MEMORANDUM

URBAN CROSSROADS

DATE: March 22, 2023
TO: Nicole Morse, T&B Planning, Inc.
FROM: Alex So, Urban Crossroads, Inc.
JOB NO: 14501-04 VMT

4665 LAMPSON AVENUE VEHICLE MILES TRAVELED (VMT) ALTERNATIVE USE ANALYSIS

Urban Crossroads, Inc. is pleased to provide the following Vehicle Miles Traveled (VMT) Alternative Use Analysis for the 4665 Lampson Avenue, which is located in the City of Los Alamitos.

PROJECT OVERVIEW

The Project (**Project**) consists of the development of 246 dwelling units, detailed as follows:

- 55 single family detached residential dwelling units (cluster homes)
- 114 multifamily (low-rise) residential dwelling units
- 77 affordable apartment dwelling units

The proposed alternative (**Project Alternative**) replaces the affordable housing component with age-restricted housing, which would result in the following:

- 55 single family detached residential dwelling units (cluster homes),
- 114 multifamily (low-rise) residential dwelling units,
- 77 attached age-restricted affordable housing dwelling units

ANALYSIS APPROACH

A comparative analysis was prepared to compare the VMT forecasts for the proposed Project Alternative to the Project. The Orange County Transportation Analysis Model (OCTAM) model does not have a mechanism to account for age-restricted affordable housing, therefore, VMT was derived based on OCTAM model trip lengths using the Project's trip generation for the Project and the Project Alternative.

TRAFFIC MODELING METHODOLOGY

The OCTAM sub regional model is the appropriate tool for conducting VMT analysis for land use projects in the County of Orange, as it considers interaction between

different land uses based on socio-economic data (SED), such as population, households, and employment.

PROJECT LAND USE CONVERSION

Adjustments in SED have been made to the appropriate Project transportation analysis zone (TAZ 634) within the OCTAM model to reflect the Project and Project Alternative land use information. The population conversion factors were obtained from the State of California Department of Finance E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2021 with 2010 Census Benchmark (3). Table 1 summarizes the SED inputs used to reflect the Original Project and Project Alternative.

TABLE 1: POPULATION ESTIMATES

	Project
Households	246
Population	647

PASSENGER CAR TRIP LENGTHS

Passenger car trip lengths can be derived from the OCTAM outputs once SED inputs are made to the OCTAM inputs and the OCTAM model is run. Table 2 shows the average trip length for the Project's transportation analysis zone (TAZ) 634 for the base year and cumulative year models. The trip lengths for both model years are interpolated using linear interpolation to the Notice of Preparation year or baseline year 2022.

TABLE 2: OCTAM TRIP LENGHTS FOR TAZ 634

	Base Year (2016)	Cumulative Year (2045)	Baseline Year (2022)
Trip Length	12.12	12.26	12.15

PROJECT TRIP GENERATION

The Project's Traffic Analysis (Urban Crossroads, 2023) estimates the Project to generate 1,658 vehicle trip ends per day. Table 3 shows the results of the Project's trip generation.

TABLE 3: PROJECT TRIP GENERATION SUMMARY

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Single Family Detached	DU	210	0.18	0.52	0.70	0.59	0.35	0.94	9.43
Multifamily Housing (Low-Rise) (2-3 Floors)	DU	220	0.10	0.30	0.40	0.32	0.19	0.51	6.74
Affordable Housing	DU	223	0.10	0.26	0.36	0.27	0.19	0.46	4.81

[1] Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] DU = Dwelling Units

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Single Family Detached	55	DU	10	28	38	33	19	52	520
Multifamily Housing	114	DU	11	35	46	37	22	59	768
Affordable Housing	77	DU	8	20	28	21	15	36	370
Project Total Trips			**29**	**83**	**112**	**91**	**56**	**147**	**1,658**

[1] DU = Dwelling Units

PROJECT ALTERNATIVE TRIP GENERATION

The Project's Alternative Use Traffic Assessment (Urban Crossroads, 2023) estimates the Project Alternative to generate 1,538 vehicle trip ends per day. Table 4 shows the results of the Project Alternative's trip generation, resulting in a net decrease of 120 daily vehicle trip ends per day.

TABLE 4: PROJECT ALTERNATIVE TRIP GENERATION SUMMARY

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Single Family Detached	DU	210	0.18	0.52	0.70	0.59	0.35	0.94	9.43
Multifamily Housing (Low-Rise) (2-3 Floors)	DU	220	0.10	0.30	0.40	0.32	0.19	0.51	6.74
Senior Housing - Attached	DU	252	0.07	0.13	0.20	0.14	0.11	0.25	3.24

[1] Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] DU = Dwelling Units

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Single Family Detached	55	DU	10	28	38	33	19	52	520
Multifamily Housing	114	DU	11	35	46	37	22	59	768
Senior Housing Attached	77	DU	5	10	15	11	8	19	250
Project Alternative Total Trips			**26**	**73**	**99**	**81**	**49**	**130**	**1,538**
Proposed Project Total Trips			29	83	112	91	56	147	1,658
Variance (Alternative - Proposed)			**-3**	**-10**	**-13**	**-10**	**-7**	**-17**	**-120**

[1] DU = Dwelling Units

VMT ESTIMATES

The Project and Project Alternative VMT estimates are the result of the product of the daily vehicle trip generation and the OCTAM model vehicle trip lengths. Table 5 shows the results of the VMT estimates for baseline and cumulative conditions.

TABLE 5: VMT COMARISON

	Baseline (2022)	Cumulative (2045)
Project VMT	20,145	20,327
Project Alternative VMT	18,687	18,856
Net Reduction in VMT	-1,458	-1,471

SUMMARY

As the Project Alternative is estimated to decrease daily vehicle trips and subsequent VMT, the Project Alternative will not incur any new or additional VMT impacts as compared to the Project.

If you have any questions, please contact me directly at aso@urbanxroads.com.

REFERENCES

1. **State of California Department of Finance.** *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2021 with 2010 Census Benchmark.* May 2021.

MEMORANDUM

URBAN | CROSSROADS

DATE: June 1, 2023
TO: Nicole Morse, T&B Planning, Inc.
FROM: Charlene So, Urban Crossroads
JOB NO: 14501-08 TA Memo

4665 LAMPSON AVENUE ALTERNATIVE USE TRAFFIC ASSESSMENT

Urban Crossroads, Inc. is pleased to submit the following Alternative Use Traffic Assessment for the proposed 4665 Lampson Avenue development (**Project**), which is located in the City of Los Alamitos but adjacent to the City of Seal Beach. This assessment has been prepared to evaluate the proposed Project land use alternative that replaces the affordable housing with age-restricted housing (attached product type). The trip generation for the proposed Project Alternative was presented in the 4665 Lampson Avenue Traffic Analysis (dated February 3, 2023, referred to as 2023 Traffic Study). The purpose of this assessment is to determine whether the proposed Project Alternative would have different deficiencies and recommended improvements from those presented in the 2023 Traffic Study.

SUMMARY OF FINDINGS

For the purposes of this assessment, only Opening Year Cumulative (2026) With Project and General Plan Buildout With Project scenarios have been evaluated assuming the proposed Project Alternative use which would be compared to the results presented in the 2023 Traffic Study.

- The level of service (LOS) operations during the peak hour are anticipated to continue to operate at an acceptable LOS under Opening Year Cumulative (2026) traffic conditions, with the exception of Seal Beach Boulevard & Lampson Avenue (#1), consistent with the 2023 Traffic Study.
- No site adjacent queues are anticipated under General Plan Buildout With Project traffic conditions, consistent with the 2023 Traffic Study.
- Consistent with the 2023 Traffic Study, improvements to deficient intersections have been recommended to maintain acceptable peak hour operations under Opening Year Cumulative (2026) With Project and General Plan Buildout With Project traffic conditions.

PROJECT TRIP GENERATION

The proposed Project Alternative replaces the affordable housing with age-restricted housing (attached product type). As such, the Project Alternative consists of the development of 55 single family detached residential dwelling units (cluster homes), 114 multifamily (low-rise) residential dwelling units, and 77 attached senior housing dwelling units (total of 246 dwelling units). No other changes are proposed to the other uses from those evaluated in the 2023 Traffic Study. In order to develop the traffic characteristics of the Project Alternative, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) for the Single Family Detached Residential Land Use category (ITE Land Use Code 210), Multifamily (Low-Rise) Housing (ITE Land Use Code 220), and Attached Senior Housing (ITE Land Use Code 252) were used to calculate the Project Alternative trip generation (see Table 1 for rates). The trip generation summary illustrating daily, and peak hour trip generation estimates for the Project Alternative are also shown on Table 1. The Project Alternative is anticipated to generate 1,538 two-way trip-ends per day with 99 AM peak hour trips and 130 PM peak hour trips. As shown, the Project Alternative generates 120 fewer two-way trip-ends per day with 13 fewer AM peak hour trips and 17 fewer PM peak hour trips.

TABLE 1: PROJECT ALTERNATIVE TRIP GENERATION SUMMARY

		ITE LU	AM Peak Hour			PM Peak Hour			
Land Use[1]	Units[2]	Code	In	Out	Total	In	Out	Total	Daily
Single Family Detached	DU	210	0.18	0.52	0.70	0.59	0.35	0.94	9.43
Multifamily Housing (Low-Rise) (2-3 Floors)	DU	220	0.10	0.30	0.40	0.32	0.19	0.51	6.74
Senior Housing - Attached	DU	252	0.07	0.13	0.20	0.14	0.11	0.25	3.24

[1] Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] DU = Dwelling Units

			AM Peak Hour			PM Peak Hour			
Land Use	Quantity	Units[1]	In	Out	Total	In	Out	Total	Daily
Single Family Detached	55	DU	10	28	38	33	19	52	520
Multifamily Housing	114	DU	11	35	46	37	22	59	768
Senior Housing Attached	77	DU	5	10	15	11	8	19	250
Project Alternative Total Trips			**26**	**73**	**99**	**81**	**49**	**130**	**1,538**
Proposed Project Total Trips			29	83	112	91	56	147	1,658
Variance (Alternative - Proposed)			**-3**	**-10**	**-13**	**-10**	**-7**	**-17**	**-120**

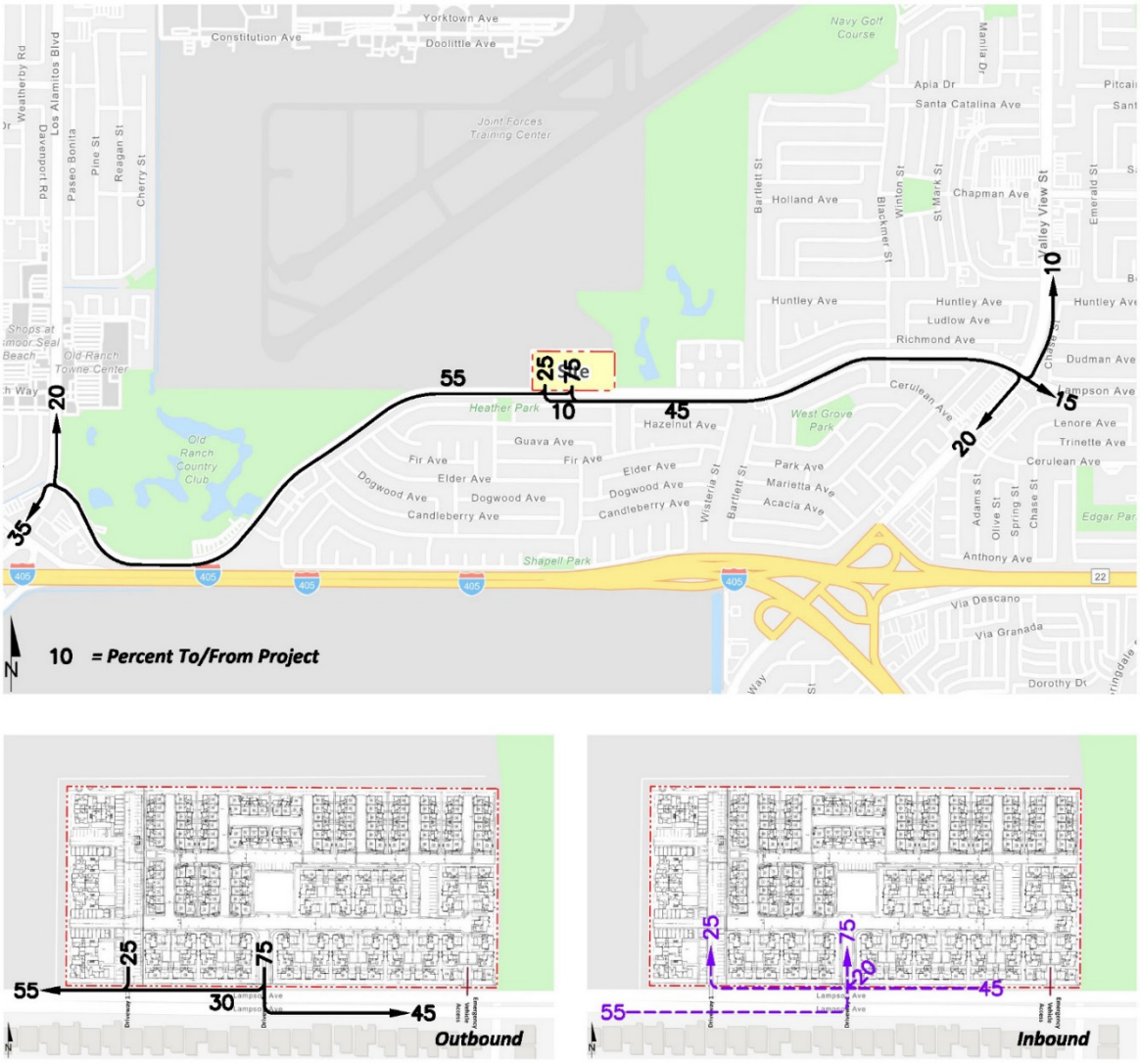
[1] DU = Dwelling Units

PROJECT TRIP DISTRIBUTION

The Project trip distribution represents the directional orientation of traffic to and from the Project site. Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. The trip distribution used for the proposed Project identified in the 2023 Traffic Study, has also been used for the Project Alternative. Exhibit 1 shows the Project

trip distribution patterns. Access to the Project site will remain the same as described and evaluated in the 2023 Traffic Study.

