HCM Signalized Intersection Capacity Analysis
125: Gilman Springs Rd & SR-79 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	400	330	10	380	0	0	0	0	220	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1900	1615	1805	1900						1813	1615
Flt Permitted		1.00	1.00	0.49	1.00						0.95	1.00
Satd. Flow (perm)		1900	1615	933	1900						1813	1615
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	417	344	10	396	0	0	0	0	229	10	10
RTOR Reduction (vph)	0	0	179	0	0	0	0	0	0	0	0	7
Lane Group Flow (vph)	0	417	165	10	396	0	0	0	0	0	239	3
Confl. Peds. (#/hr)												
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		14.6	14.6	14.6	14.6						7.8	7.8
Effective Green, g (s)		14.6	14.6	14.6	14.6						7.8	7.8
Actuated g/C Ratio		0.48	0.48	0.48	0.48						0.26	0.26
Clearance Time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		913	776	448	913						465	414
v/s Ratio Prot		c0.22			0.21							
v/s Ratio Perm			0.10	0.01							0.13	0.00
v/c Ratio		0.46	0.21	0.02	0.43						0.51	0.01
Uniform Delay, d1		5.3	4.6	4.2	5.2						9.7	8.4
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		0.4	0.1	0.0	0.3						1.0	0.0
Delay (s)		5.6	4.7	4.2	5.5						10.6	8.4
Level of Service		A	A	A	A						B	A
Approach Delay (s)		5.2			5.5			0.0			10.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	30.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
132: San Timoteo Canyon Rd & Alessandro Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	560	0	0	250	260	10	30	10	220	10	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.93			0.97			0.99	
Flt Protected		1.00			1.00			0.99			0.96	
Satd. Flow (prot)		1795			1676			1734			1706	
Flt Permitted		0.96			1.00			0.92			0.71	
Satd. Flow (perm)		1724			1676			1611			1268	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	622	0	0	278	289	11	33	11	244	11	22
RTOR Reduction (vph)	0	0	0	0	65	0	0	8	0	0	5	0
Lane Group Flow (vph)	0	655	0	0	502	0	0	47	0	0	272	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		22.9			22.9			15.1			15.1	
Effective Green, g (s)		22.9			22.9			15.1			15.1	
Actuated g/C Ratio		0.48			0.48			0.31			0.31	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		822			800			507			399	
v/s Ratio Prot					0.30							
v/s Ratio Perm		c0.38						0.03			c0.21	
v/c Ratio		0.80			0.63			0.09			0.68	
Uniform Delay, d1		10.6			9.4			11.6			14.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		5.4			1.5			0.1			4.7	
Delay (s)		16.0			10.9			11.7			19.1	
Level of Service		B			B			B			B	
Approach Delay (s)		16.0			10.9			11.7			19.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
133: San Timoteo Canyon Rd & Live Oak Canyon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	700	10	10	470	170	10	10	10	110	0	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.96			0.95			0.98	
Flt Protected		1.00			1.00			0.98			0.96	
Satd. Flow (prot)		1794			1735			1691			1691	
Flt Permitted		0.97			0.99			0.89			0.73	
Satd. Flow (perm)		1749			1713			1528			1293	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	24	833	12	12	560	202	12	12	12	131	0	24
RTOR Reduction (vph)	0	0	0	0	13	0	0	10	0	0	11	0
Lane Group Flow (vph)	0	869	0	0	761	0	0	26	0	0	144	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		34.3			34.3			9.4			9.4	
Effective Green, g (s)		34.3			34.3			9.4			9.4	
Actuated g/C Ratio		0.64			0.64			0.18			0.18	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1117			1094			267			226	
v/s Ratio Prot												
v/s Ratio Perm		c0.50			0.44			0.02			c0.11	
v/c Ratio		0.78			0.70			0.10			0.64	
Uniform Delay, d1		7.0			6.3			18.6			20.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.5			1.9			0.2			5.8	
Delay (s)		10.4			8.2			18.8			26.4	
Level of Service		B			A			B			C	
Approach Delay (s)		10.4			8.2			18.8			26.4	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
134: San Timoteo Canyon Rd & Redlands Blvd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	60	700	30	20	670	80
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.0			5.0	5.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.88			1.00	0.99	
Flt Protected	1.00			0.97	0.96	
Satd. Flow (prot)	1576			1748	1698	
Flt Permitted	1.00			0.23	0.96	
Satd. Flow (perm)	1576			419	1698	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	778	33	22	744	89
RTOR Reduction (vph)	572	0	0	0	5	0
Lane Group Flow (vph)	273	0	0	55	828	0
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	15.4			15.4	33.6	
Effective Green, g (s)	15.4			15.4	33.6	
Actuated g/C Ratio	0.26			0.26	0.57	
Clearance Time (s)	5.0			5.0	5.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	411			109	967	
v/s Ratio Prot	c0.17				c0.49	
v/s Ratio Perm				0.13		
v/c Ratio	0.66			0.50	0.86	
Uniform Delay, d1	19.5			18.6	10.7	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	4.0			3.6	7.5	
Delay (s)	23.5			22.2	18.2	
Level of Service	C			C	B	
Approach Delay (s)	23.5			22.2	18.2	
Approach LOS	C			C	B	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Traffic Impact Analysis Report

for the World Logistics Center

Appendix D

Intersection LOS Worksheets
for Existing Plus Build-out Conditions

This page intentionally left blank

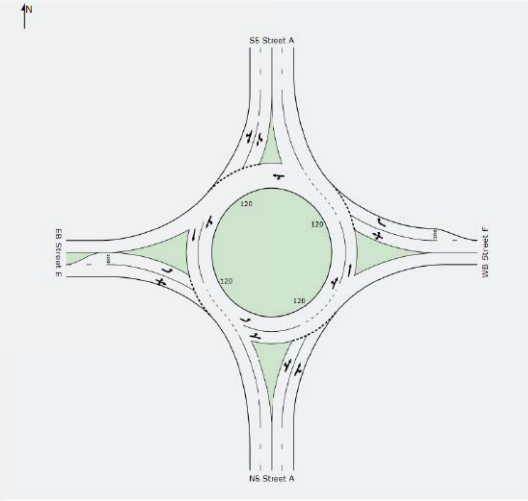
LANE OUTPUT

*Use the **Control** sheet to create output data in this sheet. For detailed information, refer to the **Intro** sheet.*

Title: Intersection 1 - Existing Plus Build-out - AM Peak Hour
Intersection Type: Roundabout

Lane Use & Performance

	Demand Flow veh/h	HV %	Capacity veh/h	Deg. Satn. v/c	Lane Util. %	Average Delay sec	Level of Service	Percentile Back of Queue Vehicles veh	Percentile Back of Queue Distance ft	Prob. Blockage %
South: NB Street A										
Lane 1	441	0.0	686	0.643	100	11.7	LOS B	4.7	117.7	0.0
Lane 2	469	0.0	729	0.643	100	10.9	LOS B	4.8	120.7	0.0
Approach	910	0.0		0.643		11.3	LOS B	4.8	120.7	
East: WB Street F										
Lane 1	145	0.0	586	0.247	100	11.2	LOS B	1.0	24.7	0.0
Lane 2	165	0.0	668	0.247	100	9.1	LOS A	1.0	25.7	0.0
Approach	310	0.0		0.247		10.0	LOS B	1.0	25.7	
North: SB Street A										
Lane 1	1270	0.0	1305	0.973	100	15.7	LOS B	496.6	870.5	0.0
Lane 2	1430	0.0	1470	0.973	100	11.6	LOS B	583.3	864.3	0.0
Approach	2700	0.0		0.973		13.5	LOS B	583.3	870.5	
West: EB Street E										
Lane 1	271	0.0	239	1.133	100	111.7	LOS F	19.9	496.3	49.8
Lane 2	329	0.0	290	1.133	100	113.2	LOS F	23.3	583.3	0.0
Approach	600	0.0		1.133		115.0	LOS F	23.3	583.3	
All Vehicles	4520			1.133		26.3	LOS C	34.8	870.5	



HCM Signalized Intersection Capacity Analysis
2: Street E & Street D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	50	70	180	80	310	580
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1900	1591	3502	1900	1805	1592
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1900	1591	3502	1900	1805	1592
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	76	196	87	337	630
RTOR Reduction (vph)	0	66	0	0	0	356
Lane Group Flow (vph)	54	10	196	87	337	274
Confl. Peds. (#/hr)		5			5	5
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	5.6	5.6	5.7	15.3	17.9	17.9
Effective Green, g (s)	5.6	5.6	5.7	15.3	17.9	17.9
Actuated g/C Ratio	0.14	0.14	0.14	0.37	0.43	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	258	216	485	706	784	692
v/s Ratio Prot	c0.03		c0.06	0.05	c0.19	
v/s Ratio Perm		0.01				0.17
v/c Ratio	0.21	0.05	0.40	0.12	0.43	0.40
Uniform Delay, d1	15.8	15.5	16.2	8.5	8.1	8.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.6	0.1	0.4	0.4
Delay (s)	16.2	15.6	16.8	8.6	8.5	8.3
Level of Service	B	B	B	A	A	A
Approach Delay (s)	15.8			14.2	8.4	
Approach LOS	B			B	A	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	41.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

VOLUMES
UTILITY APPLICATION FOR SIDRA INTERSECTION 5.1 © 2000-2011 Akcelik & Associates Pty Ltd

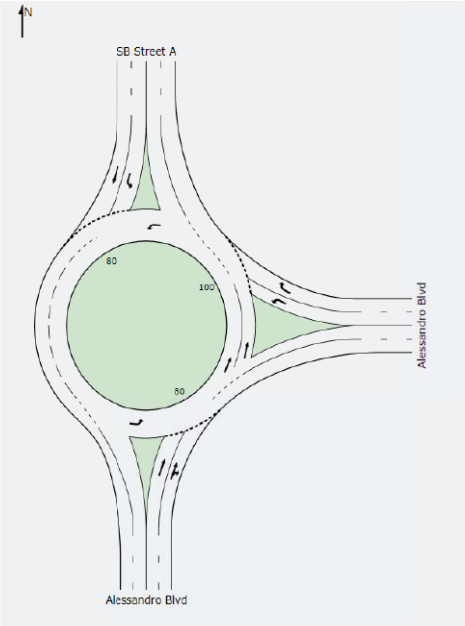
LANE OUTPUT

*Use the **Control** sheet to create output data in this sheet. For detailed information, refer to the **Intro** sheet.*

Title: Intersection 3 - Existing Plus Build-out - AM Peak Hour
Intersection Type: Roundabout

Lane Use & Performance

	Demand Flow veh/h	HV %	Capacity veh/h	Deg. Satn. v/c	Lane Util. %	Average Delay sec	Level of Service	Percentile Back of Queue Vehicles veh	Percentile Back of Queue Distance ft	Prob. Blockage %
South: NB Alessandro Blvd										
Lane 1	260	0.0	781	0.333	100	9.5	LOS A	2.1	52.2	0.0
Lane 2	280	0.0	839	0.334	100	10.8	LOS B	2.1	53.6	0.0
Approach	540	0.0		0.334		10.2	LOS B	2.1	53.6	
East: WB Alessandro Blvd										
Lane 1	110	0.0	604	0.182	100	14.7	LOS B	0.8	20.8	0.0
Lane 2	400	0.0	996	0.402	100	7.9	LOS A	2.5	62.3	0.0
Approach	510	0.0		0.402		9.4	LOS A	2.5	62.3	
North: SB Street A										
Lane 1	570	0.0	1353	0.421	100	12.6	LOS B	2.9	71.4	0.0
Lane 2	140	0.0	778	0.180	100	6.8	LOS A	0.9	21.6	0.0
Approach	710	0.0		0.421		11.5	LOS B	2.9	71.4	
All Vehicles	1760			0.421		10.5	LOS B	2.9	71.4	



VOLUMES
UTILITY APPLICATION FOR SIDRA INTERSECTION 5.1 © 2000-2011 Akcelik & Associates Pty Ltd

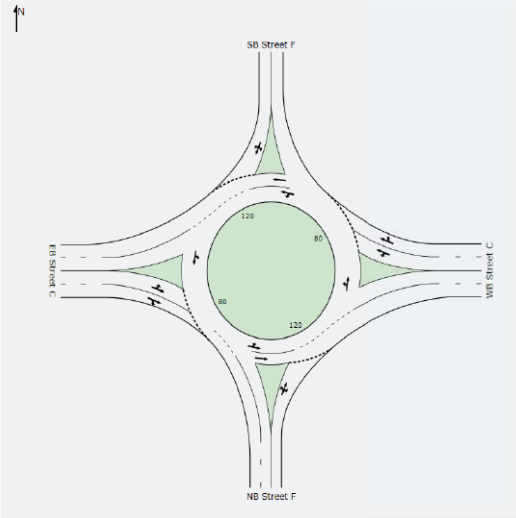
LANE OUTPUT

*Use the **Control** sheet to create output data in this sheet. For detailed information, refer to the **Intro** sheet.*

Title: Intersection 4 - Existing Plus Build-out - AM Peak Hour
Intersection Type: Roundabout

Lane Use & Performance

	Demand Flow veh/h	HV %	Capacity veh/h	Deg. Satn. v/c	Lane Util. %	Average Delay sec	Level of Service	Percentile Back of Queue Vehicles veh	Percentile Back of Queue Distance ft	Prob. Blockage %
South: NB Street F										
Lane 1	300	0.0	713	0.421	100	15.1	LOS C	2.4	60.0	0.0
Approach	300	0.0		0.421		15.1	LOS C	2.4	60.0	
East: WB Street C										
Lane 1	255	0.0	1002	0.255	100	9.6	LOS A	1.4	34.3	0.0
Lane 2	265	0.0	1040	0.255	100	7.4	LOS A	1.4	34.7	0.0
Approach	520	0.0		0.255		8.5	LOS A	1.4	34.7	
North: SB Street F										
Lane 1	120	0.0	720	0.167	100	12.1	LOS B	0.6	15.9	0.0
Approach	120	0.0		0.167		12.1	LOS B	0.6	15.9	
West: EB Street C										
Lane 1	400	0.0	1141	0.351	85	8.1	LOS A	2.0	48.9	0.0
Lane 2	520	0.0	1258	0.414	100	8.1	LOS A	2.5	62.7	0.0
Approach	920	0.0		0.414		8.1	LOS A	2.5	62.7	
All Vehicles	1860		0	0.421		9.6	LOS A	2.5	62.7	



HCM Signalized Intersection Capacity Analysis
6: Street C & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	220	140	340	600	270	550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1569	1715	1800	1900	1589
Flt Permitted	0.95	1.00	0.95	0.98	1.00	1.00
Satd. Flow (perm)	1805	1569	1715	1776	1900	1589
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	247	157	382	674	303	618
RTOR Reduction (vph)	0	124	0	0	0	392
Lane Group Flow (vph)	247	33	344	712	303	226
Confl. Peds. (#/hr)	5	5				5
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.8	13.8	15.4	43.1	23.7	23.7
Effective Green, g (s)	13.8	13.8	15.4	43.1	23.7	23.7
Actuated g/C Ratio	0.21	0.21	0.24	0.66	0.37	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	384	334	407	1185	694	580
v/s Ratio Prot	c0.14		c0.20	0.14	0.16	
v/s Ratio Perm		0.02		c0.26		0.14
v/c Ratio	0.64	0.10	0.85	0.60	0.44	0.39
Uniform Delay, d1	23.3	20.6	23.6	6.1	15.6	15.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.1	14.8	0.9	0.4	0.4
Delay (s)	27.0	20.7	38.4	7.0	16.0	15.7
Level of Service	C	C	D	A	B	B
Approach Delay (s)	24.5			17.2	15.8	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Street B & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	10	40	40	600	780	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1571	1805	1900	1900	1571
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1571	1805	1900	1900	1571
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	43	43	652	848	11
RTOR Reduction (vph)	0	40	0	0	0	2
Lane Group Flow (vph)	11	3	43	652	848	9
Confl. Peds. (#/hr)	5	5				5
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	3.6	3.6	3.5	43.8	36.3	36.3
Effective Green, g (s)	3.6	3.6	3.5	43.8	36.3	36.3
Actuated g/C Ratio	0.06	0.06	0.06	0.79	0.66	0.66
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	117	102	114	1502	1245	1029
v/s Ratio Prot	c0.01		0.02	c0.34	c0.45	
v/s Ratio Perm		0.00				0.01
v/c Ratio	0.09	0.03	0.38	0.43	0.68	0.01
Uniform Delay, d1	24.4	24.3	24.9	1.8	5.9	3.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	2.1	0.2	1.6	0.0
Delay (s)	24.7	24.4	27.0	2.1	7.5	3.3
Level of Service	C	C	C	A	A	A
Approach Delay (s)	24.4			3.6	7.4	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
10: Locust Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	40	0	60	5	0	5	20	830	0	0	610	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	45	0	68	6	0	6	23	943	0	0	693	23
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1698	1692	703	1760	1715	953	721			948		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1698	1692	703	1760	1715	953	721			948		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	35	100	84	90	100	98	97			100		
cM capacity (veh/h)	70	91	437	54	88	314	886			729		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	114	11	23	943	0	0	693	23
Volume Left	45	6	23	0	0	0	0	0
Volume Right	68	6	0	0	0	0	0	23
cSH	141	93	886	1700	1700	1700	1700	1700
Volume to Capacity	0.80	0.12	0.03	0.55	0.00	0.00	0.41	0.01
Queue Length 95th (ft)	126	10	2	0	0	0	0	0
Control Delay (s)	92.2	49.1	9.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	E	A					
Approach Delay (s)	92.2	49.1	0.2			0.0		
Approach LOS	F	E						

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
11: Ironwood Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	20	30	10	10	10	50	600	10	10	460	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.97			0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1777			1766		1805	1894		1805	1900	1561
Flt Permitted		0.97			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1777			1766		1805	1894		1805	1900	1561
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	119	24	36	12	12	12	60	714	12	12	548	95
RTOR Reduction (vph)	0	6	0	0	12	0	0	1	0	0	0	23
Lane Group Flow (vph)	0	173	0	0	25	0	60	725	0	12	548	72
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)		42.9			5.0		8.2	53.1		3.0	47.9	47.9
Effective Green, g (s)		42.9			5.0		8.2	53.1		3.0	47.9	47.9
Actuated g/C Ratio		0.36			0.04		0.07	0.44		0.02	0.40	0.40
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		635			74		123	838		45	758	623
v/s Ratio Prot		c0.10			c0.01		c0.03	c0.38		0.01	0.29	
v/s Ratio Perm												0.05
v/c Ratio		0.27			0.33		0.49	0.87		0.27	0.72	0.11
Uniform Delay, d1		27.4			55.9		53.9	30.2		57.4	30.4	22.7
Progression Factor		0.77			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.5			2.6		3.0	9.3		3.2	3.4	0.1
Delay (s)		21.8			58.5		56.9	39.5		60.6	33.9	22.8
Level of Service		C			E		E	D		E	C	C
Approach Delay (s)		21.8			58.5			40.9			32.8	
Approach LOS		C			E			D			C	

Intersection Summary			
HCM Average Control Delay	36.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
12: Ironwood Ave & Theodore St

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	200	30	10	110	60
Sign Control	Yield			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	12	247	37	12	136	74
Pedestrians	5			5		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	356	5	530	282	5	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	356	5	530	282	5	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	98	77	89	98	92	
cM capacity (veh/h)	521	1080	325	573	1623	

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2
Volume Total	12	247	49	136	74
Volume Left	0	0	37	136	0
Volume Right	0	247	0	0	74
cSH	521	1080	364	1623	1700
Volume to Capacity	0.02	0.23	0.14	0.08	0.04
Queue Length 95th (ft)	2	22	12	7	0
Control Delay (s)	12.1	9.3	16.4	7.4	0.0
Lane LOS	B	A	C	A	
Approach Delay (s)	9.5		16.4	4.8	
Approach LOS	A		C		

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
13: Spruce Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	10	10	10	10	130	10	500	130	220	280	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	12	12	12	12	155	12	595	155	262	333	12
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1653	1647	349	1581	1575	683	350			755		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1653	1647	349	1581	1575	683	350			755		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	83	98	79	84	66	99			70		
cM capacity (veh/h)	34	69	693	57	76	449	1215			861		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	24	179	12	750	262	345
Volume Left	0	12	12	0	262	0
Volume Right	12	155	0	155	0	12
cSH	125	252	1215	1700	861	1700
Volume to Capacity	0.19	0.71	0.01	0.44	0.30	0.20
Queue Length 95th (ft)	17	120	1	0	32	0
Control Delay (s)	40.6	48.0	8.0	0.0	11.0	0.0
Lane LOS	E	E	A		B	
Approach Delay (s)	40.6	48.0	0.1		4.7	
Approach LOS	E	E				

