Time (g_c+I1), s	12.1	17.5	3.9	14.2	3.0	14.0	10.2	44.6				
Green Ext Time (p_c), s	0.4	6.6	0.0	2.9	0.0	4.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			35.6									
HCM 6th LOS			D									

HCM 6th TWSC
5: Lime St. & Alleyway

EAPC PM Peak Hour

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	7	1	1	2	1	411	4	1	643	6
Future Vol, veh/h	1	1	7	1	1	2	1	411	4	1	643	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	8	1	1	2	1	442	4	1	691	6
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	920	1144	349	794	1145	223	697	0	0	446	0	0
Stage 1	696	696	-	446	446	-	-	-	-	-	-	-
Stage 2	224	448	-	348	699	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	226	198	647	279	198	780	895	-	-	1111	-	-
Stage 1	398	441	-	561	572	-	-	-	-	-	-	-
Stage 2	758	571	-	641	440	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	224	198	647	274	198	780	895	-	-	1111	-	-
Mov Cap-2 Maneuver	224	198	-	274	198	-	-	-	-	-	-	-
Stage 1	398	441	-	560	571	-	-	-	-	-	-	-
Stage 2	754	570	-	631	440	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	13.3		15.3		0		0					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	895	-	-	443	355	1111	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.022	0.012	0.001	-	-				
HCM Control Delay (s)	9	0	-	13.3	15.3	8.2	0	-				
HCM Lane LOS	A	A	-	B	C	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0.1	0	0	-	-				

HCM 6th TWSC
6: Lemon St. & Alleyway

EAPC PM Peak Hour

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱			↰↱				
Traffic Vol, veh/h	0	0	0	0	0	7	0	315	6	0	0	0
Future Vol, veh/h	0	0	0	0	0	7	0	315	6	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	10	0	444	8	0	0	0

Major/Minor	Minor2		Minor1		Major1						
Conflicting Flow All	222	452	-	-	448	226	0	0	0		
Stage 1	0	0	-	-	448	-	-	-	-		
Stage 2	222	452	-	-	0	-	-	-	-		
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-		
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-		
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-		
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-		
Pot Cap-1 Maneuver	715	502	0	0	504	777	-	-	-		
Stage 1	-	-	0	0	571	-	-	-	-		
Stage 2	760	569	0	0	-	-	-	-	-		
Platoon blocked, %								-	-		
Mov Cap-1 Maneuver	706	502	-	-	504	777	-	-	-		
Mov Cap-2 Maneuver	706	502	-	-	504	-	-	-	-		
Stage 1	-	-	-	-	571	-	-	-	-		
Stage 2	750	569	-	-	-	-	-	-	-		

Approach	EB	WB	NB
HCM Control Delay, s	0	9.7	0
HCM LOS	A	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	
Capacity (veh/h)	-	-	-	-	777
HCM Lane V/C Ratio	-	-	-	-	0.013
HCM Control Delay (s)	0	-	-	0	9.7
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-	0

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	44	281	41	0	0
Future Vol, veh/h	0	44	281	41	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	46	296	43	0	0
Major/Minor	Minor1		Major1			
Conflicting Flow All	-	170	0	0		
Stage 1	-	-	-	-		
Stage 2	-	-	-	-		
Critical Hdwy	-	6.94	-	-		
Critical Hdwy Stg 1	-	-	-	-		
Critical Hdwy Stg 2	-	-	-	-		
Follow-up Hdwy	-	3.32	-	-		
Pot Cap-1 Maneuver	0	844	-	-		
Stage 1	0	-	-	-		
Stage 2	0	-	-	-		
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	-	844	-	-		
Mov Cap-2 Maneuver	-	-	-	-		
Stage 1	-	-	-	-		
Stage 2	-	-	-	-		
Approach	WB		NB			
HCM Control Delay, s	9.5		0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT		NBRWBLn1			
Capacity (veh/h)	-		844			
HCM Lane V/C Ratio	-		0.055			
HCM Control Delay (s)	-		9.5			
HCM Lane LOS	-		A			
HCM 95th %tile Q(veh)	-		0.2			