EXHIBIT 1: PROJECT TRIP DISTRIBUTION



PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project Alternative trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project Alternative traffic generation and trip distribution patterns, Project Alternative only ADT and weekday AM and PM peak hour intersection turning movement volumes are shown in Attachment A.

QUEUING ANALYSIS

A queuing analysis has been performed for the Project driveways on Lampson Avenue under General Plan Buildout With Project Alternative traffic conditions. The traffic modeling and signal timing optimization software package SimTraffic has been utilized to assess the queues consistent with the 2023 Traffic Study. Queuing analysis worksheets for the weekday AM and PM peak hours are provided in Attachment B of this report for General Plan Buildout With Project Alternative traffic conditions.

As shown in Table 2, no site adjacent queues are anticipated under General Plan Buildout With Project Alternative traffic conditions, consistent with the 2023 Traffic Study. An eastbound left turn lane with a minimum of 150-feet of storage at Driveway 2 is anticipated to sufficiently accommodate 95th percentile peak hour queues.

TABLE 2: PEAK HOUR QUEUING SUMMARY FOR GENERAL PLAN BUILDOUT CONDITIONS

#	Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet) AM Peak Hour	95th Percentile Queue (Feet) PM Peak Hour	Acceptable?[1] AM	Acceptable?[1] PM
6	Driveway 1 & Lampson Av.	SBR	100	38	34	Yes	Yes
7	Driveway 2 & Lampson Av.	SBL/R	100	58	52	Yes	Yes
		EBL	150	21	39	Yes	Yes
		WBT	520	0	0	Yes	Yes

* SB = Southbound, EB = Eastbound, WB = Westbound, L = Left, T = Through, R = Right

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 25 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

OPENING YEAR CUMULATIVE (2026) INTERSECTION OPERATIONS ANALYSIS

Opening Year Cumulative (2026) forecasts apply an ambient growth of 8.24% plus traffic from pending and approved but not yet constructed known development projects in the area. The weekday ADT and weekday AM and PM peak hour volumes which can be expected for Opening Year Cumulative (2026) With Project Alternative conditions are shown in Attachment C.

As shown on Table 3, the following study area intersection is anticipated to operate at an unacceptable LOS during the peak hours under Opening Year Cumulative (2026) With Project Alternative traffic conditions, consistent with the 2023 Traffic Study:

- Seal Beach Bl. & Lampson Av. (#1) – LOS E AM and PM peak hours

Although the intersection of Valley View Street at Lampson Avenue is anticipated to operate at a deficient LOS based on the Intersection Capacity Utilization (ICU) methodology, a more detailed peak hour intersection operations assessment based on the Highway Capacity Manual (HCM) methodology indicates acceptable peak hour operations. As such, no improvements have been recommended at the intersection of Valley View Street and Lampson Avenue. The intersection operations analysis worksheets for Opening Year Cumulative (2026) With Project Alternative traffic conditions are included in Attachment D.

TABLE 3: INTERSECTION ANALYSIS FOR OPENING YEAR CUMULATIVE (2026) CONDITIONS

#	Intersection	Traffic Control[2]	2026 Without Project				2026 With Project							
							Primary Use				Alternative Use			
			Delay (secs.) or ICU (v/c)[1]		Level of Service		Delay (secs.) or ICU (v/c)[1]		Level of Service		Delay (secs.) or ICU (v/c)[1]		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Seal Beach Bl. & Lampson Av.	TS	**0.92**	**0.95**	**E**	**E**	**0.93**	**0.96**	**E**	**E**	**0.93**	**0.96**	**E**	**E**
2	Old Ranch Plaza & Lampson Av.	TS	0.46	0.44	A	A	0.48	0.45	A	A	0.48	0.45	A	A
3	Basswood St. & Lampson Av.	TS	0.51	0.49	A	A	0.53	0.51	A	A	0.53	0.50	A	A
4	Candleberry Av. & Lampson Av.	TS	0.44	0.42	A	A	0.46	0.43	A	A	0.46	0.43	A	A
5	Heather St. & Lampson Av.	TS	0.38	0.42	A	A	0.39	0.44	A	A	0.39	0.43	A	A
6	Driveway 1 & Lampson Av.	**CSS**	Future Intersection				10.9	10.8	B	B	10.8	10.7	B	B
7	Driveway 2 & Lampson Av.	**CSS**	Future Intersection				14.8	15.6	B	C	14.6	15.3	B	C
8	Rose St. & Lampson Av.	TS	0.34	0.41	A	A	0.35	0.42	A	A	0.35	0.42	A	A
9	Tulip St. & Lampson Av.	TS	0.34	0.42	A	A	0.35	0.42	A	A	0.35	0.42	A	A
10	Valley View St. & Lampson Av.	TS	0.80	**0.90**	D	**E**	0.82	**0.92**	D	**E**	0.81	**0.92**	D	**E**
	HCM Analysis:		31.4	36.5	C	D	33.3	40.6	C	D	35.2	40.3	D	D

* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

ICU is reported in volume-to-capacity (v/c). ICU analysis conducted for signalized intersections only.

[2] CSS = Cross-street Stop; TS = Traffic Signal; **CSS** = Improvement

OPENING YEAR CUMULATIVE (2026) RECOMMENDED IMPROVEMENTS

This section provides a summary of deficiencies and recommended improvements for Opening Year Cumulative (2026) traffic conditions. Improvements necessary to improve the traffic deficiency back to acceptable levels is discussed below and is consistent with the 2023 Traffic Study.

Seal Beach Boulevard & Lampson Avenue (#1): The intersection of Seal Beach Boulevard and Lampson Avenue is anticipated to meet the applicable deficiency criteria for LOS. As shown in Table 4, restriping the number two westbound left turn lane as a shared left-right turn lane would improve the intersection operations back to acceptable LOS.

The intersection operations analysis worksheets for Opening Year Cumulative (2026) With Project Alternative traffic conditions, with improvements, are included in Attachment E.

TABLE 4: INTERSECTION ANALYSIS FOR OPENING YEAR CUMULATIVE (2026) CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1] Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R	Delay[2] (secs.) AM	PM	Level of Service AM	PM
1	Seal Beach Bl. & Lampson Av.																	
	- Without Improvements	TS	0	3	1>	2	3	0	0	0	0	2	0	1>	**0.93**	**0.96**	**E**	**E**
	- With Improvements[4]	TS	0	3	1>	2	3	0	0	0	0	**1**	**1**	1>	0.74	0.82	C	D

[1] 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; > = Right-Turn Overlap Phasing; **1** = Improvement

[2] Per the Highway Capacity Manual 6th Edition, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal

[4] Improvement includes restriping the number 2 westbound left as a shared left-right turn lane.

GENERAL PLAN BUILDOUT INTERSECTION OPERATIONS ANALYSIS

For the intersections of Seal Beach Boulevard at Lampson Avenue and Valley View Steet at Lampson Avenue the General Plan Buildout Without Project weekday AM and PM peak hour volumes are based on the OCTAM traffic model. For the remaining study intersections, General Plan Buildout forecasts include Existing traffic volumes plus an ambient growth factor of 14% plus traffic from pending and approved but not yet constructed known development projects in the area. The weekday ADT and weekday AM and PM peak hour volumes which can be expected for General Plan Buildout With Project traffic conditions for the alternative use are shown in Attachment F.

As shown on Table 5, the following study area intersection is anticipated to operate at an unacceptable LOS during the peak hours under General Plan Buildout With Project Alternative traffic conditions, consistent with the 2023 Traffic Study:

- Seal Beach Bl. & Lampson Av. (#1) – LOS F AM and PM peak hours

Although the intersection of Valley View Street at Lampson Avenue is anticipated to operate at a deficient LOS based on the ICU methodology, a more detailed peak hour intersection operations assessment based on the HCM methodology indicates acceptable peak hour operations. As such, no intersection improvements have been recommended at the intersection of Valley View Street and Lampson Avenue. The intersection operations analysis worksheets for General Plan Buildout With Project Alternative traffic conditions are included in Attachment G.

TABLE 5: INTERSECTION ANALYSIS FOR GENERAL PLAN BUILDOUT CONDITIONS

#	Intersection	Traffic Control[2]	GPBO Without Project				GPBO With Project							
							Primary Use				Alternative Use			
			Delay (secs.) or ICU (v/c)[1]		Level of Service		Delay (secs.) or ICU (v/c)[1]		Level of Service		Delay (secs.) or ICU (v/c)[1]		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Seal Beach Bl. & Lampson Av.	TS	**1.02**	**1.00**	**F**	**F**	**1.04**	**1.01**	**F**	**F**	**1.03**	**1.01**	**F**	**F**
2	Old Ranch Plaza & Lampson Av.	TS	0.48	0.44	A	A	0.50	0.45	A	A	0.49	0.44	A	A
3	Basswood St. & Lampson Av.	TS	0.54	0.43	A	A	0.55	0.53	A	A	0.54	0.52	A	A
4	Candleberry Av. & Lampson Av.	TS	0.45	0.43	A	A	0.46	0.45	A	A	0.46	0.45	A	A
5	Heather St. & Lampson Av.	TS	0.38	0.43	A	A	0.40	0.45	A	A	0.40	0.45	A	A
6	Driveway 1 & Lampson Av.	**CSS**	Future Intersection				11.0	10.9	B	B	11.0	10.9	B	B
7	Driveway 2 & Lampson Av.	**CSS**	Future Intersection				15.3	16.1	C	C	15.0	15.8	C	C
8	Rose St. & Lampson Av.	TS	0.34	0.42	A	A	0.34	0.43	A	A	0.34	0.42	A	A
9	Tulip St. & Lampson Av.	TS	0.35	0.43	A	A	0.36	0.44	A	A	0.36	0.44	A	A
10	Valley View St. & Lampson Av.	TS	**0.91**	**0.95**	**E**	**E**	**0.92**	**0.96**	**E**	**E**	**0.92**	**0.96**	**E**	**E**
	HCM Analysis:		52.3	49.8	D	D	54.0	52.4	D	D	53.8	52.1	D	D

* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

ICU is reported in volume-to-capacity (v/c). ICU analysis conducted for signalized intersections only.

[2] CSS = Cross-street Stop; TS = Traffic Signal; **CSS** = Improvement

GENERAL PLAN BUILDOUT RECOMMENDED IMPROVEMENTS

This section provides a summary of deficiencies and recommended improvements for General Plan Buildout traffic conditions. Improvements necessary to improve this traffic deficiency back to acceptable levels is discussed below and is consistent with the 2023 Traffic Study.

Seal Beach Boulevard & Lampson Avenue (#1): the same improvements as those identified previously for Opening Year Cumulative traffic conditions would improve the intersection operations back to acceptable LOS, as shown in Table 6.

The intersection operations analysis worksheets for General Plan Buildout With Project Alternative traffic conditions, with improvements, are included in Attachment H.

If you have any questions or comments, I can be reached at cso@urbanxroads.com.