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
14: SR-60 EB Ramps & Redlands Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	190	340	70	470	330	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.91		1.00	1.00	1.00	0.85
Flt Protected	0.98		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1705		1805	1900	1900	1615
Flt Permitted	0.98		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1705		1805	1900	1900	1615
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	224	400	82	553	388	35
RTOR Reduction (vph)	99	0	0	0	0	11
Lane Group Flow (vph)	525	0	82	553	388	24
Confl. Peds. (#/hr)						
Turn Type			Prot			pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases						6
Actuated Green, G (s)	19.0		3.7	24.2	16.5	35.5
Effective Green, g (s)	19.0		3.7	24.2	16.5	35.5
Actuated g/C Ratio	0.37		0.07	0.47	0.32	0.69
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	633		130	898	612	1246
v/s Ratio Prot	c0.31		0.05	c0.29	0.20	0.01
v/s Ratio Perm						0.01
v/c Ratio	0.83		0.63	0.62	0.63	0.02
Uniform Delay, d1	14.6		23.1	10.0	14.8	2.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	8.8		9.6	1.3	2.2	0.0
Delay (s)	23.5		32.7	11.3	16.9	2.4
Level of Service	C		C	B	B	A
Approach Delay (s)	23.5			14.1	15.7	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
15: SR 60 WB Ramp & Theodore St

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	20	290	1280	120	210	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1590	3502	5187	5187	1588
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1590	3502	5187	5187	1588
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	22	312	1376	129	226	65
RTOR Reduction (vph)	0	272	0	0	0	57
Lane Group Flow (vph)	22	40	1376	129	226	8
Confl. Peds. (#/hr)	5	5				5
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	8.4	8.4	37.2	49.6	8.4	8.4
Effective Green, g (s)	8.4	8.4	37.2	49.6	8.4	8.4
Actuated g/C Ratio	0.13	0.13	0.56	0.75	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230	202	1974	3898	660	202
v/s Ratio Prot	0.01		c0.39	0.02	c0.04	
v/s Ratio Perm		c0.02				0.01
v/c Ratio	0.10	0.20	0.70	0.03	0.34	0.04
Uniform Delay, d1	25.4	25.8	10.4	2.1	26.3	25.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.5	1.1	0.0	0.3	0.1
Delay (s)	25.6	26.3	11.4	2.1	26.6	25.3
Level of Service	C	C	B	A	C	C
Approach Delay (s)	26.2			10.6	26.3	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
16: SR-60 EB Ramps & Theodore St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	0	1990	0	0	0	0	1410	180	0	480	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		0.88					0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		0.99					1.00	0.99		1.00	0.98
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		2804					5187	1591		5187	1575
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		2804					5187	1591		5187	1575
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	0	2163	0	0	0	0	1533	196	0	522	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	48	0	0	3
Lane Group Flow (vph)	65	0	2163	0	0	0	0	1533	148	0	522	8
Confl. Peds. (#/hr)			5						5			5
Turn Type	custom		Free						Perm			Perm
Protected Phases								2			6	
Permitted Phases	4		Free						2			6
Actuated Green, G (s)	2.7		43.4					32.7	32.7		32.7	32.7
Effective Green, g (s)	2.7		43.4					32.7	32.7		32.7	32.7
Actuated g/C Ratio	0.06		1.00					0.75	0.75		0.75	0.75
Clearance Time (s)	4.0							4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0							3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	112		2804					3908	1199		3908	1187
v/s Ratio Prot								0.30			0.10	
v/s Ratio Perm	0.04		c0.77						0.09			0.01
v/c Ratio	0.58		0.77					0.39	0.12		0.13	0.01
Uniform Delay, d1	19.8		0.0					1.9	1.5		1.5	1.3
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	7.4		2.1					0.1	0.0		0.0	0.0
Delay (s)	27.2		2.1					1.9	1.5		1.5	1.3
Level of Service	C		A					A	A		A	A
Approach Delay (s)		2.9			0.0			1.9			1.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	2.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	0.0
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
18: Eucalyptus Ave & Redlands Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	10	60	500	70	470	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.98	0.97	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.89	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.99	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1641	1492	1900	1589	1805	1900
Flt Permitted	0.99	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1641	1492	1900	1589	1805	1900
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	65	543	76	511	250
RTOR Reduction (vph)	25	36	0	25	0	0
Lane Group Flow (vph)	13	2	543	51	511	250
Confl. Peds. (#/hr)	5	5		5		
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	3.7	3.7	25.1	25.1	24.5	53.6
Effective Green, g (s)	3.7	3.7	25.1	25.1	24.5	53.6
Actuated g/C Ratio	0.06	0.06	0.38	0.38	0.38	0.82
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	93	85	730	611	677	1560
v/s Ratio Prot	c0.01		c0.29		c0.28	0.13
v/s Ratio Perm		0.00		0.03		
v/c Ratio	0.13	0.03	0.74	0.08	0.75	0.16
Uniform Delay, d1	29.3	29.1	17.3	12.8	17.8	1.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	4.1	0.1	4.8	0.0
Delay (s)	29.9	29.2	21.4	12.8	22.6	1.3
Level of Service	C	C	C	B	C	A
Approach Delay (s)	29.6		20.4			15.6
Approach LOS	C		C			B

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Eucalyptus Ave & Theodore St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	10	350	80	0	20	110	1490	100	40	2480	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.88	1.00	1.00		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.98		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1799	1900	2799	1799	1590		3502	5187	1569	1805	5187	1589
Flt Permitted	0.74	1.00	1.00	0.75	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1407	1900	2799	1421	1590		3502	5187	1569	1805	5187	1589
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	11	380	87	0	22	120	1620	109	43	2696	54
RTOR Reduction (vph)	0	0	205	0	19	0	0	0	20	0	0	7
Lane Group Flow (vph)	109	11	175	87	3	0	120	1620	89	43	2696	47
Confl. Peds. (#/hr)	5		5	5		5			5			5
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8					2			6
Actuated Green, G (s)	12.1	12.1	12.1	12.1	12.1		7.0	53.7	53.7	4.1	50.8	50.8
Effective Green, g (s)	12.1	12.1	12.1	12.1	12.1		7.0	53.7	53.7	4.1	50.8	50.8
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15		0.09	0.66	0.66	0.05	0.62	0.62
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	208	281	414	210	235		299	3401	1029	90	3217	986
v/s Ratio Prot		0.01			0.00		c0.03	c0.31		0.02	c0.52	
v/s Ratio Perm	c0.08		0.06	0.06					0.06			0.03
v/c Ratio	0.52	0.04	0.42	0.41	0.01		0.40	0.48	0.09	0.48	0.84	0.05
Uniform Delay, d1	32.2	29.9	31.7	31.7	29.8		35.5	7.1	5.1	37.9	12.3	6.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.1	0.7	1.3	0.0		0.9	0.1	0.0	4.0	2.1	0.0
Delay (s)	34.6	30.0	32.4	33.0	29.8		36.4	7.2	5.2	41.8	14.3	6.1
Level of Service	C	C	C	C	C		D	A	A	D	B	A
Approach Delay (s)		32.9			32.4			8.9			14.6	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
20: Alessandro Blvd & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	260	50	20	420	0	190	0	30	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	313	60	24	506	0	229	0	36	0	0	0
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	511			378			908	908	353	908	938	516
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	511			378			908	908	353	908	938	516
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			9	100	95	100	100	100
cM capacity (veh/h)	1060			1186			251	270	689	238	259	558

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	373	530	229	36	0
Volume Left	0	24	229	0	0
Volume Right	60	0	0	36	0
cSH	1060	1186	251	689	1700
Volume to Capacity	0.00	0.02	0.91	0.05	0.00
Queue Length 95th (ft)	0	2	200	4	0
Control Delay (s)	0.0	0.6	79.0	10.5	0.0
Lane LOS		A	F	B	A
Approach Delay (s)	0.0	0.6	69.7		0.0
Approach LOS			F		A

Intersection Summary			
Average Delay	16.1		
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
21: Alessandro Blvd & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	130	60	30	170	20	90	560	80	40	400	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1794		1805	1865		1805	1858		1805	1793	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1794		1805	1865		1805	1858		1805	1793	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	69	149	69	34	195	23	103	644	92	46	460	218
RTOR Reduction (vph)	0	21	0	0	6	0	0	5	0	0	17	0
Lane Group Flow (vph)	69	197	0	34	212	0	103	731	0	46	661	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.7	17.2		2.6	13.1		5.9	32.4		3.8	30.3	
Effective Green, g (s)	6.7	17.2		2.6	13.1		5.9	32.4		3.8	30.3	
Actuated g/C Ratio	0.09	0.24		0.04	0.18		0.08	0.45		0.05	0.42	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	168	429		65	339		148	836		95	755	
v/s Ratio Prot	c0.04	c0.11		0.02	c0.11		0.06	c0.39		0.03	c0.37	
v/s Ratio Perm												
v/c Ratio	0.41	0.46		0.52	0.63		0.70	0.87		0.48	0.88	
Uniform Delay, d1	30.8	23.4		34.1	27.2		32.2	18.0		33.1	19.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.8		7.4	3.6		13.3	10.1		3.8	11.0	
Delay (s)	32.4	24.2		41.5	30.8		45.5	28.0		37.0	30.2	
Level of Service	C	C		D	C		D	C		D	C	
Approach Delay (s)		26.2			32.2			30.2			30.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
23: Alessandro Blvd & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	140	10	70	10	10	10	20	370	10	10	190	60
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	175	12	88	12	12	12	25	462	12	12	238	75

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	188	88	38	488	13	325
Volume Left (vph)	175	0	13	25	0	13
Volume Right (vph)	0	88	13	0	13	75
Hadj (s)	0.47	-0.70	-0.13	0.03	-0.70	-0.13
Departure Headway (s)	7.5	6.3	7.6	6.1	5.4	6.3
Degree Utilization, x	0.39	0.15	0.08	0.83	0.02	0.57
Capacity (veh/h)	455	533	419	577	644	542
Control Delay (s)	14.0	9.2	11.3	31.0	7.3	17.3
Approach Delay (s)	12.4		11.3	30.4		17.3
Approach LOS	B		B	D		C

Intersection Summary			
Delay	21.7		
HCM Level of Service	C		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
24: Cactus Ave & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	290	210	40	260	20	220	130	40	60	50	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97		1.00	0.98		1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Frt	1.00	0.94		1.00	1.00	0.85		1.00	0.85		0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.98	
Satd. Flow (prot)	1805	3345		1805	1900	1570		1842	1589		1829	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.98	
Satd. Flow (perm)	1805	3345		1805	1900	1570		1842	1589		1829	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	13	377	273	52	338	26	286	169	52	78	65	13
RTOR Reduction (vph)	0	130	0	0	0	18	0	0	35	0	3	0
Lane Group Flow (vph)	13	520	0	52	338	8	0	455	17	0	153	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8			2			
Actuated Green, G (s)	1.1	18.4		5.3	22.6	22.6		25.5	25.5		12.3	
Effective Green, g (s)	1.1	18.4		5.3	22.6	22.6		25.5	25.5		12.3	
Actuated g/C Ratio	0.01	0.24		0.07	0.29	0.29		0.33	0.33		0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	26	794		123	554	458		606	523		290	
v/s Ratio Prot	0.01	0.16		c0.03	c0.18			c0.25			c0.08	
v/s Ratio Perm						0.00			0.01			
v/c Ratio	0.50	0.66		0.42	0.61	0.02		0.75	0.03		0.53	
Uniform Delay, d1	37.9	26.7		34.6	23.7	19.5		23.2	17.6		29.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	14.3	2.0		2.3	2.0	0.0		5.2	0.0		1.7	
Delay (s)	52.2	28.6		37.0	25.6	19.6		28.4	17.7		31.6	
Level of Service	D	C		D	C	B		C	B		C	
Approach Delay (s)		29.1			26.7			27.3			31.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	77.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Cactus Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	200	90	30	120	30	130	590	100	20	320	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	0.97		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3427		1805	3486		1805	3610	1596	1805	4969	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3427		1805	3486		1805	3610	1596	1805	4969	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	129	235	106	35	141	35	153	694	118	24	376	129
RTOR Reduction (vph)	0	70	0	0	30	0	0	0	62	0	70	0
Lane Group Flow (vph)	129	271	0	35	146	0	153	694	56	24	435	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	9.7	12.3		5.5	8.1		11.9	21.1	26.6	1.1	10.3	
Effective Green, g (s)	9.7	12.3		5.5	8.1		11.9	21.1	26.6	1.1	10.3	
Actuated g/C Ratio	0.17	0.22		0.10	0.14		0.21	0.38	0.48	0.02	0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	313	753		177	504		384	1360	872	35	914	
v/s Ratio Prot	0.07	c0.08		0.02	c0.04		0.08	c0.19	0.01	0.01	c0.09	
v/s Ratio Perm									0.03			
v/c Ratio	0.41	0.36		0.20	0.29		0.40	0.51	0.06	0.69	0.48	
Uniform Delay, d1	20.6	18.5		23.2	21.4		19.0	13.5	8.0	27.3	20.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.3		0.6	0.3		0.7	0.3	0.0	43.6	0.4	
Delay (s)	21.5	18.8		23.8	21.7		19.7	13.8	8.0	70.9	20.8	
Level of Service	C	B		C	C		B	B	A	E	C	
Approach Delay (s)		19.5			22.0			14.0			23.1	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
27: Cactus Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	150	150	50	180	40	30	20	210	410	130	180	90
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	205	205	68	247	55	41	27	288	562	178	247	123

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	308	171	247	96	171	705	301	247
Volume Left (vph)	205	0	247	0	27	0	178	0
Volume Right (vph)	0	68	0	41	0	562	0	123
Hadj (s)	0.33	-0.28	0.50	-0.30	0.08	-0.56	0.30	-0.35
Departure Headway (s)	9.0	8.4	9.4	8.7	8.6	8.0	8.9	8.3
Degree Utilization, x	0.77	0.40	0.65	0.23	0.41	1.56	0.75	0.57
Capacity (veh/h)	390	419	368	403	410	454	395	420
Control Delay (s)	35.4	15.7	26.9	13.0	16.2	283.1	32.7	20.4
Approach Delay (s)	28.4		23.0		231.0		27.2	
Approach LOS	D		C		F		D	

Intersection Summary			
Delay	106.3		
HCM Level of Service	F		
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
28: John F Kennedy Dr & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	50	10	280	80	210	20	490	560	110	330	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.89		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3512		1805	3185		1805	5187	1601	1805	4960	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3512		1805	3185		1805	5187	1601	1805	4960	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	104	65	13	364	104	273	26	636	727	143	429	156
RTOR Reduction (vph)	0	12	0	0	208	0	0	0	373	0	53	0
Lane Group Flow (vph)	104	66	0	364	169	0	26	636	354	143	532	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	6.9	5.5		11.3	9.9		1.2	16.0	27.3	7.2	22.0	
Effective Green, g (s)	6.9	5.5		11.3	9.9		1.2	16.0	27.3	7.2	22.0	
Actuated g/C Ratio	0.12	0.10		0.20	0.18		0.02	0.29	0.49	0.13	0.39	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	222	345		364	563		39	1482	895	232	1949	
v/s Ratio Prot	0.06	0.02		c0.20	c0.05		0.01	0.12	c0.08	c0.08	0.11	
v/s Ratio Perm									0.14			
v/c Ratio	0.47	0.19		1.00	0.30		0.67	0.43	0.40	0.62	0.27	
Uniform Delay, d1	22.8	23.2		22.4	20.0		27.2	16.3	9.1	23.1	11.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	0.3		47.2	0.3		35.5	0.2	0.3	4.8	0.1	
Delay (s)	24.4	23.5		69.5	20.3		62.7	16.5	9.4	27.9	11.6	
Level of Service	C	C		E	C		E	B	A	C	B	
Approach Delay (s)		24.0			44.5			13.6			14.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
29: Ironwood Ave & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	180	100	130	400	40	70	390	90	40	560	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1598	1805	3555		1805	3610	1592	1805	3610	1591
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1598	1805	3555		1805	3610	1592	1805	3610	1591
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	83	188	104	135	417	42	73	406	94	42	583	240
RTOR Reduction (vph)	0	0	80	0	8	0	0	0	30	0	0	90
Lane Group Flow (vph)	83	188	24	135	451	0	73	406	64	42	583	150
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6
Actuated Green, G (s)	9.2	17.0	27.2	13.4	21.2		10.2	68.0	81.4	5.6	63.4	72.6
Effective Green, g (s)	9.2	17.0	27.2	13.4	21.2		10.2	68.0	81.4	5.6	63.4	72.6
Actuated g/C Ratio	0.08	0.14	0.23	0.11	0.18		0.08	0.57	0.68	0.05	0.53	0.60
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	138	511	362	202	628		153	2046	1080	84	1907	963
v/s Ratio Prot	0.05	0.05	0.01	c0.07	c0.13		c0.04	0.11	0.01	0.02	c0.16	0.01
v/s Ratio Perm			0.01						0.03			0.08
v/c Ratio	0.60	0.37	0.07	0.67	0.72		0.48	0.20	0.06	0.50	0.31	0.16
Uniform Delay, d1	53.6	46.6	36.4	51.2	46.6		52.4	12.7	6.5	55.8	15.9	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.91	0.87	0.62	1.00	1.00	1.00
Incremental Delay, d2	7.2	0.5	0.1	8.1	3.9		2.3	0.2	0.0	4.6	0.4	0.1
Delay (s)	60.8	47.1	36.5	59.3	50.5		49.8	11.3	4.0	60.5	16.3	10.4
Level of Service	E	D	D	E	D		D	B	A	E	B	B
Approach Delay (s)		47.2			52.5			15.0			16.8	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
30: SR-60 WB Ramps & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	240	10	120	270	540	0	0	570	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	
Frpb, ped/bikes					1.00	0.98	1.00	1.00			0.99	
Flpb, ped/bikes					1.00	1.00	1.00	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.95	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1813	1587	1805	3610			3399	
Flt Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1813	1587	1805	3610			3399	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	250	10	125	281	562	0	0	594	312
RTOR Reduction (vph)	0	0	0	0	0	40	0	0	0	0	43	0
Lane Group Flow (vph)	0	0	0	0	260	85	281	562	0	0	863	0
Confl. Peds. (#/hr)						5						5
Turn Type				Split		Perm	Prot					
Protected Phases				8	8		5	2			6	
Permitted Phases						8						
Actuated Green, G (s)					22.7	22.7	23.8	89.3			61.5	
Effective Green, g (s)					22.7	22.7	23.8	89.3			61.5	
Actuated g/C Ratio					0.19	0.19	0.20	0.74			0.51	
Clearance Time (s)					4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					343	300	358	2686			1742	
v/s Ratio Prot					c0.14		c0.16	0.16			c0.25	
v/s Ratio Perm						0.05						
v/c Ratio					0.76	0.28	0.78	0.21			0.50	
Uniform Delay, d1					46.1	41.7	45.7	4.7			19.1	
Progression Factor					1.00	1.00	1.00	1.00			0.67	
Incremental Delay, d2					9.2	0.5	10.8	0.2			1.0	
Delay (s)					55.3	42.2	56.4	4.8			13.8	
Level of Service					E	D	E	A			B	
Approach Delay (s)		0.0			51.0			22.0			13.8	
Approach LOS		A			D			C			B	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
31: SR-60 EB Ramps & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	0	350	0	0	0	0	530	120	180	720	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0		4.0	4.0	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1715	1715	1592					5018		1805	3610	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1715	1715	1592					5018		1805	3610	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	286	0	385	0	0	0	0	582	132	198	791	0
RTOR Reduction (vph)	0	0	73	0	0	0	0	49	0	0	0	0
Lane Group Flow (vph)	143	143	312	0	0	0	0	665	0	198	791	0
Confl. Peds. (#/hr)			5						5			
Turn Type	Split		Perm							Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	16.9	16.9	16.9					13.8		10.0	27.8	
Effective Green, g (s)	16.9	16.9	16.9					13.8		10.0	27.8	
Actuated g/C Ratio	0.32	0.32	0.32					0.26		0.19	0.53	
Clearance Time (s)	4.0	4.0	4.0					4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	550	550	511					1314		343	1904	
v/s Ratio Prot	0.08	0.08						c0.13		c0.11	0.22	
v/s Ratio Perm			c0.20									
v/c Ratio	0.26	0.26	0.61					0.51		0.58	0.42	
Uniform Delay, d1	13.3	13.3	15.1					16.6		19.4	7.5	
Progression Factor	1.00	1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.3	2.1					0.3		2.4	0.1	
Delay (s)	13.5	13.5	17.2					16.9		21.8	7.7	
Level of Service	B	B	B					B		C	A	
Approach Delay (s)		15.6			0.0			16.9			10.5	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
32: Sunnymead Blvd & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	180	340	20	60	480	100	830	100	290	590	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.91		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.87		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1595	1805	3128		1805	5094		3502	3610	1594
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1595	1805	3128		1805	5094		3502	3610	1594
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	304	196	370	22	65	522	109	902	109	315	641	76
RTOR Reduction (vph)	0	0	114	0	198	0	0	11	0	0	0	32
Lane Group Flow (vph)	304	196	256	22	389	0	109	1000	0	315	641	44
Confl. Peds. (#/hr)			5						5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	15.3	33.0	45.1	4.2	21.9		12.1	52.1		14.7	54.7	70.0
Effective Green, g (s)	15.3	33.0	45.1	4.2	21.9		12.1	52.1		14.7	54.7	70.0
Actuated g/C Ratio	0.13	0.28	0.38	0.04	0.18		0.10	0.43		0.12	0.46	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	447	993	653	63	571		182	2212		429	1646	983
v/s Ratio Prot	c0.09	0.05	0.04	0.01	c0.12		0.06	c0.20		c0.09	c0.18	0.01
v/s Ratio Perm			0.12									0.02
v/c Ratio	0.68	0.20	0.39	0.35	1.10dr		0.60	0.45		0.73	0.39	0.05
Uniform Delay, d1	50.0	33.3	27.4	56.6	45.8		51.6	23.9		50.8	21.6	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.29	0.46		1.35	0.36	0.06
Incremental Delay, d2	4.2	0.1	0.4	3.3	3.3		4.8	0.6		4.9	0.5	0.0
Delay (s)	54.2	33.4	27.8	59.9	49.1		71.6	11.6		73.7	8.3	0.6
Level of Service	D	C	C	E	D		E	B		E	A	A
Approach Delay (s)		38.3			49.5			17.5			27.7	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
33: SR-60 WB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	170	10	130	600	1060	0	0	860	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					1.00		0.97	0.95			0.91	
Frpb, ped/bikes					0.99		1.00	1.00			0.99	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.94		1.00	1.00			0.95	
Flt Protected					0.97		0.95	1.00			1.00	
Satd. Flow (prot)					1731		3502	3610			4908	
Flt Permitted					0.97		0.95	1.00			1.00	
Satd. Flow (perm)					1731		3502	3610			4908	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	177	10	135	625	1104	0	0	896	417
RTOR Reduction (vph)	0	0	0	0	23	0	0	0	0	0	66	0
Lane Group Flow (vph)	0	0	0	0	299	0	625	1104	0	0	1247	0
Confl. Peds. (#/hr)						5						5
Turn Type				Split			Prot					
Protected Phases				8	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					24.7		34.0	87.3			49.3	
Effective Green, g (s)					24.7		34.0	87.3			49.3	
Actuated g/C Ratio					0.21		0.28	0.73			0.41	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					356		992	2626			2016	
v/s Ratio Prot					c0.17		c0.18	0.31			c0.25	
v/s Ratio Perm												
v/c Ratio					0.84		0.63	0.42			0.62	
Uniform Delay, d1					45.8		37.5	6.4			27.9	
Progression Factor					1.00		0.90	0.53			1.00	
Incremental Delay, d2					15.8		1.1	0.4			1.4	
Delay (s)					61.6		34.9	3.8			29.4	
Level of Service					E		C	A			C	
Approach Delay (s)		0.0			61.6			15.1			29.4	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
34: Eucalyptus Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	80	40	60	150	160	50	880	40	130	870	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1587	1805	1900	1587	1805	3610	1567	1805	3610	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1587	1805	1900	1587	1805	3610	1567	1805	3610	1566
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	89	44	67	167	178	56	978	44	144	967	22
RTOR Reduction (vph)	0	0	39	0	0	152	0	0	9	0	0	4
Lane Group Flow (vph)	22	89	5	67	167	26	56	978	35	144	967	18
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.2	14.9	14.9	7.0	17.7	17.7	7.2	67.3	67.3	14.8	74.9	74.9
Effective Green, g (s)	4.2	14.9	14.9	7.0	17.7	17.7	7.2	67.3	67.3	14.8	74.9	74.9
Actuated g/C Ratio	0.04	0.12	0.12	0.06	0.15	0.15	0.06	0.56	0.56	0.12	0.62	0.62
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	63	236	197	105	280	234	108	2025	879	223	2253	977
v/s Ratio Prot	0.01	0.05		c0.04	c0.09		0.03	c0.27		c0.08	0.27	
v/s Ratio Perm			0.00			0.02			0.02			0.01
v/c Ratio	0.35	0.38	0.03	0.64	0.60	0.11	0.52	0.48	0.04	0.65	0.43	0.02
Uniform Delay, d1	56.6	48.3	46.2	55.3	47.8	44.3	54.7	15.9	11.8	50.1	11.6	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.14	0.64	0.64
Incremental Delay, d2	3.3	1.0	0.1	12.0	3.4	0.2	4.2	0.8	0.1	5.9	0.6	0.0
Delay (s)	59.9	49.3	46.2	67.3	51.2	44.6	58.9	16.7	11.9	63.0	8.0	5.5
Level of Service	E	D	D	E	D	D	E	B	B	E	A	A
Approach Delay (s)		49.9			51.0			18.7			15.0	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
35: Locust Ave & Moreno Beach Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	10	70	10	10	80
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	12	12	84	12	12	96
Pedestrians	5			5		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			24		204	23
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			24		204	23
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		98	91
cM capacity (veh/h)			1604		745	1055