TABLE 6: INTERSECTION ANALYSIS FOR GENERAL PLAN BUILDOUT CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Seal Beach Bl. & Lampson Av.																	
	- Without Improvements	TS	0	3	1>	2	3	0	0	0	0	2	0	1>	**1.04**	**1.01**	**F**	**F**
	- With Improvements[4]	TS	0	3	1>	2	3	0	0	0	0	**1**	**1**	1>	0.86	0.89	D	D

[1] 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.

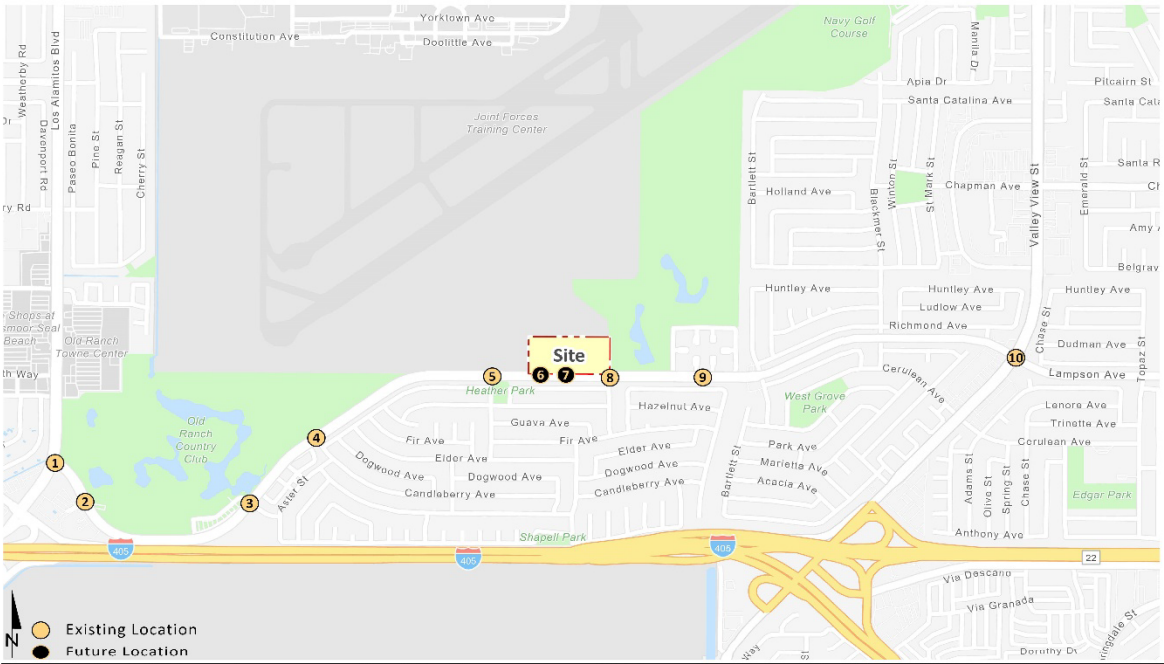
L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; **1** = Improvement

[2] Per the Highway Capacity Manual 6th Edition, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal

[4] Improvement includes restriping the number 2 westbound left as a shared left-right turn lane.

ATTACHMENT A: PROJECT ALTERNATIVE ONLY TRAFFIC VOLUMES



1 Seal Beach Bl. & Lampson Av.	2 Old Ranch Plaza & Lampson Av.	3 Basswood St. & Lampson Av.	4 Candleberry Av. & Lampson Av.	5 Heather St. & Lampson Av.
300 / 850 / 550 / 850 5(16) ↳ ← 15(10) ← 26(17) ↱ 9(28)	850 / 850 ← 40(27) 14(45) →	850 / 850 ← 40(27) 14(45) →	850 / 850 ← 40(27) 14(45) →	850 / 850 ← 40(27) 14(45) →

6 Driveway 1 & Lampson Av.	7 Driveway 2 & Lampson Av.	8 Rose St. & Lampson Av.	9 Tulip St. & Lampson Av.	10 Valley View St. & Lampson Av.
400 / 850 / 850 18(12) ↳ ← 7(20) ← 22(15) 14(45) →	1,150 / 700 / 850 22(15) ↳ 33(22) ↳ ← 5(16) ← 7(20) 14(45) →	700 / 700 ← 12(36) 33(22) →	700 / 700 ← 12(36) 33(22) →	150 / 250 / 700 / 300 3(8) ↳ ← 4(12) 7(5) → 11(7) → 15(10) ↴ 5(16) ↰ 5(16) ↑

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

ATTACHMENT B: SITE ADJACENT QUEUING ANALYSIS WORKSHEETS

Intersection: 6: Lampson Av. & Driveway 1

Movement	SB
Directions Served	R
Maximum Queue (ft)	41
Average Queue (ft)	13
95th Queue (ft)	38
Link Distance (ft)	176
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Lampson Av. & Driveway 2

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	29	71
Average Queue (ft)	4	29
95th Queue (ft)	21	58
Link Distance (ft)		154
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 6: Lampson Av. & Driveway 1

Movement	SB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	10
95th Queue (ft)	34
Link Distance (ft)	176
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

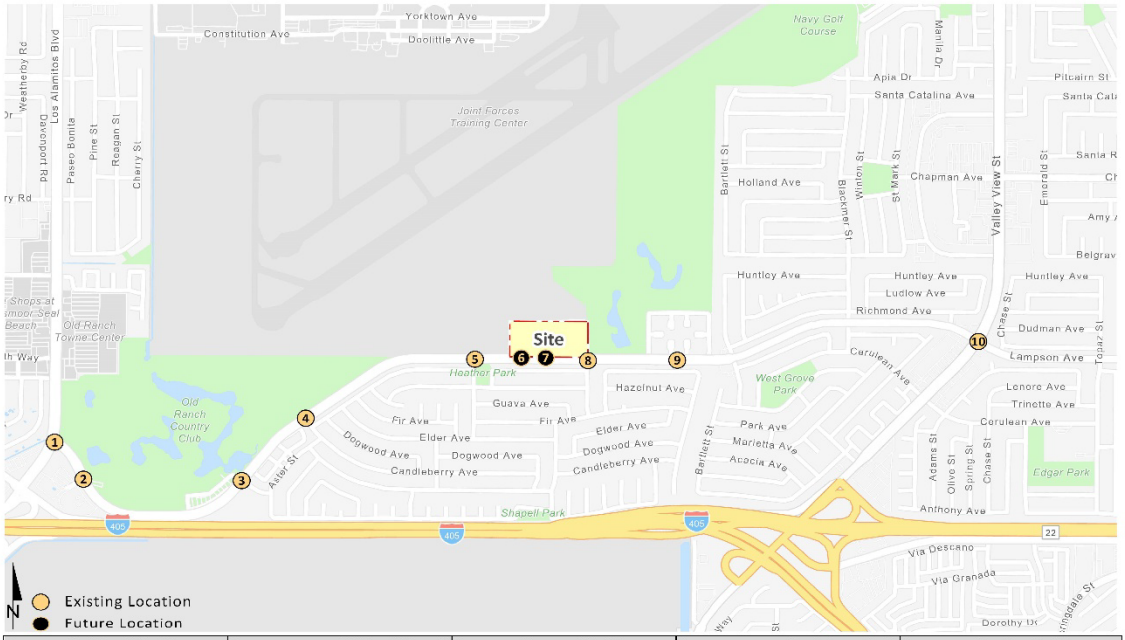
Intersection: 7: Lampson Av. & Driveway 2

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	44	66
Average Queue (ft)	14	23
95th Queue (ft)	39	52
Link Distance (ft)		154
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

ATTACHMENT C: OPENING YEAR CUMULATIVE (2026) WITH PROJECT ALTERNATIVE TRAFFIC VOLUMES



1	Seal Beach Bl. & Lampson Av.	2	Old Ranch Plaza & Lampson Av.	3	Basswood St. & Lampson Av.	4	Candleberry Av. & Lampson Av.	5	Heather St. & Lampson Av.
44,450	21,200	850	19,900	850	16,050		14,350		14,600
↓ 1447(1367)	← 661(530)	↲ 34(20)	← 5(6)	↲ 8(41)	← 6(3)		← 691(632)		← 624(606)
↳ 440(535)	← 426(395)	↓ 0(1)	← 1022(860)	↓ 0(3)	← 860(693)		↰ 22(30)		↰ 37(74)
	↑ ↱	↳ 6(3)	↰ 11(8)	↳ 1(4)	↰ 10(12)		↰ ↑ ↱		↰ ↱
	1345(1721) 325(512)	18(37) →	↰ ↑ ↱	19(28) →	↰ ↑ ↱	453(673) →	185(76) 37(24)	423(632) →	90(56) 66(55)
42,800		712(974) →	31(45) 3(0) 8(11)	532(778) →	221(134) 1(0) 3(11)	83(120) ↴		67(65) ↴	
		35(37) ↴	1,100	86(126) ↴	3,050	16,050	2,650	14,550	2,650
21,200		21,200		19,250					

6	Driveway 1 & Lampson Av.	7	Driveway 2 & Lampson Av.	8	Rose St. & Lampson Av.	9	Tulip St. & Lampson Av.	10	Valley View St. & Lampson Av.
400	14,450	1,150	14,300		15,000	550	16,150	46,250	11,650
↲ 18(12)	← 7(20)	↲ 22(15)	↱ 5(16)		← 598(624)	↲ 15(12)	↱ 10(20)	↲ 191(243)	↱ 214(122)
	← 648(634)	↳ 33(22)	← 633(639)		↰ 32(74)	↓ 1(0)	← 572(658)	↓ 1676(1844)	← 203(237)
		14(45) ↳			↰ ↱	↳ 13(11)	↰ 40(86)	↳ 124(172)	↰ 234(214)
479(704) →		465(659) →		472(646) →	40(30) 56(60)	5(8) ↳	↰ ↑ ↱	203(259) ↳	↰ ↑ ↱
				26(36) ↴		509(669) →	42(29) 1(0) 85(70)	264(223) →	146(238) 146(238) 187(161)
14,450		14,450		14,300	2,100	12(29) ↴		170(148) ↴	
						15,000	2,250	14,950	45,450

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

ATTACHMENT D: OPENING YEAR CUMULATIVE (2026) WITH PROJECT ALTERNATIVE CONDITIONS INTERSECTION OPERATION ANALYSIS WORKSHEETS

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Seal Beach & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.931
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	118	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	3 0	1	2 0	3 0	0	0 0	0 0	0	2 0	0 0	1
Volume Module:												
Base Vol:	0	1199	266	364	1244	0	0	0	0	340	0	572
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	0	1298	288	394	1347	0	0	0	0	368	0	619
Added Vol:	0	47	37	46	100	0	0	0	0	57	0	42
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1345	325	440	1447	0	0	0	0	425	0	661
User 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
PHF 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
PHF Volume:	0	1345	325	440	1447	0	0	0	0	425	0	661
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1345	325	440	1447	0	0	0	0	425	0	661
PCE 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
MLF 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
FinalVolume:	0	1345	325	440	1447	0	0	0	0	425	0	661
OvlAdjVol:			112									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	4800	1600	3200	4800	0	0	0	0	3200	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.28	0.20	0.14	0.30	0.00	0.00	0.00	0.00	0.13	0.00	0.41
OvlAdjV/S:			0.07									
Crit Moves:		****		****								****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Old Ranch Plaza & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.477
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 1	0	0	1! 0	0	1 0	2 0 1	1	0	1 1 0
Volume Module:												
Base Vol:	29	3	7	1	0	3	7	591	32	10	880	3
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	31	3	8	1	0	3	8	640	35	11	953	3
Added Vol:	0	0	0	5	0	31	10	72	0	0	69	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	3	8	6	0	34	18	712	35	11	1022	5
User 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
PHF 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
PHF Volume:	31	3	8	6	0	34	18	712	35	11	1022	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	3	8	6	0	34	18	712	35	11	1022	5
PCE 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
MLF 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
FinalVolume:	31	3	8	6	0	34	18	712	35	11	1022	5
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.91	0.09	1.00	0.15	0.00	0.85	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	1450	150	1600	241	0	1359	1600	3200	1600	1600	3184	16
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.00	0.00	0.00	0.03	0.01	0.22	0.02	0.01	0.32	0.32
Crit Moves:	****					****	****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Basswood & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.526
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	0	0	1! 0	0	1 0	1	1 0	1 0	1 0
Volume Module:												
Base Vol:	204	1	3	1	0	7	18	420	79	9	730	6
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	221	1	3	1	0	8	19	455	86	10	790	6
Added Vol:	0	0	0	0	0	0	0	78	0	0	70	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	221	1	3	1	0	8	19	533	86	10	860	6
User 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
PHF 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
PHF Volume:	221	1	3	1	0	8	19	533	86	10	860	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	1	3	1	0	8	19	533	86	10	860	6
PCE 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
MLF 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
FinalVolume:	221	1	3	1	0	8	19	533	86	10	860	6
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.25	0.75	0.12	0.00	0.88	1.00	1.72	0.28	1.00	1.99	0.01
Final Sat.:	1600	400	1200	200	0	1400	1600	2757	443	1600	3176	24
Capacity Analysis Module:												
Vol/Sat:	0.14	0.00	0.00	0.00	0.00	0.01	0.01	0.19	0.19	0.01	0.27	0.27
Crit Moves:	****					****	****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Candleberrry & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.455
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	0	0	1	1	0	1	0	2	0	0
Volume Module:												
Base Vol:	171	0	29	0	0	0	0	347	77	16	574	0
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	185	0	31	0	0	0	0	376	83	17	621	0
Added Vol:	0	0	6	0	0	0	0	78	0	5	70	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	185	0	37	0	0	0	0	454	83	22	691	0
User 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
PHF 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
PHF Volume:	185	0	37	0	0	0	0	454	83	22	691	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	0	37	0	0	0	0	454	83	22	691	0
PCE 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
MLF 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
FinalVolume:	185	0	37	0	0	0	0	454	83	22	691	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.83	0.00	0.17	0.00	0.00	0.00	0.00	1.69	0.31	1.00	2.00	0.00
Final Sat.:	1331	0	269	0	0	0	0	2703	497	1600	3200	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.14	0.00	0.00	0.00	0.00	0.17	0.17	0.01	0.22	0.00
Crit Moves:			****				****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Heather & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.392
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	0	0	1	1	0	1	0	2	0	0
Volume Module:												
Base Vol:	83	0	55	0	0	0	0	314	62	30	507	0
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	90	0	60	0	0	0	0	340	67	32	549	0
Added Vol:	0	0	6	0	0	0	0	83	0	5	75	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	0	66	0	0	0	0	423	67	37	624	0
User 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
PHF 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
PHF Volume:	90	0	66	0	0	0	0	423	67	37	624	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	0	66	0	0	0	0	423	67	37	624	0
PCE 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
MLF 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
FinalVolume:	90	0	66	0	0	0	0	423	67	37	624	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.58	0.00	0.42	0.00	0.00	0.00	0.00	1.73	0.27	1.00	2.00	0.00
Final Sat.:	925	0	675	0	0	0	0	2762	438	1600	3200	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.10	0.00	0.00	0.00	0.00	0.15	0.15	0.02	0.19	0.00
Crit Moves:			****				****				****	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	479	648	7	0	18
Future Vol, veh/h	0	479	648	7	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	521	704	8	0	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	356
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	-	-	-	0	640
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	640
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	640
HCM Lane V/C Ratio	-	-	-	0.031
HCM Control Delay (s)	-	-	-	10.8
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	465	633	5	33	22
Future Vol, veh/h	14	465	633	5	33	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	505	688	5	36	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	693	0	-	0	974	347
Stage 1	-	-	-	-	691	-
Stage 2	-	-	-	-	283	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	898	-	-	-	249	649
Stage 1	-	-	-	-	459	-
Stage 2	-	-	-	-	740	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	898	-	-	-	245	649
Mov Cap-2 Maneuver	-	-	-	-	356	-
Stage 1	-	-	-	-	451	-
Stage 2	-	-	-	-	740	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	898	-	-	-	434
HCM Lane V/C Ratio	0.017	-	-	-	0.138
HCM Control Delay (s)	9.1	-	-	-	14.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 Rose & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.347
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	0	0	1	1	0	1	0	2	0	0
Volume Module:												
Base Vol:	37	0	46	0	0	0	0	336	24	25	505	0
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	40	0	50	0	0	0	0	364	26	27	547	0
Added Vol:	0	0	6	0	0	0	0	107	0	5	51	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	40	0	56	0	0	0	0	471	26	32	598	0
User 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
PHF 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
PHF Volume:	40	0	56	0	0	0	0	471	26	32	598	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	0	56	0	0	0	0	471	26	32	598	0
PCE 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
MLF 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
FinalVolume:	40	0	56	0	0	0	0	471	26	32	598	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.41	0.01	0.58	0.00	0.00	0.00	0.00	1.90	0.10	1.00	2.00	0.00
Final Sat.:	669	0	931	0	0	0	0	3033	167	1600	3200	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.06	0.00	0.00	0.00	0.00	0.16	0.16	0.02	0.19	0.00
Crit Moves:			****				****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Tulip & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.349
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	39	1	73	10	1	14	5	366	11	32	477	7
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	42	1	79	11	1	15	5	396	12	35	516	8
Added Vol:	0	0	6	2	0	0	0	113	0	5	56	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	1	85	13	1	15	5	509	12	40	572	10
User 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
PHF 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
PHF Volume:	42	1	85	13	1	15	5	509	12	40	572	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	1	85	13	1	15	5	509	12	40	572	10
PCE 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
MLF 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
FinalVolume:	42	1	85	13	1	15	5	509	12	40	572	10
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.01	0.99	0.44	0.04	0.52	1.00	1.95	0.05	1.00	1.97	0.03
Final Sat.:	1600	20	1580	706	60	834	1600	3127	73	1600	3147	53
Capacity Analysis Module:												
Vol/Sat:	0.03	0.05	0.05	0.01	0.02	0.02	0.00	0.16	0.16	0.02	0.18	0.18
Crit Moves:		****		****				****		****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Valley View & Lampson

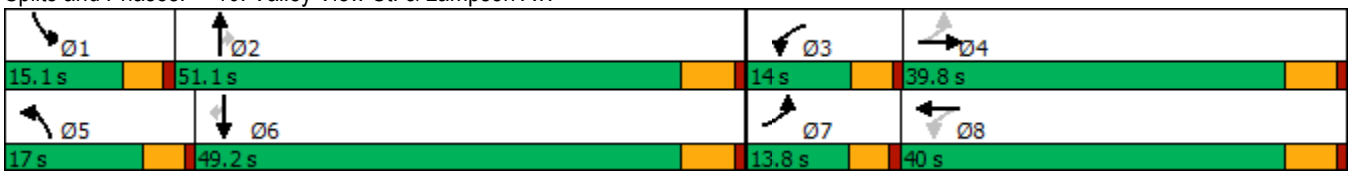
Cycle (sec):	100	Critical Vol./Cap.(X):	0.806
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	68	Level Of Service:	D

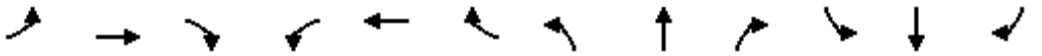
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	115	1400	165	105	1529	151	150	234	126	184	184	178
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	124	1515	179	114	1655	163	162	253	136	199	199	193
Added Vol:	26	25	4	5	21	32	55	25	47	4	8	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	1540	183	119	1676	195	217	278	183	203	207	200
User 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
PHF 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
PHF Volume:	150	1540	183	119	1676	195	217	278	183	203	207	200
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	1540	183	119	1676	195	217	278	183	203	207	200
PCE 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
MLF 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
FinalVolume:	150	1540	183	119	1676	195	217	278	183	203	207	200
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.21	0.79	1.00	1.02	0.98
Final Sat.:	1600	4800	1600	1600	4800	1600	1600	1929	1271	1600	1629	1571
Capacity Analysis Module:												
Vol/Sat:	0.09	0.32	0.11	0.07	0.35	0.12	0.14	0.14	0.14	0.13	0.13	0.13
Crit Moves:	****				****		****				****	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	203	264	234	303	146	1540	187	124	1676	191
Future Volume (vph)	203	264	234	303	146	1540	187	124	1676	191
Turn Type	pm+pt	NA	pm+pt	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases	4		8				2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	39.8	9.6	39.8	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	13.8	39.8	14.0	40.0	17.0	51.1	51.1	15.1	49.2	49.2
Total Split (%)	11.5%	33.2%	11.7%	33.3%	14.2%	42.6%	42.6%	12.6%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	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
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	30.9	20.5	31.3	20.7	12.0	45.3	45.3	10.3	43.6	43.6
Actuated g/C Ratio	0.29	0.19	0.29	0.19	0.11	0.43	0.43	0.10	0.41	0.41
v/c Ratio	0.95	0.64	0.94	0.74	0.80	0.77	0.28	0.79	0.87	0.30
Control Delay	78.6	32.6	74.2	35.1	76.3	30.2	11.5	79.8	35.7	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.6	32.6	74.2	35.1	76.3	30.2	11.5	79.8	35.7	12.4
LOS	E	C	E	D	E	C	B	E	D	B
Approach Delay		47.3		47.3		32.0			36.2	
Approach LOS		D		D		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.4	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 37.6	Intersection LOS: D
Intersection Capacity Utilization 86.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 10: Valley View St. & Lampson Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	264	170	234	303	214	146	1540	187	124	1676	191
Future Volume (veh/h)	203	264	170	234	303	214	146	1540	187	124	1676	191
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.99
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	221	287	147	254	329	175	159	1674	140	135	1822	159
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	446	222	304	441	229	189	2146	655	164	2074	635
Arrive On Green	0.09	0.20	0.20	0.09	0.20	0.20	0.11	0.42	0.42	0.09	0.41	0.41
Sat Flow, veh/h	1781	2285	1136	1781	2237	1160	1781	5106	1558	1781	5106	1564
Grp Volume(v), veh/h	221	221	213	254	260	244	159	1674	140	135	1822	159
Grp Sat Flow(s),veh/h/ln	1781	1777	1644	1781	1777	1620	1781	1702	1558	1781	1702	1564
Q Serve(g_s), s	9.2	11.8	12.3	9.4	14.2	14.7	9.0	29.2	5.9	7.7	34.0	6.9
Cycle Q Clear(g_c), s	9.2	11.8	12.3	9.4	14.2	14.7	9.0	29.2	5.9	7.7	34.0	6.9
Prop In Lane	1.00		0.69	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	347	321	304	350	319	189	2146	655	164	2074	635
V/C Ratio(X)	0.80	0.64	0.66	0.84	0.74	0.77	0.84	0.78	0.21	0.82	0.88	0.25
Avail Cap(c_a), veh/h	277	585	542	304	589	537	214	2241	684	181	2147	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	38.2	38.4	34.6	39.0	39.2	45.3	25.8	19.1	46.0	28.3	20.3
Incr Delay (d2), s/veh	13.9	2.0	2.3	17.0	3.1	3.8	20.6	1.8	0.2	21.5	4.4	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	5.3	5.1	5.0	3.0	6.2	5.9	4.9	11.2	2.0	4.3	13.6	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	40.1	40.8	51.7	42.1	43.0	65.9	27.6	19.2	67.5	32.7	20.5
LnGrp LOS	D	D	D	D	D	D	E	C	B	E	C	C
Approach Vol, veh/h		655			758			1973			2116	
Approach Delay, s/veh		42.7			45.6			30.1			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	14.1	49.2	14.0	25.9	15.6	47.7	13.8	26.1
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.5	45.3	9.4	34.0	12.4	43.4	9.2	34.2
Max Q Clear Time (g_c+I1), s	9.7	31.2	11.4	14.3	11.0	36.0	11.2	16.7
Green Ext Time (p_c), s	0.0	9.4	0.0	2.3	0.0	5.9	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	35.2
HCM 6th LOS	D