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	24	96	12	96
Volume Left	0	84	12	0
Volume Right	12	0	0	96
cSH	1700	1604	745	1055
Volume to Capacity	0.01	0.05	0.02	0.09
Queue Length 95th (ft)	0	4	1	8
Control Delay (s)	0.0	6.5	9.9	8.8
Lane LOS		A	A	A
Approach Delay (s)	0.0	6.5	8.9	
Approach LOS			A	

Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	21.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
36: Ironwood Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	150	140	180	120	10	80	70	150	10	100	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00			0.98			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.93		1.00	0.99			0.93			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1805	1733		1805	1873			1720			1826	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (perm)	1805	1733		1805	1873			1720			1826	
Peak-hour factor, PHF	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Adj. Flow (vph)	42	211	197	254	169	14	113	99	211	14	141	42
RTOR Reduction (vph)	0	27	0	0	2	0	0	30	0	0	9	0
Lane Group Flow (vph)	42	381	0	254	181	0	0	393	0	0	188	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	6.2	37.0		21.8	52.6			28.0			17.2	
Effective Green, g (s)	6.2	37.0		21.8	52.6			28.0			17.2	
Actuated g/C Ratio	0.05	0.31		0.18	0.44			0.23			0.14	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	93	534		328	821			401			262	
v/s Ratio Prot	0.02	c0.22		c0.14	0.10			c0.23			c0.10	
v/s Ratio Perm												
v/c Ratio	0.45	0.71		0.77	0.22			0.98			0.72	
Uniform Delay, d1	55.2	36.8		46.8	20.9			45.7			49.1	
Progression Factor	1.00	1.00		0.84	0.78			1.00			0.99	
Incremental Delay, d2	3.5	7.9		10.8	0.6			39.6			9.1	
Delay (s)	58.7	44.7		50.1	17.0			85.3			57.8	
Level of Service	E	D		D	B			F			E	
Approach Delay (s)		46.0			36.3			85.3			57.8	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM Average Control Delay	55.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
37: SR-60 EB Ramps & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	60	530	20	10	20	120	780	30	30	340	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes		0.99		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.89		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1668		1805	1900	1589	1805	3610	1570	1805	5067	
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1668		1805	1900	1589	1805	3610	1570	1805	5067	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	106	71	624	24	12	24	141	918	35	35	400	59
RTOR Reduction (vph)	0	89	0	0	0	23	0	0	21	0	15	0
Lane Group Flow (vph)	0	712	0	24	12	1	141	918	14	35	444	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)		35.6		4.1	4.1	4.1	11.7	28.5	28.5	3.8	20.6	
Effective Green, g (s)		35.6		4.1	4.1	4.1	11.7	28.5	28.5	3.8	20.6	
Actuated g/C Ratio		0.40		0.05	0.05	0.05	0.13	0.32	0.32	0.04	0.23	
Clearance Time (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		675		84	89	74	240	1169	508	78	1186	
v/s Ratio Prot		c0.43		c0.01	0.01		c0.08	c0.25		0.02	0.09	
v/s Ratio Perm						0.00			0.01			
v/c Ratio		1.06		0.29	0.13	0.02	0.59	0.79	0.03	0.45	0.37	
Uniform Delay, d1		26.2		40.5	40.2	40.0	35.9	27.0	20.3	41.1	28.3	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		50.1		1.9	0.7	0.1	3.6	3.5	0.0	4.1	0.2	
Delay (s)		76.3		42.4	40.9	40.1	39.5	30.5	20.3	45.1	28.5	
Level of Service		E		D	D	D	D	C	C	D	C	
Approach Delay (s)		76.3			41.2			31.4			29.7	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM Average Control Delay	46.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
38: John Kennedy Dr & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	340	80	140	330	70	180	630	190	190	370	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3496		1805	3505		1805	3610	1587	1805	3610	1586
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3496		1805	3505		1805	3610	1587	1805	3610	1586
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	80	391	92	161	379	80	207	724	218	218	425	46
RTOR Reduction (vph)	0	19	0	0	17	0	0	0	132	0	0	27
Lane Group Flow (vph)	80	464	0	161	442	0	207	724	86	218	425	19
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	7.8	22.7		13.9	28.8		18.9	47.6	47.6	19.8	48.5	48.5
Effective Green, g (s)	7.8	22.7		13.9	28.8		18.9	47.6	47.6	19.8	48.5	48.5
Actuated g/C Ratio	0.06	0.19		0.12	0.24		0.16	0.40	0.40	0.17	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	117	661		209	841		284	1432	630	298	1459	641
v/s Ratio Prot	0.04	c0.13		c0.09	0.13		0.11	c0.20		c0.12	0.12	
v/s Ratio Perm									0.05			0.01
v/c Ratio	0.68	0.70		0.77	0.52		0.73	0.51	0.14	0.73	0.29	0.03
Uniform Delay, d1	54.9	45.5		51.5	39.7		48.1	27.3	23.1	47.6	24.1	21.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.54	0.91	1.33
Incremental Delay, d2	15.3	3.4		16.0	0.6		9.0	1.3	0.5	7.3	0.4	0.1
Delay (s)	70.2	48.8		67.5	40.2		57.1	28.6	23.6	33.2	22.3	28.7
Level of Service	E	D		E	D		E	C	C	C	C	C
Approach Delay (s)		51.9			47.3			32.8			26.2	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	37.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
39: Iris Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	380	110	240	530	150	230	460	210	180	270	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3475		1805	3477		1805	5187	1587	1805	5052	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3475		1805	3477		1805	5187	1587	1805	5052	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	81	442	128	279	616	174	267	535	244	209	314	58
RTOR Reduction (vph)	0	25	0	0	23	0	0	0	160	0	21	0
Lane Group Flow (vph)	81	545	0	279	767	0	267	535	84	209	351	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.7	27.5		17.0	35.8		23.2	41.1	41.1	18.4	36.3	
Effective Green, g (s)	8.7	27.5		17.0	35.8		23.2	41.1	41.1	18.4	36.3	
Actuated g/C Ratio	0.07	0.23		0.14	0.30		0.19	0.34	0.34	0.15	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	131	796		256	1037		349	1777	544	277	1528	
v/s Ratio Prot	0.04	0.16		c0.15	c0.22		c0.15	c0.10		0.12	0.07	
v/s Ratio Perm									0.05			
v/c Ratio	0.62	0.69		1.09	0.74		0.77	0.30	0.15	0.75	0.23	
Uniform Delay, d1	54.0	42.3		51.5	37.9		45.8	28.9	27.4	48.6	31.4	
Progression Factor	1.00	1.00		1.00	1.00		1.02	0.52	0.62	1.00	1.00	
Incremental Delay, d2	8.4	2.5		82.3	2.8		8.1	0.4	0.5	11.1	0.4	
Delay (s)	62.4	44.7		133.8	40.7		54.8	15.5	17.5	59.7	31.7	
Level of Service	E	D		F	D		D	B	B	E	C	
Approach Delay (s)		46.9			65.0			26.0			41.8	
Approach LOS		D			E			C			D	

Intersection Summary			
HCM Average Control Delay	45.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
40: Iris Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	650	70	110	600	60	140	180	260	60	170	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.91		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3552		1805	3610	1594	1805	3261		1805	3377	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3552		1805	3610	1594	1805	3261		1805	3377	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	93	756	81	128	698	70	163	209	302	70	198	128
RTOR Reduction (vph)	0	6	0	0	0	38	0	230	0	0	107	0
Lane Group Flow (vph)	93	831	0	128	698	32	163	281	0	70	219	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot		pm+ov	Prot			Prot		
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	7.8	26.3		11.2	29.7	36.1	12.9	18.3		6.4	11.8	
Effective Green, g (s)	7.8	26.3		11.2	29.7	36.1	12.9	18.3		6.4	11.8	
Actuated g/C Ratio	0.10	0.34		0.14	0.38	0.46	0.16	0.23		0.08	0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	180	1195		259	1371	817	298	763		148	510	
v/s Ratio Prot	0.05	c0.23		c0.07	c0.19	0.00	c0.09	c0.09		0.04	0.06	
v/s Ratio Perm						0.02						
v/c Ratio	0.52	0.70		0.49	0.51	0.04	0.55	0.37		0.47	0.43	
Uniform Delay, d1	33.4	22.5		30.9	18.6	11.5	30.0	25.1		34.3	30.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.5	1.8		1.5	0.3	0.0	2.1	0.3		2.4	0.6	
Delay (s)	35.9	24.3		32.4	18.9	11.6	32.0	25.4		36.7	30.7	
Level of Service	D	C		C	B	B	C	C		D	C	
Approach Delay (s)		25.4			20.3			27.0			31.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
41: Iris Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	620	310	480	490	120	320	450	490	140	460	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	4902		3502	5019		3502	3610	1600	3502	3522	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	4902		3502	5019		3502	3610	1600	3502	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	674	337	522	533	130	348	489	533	152	500	87
RTOR Reduction (vph)	0	78	0	0	34	0	0	0	27	0	14	0
Lane Group Flow (vph)	152	933	0	522	629	0	348	489	506	152	573	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.5	24.1		15.2	30.8		11.2	23.6	38.8	7.9	20.3	
Effective Green, g (s)	8.5	24.1		15.2	30.8		11.2	23.6	38.8	7.9	20.3	
Actuated g/C Ratio	0.10	0.28		0.18	0.35		0.13	0.27	0.45	0.09	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	343	1361		613	1781		452	982	789	319	824	
v/s Ratio Prot	0.04	c0.19		c0.15	0.13		c0.10	0.14	c0.11	0.04	0.16	
v/s Ratio Perm									0.20			
v/c Ratio	0.44	0.69		0.85	0.35		0.77	0.50	0.64	0.48	0.70	
Uniform Delay, d1	36.9	28.0		34.7	20.7		36.6	26.6	18.6	37.5	30.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	1.4		11.0	0.1		7.7	0.4	1.8	1.1	2.6	
Delay (s)	37.8	29.4		45.7	20.8		44.3	27.0	20.4	38.6	33.0	
Level of Service	D	C		D	C		D	C	C	D	C	
Approach Delay (s)		30.5			31.8			28.8			34.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	86.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
43: Iris Ave & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	950	20	30	650	10	50	100	50	10	40	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.97			0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1805	5168		1805	5174			1806			1691	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (perm)	1805	5168		1805	5174			1806			1691	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	193	1080	23	34	739	11	57	114	57	11	45	148
RTOR Reduction (vph)	0	1	0	0	1	0	0	11	0	0	98	0
Lane Group Flow (vph)	193	1102	0	34	749	0	0	217	0	0	106	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	7.3	25.7		2.3	20.7			13.8			10.2	
Effective Green, g (s)	7.3	25.7		2.3	20.7			13.8			10.2	
Actuated g/C Ratio	0.11	0.38		0.03	0.30			0.20			0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	194	1953		61	1575			367			254	
v/s Ratio Prot	c0.11	c0.21		0.02	0.14			c0.12			c0.06	
v/s Ratio Perm												
v/c Ratio	0.99	0.56		0.56	0.48			0.59			0.42	
Uniform Delay, d1	30.3	16.7		32.3	19.2			24.5			26.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	62.8	0.4		10.6	0.2			2.5			1.1	
Delay (s)	93.1	17.1		42.9	19.5			27.1			27.3	
Level of Service	F	B		D	B			C			C	
Approach Delay (s)		28.4			20.5			27.1			27.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	68.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
44: Iris Ave & Via Del Lago

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	950	10	20	650	10	20	0	40	20	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00		0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1805	5178		1805	5174		1805		1615	1805	1593	
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)	1805	5178		1805	5174		1805		1615	1805	1593	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	24	1159	12	24	793	12	24	0	49	24	0	24
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	45	0	24	0
Lane Group Flow (vph)	24	1171	0	24	804	0	24	0	4	24	0	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	0.8	26.0		4.1	29.3		0.8		4.1	5.6	0.8	
Effective Green, g (s)	0.8	26.0		4.1	29.3		0.8		4.1	5.6	0.8	
Actuated g/C Ratio	0.02	0.55		0.09	0.61		0.02		0.09	0.12	0.02	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	30	2822		155	3178		30		139	212	27	
v/s Ratio Prot	c0.01	c0.23		0.01	c0.16		c0.01		0.00	c0.01	0.00	
v/s Ratio Perm												
v/c Ratio	0.80	0.41		0.15	0.25		0.80		0.03	0.11	0.01	
Uniform Delay, d1	23.4	6.4		20.2	4.2		23.4		20.0	18.8	23.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2	84.3	0.1		0.5	0.0		84.3		0.1	0.2	0.2	
Delay (s)	107.6	6.5		20.7	4.2		107.6		20.1	19.1	23.3	
Level of Service	F	A		C	A		F		C	B	C	
Approach Delay (s)		8.5			4.7			48.9			21.2	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	47.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
45: Krameria Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	170	60	160	190	140	50	690	330	90	470	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes		0.99		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.96
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.97		1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1818		1805	1900	1587	1805	3415		1805	1900	1555
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1818		1805	1900	1587	1805	3415		1805	1900	1555
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	181	64	170	202	149	53	734	351	96	500	21
RTOR Reduction (vph)	0	11	0	0	0	125	0	39	0	0	0	11
Lane Group Flow (vph)	0	255	0	170	202	24	53	1046	0	96	500	10
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)		21.9		19.1	19.1	19.1	7.8	51.1		11.9	55.2	55.2
Effective Green, g (s)		21.9		19.1	19.1	19.1	7.8	51.1		11.9	55.2	55.2
Actuated g/C Ratio		0.18		0.16	0.16	0.16	0.06	0.43		0.10	0.46	0.46
Clearance Time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		332		287	302	253	117	1454		179	874	715
v/s Ratio Prot		c0.14		0.09	c0.11		0.03	c0.31		c0.05	0.26	
v/s Ratio Perm						0.01						0.01
v/c Ratio		0.77		0.59	0.67	0.09	0.45	0.72		0.54	0.57	0.01
Uniform Delay, d1		46.6		46.8	47.5	43.1	54.0	28.5		51.4	23.7	17.6
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		1.05	0.57	0.59
Incremental Delay, d2		10.3		3.3	5.5	0.2	2.8	3.1		2.4	2.1	0.0
Delay (s)		56.9		50.1	53.0	43.2	56.8	31.6		56.3	15.8	10.5
Level of Service		E		D	D	D	E	C		E	B	B
Approach Delay (s)		56.9			49.3			32.8			21.9	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM Average Control Delay	36.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
46: Krameria Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	350	110	80	330	120	130	150	50	190	170	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3468		1805	3452		1805	3462		1805	3437	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3468		1805	3452		1805	3462		1805	3437	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	305	427	134	98	402	146	159	183	61	232	207	85
RTOR Reduction (vph)	0	33	0	0	42	0	0	43	0	0	57	0
Lane Group Flow (vph)	305	528	0	98	506	0	159	201	0	232	235	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	7.1	17.4		5.5	15.8		10.1	9.4		11.1	10.4	
Effective Green, g (s)	7.1	17.4		5.5	15.8		10.1	9.4		11.1	10.4	
Actuated g/C Ratio	0.12	0.29		0.09	0.27		0.17	0.16		0.19	0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	216	1016		167	918		307	548		337	602	
v/s Ratio Prot	c0.17	c0.15		0.05	0.15		0.09	0.06		c0.13	c0.07	
v/s Ratio Perm												
v/c Ratio	1.41	0.52		0.59	0.55		0.52	0.37		0.69	0.39	
Uniform Delay, d1	26.1	17.5		25.9	18.8		22.4	22.3		22.5	21.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	210.6	0.5		5.2	0.7		1.5	0.4		5.8	0.4	
Delay (s)	236.7	18.0		31.0	19.5		23.9	22.8		28.3	22.1	
Level of Service	F	B		C	B		C	C		C	C	
Approach Delay (s)		95.0			21.2			23.2			24.9	
Approach LOS		F			C			C			C	