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Seal Beach & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.957
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	140	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	3 0	1	2 0	3 0	0	0 0	0 0	0	2 0	0 0	1
Volume Module:												
Base Vol:	0	1508	413	447	1202	0	0	0	0	322	0	447
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	0	1632	447	484	1301	0	0	0	0	349	0	484
Added Vol:	0	89	65	52	66	0	0	0	0	46	0	46
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1721	512	536	1367	0	0	0	0	395	0	530
User 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
PHF 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
PHF Volume:	0	1721	512	536	1367	0	0	0	0	395	0	530
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1721	512	536	1367	0	0	0	0	395	0	530
PCE 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
MLF 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
FinalVolume:	0	1721	512	536	1367	0	0	0	0	395	0	530
OvlAdjVol:			315									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	4800	1600	3200	4800	0	0	0	0	3200	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.32	0.17	0.28	0.00	0.00	0.00	0.00	0.12	0.00	0.33
OvlAdjV/S:			0.20									
Crit Moves:		****		****								****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Old Ranch Plaza & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.452
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 1	0	0	1! 0	0	1 0	2 0 1	1	0	1 1 0
Volume Module:												
Base Vol:	42	0	10	0	1	0	4	822	34	7	727	0
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	45	0	11	0	1	0	4	890	37	8	787	0
Added Vol:	0	0	0	3	0	20	33	83	0	0	73	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	0	11	3	1	20	37	973	37	8	860	6
User 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
PHF 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
PHF Volume:	45	0	11	3	1	20	37	973	37	8	860	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	0	11	3	1	20	37	973	37	8	860	6
PCE 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
MLF 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
FinalVolume:	45	0	11	3	1	20	37	973	37	8	860	6
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.12	0.04	0.84	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	1600	0	1600	199	72	1329	1600	3200	1600	1600	3178	22
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.01	0.00	0.02	0.02	0.02	0.30	0.02	0.00	0.27	0.27
Crit Moves:	****			****			****			****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Basswood & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.504
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	124	0	10	4	3	38	26	638	116	11	568	3
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	134	0	11	4	3	41	28	691	126	12	615	3
Added Vol:	0	0	0	0	0	0	0	87	0	0	78	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	134	0	11	4	3	41	28	778	126	12	693	3
User 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
PHF 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
PHF Volume:	134	0	11	4	3	41	28	778	126	12	693	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	134	0	11	4	3	41	28	778	126	12	693	3
PCE 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
MLF 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
FinalVolume:	134	0	11	4	3	41	28	778	126	12	693	3
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.09	0.07	0.84	1.00	1.72	0.28	1.00	1.99	0.01
Final Sat.:	1600	0	1600	142	107	1351	1600	2755	445	1600	3185	15
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.01	0.00	0.03	0.03	0.02	0.28	0.28	0.01	0.22	0.22
Crit Moves:	****				****			****			****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Candleberrry & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.429
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	0	0	1	1	0	1	0	2	0	0
Volume Module:												
Base Vol:	70	0	18	0	0	0	0	541	111	24	512	0
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	76	0	19	0	0	0	0	586	120	26	554	0
Added Vol:	0	0	5	0	0	0	0	87	0	4	78	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	76	0	24	0	0	0	0	673	120	30	632	0
User 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
PHF 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
PHF Volume:	76	0	24	0	0	0	0	673	120	30	632	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	0	24	0	0	0	0	673	120	30	632	0
PCE 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
MLF 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
FinalVolume:	76	0	24	0	0	0	0	673	120	30	632	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.76	0.00	0.24	0.00	0.00	0.00	0.00	1.70	0.30	1.00	2.00	0.00
Final Sat.:	1209	0	391	0	0	0	0	2715	485	1600	3200	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.06	0.00	0.00	0.00	0.00	0.25	0.25	0.02	0.20	0.00
Crit Moves:			****					****		****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Heather & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.434
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	0	0	1	1	0	1	0	2	0	0
Volume Module:												
Base Vol:	52	0	46	0	0	0	0	499	60	65	484	0
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	56	0	50	0	0	0	0	540	65	70	524	0
Added Vol:	0	0	5	0	0	0	0	92	0	4	82	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	0	55	0	0	0	0	632	65	74	606	0
User 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
PHF 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
PHF Volume:	56	0	55	0	0	0	0	632	65	74	606	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	0	55	0	0	0	0	632	65	74	606	0
PCE 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
MLF 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
FinalVolume:	56	0	55	0	0	0	0	632	65	74	606	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.51	0.00	0.49	0.00	0.00	0.00	0.00	1.81	0.19	1.00	2.00	0.00
Final Sat.:	811	0	789	0	0	0	0	2902	298	1600	3200	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.07	0.00	0.00	0.00	0.00	0.22	0.22	0.05	0.19	0.00
Crit Moves:			****					****		****		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	704	634	20	0	12
Future Vol, veh/h	0	704	634	20	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	765	689	22	0	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	356
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	-	-	-	0	640
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	640
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	640
HCM Lane V/C Ratio	-	-	-	0.02
HCM Control Delay (s)	-	-	-	10.7
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	659	639	16	22	15
Future Vol, veh/h	45	659	639	16	22	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	716	695	17	24	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	712	0	-	0	1160	356
Stage 1	-	-	-	-	704	-
Stage 2	-	-	-	-	456	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	884	-	-	-	189	640
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	605	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	884	-	-	-	179	640
Mov Cap-2 Maneuver	-	-	-	-	306	-
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	605	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	884	-	-	-	388
HCM Lane V/C Ratio	0.055	-	-	-	0.104
HCM Control Delay (s)	9.3	-	-	-	15.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 Rose & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.416
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	0	0	1	1	0	1	0	2	0	0
Volume Module:												
Base Vol:	28	0	51	0	0	0	0	528	33	65	489	0
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	30	0	55	0	0	0	0	572	36	70	529	0
Added Vol:	0	0	5	0	0	0	0	74	0	4	96	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	30	0	60	0	0	0	0	646	36	74	625	0
User 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
PHF 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
PHF Volume:	30	0	60	0	0	0	0	646	36	74	625	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	0	60	0	0	0	0	646	36	74	625	0
PCE 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
MLF 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
FinalVolume:	30	0	60	0	0	0	0	646	36	74	625	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.33	0.00	0.67	0.00	0.00	0.00	0.00	1.90	0.10	1.00	2.00	0.00
Final Sat.:	536	0	1064	0	0	0	0	3032	168	1600	3200	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.06	0.00	0.00	0.00	0.00	0.21	0.21	0.05	0.20	0.00
Crit Moves:			****					****		****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Tulip & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.422
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	27	0	60	8	0	11	7	545	27	76	516	17
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	29	0	65	9	0	12	8	590	29	82	559	18
Added Vol:	0	0	5	2	0	0	0	79	0	4	100	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	29	0	70	11	0	12	8	669	29	86	659	20
User 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
PHF 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
PHF Volume:	29	0	70	11	0	12	8	669	29	86	659	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	29	0	70	11	0	12	8	669	29	86	659	20
PCE 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
MLF 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
FinalVolume:	29	0	70	11	0	12	8	669	29	86	659	20
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.47	0.00	0.53	1.00	1.92	0.08	1.00	1.94	0.06
Final Sat.:	1600	0	1600	756	0	844	1600	3066	134	1600	3104	96
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.04	0.01	0.00	0.01	0.00	0.22	0.22	0.05	0.21	0.21
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Valley View & Lampson

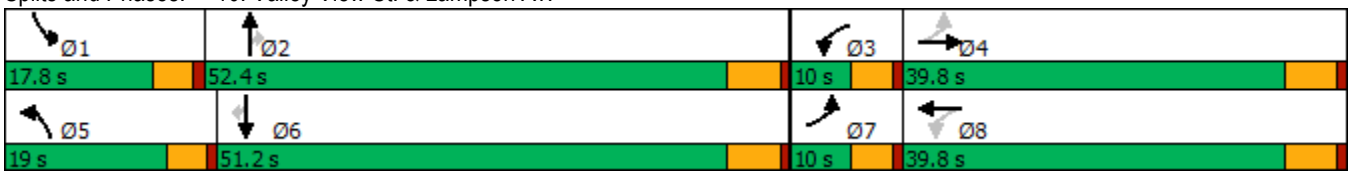
Cycle (sec):	100	Critical Vol./Cap.(X):	0.921
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	112	Level Of Service:	E

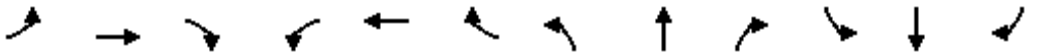
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	185	1554	134	145	1688	202	211	200	108	169	208	101
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	200	1682	145	157	1827	219	228	216	117	183	225	109
Added Vol:	50	22	5	3	17	36	38	15	38	5	24	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	250	1704	150	160	1844	255	266	231	155	188	249	115
User 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
PHF 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
PHF Volume:	250	1704	150	160	1844	255	266	231	155	188	249	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	250	1704	150	160	1844	255	266	231	155	188	249	115
PCE 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
MLF 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
FinalVolume:	250	1704	150	160	1844	255	266	231	155	188	249	115
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.20	0.80	1.00	1.37	0.63
Final Sat.:	1600	4800	1600	1600	4800	1600	1600	1917	1283	1600	2187	1013
Capacity Analysis Module:												
Vol/Sat:	0.16	0.36	0.09	0.10	0.38	0.16	0.17	0.12	0.12	0.12	0.11	0.11
Crit Moves:	****				****		****				****	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	259	223	214	237	238	1704	161	172	1844	243
Future Volume (vph)	259	223	214	237	238	1704	161	172	1844	243
Turn Type	pm+pt	NA	pm+pt	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases	4		8				2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	39.8	9.6	39.8	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	10.0	39.8	10.0	39.8	19.0	52.4	52.4	17.8	51.2	51.2
Total Split (%)	8.3%	33.2%	8.3%	33.2%	15.8%	43.7%	43.7%	14.8%	42.7%	42.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	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
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	23.4	16.8	23.4	16.8	14.5	47.2	47.2	12.9	45.7	45.7
Actuated g/C Ratio	0.23	0.16	0.23	0.16	0.14	0.46	0.46	0.12	0.44	0.44
v/c Ratio	1.24	0.59	1.05	0.61	0.99	0.76	0.22	0.80	0.85	0.33
Control Delay	171.2	29.2	110.2	35.5	100.8	27.1	8.3	71.4	31.2	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	171.2	29.2	110.2	35.5	100.8	27.1	8.3	71.4	31.2	12.4
LOS	F	C	F	D	F	C	A	E	C	B
Approach Delay		87.5		63.4		34.0			32.2	
Approach LOS		F		E		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 42.4	Intersection LOS: D
Intersection Capacity Utilization 92.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 10: Valley View St. & Lampson Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	223	148	214	237	122	238	1704	161	172	1844	243
Future Volume (veh/h)	259	223	148	214	237	122	238	1704	161	172	1844	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	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	267	230	119	221	244	104	245	1757	127	177	1901	173
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	221	336	167	220	358	147	262	2394	733	209	2242	695
Arrive On Green	0.06	0.15	0.15	0.06	0.15	0.15	0.15	0.47	0.47	0.12	0.44	0.44
Sat Flow, veh/h	1781	2291	1142	1781	2439	1006	1781	5106	1564	1781	5106	1583
Grp Volume(v), veh/h	267	176	173	221	176	172	245	1757	127	177	1901	173
Grp Sat Flow(s),veh/h/ln	1781	1777	1656	1781	1777	1668	1781	1702	1564	1781	1702	1583
Q Serve(g_s), s	5.4	9.2	9.7	5.4	9.2	9.6	13.3	27.3	4.6	9.5	32.6	6.7
Cycle Q Clear(g_c), s	5.4	9.2	9.7	5.4	9.2	9.6	13.3	27.3	4.6	9.5	32.6	6.7
Prop In Lane	1.00		0.69	1.00		0.60	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	221	261	243	220	261	245	262	2394	733	209	2242	695
V/C Ratio(X)	1.21	0.68	0.71	1.00	0.67	0.71	0.94	0.73	0.17	0.85	0.85	0.25
Avail Cap(c_a), veh/h	221	616	575	220	616	579	262	2428	744	240	2365	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	39.6	39.8	40.9	39.6	39.8	41.3	21.1	15.0	42.4	24.6	17.3
Incr Delay (d2), s/veh	127.5	3.1	3.8	61.3	3.0	3.7	38.2	1.2	0.1	19.3	3.0	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	10.4	4.1	4.0	6.3	4.0	4.0	8.4	10.0	1.5	5.1	12.4	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	168.4	42.7	43.7	102.2	42.6	43.5	79.5	22.2	15.2	61.7	27.5	17.5
LnGrp LOS	F	D	D	F	D	D	E	C	B	E	C	B
Approach Vol, veh/h		616			569			2129			2251	
Approach Delay, s/veh		97.4			66.0			28.4			29.4	
Approach LOS		F			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.1	51.7	10.0	20.2	19.0	48.8	10.0	20.2
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	13.2	46.6	5.4	34.0	14.4	45.4	5.4	34.0
Max Q Clear Time (g_c+I1), s	11.5	29.3	7.4	11.7	15.3	34.6	7.4	11.6
Green Ext Time (p_c), s	0.0	11.3	0.0	1.8	0.0	8.4	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	40.3
HCM 6th LOS	D

ATTACHMENT E: OPENING YEAR CUMULATIVE (2026) WITH PROJECT ALTERNATIVE CONDITIONS INTERSECTION OPERATION ANALYSIS WORKSHEETS WITH IMPROVEMENTS