Intersection Summary			
HCM Average Control Delay	48.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
47: Krameria Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	260	220	150	150	120	220	890	200	110	600	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.93		1.00	0.93		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	3338		1805	3369		1805	3610	1615	1805	3511	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	3338		1805	3369		1805	3610	1615	1805	3511	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	318	295	250	170	170	136	250	1011	227	125	682	136
RTOR Reduction (vph)	0	182	0	0	116	0	0	0	119	0	16	0
Lane Group Flow (vph)	318	363	0	170	190	0	250	1011	108	125	802	0
Confl. Peds. (#/hr)			5									5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	10.8	14.3		7.1	10.6		7.1	27.1	34.2	9.4	29.4	
Effective Green, g (s)	10.8	14.3		7.1	10.6		7.1	27.1	34.2	9.4	29.4	
Actuated g/C Ratio	0.15	0.19		0.10	0.14		0.10	0.37	0.46	0.13	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	512	646		173	483		173	1324	835	230	1397	
v/s Ratio Prot	0.09	c0.11		c0.09	0.06		c0.14	c0.28	0.01	0.07	0.23	
v/s Ratio Perm									0.05			
v/c Ratio	0.62	0.56		0.98	0.39		1.45	0.76	0.13	0.54	0.57	
Uniform Delay, d1	29.6	27.0		33.3	28.7		33.4	20.6	11.3	30.2	17.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.3	1.1		62.9	0.5		229.7	2.7	0.1	2.6	0.6	
Delay (s)	32.0	28.1		96.3	29.3		263.1	23.3	11.4	32.9	17.9	
Level of Service	C	C		F	C		F	C	B	C	B	
Approach Delay (s)		29.5			53.2			61.8			19.9	
Approach LOS		C			D			E			B	

Intersection Summary			
HCM Average Control Delay	42.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
48: Alessandro Blvd & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	440	120	30	560	40	190	200	40	70	160	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1590	1805	3610	1590	3502	1847		1805	3381	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1590	1805	3610	1590	3502	1847		1805	3381	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	70	512	140	35	651	47	221	233	47	81	186	116
RTOR Reduction (vph)	0	0	51	0	0	19	0	7	0	0	95	0
Lane Group Flow (vph)	70	512	89	35	651	28	221	273	0	81	207	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot			Prot		
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	8.7	64.8	76.7	5.4	61.5	70.9	11.9	24.4		9.4	21.9	
Effective Green, g (s)	8.7	64.8	76.7	5.4	61.5	70.9	11.9	24.4		9.4	21.9	
Actuated g/C Ratio	0.07	0.54	0.64	0.05	0.51	0.59	0.10	0.20		0.08	0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	131	1949	1069	81	1850	939	347	376		141	617	
v/s Ratio Prot	c0.04	c0.14	0.01	0.02	c0.18	0.00	0.06	c0.15		c0.04	0.06	
v/s Ratio Perm			0.05			0.02						
v/c Ratio	0.53	0.26	0.08	0.43	0.35	0.03	0.64	0.73		0.57	0.34	
Uniform Delay, d1	53.7	14.8	8.3	55.8	17.4	10.2	52.0	44.7		53.4	42.7	
Progression Factor	0.91	1.26	2.89	1.00	1.00	1.00	0.73	0.77		1.00	1.00	
Incremental Delay, d2	4.0	0.3	0.0	3.7	0.5	0.0	3.6	6.5		5.6	0.3	
Delay (s)	52.8	19.0	23.9	59.5	17.9	10.2	41.8	40.8		58.9	43.0	
Level of Service	D	B	C	E	B	B	D	D		E	D	
Approach Delay (s)		23.2			19.4			41.2			46.4	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
49: Alessandro Blvd & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	280	160	80	380	20	160	260	120	30	250	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1589	1805	1900	1575	1805	1900	1584	1805	1844	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1589	1805	1900	1575	1805	1900	1584	1805	1844	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	38	359	205	103	487	26	205	333	154	38	321	64
RTOR Reduction (vph)	0	0	77	0	0	4	0	0	79	0	6	0
Lane Group Flow (vph)	38	359	128	103	487	22	205	333	75	38	379	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	3.6	24.2	24.2	13.3	33.9	41.4	15.7	32.5	45.8	7.5	24.3	
Effective Green, g (s)	3.6	24.2	24.2	13.3	33.9	41.4	15.7	32.5	45.8	7.5	24.3	
Actuated g/C Ratio	0.04	0.26	0.26	0.14	0.36	0.44	0.17	0.35	0.49	0.08	0.26	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	69	492	411	257	689	765	303	660	776	145	479	
v/s Ratio Prot	0.02	c0.19		0.06	c0.26	0.00	c0.11	0.18	0.01	0.02	c0.21	
v/s Ratio Perm			0.08			0.01			0.03			
v/c Ratio	0.55	0.73	0.31	0.40	0.71	0.03	0.68	0.50	0.10	0.26	0.79	
Uniform Delay, d1	44.2	31.7	27.9	36.5	25.5	14.7	36.5	24.1	12.8	40.4	32.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.2	5.4	0.4	1.0	3.3	0.0	5.9	0.6	0.1	1.0	8.7	
Delay (s)	53.3	37.0	28.4	37.5	28.9	14.7	42.4	24.7	12.8	41.4	40.9	
Level of Service	D	D	C	D	C	B	D	C	B	D	D	
Approach Delay (s)		35.1			29.7			27.3			41.0	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	110	360	370	60	60	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1900	3610	1578	1805	1603
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1900	3610	1578	1805	1603
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	126	414	425	69	69	103
RTOR Reduction (vph)	0	0	0	49	0	63
Lane Group Flow (vph)	126	414	425	20	69	40
Confl. Peds. (#/hr)				5	5	5
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	6.3	20.6	10.3	10.3	7.8	14.1
Effective Green, g (s)	6.3	20.6	10.3	10.3	7.8	14.1
Actuated g/C Ratio	0.17	0.57	0.28	0.28	0.21	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	312	1075	1022	447	387	797
v/s Ratio Prot	0.07	c0.22	0.12		c0.04	0.01
v/s Ratio Perm				0.01		0.02
v/c Ratio	0.40	0.39	0.42	0.04	0.18	0.05
Uniform Delay, d1	13.4	4.4	10.6	9.5	11.7	7.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.2	0.3	0.0	0.2	0.0
Delay (s)	14.2	4.6	10.9	9.5	11.9	7.0
Level of Service	B	A	B	A	B	A
Approach Delay (s)		6.9	10.7		9.0	
Approach LOS		A	B		A	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	36.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
51: Alessandro Blvd & Nason St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	210	150	180	290	80	80	210	50	60	270	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1591	1805	1900	1592	1805	3489		1805	3610	1575
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1591	1805	1900	1592	1805	3489		1805	3610	1575
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	82	247	176	212	341	94	94	247	59	71	318	82
RTOR Reduction (vph)	0	0	136	0	0	63	0	25	0	0	0	67
Lane Group Flow (vph)	82	247	40	212	341	31	94	281	0	71	318	15
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	7.8	13.6	13.6	14.1	19.9	19.9	5.2	10.7		5.7	11.2	11.2
Effective Green, g (s)	7.8	13.6	13.6	14.1	19.9	19.9	5.2	10.7		5.7	11.2	11.2
Actuated g/C Ratio	0.13	0.23	0.23	0.23	0.33	0.33	0.09	0.18		0.09	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	234	430	360	423	629	527	156	621		171	673	294
v/s Ratio Prot	0.05	0.13		c0.12	c0.18		c0.05	0.08		0.04	c0.09	
v/s Ratio Perm			0.03			0.02						0.01
v/c Ratio	0.35	0.57	0.11	0.50	0.54	0.06	0.60	0.45		0.42	0.47	0.05
Uniform Delay, d1	23.8	20.7	18.5	19.9	16.4	13.7	26.5	22.1		25.6	21.8	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	1.9	0.1	0.9	1.0	0.0	6.4	0.5		1.6	0.5	0.1
Delay (s)	24.8	22.5	18.6	20.9	17.3	13.8	32.9	22.6		27.3	22.3	20.2
Level of Service	C	C	B	C	B	B	C	C		C	C	C
Approach Delay (s)		21.5			18.0			25.0			22.7	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
52: Cactus Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	570	150	30	530	30	190	280	40	40	220	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3484		1805	3577		1805	3534		1805	1900	1585
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3484		1805	3577		1805	3534		1805	1900	1585
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	125	712	188	38	662	38	238	350	50	50	275	88
RTOR Reduction (vph)	0	17	0	0	3	0	0	10	0	0	0	71
Lane Group Flow (vph)	125	883	0	38	697	0	238	390	0	50	275	17
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	12.8	55.8		4.8	47.8		20.4	37.8		5.6	23.0	23.0
Effective Green, g (s)	12.8	55.8		4.8	47.8		20.4	37.8		5.6	23.0	23.0
Actuated g/C Ratio	0.11	0.46		0.04	0.40		0.17	0.31		0.05	0.19	0.19
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	193	1620		72	1425		307	1113		84	364	304
v/s Ratio Prot	c0.07	c0.25		0.02	0.19		c0.13	0.11		0.03	c0.14	
v/s Ratio Perm												0.01
v/c Ratio	0.65	0.55		0.53	0.49		0.78	0.35		0.60	0.76	0.06
Uniform Delay, d1	51.4	23.0		56.5	27.0		47.6	31.6		56.1	45.8	39.6
Progression Factor	0.63	1.14		1.11	0.97		1.00	1.00		0.87	0.78	0.86
Incremental Delay, d2	7.1	1.3		6.0	1.1		11.6	0.2		10.8	8.6	0.1
Delay (s)	39.4	27.5		68.8	27.2		59.2	31.8		59.7	44.3	34.1
Level of Service	D	C		E	C		E	C		E	D	C
Approach Delay (s)		29.0			29.3			42.0			44.0	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	34.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
53: Cactus Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	430	230	280	360	40	180	590	350	80	520	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1586	1805	3549		1805	3610	1567	1805	3557	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1586	1805	3549		1805	3610	1567	1805	3557	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	85	524	280	341	439	49	220	720	427	98	634	61
RTOR Reduction (vph)	0	0	173	0	7	0	0	0	307	0	6	0
Lane Group Flow (vph)	85	524	107	341	481	0	220	720	120	98	689	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	8.4	33.4	33.4	26.7	51.7		17.2	33.8	33.8	10.1	26.7	
Effective Green, g (s)	8.4	33.4	33.4	26.7	51.7		17.2	33.8	33.8	10.1	26.7	
Actuated g/C Ratio	0.07	0.28	0.28	0.22	0.43		0.14	0.28	0.28	0.08	0.22	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	126	529	441	402	1529		259	1017	441	152	791	
v/s Ratio Prot	0.05	c0.28		c0.19	0.14		c0.12	0.20		0.05	c0.19	
v/s Ratio Perm			0.07						0.08			
v/c Ratio	0.67	0.99	0.24	0.85	0.31		0.85	0.71	0.27	0.64	0.87	
Uniform Delay, d1	54.5	43.1	33.5	44.7	22.5		50.1	38.7	33.5	53.2	45.0	
Progression Factor	0.63	0.78	1.54	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.1	34.9	1.2	15.2	0.5		22.0	2.3	0.3	9.0	10.3	
Delay (s)	46.3	68.6	52.7	59.9	23.0		72.2	40.9	33.9	62.2	55.3	
Level of Service	D	E	D	E	C		E	D	C	E	E	
Approach Delay (s)		61.4			38.2			43.8			56.2	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM Average Control Delay	49.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
55: Cactus Ave & Nason St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	380	20	0	370	110	40	30	10	120	10	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99			0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1884			1828		1805	1900	1573	1805	1900	1590
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1884			1828		1805	1900	1573	1805	1900	1590
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	157	458	24	0	446	133	48	36	12	145	12	205
RTOR Reduction (vph)	0	1	0	0	11	0	0	0	11	0	0	164
Lane Group Flow (vph)	157	481	0	0	568	0	48	36	1	145	12	41
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	9.1	39.7			26.6		3.9	7.6	7.6	10.2	13.9	13.9
Effective Green, g (s)	9.1	39.7			26.6		3.9	7.6	7.6	10.2	13.9	13.9
Actuated g/C Ratio	0.13	0.57			0.38		0.06	0.11	0.11	0.15	0.20	0.20
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	1076			700		101	208	172	265	380	318
v/s Ratio Prot	c0.09	0.26			c0.31		c0.03	0.02		c0.08	0.01	
v/s Ratio Perm									0.00			c0.03
v/c Ratio	0.67	0.45			0.81		0.48	0.17	0.01	0.55	0.03	0.13
Uniform Delay, d1	28.8	8.6			19.2		31.8	28.1	27.6	27.5	22.4	22.8
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	0.3			7.1		3.5	0.4	0.0	2.3	0.0	0.2
Delay (s)	35.6	8.9			26.3		35.3	28.5	27.6	29.8	22.4	23.0
Level of Service	D	A			C		D	C	C	C	C	C
Approach Delay (s)		15.5			26.3			31.8			25.7	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
56: Alessandro Blvd & Frederick St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	640	50	60	920	100	60	190	40	110	200	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1586	1805	5102		3502	3505		3502	3610	1589
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1586	1805	5102		3502	3505		3502	3610	1589
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	104	667	52	62	958	104	62	198	42	115	208	125
RTOR Reduction (vph)	0	0	20	0	7	0	0	21	0	0	0	107
Lane Group Flow (vph)	104	667	32	62	1055	0	62	219	0	115	208	18
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	12.8	72.7	72.7	8.3	68.2		5.6	12.9		10.1	17.4	17.4
Effective Green, g (s)	12.8	72.7	72.7	8.3	68.2		5.6	12.9		10.1	17.4	17.4
Actuated g/C Ratio	0.11	0.61	0.61	0.07	0.57		0.05	0.11		0.08	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	193	2187	961	125	2900		163	377		295	523	230
v/s Ratio Prot	c0.06	0.18		c0.03	c0.21		0.02	c0.06		0.03	c0.06	
v/s Ratio Perm			0.02									0.01
v/c Ratio	0.54	0.30	0.03	0.50	0.36		0.38	0.58		0.39	0.40	0.08
Uniform Delay, d1	50.8	11.4	9.5	53.8	14.1		55.5	51.0		52.0	46.5	44.4
Progression Factor	0.69	0.64	0.29	0.67	0.66		1.02	0.43		1.00	1.00	1.00
Incremental Delay, d2	2.8	0.4	0.1	3.0	0.3		1.4	2.2		0.9	0.5	0.1
Delay (s)	37.7	7.7	2.8	38.8	9.6		58.1	24.0		52.9	47.0	44.5
Level of Service	D	A	A	D	A		E	C		D	D	D
Approach Delay (s)		11.1			11.2			31.0			47.8	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
57: Alessandro Blvd & Graham St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	660	100	50	940	60	70	150	40	80	120	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1585	1805	5135		1805	3483		1805	3412	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1585	1805	5135		1805	3483		1805	3412	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	42	688	104	52	979	62	73	156	42	83	125	62
RTOR Reduction (vph)	0	0	38	0	3	0	0	28	0	0	57	0
Lane Group Flow (vph)	42	688	66	52	1038	0	73	170	0	83	130	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	6.4	75.7	75.7	7.7	77.0		10.4	11.3		9.3	10.2	
Effective Green, g (s)	6.4	75.7	75.7	7.7	77.0		10.4	11.3		9.3	10.2	
Actuated g/C Ratio	0.05	0.63	0.63	0.06	0.64		0.09	0.09		0.08	0.08	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	96	2277	1000	116	3295		156	328		140	290	
v/s Ratio Prot	c0.02	0.19		c0.03	c0.20		0.04	c0.05		c0.05	0.04	
v/s Ratio Perm			0.04									
v/c Ratio	0.44	0.30	0.07	0.45	0.31		0.47	0.52		0.59	0.45	
Uniform Delay, d1	55.1	10.1	8.5	54.1	9.7		52.2	51.8		53.5	52.2	
Progression Factor	0.90	0.56	1.06	0.94	0.68		1.22	1.23		1.00	1.00	
Incremental Delay, d2	3.1	0.3	0.1	2.5	0.2		2.1	1.3		6.6	1.1	
Delay (s)	52.5	6.0	9.1	53.5	6.8		65.6	65.2		60.1	53.3	
Level of Service	D	A	A	D	A		E	E		E	D	
Approach Delay (s)		8.7			9.1			65.3			55.4	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
58: Alessandro Blvd & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	520	30	40	880	150	140	290	40	150	170	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1594	1805	5061		1805	3538		1805	3610	1602
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1594	1805	5061		1805	3538		1805	3610	1602
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	565	33	43	957	163	152	315	43	163	185	109
RTOR Reduction (vph)	0	0	9	0	14	0	0	12	0	0	0	79
Lane Group Flow (vph)	98	565	24	43	1106	0	152	346	0	163	185	30
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	11.8	65.9	86.9	5.6	59.7		21.0	17.3		15.2	11.5	23.3
Effective Green, g (s)	11.8	65.9	86.9	5.6	59.7		21.0	17.3		15.2	11.5	23.3
Actuated g/C Ratio	0.10	0.55	0.72	0.05	0.50		0.18	0.14		0.13	0.10	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	177	2849	1207	84	2518		316	510		229	346	311
v/s Ratio Prot	c0.05	0.11	0.00	0.02	c0.22		c0.08	c0.10		c0.09	0.05	0.01
v/s Ratio Perm			0.01									0.01
v/c Ratio	0.55	0.20	0.02	0.51	0.44		0.48	0.68		0.71	0.53	0.10
Uniform Delay, d1	51.6	13.7	4.6	55.9	19.4		44.6	48.7		50.3	51.7	39.7
Progression Factor	0.68	0.61	0.91	1.06	1.13		0.52	0.54		1.00	1.00	1.00
Incremental Delay, d2	3.6	0.2	0.0	4.9	0.5		1.1	3.4		10.0	1.6	0.1
Delay (s)	38.9	8.4	4.2	63.9	22.4		24.5	30.0		60.3	53.3	39.8
Level of Service	D	A	A	E	C		C	C		E	D	D
Approach Delay (s)		12.5			23.9			28.3			52.6	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	26.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
59: Alessandro Blvd & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	480	70	70	810	70	140	240	70	80	220	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5076		1805	5118		1805	3475		1805	3450	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	5076		1805	5118		1805	3475		1805	3450	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	533	78	78	900	78	156	267	78	89	244	89
RTOR Reduction (vph)	0	10	0	0	5	0	0	35	0	0	43	0
Lane Group Flow (vph)	44	601	0	78	973	0	156	310	0	89	290	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	7.2	64.9		8.0	65.7		15.6	16.4		14.7	15.5	
Effective Green, g (s)	7.2	64.9		8.0	65.7		15.6	16.4		14.7	15.5	
Actuated g/C Ratio	0.06	0.54		0.07	0.55		0.13	0.14		0.12	0.13	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	108	2745		120	2802		235	475		221	446	
v/s Ratio Prot	c0.02	0.12		c0.04	c0.19		c0.09	c0.09		0.05	0.08	
v/s Ratio Perm												
v/c Ratio	0.41	0.22		0.65	0.35		0.66	0.65		0.40	0.65	
Uniform Delay, d1	54.3	14.3		54.6	15.2		49.7	49.1		48.6	49.7	
Progression Factor	1.13	0.61		0.65	0.25		0.66	0.32		1.00	1.00	
Incremental Delay, d2	2.4	0.2		10.9	0.3		6.4	3.0		1.2	3.4	
Delay (s)	64.0	8.9		46.2	4.1		39.3	18.5		49.8	53.1	
Level of Service	E	A		D	A		D	B		D	D	
Approach Delay (s)		12.6			7.2			25.0			52.4	
Approach LOS		B			A			C			D	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
60: Alessandro Blvd & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	310	80	80	620	80	210	560	70	170	420	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1587	1805	5088		1805	3610	1589	1805	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1587	1805	5088		1805	3610	1589	1805	3610	1588
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	172	356	92	92	713	92	241	644	80	195	483	195
RTOR Reduction (vph)	0	0	56	0	12	0	0	0	61	0	0	158
Lane Group Flow (vph)	172	356	36	92	793	0	241	644	19	195	483	37
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.1	47.0	47.0	10.4	44.3		23.9	28.2	28.2	18.4	22.7	22.7
Effective Green, g (s)	13.1	47.0	47.0	10.4	44.3		23.9	28.2	28.2	18.4	22.7	22.7
Actuated g/C Ratio	0.11	0.39	0.39	0.09	0.37		0.20	0.23	0.23	0.15	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	197	1414	622	156	1878		359	848	373	277	683	300
v/s Ratio Prot	c0.10	0.10		c0.05	c0.16		c0.13	c0.18		0.11	0.13	
v/s Ratio Perm			0.02						0.01			0.02
v/c Ratio	0.87	0.25	0.06	0.59	0.42		0.67	0.76	0.05	0.70	0.71	0.12
Uniform Delay, d1	52.6	24.6	22.7	52.7	28.3		44.4	42.7	35.5	48.2	45.5	40.4
Progression Factor	0.91	0.94	1.85	1.26	0.82		0.64	0.34	0.05	1.00	1.00	1.00
Incremental Delay, d2	31.5	0.4	0.2	5.3	0.7		4.0	3.3	0.0	7.9	3.4	0.2
Delay (s)	79.2	23.6	42.2	71.9	23.8		32.6	18.0	1.8	56.1	48.9	40.6
Level of Service	E	C	D	E	C		C	B	A	E	D	D
Approach Delay (s)		41.8			28.7			20.3			48.6	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	33.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
61: Cactus Ave & Frederick St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	130	970	1470	150	120	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	3610	3610	1589	3502	1603
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	3610	3610	1589	3502	1603
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	138	1032	1564	160	128	74
RTOR Reduction (vph)	0	0	0	35	0	14
Lane Group Flow (vph)	138	1032	1564	125	128	60
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	14.0	102.2	84.2	94.0	9.8	23.8
Effective Green, g (s)	14.0	102.2	84.2	94.0	9.8	23.8
Actuated g/C Ratio	0.12	0.85	0.70	0.78	0.08	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	211	3075	2533	1298	286	371
v/s Ratio Prot	c0.08	0.29	c0.43	0.01	c0.04	0.02
v/s Ratio Perm				0.07		0.02
v/c Ratio	0.65	0.34	0.62	0.10	0.45	0.16
Uniform Delay, d1	50.7	1.8	9.4	3.0	52.5	39.8
Progression Factor	0.92	1.29	0.99	1.75	0.51	0.35
Incremental Delay, d2	6.7	0.3	1.0	0.0	1.1	0.2
Delay (s)	53.3	2.7	10.4	5.3	28.1	14.2
Level of Service	D	A	B	A	C	B
Approach Delay (s)		8.6	9.9		23.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
62: Cactus Ave & Graham St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	800	190	20	1440	70	170	40	20	60	60	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1587	1805	5147		3502	3413		1805	3610	1604
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1587	1805	5147		3502	3413		1805	3610	1604
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	85	851	202	21	1532	74	181	43	21	64	64	64
RTOR Reduction (vph)	0	0	65	0	3	0	0	19	0	0	0	13
Lane Group Flow (vph)	85	851	137	21	1603	0	181	45	0	64	64	51
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	11.7	81.1	81.1	2.8	72.2		12.3	10.0		10.1	7.8	19.5
Effective Green, g (s)	11.7	81.1	81.1	2.8	72.2		12.3	10.0		10.1	7.8	19.5
Actuated g/C Ratio	0.10	0.68	0.68	0.02	0.60		0.10	0.08		0.08	0.06	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	176	2440	1073	42	3097		359	284		152	235	314
v/s Ratio Prot	c0.05	0.24		0.01	c0.31		c0.05	0.01		0.04	c0.02	0.02
v/s Ratio Perm			0.09									0.02
v/c Ratio	0.48	0.35	0.13	0.50	0.52		0.50	0.16		0.42	0.27	0.16
Uniform Delay, d1	51.3	8.2	6.9	57.9	13.8		51.0	51.1		52.2	53.4	43.2
Progression Factor	1.05	0.58	0.55	0.80	0.45		1.00	1.00		1.08	0.87	0.79
Incremental Delay, d2	2.0	0.4	0.2	6.9	0.5		1.1	0.3		1.9	0.6	0.2
Delay (s)	55.7	5.2	4.0	53.3	6.8		52.1	51.3		58.4	47.1	34.4
Level of Service	E	A	A	D	A		D	D		E	D	C
Approach Delay (s)		8.7			7.4			51.9			46.6	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
63: Cactus Ave & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	610	240	20	810	70	700	380	10	50	190	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1597	1805	3562		3502	3594		1805	3527	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1597	1805	3562		3502	3594		1805	3527	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	642	253	21	853	74	737	400	11	53	200	32
RTOR Reduction (vph)	0	0	68	0	4	0	0	2	0	0	13	0
Lane Group Flow (vph)	63	642	185	21	923	0	737	409	0	53	219	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	7.2	55.6	87.9	3.3	51.7		32.3	39.5		5.6	12.8	
Effective Green, g (s)	7.2	55.6	87.9	3.3	51.7		32.3	39.5		5.6	12.8	
Actuated g/C Ratio	0.06	0.46	0.73	0.03	0.43		0.27	0.33		0.05	0.11	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	108	1673	1170	50	1535		943	1183		84	376	
v/s Ratio Prot	c0.03	0.18	0.04	0.01	c0.26		c0.21	0.11		0.03	c0.06	
v/s Ratio Perm			0.07									
v/c Ratio	0.58	0.38	0.16	0.42	0.60		0.78	0.35		0.63	0.58	
Uniform Delay, d1	54.9	21.0	4.9	57.4	26.2		40.6	30.5		56.2	51.0	
Progression Factor	0.86	0.82	3.64	1.06	1.23		1.00	1.00		0.30	0.25	
Incremental Delay, d2	7.5	0.6	0.1	5.1	1.6		4.3	0.2		14.4	2.3	
Delay (s)	54.7	17.9	17.7	66.2	33.7		44.9	30.6		31.3	14.9	
Level of Service	D	B	B	E	C		D	C		C	B	
Approach Delay (s)		20.3			34.5			39.8			17.9	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
64: Cactus Ave & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	550	80	50	740	50	100	340	60	50	250	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3533		1805	3572		1805	3520		1805	3545	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3533		1805	3572		1805	3520		1805	3545	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	56	618	90	56	831	56	112	382	67	56	281	34
RTOR Reduction (vph)	0	7	0	0	3	0	0	14	0	0	9	0
Lane Group Flow (vph)	56	701	0	56	884	0	112	435	0	56	306	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	8.0	66.6		7.2	65.8		14.5	22.2		8.0	15.7	
Effective Green, g (s)	8.0	66.6		7.2	65.8		14.5	22.2		8.0	15.7	
Actuated g/C Ratio	0.07	0.55		0.06	0.55		0.12	0.18		0.07	0.13	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	120	1961		108	1959		218	651		120	464	
v/s Ratio Prot	c0.03	0.20		0.03	c0.25		c0.06	c0.12		0.03	0.09	
v/s Ratio Perm												
v/c Ratio	0.47	0.36		0.52	0.45		0.51	0.67		0.47	0.66	
Uniform Delay, d1	53.9	14.8		54.7	16.3		49.4	45.5		53.9	49.6	
Progression Factor	0.65	1.78		0.61	0.51		1.00	1.00		0.64	0.34	
Incremental Delay, d2	2.7	0.5		3.6	0.7		2.0	2.6		2.8	3.4	
Delay (s)	37.7	26.8		37.1	9.0		51.5	48.1		37.6	20.3	
Level of Service	D	C		D	A		D	D		D	C	
Approach Delay (s)		27.6			10.7			48.8			22.9	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
65: Cactus Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	490	110	70	630	70	180	670	70	80	490	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3499		1805	3550		1805	3610	1585	1805	3610	1585
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3499		1805	3550		1805	3610	1585	1805	3610	1585
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	66	538	121	77	692	77	198	736	77	88	538	44
RTOR Reduction (vph)	0	15	0	0	7	0	0	0	53	0	0	34
Lane Group Flow (vph)	66	644	0	77	762	0	198	736	24	88	538	10
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	7.2	48.0		8.1	48.9		19.9	37.0	37.0	10.9	28.0	28.0
Effective Green, g (s)	7.2	48.0		8.1	48.9		19.9	37.0	37.0	10.9	28.0	28.0
Actuated g/C Ratio	0.06	0.40		0.07	0.41		0.17	0.31	0.31	0.09	0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	108	1400		122	1447		299	1113	489	164	842	370
v/s Ratio Prot	0.04	c0.18		c0.04	c0.21		c0.11	c0.20		0.05	0.15	
v/s Ratio Perm									0.01			0.01
v/c Ratio	0.61	0.46		0.63	0.53		0.66	0.66	0.05	0.54	0.64	0.03
Uniform Delay, d1	55.0	26.5		54.5	26.8		46.9	36.1	29.1	52.1	41.4	35.5
Progression Factor	0.59	0.37		1.25	0.71		0.70	0.60	0.15	1.09	0.88	1.41
Incremental Delay, d2	9.4	1.0		9.0	1.2		5.0	2.9	0.2	3.1	3.5	0.1
Delay (s)	41.7	10.9		77.0	20.3		37.9	24.6	4.4	60.2	39.9	50.3
Level of Service	D	B		E	C		D	C	A	E	D	D
Approach Delay (s)		13.7			25.5			25.6			43.3	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
66: Alessandro Blvd & Sycamore Canyon Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	1070	70	30	1550	460	290	240	10	50	30	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	0.88	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	3502	5187	1591	3502	3610	2801	3502	3610	1591
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	3502	5187	1591	3502	3610	2801	3502	3610	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	1163	76	33	1685	500	315	261	11	54	33	76
RTOR Reduction (vph)	0	0	32	0	0	116	0	0	9	0	0	71
Lane Group Flow (vph)	207	1163	44	33	1685	384	315	261	2	54	33	5
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.1	43.3	43.3	3.9	40.1	40.1	10.9	12.6	16.5	3.9	5.6	5.6
Effective Green, g (s)	7.1	43.3	43.3	3.9	40.1	40.1	10.9	12.6	16.5	3.9	5.6	5.6
Actuated g/C Ratio	0.09	0.54	0.54	0.05	0.50	0.50	0.14	0.16	0.21	0.05	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	161	2818	877	171	2610	800	479	571	720	171	254	112
v/s Ratio Prot	c0.11	c0.22		0.01	c0.32		c0.09	0.07	0.00	c0.02	0.01	
v/s Ratio Perm			0.03			0.24			0.00			0.00
v/c Ratio	1.29	0.41	0.05	0.19	0.65	0.48	0.66	0.46	0.00	0.32	0.13	0.05
Uniform Delay, d1	36.3	10.7	8.5	36.4	14.6	13.0	32.6	30.4	25.1	36.6	34.8	34.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	167.2	0.1	0.0	0.6	0.6	0.5	3.3	0.6	0.0	1.1	0.2	0.2
Delay (s)	203.5	10.8	8.6	36.9	15.1	13.4	35.9	31.0	25.1	37.7	35.0	34.7
Level of Service	F	B	A	D	B	B	D	C	C	D	C	C
Approach Delay (s)		38.3			15.1			33.5			35.8	
Approach LOS		D			B			C			D	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	79.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
67: Alessandro Blvd & SR-215 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	820	340	0	1670	0	0	0	0	200	0	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	4.0
Lane Util. Factor		0.91			0.91					0.95	0.91	0.95
Frpb, ped/bikes		1.00			1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00			1.00					1.00	1.00	1.00
Frt		0.96			1.00					1.00	0.87	0.85
Flt Protected		1.00			1.00					0.95	0.99	1.00
Satd. Flow (prot)		4959			5187					1715	1494	1534
Flt Permitted		1.00			1.00					0.95	0.99	1.00
Satd. Flow (perm)		4959			5187					1715	1494	1534
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	901	374	0	1835	0	0	0	0	220	0	341
RTOR Reduction (vph)	0	87	0	0	0	0	0	0	0	0	14	14
Lane Group Flow (vph)	0	1188	0	0	1835	0	0	0	0	196	170	167
Confl. Peds. (#/hr)						5						
Turn Type										Perm		Perm
Protected Phases		4			8						6	
Permitted Phases										6		6
Actuated Green, G (s)		48.1			48.1					13.9	13.9	13.9
Effective Green, g (s)		48.1			48.1					13.9	13.9	13.9
Actuated g/C Ratio		0.69			0.69					0.20	0.20	0.20
Clearance Time (s)		4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3408			3564					341	297	305
v/s Ratio Prot		0.24			c0.35							
v/s Ratio Perm										c0.11	0.11	0.11
v/c Ratio		0.35			0.51					0.57	0.57	0.55
Uniform Delay, d1		4.5			5.3					25.4	25.4	25.2
Progression Factor		1.00			0.23					1.00	1.00	1.00
Incremental Delay, d2		0.3			0.4					2.3	2.6	2.0
Delay (s)		4.8			1.6					27.7	28.0	27.2
Level of Service		A			A					C	C	C
Approach Delay (s)		4.8			1.6			0.0			27.6	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
68: Alessandro Blvd & SR-215 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	860	0	0	970	170	780	10	300	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.91			0.91		0.95	0.91	0.95			
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.98		1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (prot)	1805	5187			5059		1715	1636	1534			
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (perm)	1805	5187			5059		1715	1636	1534			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	935	0	0	1054	185	848	11	326	0	0	0
RTOR Reduction (vph)	0	0	0	0	34	0	0	4	76	0	0	0
Lane Group Flow (vph)	152	935	0	0	1205	0	449	439	217	0	0	0
Confl. Peds. (#/hr)	5					5						
Turn Type	Prot						Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases									2			
Actuated Green, G (s)	8.0	39.2			27.2		22.8	22.8	22.8			
Effective Green, g (s)	8.0	39.2			27.2		22.8	22.8	22.8			
Actuated g/C Ratio	0.11	0.56			0.39		0.33	0.33	0.33			
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	206	2905			1966		559	533	500			
v/s Ratio Prot	c0.08	0.18			c0.24		0.26	c0.27				
v/s Ratio Perm									0.14			
v/c Ratio	0.74	0.32			0.61		0.80	0.82	0.43			
Uniform Delay, d1	30.0	8.3			17.2		21.6	21.7	18.5			
Progression Factor	0.97	0.84			1.00		1.00	1.00	1.00			
Incremental Delay, d2	12.2	0.3			1.4		8.2	10.0	0.6			
Delay (s)	41.4	7.2			18.6		29.7	31.7	19.1			
Level of Service	D	A			B		C	C	B			
Approach Delay (s)		12.0			18.6			27.9			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
69: Alessandro Blvd & Old 215 Frontage Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	850	10	0	950	100	50	160	10	30	20	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3603			3610	1615	3502	3577		1805	3610	1615
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3603			3610	1615	3502	3577		1805	3610	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	340	904	11	0	1011	106	53	170	11	32	21	170
RTOR Reduction (vph)	0	1	0	0	0	49	0	4	0	0	0	158
Lane Group Flow (vph)	340	915	0	0	1011	57	53	177	0	32	21	12
Confl. Peds. (#/hr)			5									
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	22.0	90.0			64.0	64.0	9.3	12.8		5.2	8.7	8.7
Effective Green, g (s)	22.0	90.0			64.0	64.0	9.3	12.8		5.2	8.7	8.7
Actuated g/C Ratio	0.18	0.75			0.53	0.53	0.08	0.11		0.04	0.07	0.07
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	642	2702			1925	861	271	382		78	262	117
v/s Ratio Prot	c0.10	0.25			c0.28		0.02	c0.05		c0.02	0.01	
v/s Ratio Perm						0.04						0.01
v/c Ratio	0.53	0.34			0.53	0.07	0.20	0.46		0.41	0.08	0.11
Uniform Delay, d1	44.3	5.0			18.2	13.5	51.8	50.4		55.9	51.9	52.0
Progression Factor	1.00	1.00			0.33	0.05	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.8	0.3			1.0	0.1	0.4	0.9		3.5	0.1	0.4
Delay (s)	45.1	5.4			7.0	0.8	52.2	51.3		59.4	52.0	52.4
Level of Service	D	A			A	A	D	D		E	D	D
Approach Delay (s)		16.1			6.4			51.5			53.4	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
70: Alessandro Blvd & Day St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	780	40	10	1010	30	10	10	20	10	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.90		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5142		1805	3610	1564	1797	1688		1798	1663	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.73	1.00		0.74	1.00	
Satd. Flow (perm)	1805	5142		1805	3610	1564	1381	1688		1395	1663	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	52	804	41	10	1041	31	10	10	21	10	10	31
RTOR Reduction (vph)	0	2	0	0	0	3	0	20	0	0	29	0
Lane Group Flow (vph)	52	843	0	10	1041	28	10	11	0	10	12	0
Confl. Peds. (#/hr)			5			5	5		5	5		5
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	9.2	99.0		1.4	91.2	91.2	7.6	7.6		7.6	7.6	
Effective Green, g (s)	9.2	99.0		1.4	91.2	91.2	7.6	7.6		7.6	7.6	
Actuated g/C Ratio	0.08	0.82		0.01	0.76	0.76	0.06	0.06		0.06	0.06	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	138	4242		21	2744	1189	87	107		88	105	
v/s Ratio Prot	c0.03	0.16		0.01	c0.29			0.01			0.01	
v/s Ratio Perm						0.02	c0.01			0.01		
v/c Ratio	0.38	0.20		0.48	0.38	0.02	0.11	0.11		0.11	0.11	
Uniform Delay, d1	52.7	2.2		58.9	4.9	3.5	53.0	53.0		53.0	53.0	
Progression Factor	0.90	0.94		1.14	0.42	0.29	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.1		15.6	0.4	0.0	0.6	0.4		0.6	0.5	
Delay (s)	49.3	2.2		82.7	2.4	1.0	53.6	53.4		53.6	53.5	
Level of Service	D	A		F	A	A	D	D		D	D	
Approach Delay (s)		4.9			3.1			53.5			53.5	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
71: Alessandro Blvd & Elsworth St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	720	80	100	890	80	70	90	40	40	130	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5099		1805	5110		1805	1803		1805	1900	1589
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5099		1805	5110		1805	1803		1805	1900	1589
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	41	735	82	102	908	82	71	92	41	41	133	82
RTOR Reduction (vph)	0	7	0	0	5	0	0	20	0	0	0	73
Lane Group Flow (vph)	41	810	0	102	985	0	71	113	0	41	133	9
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	6.6	68.0		13.7	75.1		8.4	13.2		9.1	13.9	13.9
Effective Green, g (s)	6.6	68.0		13.7	75.1		8.4	13.2		9.1	13.9	13.9
Actuated g/C Ratio	0.05	0.57		0.11	0.63		0.07	0.11		0.08	0.12	0.12
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	99	2889		206	3198		126	198		137	220	184
v/s Ratio Prot	0.02	0.16		c0.06	c0.19		0.04	c0.06		0.02	c0.07	
v/s Ratio Perm												0.01
v/c Ratio	0.41	0.28		0.50	0.31		0.56	0.57		0.30	0.60	0.05
Uniform Delay, d1	54.8	13.4		49.9	10.4		54.0	50.7		52.4	50.4	47.2
Progression Factor	1.08	0.65		0.65	0.29		1.44	1.60		1.00	1.00	1.00
Incremental Delay, d2	2.8	0.2		1.8	0.2		4.3	3.0		1.2	4.6	0.1
Delay (s)	62.2	8.9		34.0	3.2		82.4	84.1		53.7	55.1	47.3
Level of Service	E	A		C	A		F	F		D	E	D
Approach Delay (s)		11.5			6.1			83.5			52.4	
Approach LOS		B			A			F			D	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
72: Cactus Ave & SR-215 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	650	50	490	640	0	0	0	0	0	0	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0							4.0
Lane Util. Factor		0.95	1.00	1.00	0.95							1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00							1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00							1.00
Frt		1.00	0.85	1.00	1.00							0.86
Flt Protected		1.00	1.00	0.95	1.00							1.00
Satd. Flow (prot)		3610	1572	1805	3610							1644
Flt Permitted		1.00	1.00	0.95	1.00							1.00
Satd. Flow (perm)		3610	1572	1805	3610							1644
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	707	54	533	696	0	0	0	0	0	0	228
RTOR Reduction (vph)	0	0	33	0	0	0	0	0	0	0	0	212
Lane Group Flow (vph)	0	707	21	533	696	0	0	0	0	0	0	16
Confl. Peds. (#/hr)			5									5
Turn Type			Perm	Prot								custom
Protected Phases		4		3 6	8							6
Permitted Phases			4									
Actuated Green, G (s)		45.8	45.8	66.2	103.8							8.2
Effective Green, g (s)		45.8	45.8	66.2	103.8							8.2
Actuated g/C Ratio		0.38	0.38	0.55	0.86							0.07
Clearance Time (s)		4.0	4.0		4.0							4.0
Vehicle Extension (s)		3.0	3.0		3.0							3.0
Lane Grp Cap (vph)		1378	600	996	3123							112
v/s Ratio Prot		c0.20		c0.30	0.19							0.01
v/s Ratio Perm			0.01									
v/c Ratio		0.51	0.03	0.54	0.22							0.14
Uniform Delay, d1		28.5	23.2	17.1	1.4							52.6
Progression Factor		1.00	1.00	0.64	1.04							1.00
Incremental Delay, d2		1.4	0.1	0.4	0.1							0.6
Delay (s)		29.9	23.4	11.4	1.5							53.2
Level of Service		C	C	B	A							D
Approach Delay (s)		29.4			5.8			0.0			53.2	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
73: Cactus Ave & SR-215 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	630	50	0	1420	140	230	100	10	10	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99			0.99		1.00	0.99		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3570			3553		1805	1873		1805	1615	
Flt Permitted	0.10	1.00			1.00		0.74	1.00		0.62	1.00	
Satd. Flow (perm)	188	3570			3553		1399	1873		1171	1615	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	670	53	0	1511	149	245	106	11	11	0	32
RTOR Reduction (vph)	0	4	0	0	5	0	0	3	0	0	25	0
Lane Group Flow (vph)	21	719	0	0	1655	0	245	114	0	11	7	0
Confl. Peds. (#/hr)						5						
Turn Type	Perm						Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)	85.8	85.8			85.8		26.2	26.2		26.2	26.2	
Effective Green, g (s)	85.8	85.8			85.8		26.2	26.2		26.2	26.2	
Actuated g/C Ratio	0.71	0.71			0.71		0.22	0.22		0.22	0.22	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	134	2553			2540		305	409		256	353	
v/s Ratio Prot		0.20			c0.47			0.06			0.00	
v/s Ratio Perm	0.11						c0.18			0.01		
v/c Ratio	0.16	0.28			0.65		0.80	0.28		0.04	0.02	
Uniform Delay, d1	5.5	6.1			9.1		44.5	39.0		37.0	36.8	
Progression Factor	0.11	0.03			0.38		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.2			1.3		14.1	0.4		0.1	0.0	
Delay (s)	2.8	0.4			4.7		58.6	39.4		37.1	36.8	
Level of Service	A	A			A		E	D		D	D	
Approach Delay (s)		0.5			4.7			52.4			36.9	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
74: Cactus Ave & Elsworth St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	930	250	120	1230	60	50	30	30	60	120	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	0.95	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1585	1805	5187	1564	1715	1660		1715	1801	1587
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1585	1805	5187	1564	1715	1660		1715	1801	1587
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	117	989	266	128	1309	64	53	32	32	64	128	96
RTOR Reduction (vph)	0	0	83	0	0	19	0	30	0	0	0	84
Lane Group Flow (vph)	117	989	183	128	1309	45	48	39	0	58	134	12
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	7.0	73.4	73.4	7.0	73.4	73.4	9.1	9.1		14.5	14.5	14.5
Effective Green, g (s)	7.0	73.4	73.4	7.0	73.4	73.4	9.1	9.1		14.5	14.5	14.5
Actuated g/C Ratio	0.06	0.61	0.61	0.06	0.61	0.61	0.08	0.08		0.12	0.12	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	105	2208	969	105	3173	957	130	126		207	218	192
v/s Ratio Prot	0.06	c0.27		c0.07	0.25		c0.03	0.02		0.03	c0.07	
v/s Ratio Perm			0.12			0.03						0.01
v/c Ratio	1.11	0.45	0.19	1.22	0.41	0.05	0.37	0.31		0.28	0.61	0.06
Uniform Delay, d1	56.5	12.5	10.2	56.5	12.1	9.3	52.7	52.5		48.0	50.1	46.7
Progression Factor	0.78	1.23	2.25	0.82	0.38	0.19	1.00	1.00		1.01	1.02	2.33
Incremental Delay, d2	121.8	0.7	0.4	149.2	0.3	0.1	1.8	1.4		0.7	4.9	0.1
Delay (s)	165.7	16.0	23.4	195.2	4.9	1.8	54.5	53.9		49.0	56.1	108.8
Level of Service	F	B	C	F	A	A	D	D		D	E	F
Approach Delay (s)		30.2			21.0			54.2			72.3	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
75: Central Ave & Lochmoor Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	600	110	10	580	280	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3512		1805	3610	1805	1596
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3512		1805	3610	1805	1596
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	714	131	12	690	333	71
RTOR Reduction (vph)	18	0	0	0	0	28
Lane Group Flow (vph)	827	0	12	690	333	43
Confl. Peds. (#/hr)		5	5			5
Turn Type			Prot			pm+ov
Protected Phases	4		3	8	2	3
Permitted Phases						2
Actuated Green, G (s)	17.9		3.4	25.3	15.4	18.8
Effective Green, g (s)	17.9		3.4	25.3	15.4	18.8
Actuated g/C Ratio	0.37		0.07	0.52	0.32	0.39
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1291		126	1875	571	747
v/s Ratio Prot	c0.24		0.01	c0.19	c0.18	0.00
v/s Ratio Perm						0.02
v/c Ratio	0.64		0.10	0.37	0.58	0.06
Uniform Delay, d1	12.7		21.2	7.0	14.0	9.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1		0.3	0.1	1.5	0.0
Delay (s)	13.8		21.5	7.1	15.5	9.4
Level of Service	B		C	A	B	A
Approach Delay (s)	13.8			7.3	14.4	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	48.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
76: Central Ave & Sycamore Canyon Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	520	120	30	240	30	460	280	730	60	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1583	3502	3550		1805	1900	1615	1805	3610	1590
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1583	3502	3550		1805	1900	1615	1805	3610	1590
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	22	571	132	33	264	33	505	308	802	66	22	22
RTOR Reduction (vph)	0	0	106	0	8	0	0	0	129	0	0	21
Lane Group Flow (vph)	22	571	26	33	289	0	505	308	673	66	22	1
Confl. Peds. (#/hr)			5	5			5					5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	3.4	17.1	17.1	3.4	17.1		47.8	46.0	46.0	5.4	3.6	3.6
Effective Green, g (s)	3.4	17.1	17.1	3.4	17.1		47.8	46.0	46.0	5.4	3.6	3.6
Actuated g/C Ratio	0.04	0.19	0.19	0.04	0.19		0.54	0.52	0.52	0.06	0.04	0.04
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	70	1009	308	135	691		982	994	845	111	148	65
v/s Ratio Prot	0.01	c0.11		0.01	c0.08		0.28	0.16		c0.04	0.01	
v/s Ratio Perm			0.02						c0.42			0.00
v/c Ratio	0.31	0.57	0.08	0.24	0.42		0.51	0.31	0.80	0.59	0.15	0.01
Uniform Delay, d1	41.1	32.0	29.0	41.0	31.0		12.7	11.9	17.1	40.2	40.7	40.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.7	0.1	0.9	0.4		0.5	0.2	5.2	8.3	0.5	0.1
Delay (s)	43.7	32.8	29.1	41.9	31.4		13.2	12.1	22.4	48.5	41.1	40.5
Level of Service	D	C	C	D	C		B	B	C	D	D	D
Approach Delay (s)		32.4			32.5			17.5			45.4	
Approach LOS		C			C			B			D	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	87.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
77: SR 60 EB Ramps & Central Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	10	50	0	0	0	0	1050	380	110	210	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.95					0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Frt	1.00	0.90	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1622	1534					3610	1615	3502	3610	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1622	1534					3610	1615	3502	3610	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	33	11	55	0	0	0	0	1154	418	121	231	0
RTOR Reduction (vph)	0	21	29	0	0	0	0	0	182	0	0	0
Lane Group Flow (vph)	33	13	3	0	0	0	0	1154	236	121	231	0
Confl. Peds. (#/hr)							5					5
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	6	6						4		3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	4.2	4.2	4.2					28.2	28.2	5.6	37.8	
Effective Green, g (s)	4.2	4.2	4.2					28.2	28.2	5.6	37.8	
Actuated g/C Ratio	0.08	0.08	0.08					0.56	0.56	0.11	0.76	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	152	136	129					2036	911	392	2729	
v/s Ratio Prot	c0.02	0.01						c0.32		c0.03	0.06	
v/s Ratio Perm			0.00						0.15			
v/c Ratio	0.22	0.10	0.02					0.57	0.26	0.31	0.08	
Uniform Delay, d1	21.4	21.1	21.0					7.0	5.6	20.4	1.6	
Progression Factor	1.00	1.00	1.00					1.00	1.00	0.97	0.70	
Incremental Delay, d2	0.7	0.3	0.1					1.1	0.7	0.4	0.1	
Delay (s)	22.1	21.5	21.1					8.1	6.3	20.2	1.2	
Level of Service	C	C	C					A	A	C	A	
Approach Delay (s)		21.5			0.0			7.6			7.7	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
78: SR60 WB Ramps & Central Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	130	290	1020	0	0	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3502	1615	3610			3610
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3502	1615	3610			3610
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	153	341	1200	0	0	200
RTOR Reduction (vph)	0	40	0	0	0	0
Lane Group Flow (vph)	153	301	1200	0	0	200
Confl. Peds. (#/hr)				5		
Turn Type		Perm				
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	12.9	12.9	29.1			29.1
Effective Green, g (s)	12.9	12.9	29.1			29.1
Actuated g/C Ratio	0.26	0.26	0.58			0.58
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	904	417	2101			2101
v/s Ratio Prot	0.04		c0.33			0.06
v/s Ratio Perm		c0.19				
v/c Ratio	0.17	0.72	0.57			0.10
Uniform Delay, d1	14.4	16.9	6.5			4.6
Progression Factor	1.00	1.00	0.20			1.00
Incremental Delay, d2	0.1	6.1	1.0			0.1
Delay (s)	14.5	23.0	2.3			4.7
Level of Service	B	C	A			A
Approach Delay (s)	20.3		2.3			4.7
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	760	10	110	1800	1930	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.91		0.97	0.91	0.94	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	5176		3502	5187	5100	
Flt Permitted	1.00		0.95	1.00	0.95	
Satd. Flow (perm)	5176		3502	5187	5100	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	826	11	120	1957	2098	11
RTOR Reduction (vph)	1	0	0	0	1	0
Lane Group Flow (vph)	836	0	120	1957	2108	0
Confl. Peds. (#/hr)		5	5			
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	25.3		13.6	42.9	38.1	
Effective Green, g (s)	25.3		13.6	42.9	38.1	
Actuated g/C Ratio	0.28		0.15	0.48	0.43	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1471		535	2500	2183	
v/s Ratio Prot	0.16		0.03	c0.38	c0.41	
v/s Ratio Perm						
v/c Ratio	0.57		0.22	0.78	0.97	
Uniform Delay, d1	27.2		33.1	19.2	24.8	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.5		0.2	1.7	12.2	
Delay (s)	27.7		33.3	20.8	37.0	
Level of Service	C		C	C	D	
Approach Delay (s)	27.7			21.6	37.0	
Approach LOS	C			C	D	