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Seal Beach & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.744
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	56	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	3 0	1	2 0	3 0	0	0 0	0 0	0	1 0	1! 0	1
Volume Module:												
Base Vol:	0	1199	266	364	1244	0	0	0	0	340	0	572
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	0	1298	288	394	1347	0	0	0	0	368	0	619
Added Vol:	0	47	37	46	100	0	0	0	0	57	0	42
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1345	325	440	1447	0	0	0	0	425	0	661
User 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
PHF 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
PHF Volume:	0	1345	325	440	1447	0	0	0	0	425	0	661
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1345	325	440	1447	0	0	0	0	425	0	661
PCE 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
MLF 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
FinalVolume:	0	1345	325	440	1447	0	0	0	0	425	0	661
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	1.17	0.00	1.83
Final Sat.:	0	4800	1600	3200	4800	0	0	0	0	1878	0	2922
Capacity Analysis Module:												
Vol/Sat:	0.00	0.28	0.20	0.14	0.30	0.00	0.00	0.00	0.00	0.23	0.00	0.23
OvlAdjV/S:			0.00									
Crit Moves:		****		****						****		

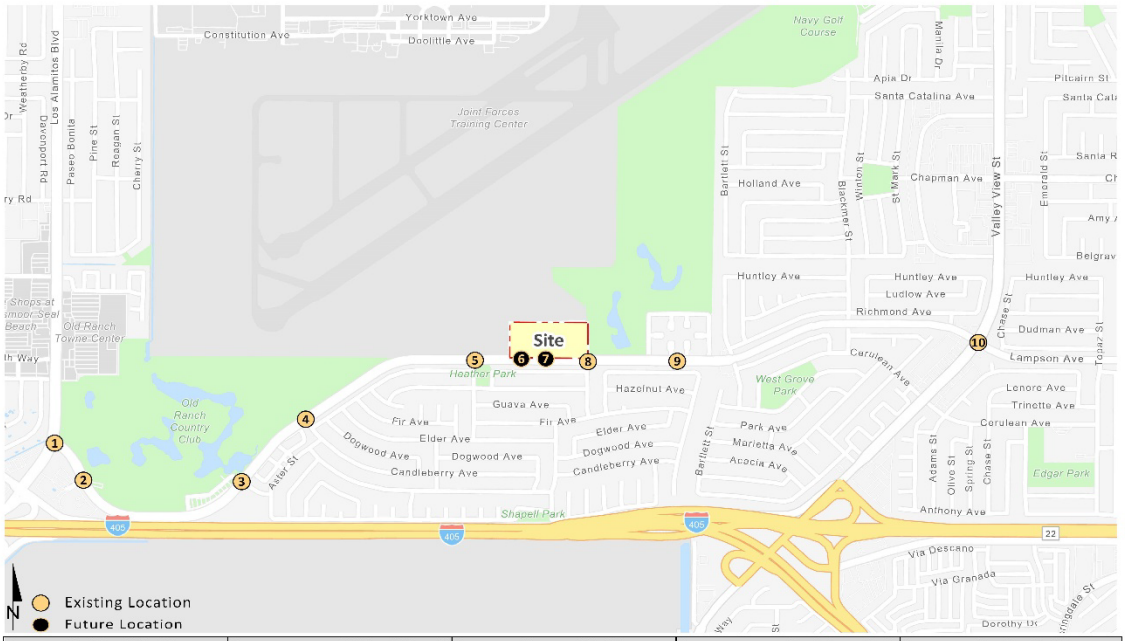
Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Seal Beach & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.819	
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx	
Optimal Cycle:	71	Level Of Service:	D	

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	3 0	1	2 0	3 0	0	0 0	0 0	0 0	1 0	1! 0	1
Volume Module:												
Base Vol:	0	1508	413	447	1202	0	0	0	0	322	0	447
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	0	1632	447	484	1301	0	0	0	0	349	0	484
Added Vol:	0	89	65	52	66	0	0	0	0	46	0	46
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1721	512	536	1367	0	0	0	0	395	0	530
User 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
PHF 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
PHF Volume:	0	1721	512	536	1367	0	0	0	0	395	0	530
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1721	512	536	1367	0	0	0	0	395	0	530
PCE 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
MLF 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
FinalVolume:	0	1721	512	536	1367	0	0	0	0	395	0	530
OvlAdjVol:			204									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	1.28	0.00	1.72
Final Sat.:	0	4800	1600	3200	4800	0	0	0	0	2049	0	2751
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.32	0.17	0.28	0.00	0.00	0.00	0.00	0.19	0.00	0.19
OvlAdjV/S:			0.13									
Crit Moves:		****			****						****	

ATTACHMENT F: GENERAL PLAN BUILDOUT WITH PROJECT ALTERNATIVE TRAFFIC VOLUMES



1	Seal Beach Bl. & Lampson Av.	2	Old Ranch Plaza & Lampson Av.	3	Basswood St. & Lampson Av.	4	Candleberry Av. & Lampson Av.	5	Heather St. & Lampson Av.
48,850	23,200	850	20,850	900	16,850		15,000		15,300
← 1591(1504)	← 726(605)	↲ 34(20)	← 5(6)	↲ 8(43)	← 7(3)		← 724(662)		← 653(634)
↲ 694(587)	↰ 466(505)	↓ 0(1)	← 1072(902)	↓ 0(3)	← 902(726)		↰ 23(31)		↰ 39(78)
	↑ ↱	↳ 6(3)	↰ 11(8)	↳ 1(5)	↰ 10(13)		↰ ↑ ↱		↰ ↱
	1479(1893) 435(560) 47,000	18(38) →	↰ ↑ ↱	21(30) →	↰ ↑ ↱	473(704) →	195(80) 39(26) 2,800	441(661) →	95(59) 69(57) 2,800
		746(1021) →	33(48) 3(0) 8(11) 1,150	556(814) →	233(141) 1(0) 3(11) 3,200	88(127) ↴		71(68) ↴	
		36(39) ↴		90(132) ↴					
		22,200		20,150		16,850		15,200	

6	Driveway 1 & Lampson Av.	7	Driveway 2 & Lampson Av.	8	Rose St. & Lampson Av.	9	Tulip St. & Lampson Av.	10	Valley View St. & Lampson Av.
400	15,100	1,150	14,950		15,700	550	16,900	50,900	12,900
↲ 18(12)	← 7(20)	↲ 22(15)	← 5(16)		← 627(652)	← 16(13)	↰ 10(21)	↲ 210(266)	↰ 267(135)
	← 679(663)	↳ 33(22)	← 664(668)		↰ 34(78)	↓ 1(0)	← 600(687)	↓ 1844(2029)	← 377(260)
					↰ ↱	↳ 13(11)	↰ 41(91)	↳ 136(198)	↰ 311(235)
499(737) →		14(45) →		491(676) →	42(32) 58(63)	6(8) →	↰ ↑ ↱	223(285) →	↰ ↑ ↱
		485(692) →		27(38) ↴	2,250	530(700) →	44(31) 1(0) 89(73)	290(322) →	185(260) 185(260) 205(177)
						13(31) ↴	2,400	186(162) ↴	49,950
15,100		15,100		14,950		15,700		16,400	

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

ATTACHMENT G: GENERAL PLAN BUILDOUT WITH PROJECT ALTERNATIVE CONDITIONS INTERSECTION OPERATION ANALYSIS WORKSHEETS

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Seal Beach & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	1.034
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	3 0	1	2 0	3 0	0	0 0	0 0	0	2 0	0 0	1
Volume Module:												
Base Vol:	0	1479	426	689	1591	0	0	0	0	440	0	711
Growth 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
Initial Bse:	0	1479	426	689	1591	0	0	0	0	440	0	711
Added Vol:	0	0	9	5	0	0	0	0	0	26	0	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1479	435	694	1591	0	0	0	0	466	0	726
User 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
PHF 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
PHF Volume:	0	1479	435	694	1591	0	0	0	0	466	0	726
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1479	435	694	1591	0	0	0	0	466	0	726
PCE 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
MLF 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
FinalVolume:	0	1479	435	694	1591	0	0	0	0	466	0	726
OvlAdjVol:			187									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5100	1700	3200	5100	0	0	0	0	3200	0	1700
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.26	0.22	0.31	0.00	0.00	0.00	0.00	0.15	0.00	0.43
OvlAdjV/S:			0.11									
Crit Moves:		****			****							****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Old Ranch Plaza & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.493
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 1	0	0	1! 0	0	1 0	2 0 1	1	0	1 1 0
Volume Module:												
Base Vol:	33	3	8	6	0	34	18	732	36	11	1032	5
Growth 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
Initial Bse:	33	3	8	6	0	34	18	732	36	11	1032	5
Added Vol:	0	0	0	0	0	0	0	14	0	0	40	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	3	8	6	0	34	18	746	36	11	1072	5
User 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
PHF 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
PHF Volume:	33	3	8	6	0	34	18	746	36	11	1072	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	3	8	6	0	34	18	746	36	11	1072	5
PCE 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
MLF 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
FinalVolume:	33	3	8	6	0	34	18	746	36	11	1072	5
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.06	1.00	1.00	1.00	1.00	1.06	1.06	1.00	1.03	1.00
Lanes:	0.92	0.08	1.00	0.15	0.00	0.85	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	1467	133	1700	240	0	1360	1600	3400	1700	1600	3285	15
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.00	0.00	0.00	0.03	0.01	0.22	0.02	0.01	0.33	0.34
Crit Moves:	****					****	****					****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Basswood & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.540
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	0	0	1! 0	0	1 0	1	1 0	1 0	1 0
Volume Module:												
Base Vol:	233	1	3	1	0	8	21	542	90	10	862	7
Growth 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
Initial Bse:	233	1	3	1	0	8	21	542	90	10	862	7
Added Vol:	0	0	0	0	0	0	0	14	0	0	40	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	233	1	3	1	0	8	21	556	90	10	902	7
User 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
PHF 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
PHF Volume:	233	1	3	1	0	8	21	556	90	10	902	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	233	1	3	1	0	8	21	556	90	10	902	7
PCE 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
MLF 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
FinalVolume:	233	1	3	1	0	8	21	556	90	10	902	7
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	0.25	0.75	0.11	0.00	0.89	1.00	1.72	0.28	1.00	1.98	0.02
Final Sat.:	1600	400	1200	178	0	1422	1600	2854	446	1600	3275	25
Capacity Analysis Module:												
Vol/Sat:	0.15	0.00	0.00	0.00	0.00	0.01	0.01	0.19	0.20	0.01	0.28	0.28
Crit Moves:	****					****	****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Candleberrry & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.459
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	195	0	39	0	0	0	0	459	88	23	684	0
Growth 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
Initial Bse:	195	0	39	0	0	0	0	459	88	23	684	0
Added Vol:	0	0	0	0	0	0	0	14	0	0	40	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	195	0	39	0	0	0	0	473	88	23	724	0
User 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
PHF 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
PHF Volume:	195	0	39	0	0	0	0	473	88	23	724	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	195	0	39	0	0	0	0	473	88	23	724	0
PCE 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
MLF 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
FinalVolume:	195	0	39	0	0	0	0	473	88	23	724	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.06	1.06	1.00	1.04	1.00	1.00	1.06	1.06
Lanes:	0.83	0.00	0.17	0.00	0.00	0.00	0.00	1.69	0.31	1.00	2.00	0.00
Final Sat.:	1333	0	267	0	0	0	0	2798	502	1600	3400	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.15	0.00	0.00	0.00	0.00	0.17	0.18	0.01	0.21	0.00
Crit Moves:			****				****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Heather & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.395
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	95	0	69	0	0	0	0	427	71	39	613	0
Growth 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
Initial Bse:	95	0	69	0	0	0	0	427	71	39	613	0
Added Vol:	0	0	0	0	0	0	0	14	0	0	40	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	0	69	0	0	0	0	441	71	39	653	0
User 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
PHF 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
PHF Volume:	95	0	69	0	0	0	0	441	71	39	653	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	0	69	0	0	0	0	441	71	39	653	0
PCE 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
MLF 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
FinalVolume:	95	0	69	0	0	0	0	441	71	39	653	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.06	1.06	1.00	1.04	1.00	1.00	1.06	1.06
Lanes:	0.58	0.00	0.42	0.00	0.00	0.00	0.00	1.72	0.28	1.00	2.00	0.00
Final Sat.:	927	0	673	0	0	0	0	2856	444	1600	3400	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.10	0.00	0.00	0.00	0.00	0.15	0.16	0.02	0.19	0.00
Crit Moves:			****				****				****	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	499	679	7	0	18
Future Vol, veh/h	0	499	679	7	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	542	738	8	0	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	373
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	-	-	-	0	624
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	624
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	624
HCM Lane V/C Ratio	-	-	-	0.031
HCM Control Delay (s)	-	-	-	11
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	485	664	5	33	22
Future Vol, veh/h	14	485	664	5	33	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	527	722	5	36	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	727	0	-	0	1019	364
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	294	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	872	-	-	-	233	633
Stage 1	-	-	-	-	440	-
Stage 2	-	-	-	-	730	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	872	-	-	-	229	633
Mov Cap-2 Maneuver	-	-	-	-	341	-
Stage 1	-	-	-	-	433	-
Stage 2	-	-	-	-	730	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	872	-	-	-	418
HCM Lane V/C Ratio	0.017	-	-	-	0.143
HCM Control Delay (s)	9.2	-	-	-	15
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 Rose & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.340
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	0	0	1	1	0	1	0	2	0	0
Volume Module:												
Base Vol:	42	0	58	0	0	0	0	458	27	34	615	0
Growth 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
Initial Bse:	42	0	58	0	0	0	0	458	27	34	615	0
Added Vol:	0	0	0	0	0	0	0	33	0	0	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	0	58	0	0	0	0	491	27	34	627	0
User 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
PHF 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
PHF Volume:	42	0	58	0	0	0	0	491	27	34	627	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	0	58	0	0	0	0	491	27	34	627	0
PCE 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
MLF 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
FinalVolume:	42	0	58	0	0	0	0	491	27	34	627	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.06	1.06	1.00	1.03	1.00	1.00	1.06	1.06
Lanes:	0.42	0.00	0.58	0.00	0.00	0.00	0.00	1.90	0.10	1.00	2.00	0.00
Final Sat.:	672	0	928	0	0	0	0	3133	167	1600	3400	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.06	0.00	0.00	0.00	0.00	0.16	0.16	0.02	0.18	0.00
Crit Moves:			****					****		****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Tulip & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.360
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	44	1	89	13	1	16	6	497	13	41	588	10
Growth 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
Initial Bse:	44	1	89	13	1	16	6	497	13	41	588	10
Added Vol:	0	0	0	0	0	0	0	33	0	0	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	1	89	13	1	16	6	530	13	41	600	10
User 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
PHF 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
PHF Volume:	44	1	89	13	1	16	6	530	13	41	600	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	1	89	13	1	16	6	530	13	41	600	10
PCE 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
MLF 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
FinalVolume:	44	1	89	13	1	16	6	530	13	41	600	10
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	0.01	0.99	0.43	0.03	0.54	1.00	1.95	0.05	1.00	1.97	0.03
Final Sat.:	1600	18	1582	693	53	853	1600	3223	77	1600	3248	52
Capacity Analysis Module:												
Vol/Sat:	0.03	0.06	0.06	0.01	0.02	0.02	0.00	0.16	0.17	0.03	0.18	0.19
Crit Moves:		****		****					****	****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Valley View & Lampson

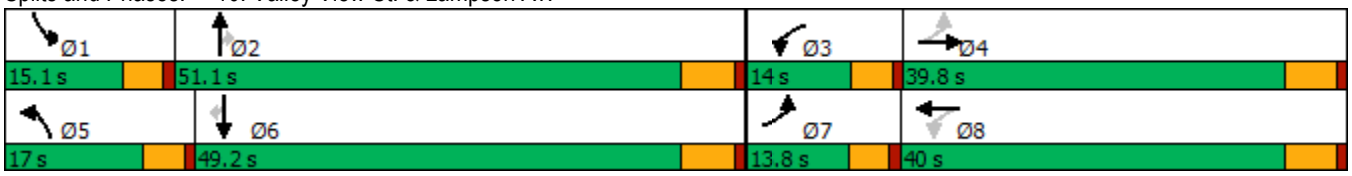
Cycle (sec):	100	Critical Vol./Cap.(X):	0.918
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	110	Level Of Service:	E

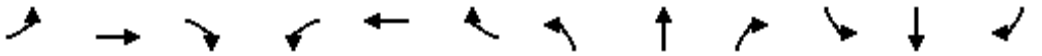
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	180	1694	205	136	1844	207	216	279	171	311	373	267
Growth 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
Initial Bse:	180	1694	205	136	1844	207	216	279	171	311	373	267
Added Vol:	5	0	0	0	0	3	7	11	15	0	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	185	1694	205	136	1844	210	223	290	186	311	377	267
User 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
PHF 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
PHF Volume:	185	1694	205	136	1844	210	223	290	186	311	377	267
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	1694	205	136	1844	210	223	290	186	311	377	267
PCE 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
MLF 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
FinalVolume:	185	1694	205	136	1844	210	223	290	186	311	377	267
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.22	0.78	1.00	1.17	0.83
Final Sat.:	1600	5100	1700	1600	5100	1700	1600	2050	1250	1600	1973	1327
Capacity Analysis Module:												
Vol/Sat:	0.12	0.33	0.12	0.09	0.36	0.12	0.14	0.14	0.15	0.19	0.19	0.20
Crit Moves:	****				****		****					****

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	223	290	311	377	185	1694	205	136	1844	210
Future Volume (vph)	223	290	311	377	185	1694	205	136	1844	210
Turn Type	pm+pt	NA	pm+pt	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases	4		8				2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	39.8	9.6	39.8	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	13.8	39.8	14.0	40.0	17.0	51.1	51.1	15.1	49.2	49.2
Total Split (%)	11.5%	33.2%	11.7%	33.3%	14.2%	42.6%	42.6%	12.6%	41.0%	41.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	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
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	35.7	25.2	36.1	25.4	12.4	45.4	45.4	10.5	43.5	43.5
Actuated g/C Ratio	0.32	0.23	0.32	0.23	0.11	0.41	0.41	0.09	0.39	0.39
v/c Ratio	1.12	0.61	1.23	0.81	1.02	0.89	0.32	0.89	1.01	0.34
Control Delay	126.2	32.2	159.4	39.7	119.8	37.9	13.4	96.8	57.1	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.2	32.2	159.4	39.7	119.8	37.9	13.4	96.8	57.1	14.5
LOS	F	C	F	D	F	D	B	F	E	B
Approach Delay		62.2		78.7		42.7			55.5	
Approach LOS		E		E		D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 55.5	Intersection LOS: E
Intersection Capacity Utilization 96.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 10: Valley View St. & Lampson Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	290	186	311	377	267	185	1694	205	136	1844	210
Future Volume (veh/h)	223	290	186	311	377	267	185	1694	205	136	1844	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.99
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	242	315	164	338	410	232	201	1841	160	148	2004	179
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	521	264	308	503	281	198	2072	632	168	1985	608
Arrive On Green	0.08	0.23	0.23	0.08	0.23	0.23	0.11	0.41	0.41	0.09	0.39	0.39
Sat Flow, veh/h	1781	2268	1151	1781	2175	1214	1781	5106	1557	1781	5106	1564
Grp Volume(v), veh/h	242	245	234	338	334	308	201	1841	160	148	2004	179
Grp Sat Flow(s),veh/h/ln	1781	1777	1642	1781	1777	1612	1781	1702	1557	1781	1702	1564
Q Serve(g_s), s	9.2	13.8	14.3	9.4	19.9	20.3	12.4	37.4	7.6	9.2	43.4	8.8
Cycle Q Clear(g_c), s	9.2	13.8	14.3	9.4	19.9	20.3	12.4	37.4	7.6	9.2	43.4	8.8
Prop In Lane	1.00		0.70	1.00		0.75	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	408	377	308	411	373	198	2072	632	168	1985	608
V/C Ratio(X)	0.97	0.60	0.62	1.10	0.81	0.83	1.02	0.89	0.25	0.88	1.01	0.29
Avail Cap(c_a), veh/h	251	541	500	308	544	494	198	2072	632	168	1985	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	38.4	38.6	39.3	40.6	40.8	49.6	30.8	22.0	50.0	34.1	23.6
Incr Delay (d2), s/veh	46.9	1.4	1.7	80.5	6.9	8.4	68.2	5.2	0.2	37.4	22.6	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	5.9	5.7	10.7	9.1	8.6	9.1	15.3	2.7	5.7	20.8	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.0	39.8	40.3	119.8	47.5	49.2	117.8	36.0	22.2	87.3	56.7	23.8
LnGrp LOS	F	D	D	F	D	D	F	D	C	F	F	C
Approach Vol, veh/h		721			980			2202			2331	
Approach Delay, s/veh		54.8			73.0			42.5			56.1	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	51.1	14.0	31.4	17.0	49.2	13.8	31.6
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.5	45.3	9.4	34.0	12.4	43.4	9.2	34.2
Max Q Clear Time (g_c+I1), s	11.2	39.4	11.4	16.3	14.4	45.4	11.2	22.3
Green Ext Time (p_c), s	0.0	4.9	0.0	2.4	0.0	0.0	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	53.8
HCM 6th LOS	D

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Seal Beach & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	1.010
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	3 0	1	2 0	3 0	0	0 0	0 0	0	2 0	0 0	1
Volume Module:												
Base Vol:	0	1893	532	571	1504	0	0	0	0	488	0	595
Growth 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
Initial Bse:	0	1893	532	571	1504	0	0	0	0	488	0	595
Added Vol:	0	0	28	16	0	0	0	0	0	17	0	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1893	560	587	1504	0	0	0	0	505	0	605
User 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
PHF 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
PHF Volume:	0	1893	560	587	1504	0	0	0	0	505	0	605
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1893	560	587	1504	0	0	0	0	505	0	605
PCE 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
MLF 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
FinalVolume:	0	1893	560	587	1504	0	0	0	0	505	0	605
OvlAdjVol:			292									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5100	1700	3200	5100	0	0	0	0	3200	0	1700
Capacity Analysis Module:												
Vol/Sat:	0.00	0.37	0.33	0.18	0.29	0.00	0.00	0.00	0.00	0.16	0.00	0.36
OvlAdjV/S:			0.17									
Crit Moves:	****			****								****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Old Ranch Plaza & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.444
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 1	0	0	1! 0	0	1 0	2 0 1	1	0	1 1 0
Volume Module:												
Base Vol:	48	0	11	3	1	20	38	976	39	8	875	6
Growth 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
Initial Bse:	48	0	11	3	1	20	38	976	39	8	875	6
Added Vol:	0	0	0	0	0	0	0	45	0	0	27	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	0	11	3	1	20	38	1021	39	8	902	6
User 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
PHF 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
PHF Volume:	48	0	11	3	1	20	38	1021	39	8	902	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	0	11	3	1	20	38	1021	39	8	902	6
PCE 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
MLF 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
FinalVolume:	48	0	11	3	1	20	38	1021	39	8	902	6
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.06	1.00	1.00	1.00	1.00	1.06	1.06	1.00	1.03	1.00
Lanes:	1.00	0.00	1.00	0.12	0.04	0.84	1.00	2.00	1.00	1.00	1.99	0.01
Final Sat.:	1600	0	1700	200	67	1333	1600	3400	1700	1600	3279	21
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.01	0.00	0.01	0.02	0.02	0.30	0.02	0.01	0.28	0.28
Crit Moves:	****					****	****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Basswood & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.524
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	141	0	11	5	3	43	30	769	132	13	699	3
Growth 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
Initial Bse:	141	0	11	5	3	43	30	769	132	13	699	3
Added Vol:	0	0	0	0	0	0	0	45	0	0	27	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	141	0	11	5	3	43	30	814	132	13	726	3
User 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
PHF 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
PHF Volume:	141	0	11	5	3	43	30	814	132	13	726	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	141	0	11	5	3	43	30	814	132	13	726	3
PCE 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
MLF 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
FinalVolume:	141	0	11	5	3	43	30	814	132	13	726	3
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	0.00	1.00	0.10	0.06	0.84	1.00	1.72	0.28	1.00	1.99	0.01
Final Sat.:	1600	0	1600	157	94	1349	1600	2853	447	1600	3287	13
Capacity Analysis Module:												
Vol/Sat:	0.09	0.00	0.01	0.00	0.03	0.03	0.02	0.29	0.30	0.01	0.22	0.23
Crit Moves:	****				****				****	****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Candleberrry & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.445
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	80	0	26	0	0	0	0	659	127	31	635	0
Growth 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
Initial Bse:	80	0	26	0	0	0	0	659	127	31	635	0
Added Vol:	0	0	0	0	0	0	0	45	0	0	27	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	0	26	0	0	0	0	704	127	31	662	0
User 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
PHF 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
PHF Volume:	80	0	26	0	0	0	0	704	127	31	662	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	0	26	0	0	0	0	704	127	31	662	0
PCE 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
MLF 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
FinalVolume:	80	0	26	0	0	0	0	704	127	31	662	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.06	1.06	1.00	1.04	1.00	1.00	1.06	1.06
Lanes:	0.75	0.00	0.25	0.00	0.00	0.00	0.00	1.69	0.31	1.00	2.00	0.00
Final Sat.:	1208	0	392	0	0	0	0	2811	489	1600	3400	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.07	0.00	0.00	0.00	0.00	0.25	0.26	0.02	0.19	0.00
Crit Moves:			****						****	****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Heather & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.449
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	59	0	57	0	0	0	0	616	68	78	607	0
Growth 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
Initial Bse:	59	0	57	0	0	0	0	616	68	78	607	0
Added Vol:	0	0	0	0	0	0	0	45	0	0	27	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	59	0	57	0	0	0	0	661	68	78	634	0
User 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
PHF 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
PHF Volume:	59	0	57	0	0	0	0	661	68	78	634	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	0	57	0	0	0	0	661	68	78	634	0
PCE 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
MLF 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
FinalVolume:	59	0	57	0	0	0	0	661	68	78	634	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.06	1.06	1.00	1.03	1.00	1.00	1.06	1.06
Lanes:	0.51	0.00	0.49	0.00	0.00	0.00	0.00	1.81	0.19	1.00	2.00	0.00
Final Sat.:	814	0	786	0	0	0	0	3002	298	1600	3400	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.07	0.00	0.00	0.00	0.00	0.22	0.23	0.05	0.19	0.00
Crit Moves:			****						****	****		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	737	663	20	0	12
Future Vol, veh/h	0	737	663	20	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	801	721	22	0	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	372
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	-	-	-	0	625
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	625
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	625
HCM Lane V/C Ratio	-	-	-	0.021
HCM Control Delay (s)	-	-	-	10.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	692	668	16	22	15
Future Vol, veh/h	45	692	668	16	22	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	752	726	17	24	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	743	0	-	0	1209	372
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	474	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	860	-	-	-	175	625
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	592	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	860	-	-	-	165	625
Mov Cap-2 Maneuver	-	-	-	-	293	-
Stage 1	-	-	-	-	410	-
Stage 2	-	-	-	-	592	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	860	-	-	-	373
HCM Lane V/C Ratio	0.057	-	-	-	0.108
HCM Control Delay (s)	9.4	-	-	-	15.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 Rose & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.424
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	0	0	1	1	0	1	0	2	0	0
Volume Module:												
Base Vol:	32	0	63	0	0	0	0	654	38	78	616	0
Growth 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
Initial Bse:	32	0	63	0	0	0	0	654	38	78	616	0
Added Vol:	0	0	0	0	0	0	0	22	0	0	36	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	0	63	0	0	0	0	676	38	78	652	0
User 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
PHF 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
PHF Volume:	32	0	63	0	0	0	0	676	38	78	652	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	0	63	0	0	0	0	676	38	78	652	0
PCE 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
MLF 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
FinalVolume:	32	0	63	0	0	0	0	676	38	78	652	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.06	1.06	1.00	1.03	1.00	1.00	1.06	1.06
Lanes:	0.34	0.00	0.66	0.00	0.00	0.00	0.00	1.89	0.11	1.00	2.00	0.00
Final Sat.:	539	0	1061	0	0	0	0	3130	170	1600	3400	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.06	0.00	0.00	0.00	0.00	0.22	0.22	0.05	0.19	0.00
Crit Moves:			****					****		****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Tulip & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.438
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	0	0	1! 0	0	1 0	1	1 0	1 0	1 0
Volume Module:												
Base Vol:	31	0	73	11	0	13	8	678	31	91	651	21
Growth 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
Initial Bse:	31	0	73	11	0	13	8	678	31	91	651	21
Added Vol:	0	0	0	0	0	0	0	22	0	0	36	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	0	73	11	0	13	8	700	31	91	687	21
User 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
PHF 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
PHF Volume:	31	0	73	11	0	13	8	700	31	91	687	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	0	73	11	0	13	8	700	31	91	687	21
PCE 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
MLF 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
FinalVolume:	31	0	73	11	0	13	8	700	31	91	687	21
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	0.00	1.00	0.46	0.00	0.54	1.00	1.92	0.08	1.00	1.94	0.06
Final Sat.:	1600	0	1600	733	0	867	1600	3164	136	1600	3205	95
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.05	0.01	0.00	0.01	0.01	0.22	0.23	0.06	0.21	0.22
Crit Moves:			****	****					****	****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Valley View & Lampson