Intersection Summary			
HCM Average Control Delay	29.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
80: Alessandro Blvd & Mission Grove Pkwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	890	40	160	1640	20	130	110	230	100	100	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91		0.97	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5187	1590	3502	5176		3502	1900	1591	1805	3439	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	5187	1590	3502	5176		3502	1900	1591	1805	3439	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	53	947	43	170	1745	21	138	117	245	106	106	43
RTOR Reduction (vph)	0	0	25	0	1	0	0	0	197	0	38	0
Lane Group Flow (vph)	53	947	18	170	1765	0	138	117	48	106	111	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.8	30.3	30.3	7.1	33.6		12.7	12.9	12.9	7.9	8.1	
Effective Green, g (s)	3.8	30.3	30.3	7.1	33.6		12.7	12.9	12.9	7.9	8.1	
Actuated g/C Ratio	0.05	0.41	0.41	0.10	0.45		0.17	0.17	0.17	0.11	0.11	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	92	2118	649	335	2344		599	330	277	192	375	
v/s Ratio Prot	0.03	c0.18		0.05	c0.34		0.04	c0.06		c0.06	0.03	
v/s Ratio Perm			0.01						0.03			
v/c Ratio	0.58	0.45	0.03	0.51	0.75		0.23	0.35	0.17	0.55	0.30	
Uniform Delay, d1	34.4	15.9	13.1	31.9	16.9		26.5	27.0	26.1	31.5	30.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.5	0.2	0.0	1.2	1.4		0.2	0.7	0.3	3.4	0.4	
Delay (s)	42.9	16.0	13.1	33.1	18.3		26.7	27.6	26.4	34.9	30.9	
Level of Service	D	B	B	C	B		C	C	C	C	C	
Approach Delay (s)		17.3			19.6			26.8			32.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	74.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
81: Martin Luther King Blvd & Chicago Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	540	100	50	530	140	420	890	200	70	220	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1597	3502	3610	1596	3502	3610	1595	3502	3610	1597
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1597	3502	3610	1596	3502	3610	1595	3502	3610	1597
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	125	614	114	57	602	159	477	1011	227	80	250	125
RTOR Reduction (vph)	0	0	70	0	0	35	0	0	65	0	0	39
Lane Group Flow (vph)	125	614	44	57	602	124	477	1011	162	80	250	86
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.7	23.0	32.2	7.2	20.5	27.7	9.2	30.8	38.0	7.2	28.8	38.5
Effective Green, g (s)	9.7	23.0	32.2	7.2	20.5	27.7	9.2	30.8	38.0	7.2	28.8	38.5
Actuated g/C Ratio	0.12	0.27	0.38	0.09	0.24	0.33	0.11	0.37	0.45	0.09	0.34	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	208	986	687	299	879	601	383	1321	796	299	1235	806
v/s Ratio Prot	c0.07	c0.17	0.01	0.02	0.17	0.02	c0.14	c0.28	0.02	0.02	0.07	0.01
v/s Ratio Perm			0.02			0.06			0.08			0.04
v/c Ratio	0.60	0.62	0.06	0.19	0.68	0.21	1.25	0.77	0.20	0.27	0.20	0.11
Uniform Delay, d1	35.4	26.8	16.5	35.8	28.9	20.3	37.5	23.5	14.0	36.0	19.6	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	1.2	0.0	0.3	2.2	0.2	130.6	2.7	0.1	0.5	0.1	0.1
Delay (s)	40.2	28.0	16.5	36.1	31.1	20.5	168.1	26.2	14.1	36.5	19.7	13.1
Level of Service	D	C	B	D	C	C	F	C	B	D	B	B
Approach Delay (s)		28.3			29.4			64.1			20.8	
Approach LOS		C			C			E			C	

Intersection Summary			
HCM Average Control Delay	43.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	84.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
82: Martin Luther King Blvd & Iowa Ave

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	180	640	600	400	170	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	0.99	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.96	1.00
Satd. Flow (prot)	1805	3610	3610	1601	3473	1459
Flt Permitted	0.95	1.00	1.00	1.00	0.96	1.00
Satd. Flow (perm)	1805	3610	3610	1601	3473	1459
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	202	719	674	449	191	112
RTOR Reduction (vph)	0	0	0	23	13	45
Lane Group Flow (vph)	202	719	674	426	196	49
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	7.1	24.6	13.5	22.0	8.5	15.6
Effective Green, g (s)	7.1	24.6	13.5	22.0	8.5	15.6
Actuated g/C Ratio	0.17	0.60	0.33	0.54	0.21	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	312	2161	1186	1013	718	696
v/s Ratio Prot	c0.11	0.20	c0.19	c0.09	0.06	0.01
v/s Ratio Perm				0.18		0.02
v/c Ratio	0.65	0.33	0.57	0.42	0.27	0.07
Uniform Delay, d1	15.8	4.1	11.4	5.7	13.7	8.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	0.1	0.6	0.3	0.2	0.0
Delay (s)	20.4	4.2	12.0	6.0	13.9	8.2
Level of Service	C	A	B	A	B	A
Approach Delay (s)		7.8	9.6		12.1	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	41.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
83: Martin Luther King Blvd & Canyon Crest Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	350	140	160	620	130	800	350	750	30	50	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1602	3502	3610	1591	3502	3610	1591	3502	3610	1604
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1602	3502	3610	1591	3502	3610	1591	3502	3610	1604
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	183	427	171	195	756	159	976	427	915	37	61	61
RTOR Reduction (vph)	0	0	72	0	0	111	0	0	385	0	0	46
Lane Group Flow (vph)	183	427	99	195	756	48	976	427	530	37	61	15
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.1	26.5	48.6	9.9	25.3	25.3	22.1	27.1	27.1	4.1	9.1	20.2
Effective Green, g (s)	11.1	26.5	48.6	9.9	25.3	25.3	22.1	27.1	27.1	4.1	9.1	20.2
Actuated g/C Ratio	0.13	0.32	0.58	0.12	0.30	0.30	0.26	0.32	0.32	0.05	0.11	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	240	1644	1008	415	1093	481	926	1170	516	172	393	464
v/s Ratio Prot	c0.10	0.08	0.03	0.06	c0.21		c0.28	0.12		0.01	0.02	0.00
v/s Ratio Perm			0.04			0.03			c0.33			0.00
v/c Ratio	0.76	0.26	0.10	0.47	0.69	0.10	1.05	0.36	1.03	0.22	0.16	0.03
Uniform Delay, d1	35.0	21.2	7.8	34.4	25.7	21.0	30.7	21.7	28.2	38.2	33.8	24.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.4	0.1	0.0	0.8	1.9	0.1	44.9	0.2	47.0	0.6	0.2	0.0
Delay (s)	48.3	21.3	7.8	35.2	27.6	21.1	75.6	21.8	75.2	38.8	34.0	24.3
Level of Service	D	C	A	D	C	C	E	C	E	D	C	C
Approach Delay (s)		24.7			28.0			65.5			31.4	
Approach LOS		C			C			E			C	

Intersection Summary			
HCM Average Control Delay	47.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	83.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
84: Martin Luther King Blvd & SR-60 EB Off Ramp

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	790	380	10	510	0	0	0	0	10	0	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		0.91	0.91	1.00	0.95					1.00	1.00	
Frt		0.99	0.85	1.00	1.00					1.00	0.85	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3434	1470	1805	3610					1805	1615	
Flt Permitted		1.00	1.00	0.22	1.00					0.95	1.00	
Satd. Flow (perm)		3434	1470	420	3610					1805	1615	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	898	432	11	580	0	0	0	0	11	0	477
RTOR Reduction (vph)	0	6	205	0	0	0	0	0	0	0	130	0
Lane Group Flow (vph)	0	935	184	11	580	0	0	0	0	11	347	0
Turn Type			Perm	Perm						Perm		
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		19.2	19.2	19.2	19.2					13.5	13.5	
Effective Green, g (s)		19.2	19.2	19.2	19.2					13.5	13.5	
Actuated g/C Ratio		0.47	0.47	0.47	0.47					0.33	0.33	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1620	693	198	1703					599	536	
v/s Ratio Prot		c0.27			0.16						c0.22	
v/s Ratio Perm			0.12	0.03						0.01		
v/c Ratio		0.58	0.26	0.06	0.34					0.02	0.65	
Uniform Delay, d1		7.8	6.5	5.8	6.8					9.1	11.6	
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	
Incremental Delay, d2		0.5	0.2	0.1	0.1					0.0	2.7	
Delay (s)		8.3	6.7	5.9	6.9					9.2	14.3	
Level of Service		A	A	A	A					A	B	
Approach Delay (s)		7.8			6.9			0.0			14.2	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	40.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
85: Martin Luther King Blvd & SR-60 WB On Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	800	0	510	0	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	851	0	543	0	0	0

Direction, Lane #	EB 1	EB 2	NB 1	NB 2
Volume Total (vph)	426	426	362	181
Volume Left (vph)	426	426	362	181
Volume Right (vph)	0	0	0	0
Hadj (s)	0.50	0.50	0.50	0.50
Departure Headway (s)	6.8	6.8	7.3	7.3
Degree Utilization, x	0.80	0.80	0.74	0.37
Capacity (veh/h)	524	522	480	478
Control Delay (s)	30.6	30.6	26.9	13.3
Approach Delay (s)	30.6		22.4	
Approach LOS	D		C	