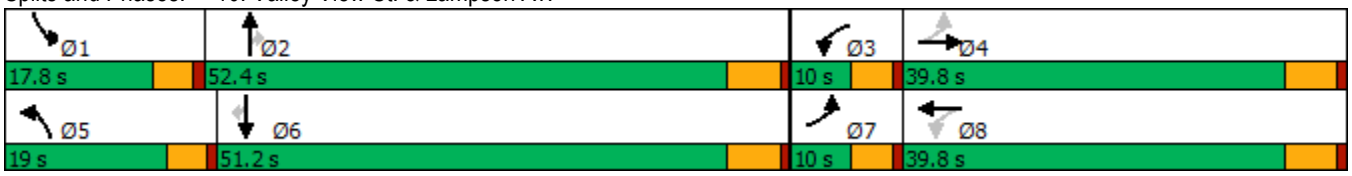
Cycle (sec):	100	Critical Vol./Cap.(X):	0.956
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	139	Level Of Service:	E

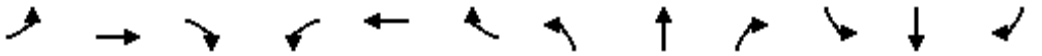
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	244	1875	177	198	2029	258	280	315	152	235	248	135
Growth 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
Initial Bse:	244	1875	177	198	2029	258	280	315	152	235	248	135
Added Vol:	16	0	0	0	0	8	5	7	10	0	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	260	1875	177	198	2029	266	285	322	162	235	260	135
User 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
PHF 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
PHF Volume:	260	1875	177	198	2029	266	285	322	162	235	260	135
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	260	1875	177	198	2029	266	285	322	162	235	260	135
PCE 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
MLF 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
FinalVolume:	260	1875	177	198	2029	266	285	322	162	235	260	135
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.33	0.67	1.00	1.32	0.68
Final Sat.:	1600	5100	1700	1600	5100	1700	1600	2229	1071	1600	2206	1094
Capacity Analysis Module:												
Vol/Sat:	0.16	0.37	0.10	0.12	0.40	0.16	0.18	0.14	0.15	0.15	0.12	0.12
Crit Moves:	****				****		****				****	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	285	322	235	260	260	1875	177	198	2029	266
Future Volume (vph)	285	322	235	260	260	1875	177	198	2029	266
Turn Type	pm+pt	NA	pm+pt	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases	4		8				2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	39.8	9.6	39.8	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	10.0	39.8	10.0	39.8	19.0	52.4	52.4	17.8	51.2	51.2
Total Split (%)	8.3%	33.2%	8.3%	33.2%	15.8%	43.7%	43.7%	14.8%	42.7%	42.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	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
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	27.2	20.6	27.2	20.6	14.5	46.8	46.8	13.3	45.6	45.6
Actuated g/C Ratio	0.25	0.19	0.25	0.19	0.14	0.44	0.44	0.12	0.43	0.43
v/c Ratio	1.28	0.71	1.27	0.58	1.12	0.87	0.24	0.93	0.96	0.38
Control Delay	189.5	39.8	189.4	34.3	138.3	33.4	9.8	93.6	43.6	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	189.5	39.8	189.4	34.3	138.3	33.4	9.8	93.6	43.6	14.5
LOS	F	D	F	C	F	C	A	F	D	B
Approach Delay		95.3		92.1		43.4			44.5	
Approach LOS		F		F		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.9	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay: 55.2	Intersection LOS: E
Intersection Capacity Utilization 99.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 10: Valley View St. & Lampson Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	322	162	235	260	135	260	1875	177	198	2029	266
Future Volume (veh/h)	285	322	162	235	260	135	260	1875	177	198	2029	266
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	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	294	332	133	242	268	117	268	1933	143	204	2092	196
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	233	443	174	206	430	182	246	2270	695	225	2211	686
Arrive On Green	0.05	0.18	0.18	0.05	0.18	0.18	0.14	0.44	0.44	0.13	0.43	0.43
Sat Flow, veh/h	1781	2488	978	1781	2418	1025	1781	5106	1564	1781	5106	1583
Grp Volume(v), veh/h	294	235	230	242	195	190	268	1933	143	204	2092	196
Grp Sat Flow(s),veh/h/ln	1781	1777	1689	1781	1777	1666	1781	1702	1564	1781	1702	1583
Q Serve(g_s), s	5.4	13.1	13.5	5.4	10.6	11.1	14.4	35.3	5.8	11.8	41.1	8.4
Cycle Q Clear(g_c), s	5.4	13.1	13.5	5.4	10.6	11.1	14.4	35.3	5.8	11.8	41.1	8.4
Prop In Lane	1.00		0.58	1.00		0.62	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	233	316	300	206	316	296	246	2270	695	225	2211	686
V/C Ratio(X)	1.26	0.74	0.76	1.17	0.62	0.64	1.09	0.85	0.21	0.91	0.95	0.29
Avail Cap(c_a), veh/h	233	579	550	206	579	543	246	2280	698	225	2221	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	40.7	40.8	42.1	39.6	39.8	45.0	25.9	17.7	45.0	28.4	19.1
Incr Delay (d2), s/veh	147.8	3.5	4.0	117.7	2.0	2.3	83.7	3.3	0.1	34.8	9.4	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	12.8	5.8	5.7	9.3	4.6	4.5	11.8	13.7	2.0	7.2	17.1	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	190.4	44.1	44.9	159.9	41.6	42.1	128.7	29.2	17.9	79.8	37.8	19.4
LnGrp LOS	F	D	D	F	D	D	F	C	B	E	D	B
Approach Vol, veh/h		759			627			2344			2492	
Approach Delay, s/veh		101.0			87.4			39.9			39.8	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	52.2	10.0	24.4	19.0	51.0	10.0	24.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	13.2	46.6	5.4	34.0	14.4	45.4	5.4	34.0
Max Q Clear Time (g_c+I1), s	13.8	37.3	7.4	15.5	16.4	43.1	7.4	13.1
Green Ext Time (p_c), s	0.0	7.5	0.0	2.4	0.0	2.1	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	52.1
HCM 6th LOS	D

ATTACHMENT H: GENERAL PLAN BUILDOUT WITH PROJECT ALTERNATIVE CONDITIONS INTERSECTION OPERATION ANALYSIS WORKSHEETS WITH IMPROVEMENTS

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Seal Beach & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.855
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	82	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	3 0	1	2 0	3 0	0	0 0	0 0	0 0	1 0	1! 0	1
Volume Module:												
Base Vol:	0	1479	426	689	1591	0	0	0	0	440	0	711
Growth 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
Initial Bse:	0	1479	426	689	1591	0	0	0	0	440	0	711
Added Vol:	0	0	9	5	0	0	0	0	0	26	0	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1479	435	694	1591	0	0	0	0	466	0	726
User 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
PHF 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
PHF Volume:	0	1479	435	694	1591	0	0	0	0	466	0	726
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1479	435	694	1591	0	0	0	0	466	0	726
PCE 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
MLF 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
FinalVolume:	0	1479	435	694	1591	0	0	0	0	466	0	726
OvlAdjVol:			13									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.03
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	1.17	0.00	1.83
Final Sat.:	0	5100	1700	3200	5100	0	0	0	0	1877	0	3023
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.26	0.22	0.31	0.00	0.00	0.00	0.00	0.25	0.00	0.24
OvlAdjV/S:			0.01									
Crit Moves:		****			****						****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Seal Beach & Lampson

Cycle (sec):	100	Critical Vol./Cap.(X):	0.886
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	93	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	3 0	1	2 0	3 0	0	0 0	0 0	0	1 0	1! 0	1
Volume Module:												
Base Vol:	0	1893	532	571	1504	0	0	0	0	488	0	595
Growth 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
Initial Bse:	0	1893	532	571	1504	0	0	0	0	488	0	595
Added Vol:	0	0	28	16	0	0	0	0	0	17	0	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1893	560	587	1504	0	0	0	0	505	0	605
User 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
PHF 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
PHF Volume:	0	1893	560	587	1504	0	0	0	0	505	0	605
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1893	560	587	1504	0	0	0	0	505	0	605
PCE 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
MLF 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
FinalVolume:	0	1893	560	587	1504	0	0	0	0	505	0	605
OvlAdjVol:			167									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.04
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	1.36	0.00	1.64
Final Sat.:	0	5100	1700	3200	5100	0	0	0	0	2184	0	2716
Capacity Analysis Module:												
Vol/Sat:	0.00	0.37	0.33	0.18	0.29	0.00	0.00	0.00	0.00	0.23	0.00	0.22
OvlAdjV/S:			0.10									
Crit Moves:		****		****						****		