Intersection Summary			
Delay	27.4		
HCM Level of Service	D		
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
86: Central Ave & Chicago Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	0	560	10	450	10	1020	480	100	260	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900		3502	1900	1615	1805	3610	1591	3502	3610	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900		3502	1900	1615	1805	3610	1591	3502	3610	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	11	0	622	11	500	11	1133	533	111	289	11
RTOR Reduction (vph)	0	0	0	0	0	212	0	0	151	0	0	5
Lane Group Flow (vph)	11	11	0	622	11	288	11	1133	382	111	289	6
Confl. Peds. (#/hr)			5	5					5	5		
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	1.0	4.6		14.9	18.5	18.5	1.0	35.6	35.6	5.2	39.8	39.8
Effective Green, g (s)	1.0	4.6		14.9	18.5	18.5	1.0	35.6	35.6	5.2	39.8	39.8
Actuated g/C Ratio	0.01	0.06		0.20	0.24	0.24	0.01	0.47	0.47	0.07	0.52	0.52
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	24	115		684	461	392	24	1684	742	239	1883	842
v/s Ratio Prot	0.01	0.01		c0.18	0.01		0.01	c0.31		c0.03	0.08	
v/s Ratio Perm						c0.18			0.24			0.00
v/c Ratio	0.46	0.10		0.91	0.02	0.73	0.46	0.67	0.51	0.46	0.15	0.01
Uniform Delay, d1	37.4	33.9		30.0	22.0	26.6	37.4	15.8	14.3	34.2	9.5	8.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.2	0.4		15.9	0.0	7.0	13.2	1.1	0.6	1.4	0.0	0.0
Delay (s)	50.6	34.2		46.0	22.0	33.6	50.6	16.9	14.9	35.6	9.5	8.8
Level of Service	D	C		D	C	C	D	B	B	D	A	A
Approach Delay (s)		42.4			40.3			16.5			16.6	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
87: Central Ave & El Cerrito Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	440	20	10	720	40	70	70	30	30	10	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99			0.98		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1805	3587		1805	3578			1812		1802	1635	
Flt Permitted	0.95	1.00		0.95	1.00			0.81		0.64	1.00	
Satd. Flow (perm)	1805	3587		1805	3578			1490		1216	1635	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	128	468	21	11	766	43	74	74	32	32	11	149
RTOR Reduction (vph)	0	3	0	0	4	0	0	12	0	0	117	0
Lane Group Flow (vph)	128	486	0	11	805	0	0	168	0	32	43	0
Confl. Peds. (#/hr)	5					5			5	5		
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	8.0	27.8		1.1	20.9			11.3		11.3	11.3	
Effective Green, g (s)	8.0	27.8		1.1	20.9			11.3		11.3	11.3	
Actuated g/C Ratio	0.15	0.53		0.02	0.40			0.22		0.22	0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	277	1910		38	1433			323		263	354	
v/s Ratio Prot	c0.07	0.14		0.01	c0.22						0.03	
v/s Ratio Perm								c0.11		0.03		
v/c Ratio	0.46	0.25		0.29	0.56			0.52		0.12	0.12	
Uniform Delay, d1	20.1	6.6		25.2	12.1			18.1		16.5	16.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.1		4.2	0.5			1.5		0.2	0.2	
Delay (s)	21.4	6.7		29.4	12.6			19.6		16.7	16.6	
Level of Service	C	A		C	B			B		B	B	
Approach Delay (s)		9.7			12.8			19.6			16.6	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	52.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
88: Central Ave & Canyon Crest Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	430	80	90	670	260	150	990	180	90	200	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3516		1805	3610	1595	1805	3610	1594	3502	3511	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3516		1805	3610	1595	1805	3610	1594	3502	3511	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	478	89	100	744	289	167	1100	200	100	222	44
RTOR Reduction (vph)	0	17	0	0	0	54	0	0	48	0	16	0
Lane Group Flow (vph)	44	550	0	100	744	235	167	1100	152	100	250	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	3.7	24.4		7.2	27.9	35.1	9.3	32.0	39.2	7.2	29.9	
Effective Green, g (s)	3.7	24.4		7.2	27.9	35.1	9.3	32.0	39.2	7.2	29.9	
Actuated g/C Ratio	0.04	0.28		0.08	0.32	0.40	0.11	0.37	0.45	0.08	0.34	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	77	988		150	1160	718	193	1331	793	290	1209	
v/s Ratio Prot	0.02	0.16		c0.06	c0.21	0.03	c0.09	c0.30	0.02	0.03	0.07	
v/s Ratio Perm						0.12			0.08			
v/c Ratio	0.57	0.56		0.67	0.64	0.33	0.87	0.83	0.19	0.34	0.21	
Uniform Delay, d1	40.8	26.6		38.6	25.2	17.8	38.1	24.9	14.3	37.6	20.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.8	0.7		10.7	1.2	0.3	30.8	4.3	0.1	0.7	0.1	
Delay (s)	50.6	27.3		49.3	26.4	18.0	69.0	29.2	14.4	38.3	20.2	
Level of Service	D	C		D	C	B	E	C	B	D	C	
Approach Delay (s)		29.0			26.3			31.7			25.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	86.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
89: Country Club Dr & Chicago Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	60	80	1430	40	20	800
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.99	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1801	1592	3610	1576	1805	3610
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1801	1592	3610	1576	1805	3610
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	67	90	1607	45	22	899
RTOR Reduction (vph)	0	80	0	7	0	0
Lane Group Flow (vph)	67	10	1607	38	22	899
Confl. Peds. (#/hr)	5	5		5	5	
Turn Type		custom		Perm	Prot	
Protected Phases			2		1	6
Permitted Phases	8	8		2		
Actuated Green, G (s)	6.1	6.1	33.9	33.9	1.1	39.0
Effective Green, g (s)	6.1	6.1	33.9	33.9	1.1	39.0
Actuated g/C Ratio	0.11	0.11	0.64	0.64	0.02	0.73
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	183	2305	1006	37	2651
v/s Ratio Prot			c0.45		0.01	c0.25
v/s Ratio Perm	c0.04	0.01		0.02		
v/c Ratio	0.32	0.06	0.70	0.04	0.59	0.34
Uniform Delay, d1	21.6	20.9	6.3	3.6	25.8	2.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	0.9	0.0	23.1	0.1
Delay (s)	22.5	21.1	7.2	3.6	48.8	2.6
Level of Service	C	C	A	A	D	A
Approach Delay (s)	21.7		7.1			3.7
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	53.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
90: Arlington Ave & SR-91 WB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	800	120	500	920	260	0	0	0	530	50	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97				1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	1805	5187	1572	1805	3610	1571				1715	1733	1597
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	1805	5187	1572	1805	3610	1571				1715	1733	1597
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	870	130	543	1000	283	0	0	0	576	54	533
RTOR Reduction (vph)	0	0	75	0	0	127	0	0	0	0	0	21
Lane Group Flow (vph)	76	870	55	543	1000	156	0	0	0	311	319	512
Confl. Peds. (#/hr)	5		5	5		5						5
Turn Type	Prot		Perm	Prot		Perm				Split		pm+ov
Protected Phases	7	4		3	8					6	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	19.9	34.9	34.9	54.0	69.0	69.0				29.1	29.1	49.0
Effective Green, g (s)	19.9	34.9	34.9	54.0	69.0	69.0				29.1	29.1	49.0
Actuated g/C Ratio	0.15	0.27	0.27	0.42	0.53	0.53				0.22	0.22	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	276	1393	422	750	1916	834				384	388	651
v/s Ratio Prot	0.04	c0.17		c0.30	0.28					0.18	0.18	c0.12
v/s Ratio Perm			0.04			0.10						0.20
v/c Ratio	0.28	0.62	0.13	0.72	0.52	0.19				0.81	0.82	0.79
Uniform Delay, d1	48.7	41.8	36.1	31.8	19.8	15.9				47.8	48.0	35.9
Progression Factor	1.00	1.00	1.00	0.56	0.49	0.09				1.00	1.00	1.00
Incremental Delay, d2	0.5	2.1	0.6	3.1	0.9	0.4				11.9	13.1	6.2
Delay (s)	49.2	43.9	36.7	20.9	10.5	1.8				59.7	61.1	42.1
Level of Service	D	D	D	C	B	A				E	E	D
Approach Delay (s)		43.4			12.3			0.0			52.0	
Approach LOS		D			B			A			D	

Intersection Summary			
HCM Average Control Delay	31.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
91: Arlington Ave & SR-91 EB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	830	210	130	1430	400	210	420	460	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.86	1.00	0.91	0.91	0.88			
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1805	3610	1596	1805	6536	1586	1643	3450	2842			
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1805	3610	1596	1805	6536	1586	1643	3450	2842			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	298	883	223	138	1521	426	223	447	489	0	0	0
RTOR Reduction (vph)	0	0	53	0	0	98	0	0	334	0	0	0
Lane Group Flow (vph)	298	883	170	138	1521	328	201	469	155	0	0	0
Confl. Peds. (#/hr)	5		5	5		5						
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm			
Protected Phases	7	4	2	3	8		2	2				
Permitted Phases			4			8			2			
Actuated Green, G (s)	26.7	71.6	99.0	19.0	63.9	63.9	27.4	27.4	27.4			
Effective Green, g (s)	26.7	71.6	99.0	19.0	63.9	63.9	27.4	27.4	27.4			
Actuated g/C Ratio	0.21	0.55	0.76	0.15	0.49	0.49	0.21	0.21	0.21			
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	371	1988	1265	264	3213	780	346	727	599			
v/s Ratio Prot	c0.17	0.24	0.03	0.08	c0.23		0.12	c0.14				
v/s Ratio Perm			0.08			0.21			0.05			
v/c Ratio	0.80	0.44	0.13	0.52	0.47	0.42	0.58	0.65	0.26			
Uniform Delay, d1	49.2	17.4	4.1	51.3	21.9	21.2	46.1	46.9	42.8			
Progression Factor	0.58	0.33	0.21	0.71	0.52	0.34	1.00	1.00	1.00			
Incremental Delay, d2	9.3	0.5	0.0	1.6	0.4	1.5	2.5	2.0	0.2			
Delay (s)	37.8	6.3	0.9	37.9	11.9	8.7	48.6	48.8	43.1			
Level of Service	D	A	A	D	B	A	D	D	D			
Approach Delay (s)		12.1			13.0			46.4			0.0	
Approach LOS		B			B			D			A	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
92: Arlington Ave & Maude St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	1040	240	50	1570	10	270	10	150	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.97		1.00	1.00		1.00	0.86			0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1805	5010		1805	5181		1805	1607			1783	
Flt Permitted	0.95	1.00		0.95	1.00		0.78	1.00			0.91	
Satd. Flow (perm)	1805	5010		1805	5181		1488	1607			1650	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	1118	258	54	1688	11	290	11	161	11	11	11
RTOR Reduction (vph)	0	23	0	0	0	0	0	113	0	0	8	0
Lane Group Flow (vph)	43	1353	0	54	1699	0	290	59	0	0	25	0
Confl. Peds. (#/hr)	5		5	5		5			5	5		
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	5.6	76.2		8.8	79.4		33.0	33.0			33.0	
Effective Green, g (s)	5.6	76.2		8.8	79.4		33.0	33.0			33.0	
Actuated g/C Ratio	0.04	0.59		0.07	0.61		0.25	0.25			0.25	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	78	2937		122	3164		378	408			419	
v/s Ratio Prot	0.02	0.27		c0.03	c0.33			0.04				
v/s Ratio Perm							c0.19				0.02	
v/c Ratio	0.55	0.46		0.44	0.54		0.77	0.15			0.06	
Uniform Delay, d1	61.0	15.3		58.2	14.7		44.9	37.6			36.7	
Progression Factor	0.95	0.33		0.65	0.59		1.00	1.00			1.00	
Incremental Delay, d2	7.5	0.5		2.1	0.5		9.0	0.2			0.1	
Delay (s)	65.2	5.5		40.1	9.2		54.0	37.7			36.8	
Level of Service	E	A		D	A		D	D			D	
Approach Delay (s)		7.3			10.2			47.9			36.8	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
93: Arlington Ave & Horace St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	1000	200	90	1300	10	220	80	40	10	40	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	1.00
Satd. Flow (prot)	1805	3500		1805	3605			1801			1880	1586
Flt Permitted	0.12	1.00		0.15	1.00			0.77			0.92	1.00
Satd. Flow (perm)	235	3500		287	3605			1435			1755	1586
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	1087	217	98	1413	11	239	87	43	11	43	98
RTOR Reduction (vph)	0	11	0	0	0	0	0	4	0	0	0	29
Lane Group Flow (vph)	33	1293	0	98	1424	0	0	365	0	0	54	69
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	84.3	84.3		84.3	84.3			37.7			37.7	37.7
Effective Green, g (s)	84.3	84.3		84.3	84.3			37.7			37.7	37.7
Actuated g/C Ratio	0.65	0.65		0.65	0.65			0.29			0.29	0.29
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	152	2270		186	2338			416			509	460
v/s Ratio Prot		0.37			c0.39							
v/s Ratio Perm	0.14			0.34				c0.25			0.03	0.04
v/c Ratio	0.22	0.57		0.53	0.61			0.88			0.11	0.15
Uniform Delay, d1	9.3	12.7		12.2	13.3			43.9			33.8	34.3
Progression Factor	0.60	0.59		0.28	0.15			1.00			1.00	1.00
Incremental Delay, d2	3.0	1.0		4.9	0.6			18.3			0.1	0.2
Delay (s)	8.6	8.4		8.3	2.6			62.3			33.9	34.4
Level of Service	A	A		A	A			E			C	C
Approach Delay (s)		8.4			3.0			62.3			34.2	
Approach LOS		A			A			E			C	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
94: Arlington Ave & Victoria Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	700	40	450	1220	270	40	360	440	150	290	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3575		1805	3493		1805	1900	1601	1805	1900	1586
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3575		1805	3493		1805	1900	1601	1805	1900	1586
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	737	42	474	1284	284	42	379	463	158	305	116
RTOR Reduction (vph)	0	3	0	0	14	0	0	0	19	0	0	72
Lane Group Flow (vph)	147	776	0	474	1554	0	42	379	444	158	305	44
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			6
Actuated Green, G (s)	11.0	32.2		36.8	58.0		5.6	34.0	70.8	11.0	39.4	39.4
Effective Green, g (s)	11.0	32.2		36.8	58.0		5.6	34.0	70.8	11.0	39.4	39.4
Actuated g/C Ratio	0.08	0.25		0.28	0.45		0.04	0.26	0.54	0.08	0.30	0.30
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	153	886		511	1558		78	497	872	153	576	481
v/s Ratio Prot	0.08	c0.22		0.26	c0.44		0.02	c0.20	0.14	c0.09	0.16	
v/s Ratio Perm									0.13			0.03
v/c Ratio	0.96	0.88		0.93	1.00		0.54	0.76	0.51	1.03	0.53	0.09
Uniform Delay, d1	59.3	47.0		45.3	35.9		60.9	44.3	18.7	59.5	37.6	32.5
Progression Factor	1.25	0.81		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	54.5	8.2		23.0	22.0		7.0	10.6	0.5	81.7	3.5	0.4
Delay (s)	128.5	46.3		68.4	57.9		67.9	54.9	19.1	141.2	41.1	32.8
Level of Service	F	D		E	E		E	D	B	F	D	C
Approach Delay (s)		59.3			60.3			36.8			66.7	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM Average Control Delay	56.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
95: Arlington Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	500	630	130	590	240	1170	1590	450	200	470	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3610	2824	3502	3610	1594	3502	3610	1591	3502	5136	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3610	2824	3502	3610	1594	3502	3610	1591	3502	5136	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	556	700	144	656	267	1300	1767	500	222	522	33
RTOR Reduction (vph)	0	0	61	0	0	33	0	0	41	0	8	0
Lane Group Flow (vph)	56	556	639	144	656	234	1300	1767	459	222	547	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	5.5	24.7	63.1	7.0	26.2	33.2	38.4	48.2	55.2	7.0	16.8	
Effective Green, g (s)	5.5	24.7	63.1	7.0	26.2	33.2	38.4	48.2	55.2	7.0	16.8	
Actuated g/C Ratio	0.05	0.24	0.61	0.07	0.25	0.32	0.37	0.47	0.54	0.07	0.16	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	96	867	1732	238	919	514	1307	1691	915	238	839	
v/s Ratio Prot	0.03	c0.15	0.14	0.04	c0.18	0.03	0.37	c0.49	0.03	c0.06	0.11	
v/s Ratio Perm			0.09			0.12			0.25			
v/c Ratio	0.58	0.64	0.37	0.61	0.71	0.46	0.99	1.04	0.50	0.93	0.65	
Uniform Delay, d1	47.6	35.1	9.9	46.6	34.9	27.7	32.1	27.4	15.1	47.7	40.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.7	1.6	0.1	4.3	2.7	0.6	23.5	34.7	0.4	40.1	1.8	
Delay (s)	56.3	36.8	10.1	50.9	37.6	28.3	55.6	62.0	15.6	87.8	42.1	
Level of Service	E	D	B	D	D	C	E	E	B	F	D	
Approach Delay (s)		23.4			37.1			53.2			55.2	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM Average Control Delay	45.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	102.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
96: Century Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	20	10	30	20	110	10	3040	20	60	1090	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.91		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805			1688		1805	5181		1805	5171	
Flt Permitted		0.45			0.94		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		842			1594		1805	5181		1805	5171	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	45	22	11	34	22	124	11	3416	22	67	1225	22
RTOR Reduction (vph)	0	6	0	0	87	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	72	0	0	93	0	11	3438	0	67	1246	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		10.8			10.8		1.3	64.8		5.4	68.9	
Effective Green, g (s)		10.8			10.8		1.3	64.8		5.4	68.9	
Actuated g/C Ratio		0.12			0.12		0.01	0.70		0.06	0.74	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		98			185		25	3610		105	3831	
v/s Ratio Prot							0.01	c0.66		c0.04	0.24	
v/s Ratio Perm		c0.09			0.06							
v/c Ratio		0.73			0.50		0.44	0.95		0.64	0.33	
Uniform Delay, d1		39.7			38.6		45.5	12.7		42.8	4.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		24.4			2.2		11.9	6.9		12.0	0.0	
Delay (s)		64.1			40.7		57.4	19.6		54.9	4.2	
Level of Service		E			D		E	B		D	A	
Approach Delay (s)		64.1			40.7			19.7			6.8	
Approach LOS		E			D			B			A	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
97: Via Vista Dr & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	40	50	20	30	100	60	2810	20	20	930	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1801	1900	1615	1805	1900	1588	1805	5181		1805	5149	
Flt Permitted	0.53	1.00	1.00	0.73	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1012	1900	1615	1383	1900	1588	1805	5181		1805	5149	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	180	45	56	22	34	112	67	3157	22	22	1045	45
RTOR Reduction (vph)	0	0	47	0	0	99	0	0	0	0	3	0
Lane Group Flow (vph)	180	45	9	22	34	13	67	3179	0	22	1087	0
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	21.6	15.0	15.0	13.2	10.6	10.6	6.6	56.3		2.6	52.3	
Effective Green, g (s)	21.6	15.0	15.0	13.2	10.6	10.6	6.6	56.3		2.6	52.3	
Actuated g/C Ratio	0.23	0.16	0.16	0.14	0.11	0.11	0.07	0.61		0.03	0.57	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	296	308	262	209	218	182	129	3153		51	2911	
v/s Ratio Prot	c0.05	0.02		0.00	0.02		0.04	c0.61		0.01	c0.21	
v/s Ratio Perm	c0.10		0.01	0.01		0.01						
v/c Ratio	0.61	0.15	0.03	0.11	0.16	0.07	0.52	1.01		0.43	0.37	
Uniform Delay, d1	30.7	33.3	32.6	34.4	36.9	36.6	41.4	18.1		44.2	11.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.5	0.2	0.1	0.2	0.3	0.2	3.5	18.0		5.8	0.1	
Delay (s)	34.2	33.5	32.7	34.6	37.3	36.7	44.9	36.1		50.0	11.2	
Level of Service	C	C	C	C	D	D	D	D		D	B	
Approach Delay (s)		33.8			36.6			36.3			11.9	
Approach LOS		C			D			D			B	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
98: Canyon Crest Dr & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	20	10	280	10	90	10	2880	830	30	1010	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		0.94	1.00		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	0.87		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3406		5090	1622		1805	5187	1594	1805	5178	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3406		5090	1622		1805	5187	1594	1805	5178	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	21	11	298	11	96	11	3064	883	32	1074	11
RTOR Reduction (vph)	0	10	0	0	82	0	0	0	172	0	0	0
Lane Group Flow (vph)	21	22	0	298	25	0	11	3064	711	32	1085	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	2.7	4.8		9.1	11.2		4.0	45.6	54.7	2.4	44.0	
Effective Green, g (s)	2.7	4.8		9.1	11.2		4.0	45.6	54.7	2.4	44.0	
Actuated g/C Ratio	0.03	0.06		0.12	0.14		0.05	0.59	0.70	0.03	0.56	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	63	210		595	233		93	3036	1201	56	2925	
v/s Ratio Prot	c0.01	0.01		0.06	0.02		0.01	c0.59	c0.07	0.02	c0.21	
v/s Ratio Perm									0.38			
v/c Ratio	0.33	0.10		0.50	0.11		0.12	1.01	0.59	0.57	0.37	
Uniform Delay, d1	36.7	34.5		32.3	29.0		35.3	16.2	5.9	37.2	9.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	0.2		0.7	0.2		0.6	18.6	0.8	13.3	0.1	
Delay (s)	39.8	34.7		32.9	29.2		35.8	34.8	6.7	50.6	9.4	
Level of Service	D	C		C	C		D	C	A	D	A	
Approach Delay (s)		36.8			31.9			28.5			10.6	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
99: Oleander Ave/Harley Knox Blvd & Perris Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	150	80	100	860	550	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1787	1567	1805	1900	1900	1576
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1787	1567	1805	1900	1900	1576
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	174	93	116	1000	640	140
RTOR Reduction (vph)	0	79	0	0	0	18
Lane Group Flow (vph)	174	14	116	1000	640	122
Confl. Peds. (#/hr)	5	5	5			5
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	16.0	16.0	13.0	86.0	69.0	69.0
Effective Green, g (s)	16.0	16.0	13.0	86.0	69.0	69.0
Actuated g/C Ratio	0.15	0.15	0.12	0.78	0.63	0.63
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	260	228	213	1485	1192	989
v/s Ratio Prot			0.06	c0.53	0.34	
v/s Ratio Perm	c0.10	0.01				0.08
v/c Ratio	0.67	0.06	0.54	0.67	0.54	0.12
Uniform Delay, d1	44.5	40.5	45.7	5.5	11.5	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.4	0.1	2.8	2.5	1.7	0.3
Delay (s)	50.9	40.6	48.5	8.0	13.3	8.5
Level of Service	D	D	D	A	B	A
Approach Delay (s)	47.3			12.2	12.4	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
101: Ramona Expy & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	970	110	60	1750	0	80	0	20	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		4.0	6.0		4.0	4.6				
Lane Util. Factor		0.91		1.00	0.91		1.00	0.95				
Frpb, ped/bikes		1.00		1.00	1.00		1.00	0.98				
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00				
Frt		0.98		1.00	1.00		1.00	0.85				
Flt Protected		1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)		5097		1805	5187		1805	3017				
Flt Permitted		1.00		0.95	1.00		0.95	1.00				
Satd. Flow (perm)		5097		1805	5187		1805	3017				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1000	113	62	1804	0	82	0	21	0	0	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	0	1108	0	62	1804	0	82	1	0	0	0	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)		81.5		8.0	93.5		6.5	5.9				
Effective Green, g (s)		81.5		8.0	93.5		6.5	5.9				
Actuated g/C Ratio		0.74		0.07	0.85		0.06	0.05				
Clearance Time (s)		6.0		4.0	6.0		4.0	4.6				
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0				
Lane Grp Cap (vph)		3776		131	4409		107	162				
v/s Ratio Prot		0.22		0.03	c0.35		c0.05	0.00				
v/s Ratio Perm												
v/c Ratio		0.29		0.47	0.41		0.77	0.01				
Uniform Delay, d1		4.7		49.0	1.9		51.0	49.3				
Progression Factor		0.11		0.83	1.23		1.00	1.00				
Incremental Delay, d2		0.2		2.0	0.2		27.3	0.0				
Delay (s)		0.7		42.5	2.5		78.3	49.3				
Level of Service		A		D	A		E	D				
Approach Delay (s)		0.7			3.9			72.4			0.0	
Approach LOS		A			A			E			A	

Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
102: Ramona Expy & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	570	120	120	1230	200	380	410	130	110	240	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5187	1586	3502	5065		3502	3610	1587	3502	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5187	1586	3502	5065		3502	3610	1587	3502	3610	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	289	588	124	124	1268	206	392	423	134	113	247	216
RTOR Reduction (vph)	0	0	65	0	17	0	0	0	106	0	0	153
Lane Group Flow (vph)	289	588	59	124	1457	0	392	423	28	113	247	63
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	16.2	52.7	52.7	9.2	45.7		15.4	22.8	22.8	6.0	13.4	13.4
Effective Green, g (s)	16.2	52.7	52.7	9.2	45.7		15.4	22.8	22.8	6.0	13.4	13.4
Actuated g/C Ratio	0.15	0.48	0.48	0.08	0.42		0.14	0.21	0.21	0.05	0.12	0.12
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	516	2485	760	293	2104		490	748	329	191	440	193
v/s Ratio Prot	c0.08	0.11		0.04	c0.29		c0.11	c0.12		0.03	0.07	
v/s Ratio Perm			0.04						0.02			0.04
v/c Ratio	0.56	0.24	0.08	0.42	0.69		0.80	0.57	0.08	0.59	0.56	0.33
Uniform Delay, d1	43.6	16.8	15.5	47.9	26.4		45.8	39.2	35.2	50.8	45.5	44.2
Progression Factor	1.29	1.00	1.33	1.33	0.67		0.94	1.05	1.50	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.2	0.2	0.1	0.2		8.8	0.9	0.1	4.8	1.6	1.0
Delay (s)	57.7	17.0	20.9	63.9	17.9		51.6	42.0	52.9	55.6	47.2	45.2
Level of Service	E	B	C	E	B		D	D	D	E	D	D
Approach Delay (s)		29.3			21.5			47.5			48.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
103: Ramona Expy & Evans Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	400	150	10	870	430	370	750	30	280	640	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	5187	1593	1805	3610	1586	3502	3587		3502	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	5187	1593	1805	3610	1586	3502	3587		3502	3610	1588
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	500	465	174	12	1012	500	430	872	35	326	744	605
RTOR Reduction (vph)	0	0	0	0	0	194	0	3	0	0	0	134
Lane Group Flow (vph)	500	465	174	12	1012	306	430	904	0	326	744	471
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Free	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6						4
Actuated Green, G (s)	13.0	42.8	110.0	1.2	31.0	31.0	13.0	33.3		12.7	33.0	33.0
Effective Green, g (s)	13.0	42.8	110.0	1.2	31.0	31.0	13.0	33.3		12.7	33.0	33.0
Actuated g/C Ratio	0.12	0.39	1.00	0.01	0.28	0.28	0.12	0.30		0.12	0.30	0.30
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	414	2018	1593	20	1017	447	414	1086		404	1083	476
v/s Ratio Prot	c0.14	0.09		0.01	c0.28		c0.12	0.25		0.09	0.21	
v/s Ratio Perm			c0.11			0.19						c0.30
v/c Ratio	1.21	0.23	0.11	0.60	1.00	0.68	1.04	0.83		0.81	0.69	0.99
Uniform Delay, d1	48.5	22.5	0.0	54.2	39.4	35.2	48.5	35.8		47.5	33.9	38.3
Progression Factor	0.88	1.37	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	114.0	0.3	0.1	40.2	27.1	8.3	54.6	7.5		11.2	3.6	38.9
Delay (s)	156.4	31.2	0.1	94.3	66.5	43.4	103.1	43.2		58.7	37.5	77.2
Level of Service	F	C	A	F	E	D	F	D		E	D	E
Approach Delay (s)		81.4			59.1			62.5			56.0	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM Average Control Delay	63.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	91.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
104: Morgan St & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	20	40	20	10	20	70	820	10	30	380	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.2		4.0	4.1	4.1	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.90		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3187		1805	1900	1581	1805	3602		1805	3610	1592
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3187		1805	1900	1581	1805	3602		1805	3610	1592
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	22	43	22	11	22	75	882	11	32	409	54
RTOR Reduction (vph)	0	39	0	0	0	21	0	1	0	0	0	18
Lane Group Flow (vph)	43	26	0	22	11	1	75	892	0	32	409	36
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	5.4	9.0		2.4	6.1	6.1	8.7	76.0		5.1	72.4	72.4
Effective Green, g (s)	5.4	9.0		2.4	6.1	6.1	8.7	76.0		5.1	72.4	72.4
Actuated g/C Ratio	0.05	0.08		0.02	0.06	0.06	0.08	0.69		0.05	0.66	0.66
Clearance Time (s)	4.0	4.2		4.0	4.1	4.1	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	89	261		39	105	88	143	2489		84	2376	1048
v/s Ratio Prot	c0.02	c0.01		0.01	0.01		c0.04	c0.25		0.02	0.11	
v/s Ratio Perm						0.00						0.02
v/c Ratio	0.48	0.10		0.56	0.10	0.01	0.52	0.36		0.38	0.17	0.03
Uniform Delay, d1	50.9	46.7		53.3	49.4	49.1	48.7	7.0		50.9	7.2	6.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.14	0.79		1.23	0.42	0.16
Incremental Delay, d2	4.1	0.2		17.3	0.4	0.1	3.3	0.4		2.8	0.2	0.1
Delay (s)	55.0	46.9		70.6	49.8	49.2	58.6	5.9		65.6	3.2	1.1
Level of Service	E	D		E	D	D	E	A		E	A	A
Approach Delay (s)		50.1			57.9			10.0			7.0	
Approach LOS		D			E			A			A	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
105: Morgan St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	90	110	60	120	50	110	350	30	30	220	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1587	1805	1900	1587	1805	3559		1805	3610	1586
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1587	1805	1900	1587	1805	3559		1805	3610	1586
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	176	106	129	71	141	59	129	412	35	35	259	106
RTOR Reduction (vph)	0	0	103	0	0	51	0	4	0	0	0	56
Lane Group Flow (vph)	176	106	26	71	141	8	129	443	0	35	259	50
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	15.1	22.4	22.4	7.0	14.3	14.3	13.1	59.4		5.2	51.5	51.5
Effective Green, g (s)	15.1	22.4	22.4	7.0	14.3	14.3	13.1	59.4		5.2	51.5	51.5
Actuated g/C Ratio	0.14	0.20	0.20	0.06	0.13	0.13	0.12	0.54		0.05	0.47	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	248	387	323	115	247	206	215	1922		85	1690	743
v/s Ratio Prot	c0.10	0.06		0.04	c0.07		c0.07	c0.12		0.02	0.07	
v/s Ratio Perm			0.02			0.00						0.03
v/c Ratio	0.71	0.27	0.08	0.62	0.57	0.04	0.60	0.23		0.41	0.15	0.07
Uniform Delay, d1	45.4	36.9	35.5	50.2	45.0	41.8	46.0	13.3		50.9	16.8	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.26	1.04		1.00	1.00	1.00
Incremental Delay, d2	9.0	0.4	0.1	9.5	3.2	0.1	4.0	0.3		3.2	0.2	0.2
Delay (s)	54.3	37.3	35.6	59.7	48.1	41.9	61.8	14.1		54.1	17.0	16.2
Level of Service	D	D	D	E	D	D	E	B		D	B	B
Approach Delay (s)		44.1			49.8			24.8			20.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
106: Rider St & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	110	20	130	160	260	30	530	70	40	290	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1795	1852		1795	1900	1583	1805	3534		1805	3547	
Flt Permitted	0.49	1.00		0.57	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	922	1852		1083	1900	1583	1805	3534		1805	3547	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	22	124	22	146	180	292	34	596	79	45	326	34
RTOR Reduction (vph)	0	7	0	0	0	240	0	6	0	0	4	0
Lane Group Flow (vph)	22	139	0	146	180	52	34	669	0	45	356	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	19.6	19.6		19.6	19.6	19.6	5.2	68.7		7.1	70.6	
Effective Green, g (s)	19.6	19.6		19.6	19.6	19.6	5.2	68.7		7.1	70.6	
Actuated g/C Ratio	0.18	0.18		0.18	0.18	0.18	0.05	0.62		0.06	0.64	
Clearance Time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	164	330		193	339	282	85	2207		117	2277	
v/s Ratio Prot		0.07			0.09		0.02	c0.19		c0.02	0.10	
v/s Ratio Perm	0.02			c0.13		0.03						
v/c Ratio	0.13	0.42		0.76	0.53	0.18	0.40	0.30		0.38	0.16	
Uniform Delay, d1	38.1	40.2		42.9	41.0	38.4	50.9	9.6		49.4	7.8	
Progression Factor	1.00	1.00		0.73	0.71	1.21	0.91	1.16		1.46	0.35	
Incremental Delay, d2	0.4	0.9		13.5	1.4	0.3	3.0	0.3		2.1	0.1	
Delay (s)	38.4	41.0		44.7	30.3	46.7	49.3	11.4		73.9	2.9	
Level of Service	D	D		D	C	D	D	B		E	A	
Approach Delay (s)		40.7			41.4			13.2			10.8	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
107: Rider St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	290	30	20	450	140	110	230	20	160	130	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.96		1.00	0.99		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3553		1805	3467		1805	3562		1805	3263	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3553		1805	3467		1805	3562		1805	3263	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	163	337	35	23	523	163	128	267	23	186	151	209
RTOR Reduction (vph)	0	7	0	0	28	0	0	6	0	0	142	0
Lane Group Flow (vph)	163	365	0	23	658	0	128	284	0	186	218	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	14.8	41.5		3.1	29.8		14.3	31.8		17.6	35.1	
Effective Green, g (s)	14.8	41.5		3.1	29.8		14.3	31.8		17.6	35.1	
Actuated g/C Ratio	0.13	0.38		0.03	0.27		0.13	0.29		0.16	0.32	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	243	1340		51	939		235	1030		289	1041	
v/s Ratio Prot	c0.09	0.10		0.01	c0.19		0.07	c0.08		c0.10	c0.07	
v/s Ratio Perm												
v/c Ratio	0.67	0.27		0.45	0.70		0.54	0.28		0.64	0.21	
Uniform Delay, d1	45.3	23.8		52.6	36.1		44.8	30.2		43.3	27.3	
Progression Factor	0.87	0.93		1.00	1.00		1.00	1.00		0.93	0.85	
Incremental Delay, d2	7.1	0.1		6.2	2.4		2.6	0.7		4.8	0.5	
Delay (s)	46.6	22.2		58.8	38.5		47.4	30.9		45.2	23.7	
Level of Service	D	C		E	D		D	C		D	C	
Approach Delay (s)		29.6			39.1			35.9			31.0	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	34.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
112: Placentia Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	80	30	30	120	140	60	490	30	40	410	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1810		1805	1900	1586	1805	3574		1805	3579	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1810		1805	1900	1586	1805	3574		1805	3579	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	38	100	38	38	150	175	75	612	38	50	512	25
RTOR Reduction (vph)	0	16	0	0	0	152	0	2	0	0	2	0
Lane Group Flow (vph)	38	122	0	38	150	23	75	648	0	50	535	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	4.7	14.2		4.7	14.2	14.2	8.7	65.5		7.4	64.2	
Effective Green, g (s)	4.7	14.2		4.7	14.2	14.2	8.7	65.5		7.4	64.2	
Actuated g/C Ratio	0.04	0.13		0.04	0.13	0.13	0.08	0.60		0.07	0.58	
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	77	234		77	245	205	143	2128		121	2089	
v/s Ratio Prot	c0.02	0.07		0.02	c0.08		c0.04	c0.18		0.03	0.15	
v/s Ratio Perm						0.01						
v/c Ratio	0.49	0.52		0.49	0.61	0.11	0.52	0.30		0.41	0.26	
Uniform Delay, d1	51.5	44.7		51.5	45.3	42.3	48.7	11.0		49.2	11.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.90	2.10		0.94	1.30	
Incremental Delay, d2	4.9	2.1		4.9	4.5	0.2	3.4	0.4		2.3	0.3	
Delay (s)	56.4	46.8		56.4	49.8	42.6	47.1	23.5		48.7	14.8	
Level of Service	E	D		E	D	D	D	C		D	B	
Approach Delay (s)		48.9			47.0			25.9			17.7	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
113: Placentia Ave & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	0	0	0	0	0	0	0			0		
vC1, stage 1 conf vol	0	0		0	0							
vC2, stage 2 conf vol	0	0		0	0							
vCu, unblocked vol	0	0	0	0	0	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	1029	900	1091	1029	900	1091	1636			1636		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	0	0	0	0	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	0.0	0.0	0.0		0.0	
Approach LOS	A	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
114: Orange Ave & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	190	40	60	180	30	60	140	40	20	110	80
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	55	209	44	66	198	33	66	154	44	22	121	88

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	308	297	66	198	22	209
Volume Left (vph)	55	66	66	0	22	0
Volume Right (vph)	44	33	0	44	0	88
Hadj (s)	-0.05	-0.02	0.50	-0.16	0.50	-0.29
Departure Headway (s)	6.0	6.0	7.4	6.7	7.4	6.6
Degree Utilization, x	0.51	0.50	0.13	0.37	0.05	0.38
Capacity (veh/h)	561	555	439	484	440	487
Control Delay (s)	15.1	14.9	10.3	12.3	9.6	12.5
Approach Delay (s)	15.1	14.9	11.8		12.2	
Approach LOS	C	B	B		B	

Intersection Summary			
Delay	13.6		
HCM Level of Service	B		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
115: Nuevo Rd & Evans Rd

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	140	280	400	80	30	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1900	1900	1569	1805	1564
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1900	1900	1569	1805	1564
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	156	311	444	89	33	311
RTOR Reduction (vph)	0	0	0	44	0	232
Lane Group Flow (vph)	156	311	444	45	33	79
Confl. Peds. (#/hr)	5			5	5	5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	14.7	74.0	55.3	55.3	28.0	28.0
Effective Green, g (s)	14.7	74.0	55.3	55.3	28.0	28.0
Actuated g/C Ratio	0.13	0.67	0.50	0.50	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	241	1278	955	789	459	398
v/s Ratio Prot	c0.09	0.16	c0.23		0.02	
v/s Ratio Perm				0.03		c0.05
v/c Ratio	0.65	0.24	0.46	0.06	0.07	0.20
Uniform Delay, d1	45.2	7.0	17.7	14.0	31.1	32.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	0.5	1.6	0.1	0.3	1.1
Delay (s)	51.1	7.5	19.4	14.1	31.4	33.3
Level of Service	D	A	B	B	C	C
Approach Delay (s)		22.0	18.5		33.1	
Approach LOS		C	B		C	

Intersection Summary			
HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
122: Ramona Expy & Bridge St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	70	460	680	80	40	40
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	500	739	87	43	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	826				1435	783
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	826				1435	783
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				68	89
cM capacity (veh/h)	813				135	397

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	76	500	826	87
Volume Left	76	0	0	43
Volume Right	0	0	87	43
cSH	813	1700	1700	270
Volume to Capacity	0.09	0.29	0.49	0.32
Queue Length 95th (ft)	8	0	0	34
Control Delay (s)	9.9	0.0	0.0	29.5
Lane LOS	A			D
Approach Delay (s)	1.3		0.0	29.5
Approach LOS				D

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
123: Bridge St & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	120	30	20	660	340	50
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	133	33	22	733	378	56
Pedestrians				5	5	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1188	411	433			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1188	411	433			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	35	95	98			
cM capacity (veh/h)	205	643	1137			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	167	22	733	433
Volume Left	133	22	0	0
Volume Right	33	0	0	56
cSH	237	1137	1700	1700
Volume to Capacity	0.70	0.02	0.43	0.25
Queue Length 95th (ft)	116	1	0	0
Control Delay (s)	49.6	8.2	0.0	0.0
Lane LOS	E	A		
Approach Delay (s)	49.6	0.2		0.0
Approach LOS	E			

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
124: Gilman Springs Rd & SR-79 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	310	0	0	350	240	280	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	21	323	0	0	365	250	292	0	0	0	0	0
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)									10			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	620			328			739	989	333	739	739	375
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	620			328			739	989	333	739	739	375
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			11	100	100	100	100	100
cM capacity (veh/h)	971			1238			326	242	708	328	339	673

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	21	323	365	250	292
Volume Left	21	0	0	0	292
Volume Right	0	0	0	250	0
cSH	971	1700	1700	1700	322
Volume to Capacity	0.02	0.19	0.21	0.15	0.90
Queue Length 95th (ft)	2	0	0	0	218
Control Delay (s)	8.8	0.0	0.0	0.0	65.5
Lane LOS	A				F
Approach Delay (s)	0.5		0.0		65.5
Approach LOS					F

Intersection Summary			
Average Delay	15.4		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
125: Gilman Springs Rd & SR-79 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	210	190	10	660	0	0	0	0	150	0	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	223	202	11	702	0	0	0	0	160	0	43
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												7
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	707			431			978	957	233	957	1159	712
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	707			431			978	957	233	957	1159	712
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	32	100	90
cM capacity (veh/h)	897			1140			206	256	807	235	195	432

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	223	202	11	702	202
Volume Left	0	0	11	0	160
Volume Right	0	202	0	0	43
cSH	1700	1700	1140	1700	298
Volume to Capacity	0.13	0.12	0.01	0.41	0.68
Queue Length 95th (ft)	0	0	1	0	115
Control Delay (s)	0.0	0.0	8.2	0.0	40.6
Lane LOS			A		E
Approach Delay (s)	0.0		0.1		40.6
Approach LOS					E

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
126: Ramona Expy & SR-79(Sanderson Ave)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	250	50	30	370	420	150	700	30	260	420	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1596	3502	3610	1615	3502	3610	1594	3502	3610	1598
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1596	3502	3610	1615	3502	3610	1594	3502	3610	1598
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	341	275	55	33	407	462	165	769	33	286	462	220
RTOR Reduction (vph)	0	0	29	0	0	37	0	0	22	0	0	85
Lane Group Flow (vph)	341	275	26	33	407	425	165	769	11	286	462	135
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		pm+ov	Prot		pt+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	8 1	5	2	3	1	6	7
Permitted Phases			4						2			6
Actuated Green, G (s)	11.3	33.2	41.8	3.8	25.7	40.0	8.6	25.0	28.8	10.3	26.7	38.0
Effective Green, g (s)	11.3	33.2	41.8	3.8	25.7	40.0	8.6	25.0	28.8	10.3	26.7	38.0
Actuated g/C Ratio	0.13	0.38	0.47	0.04	0.29	0.45	0.10	0.28	0.33	0.12	0.30	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	448	1357	828	151	1051	732	341	1022	592	409	1092	760
v/s Ratio Prot	c0.10	0.08	0.00	0.01	0.11	c0.26	0.05	c0.21	0.00	0.08	0.13	0.02
v/s Ratio Perm			0.01						0.01			0.06
v/c Ratio	0.76	0.20	0.03	0.22	0.39	0.58	0.48	0.75	0.02	0.70	0.42	0.18
Uniform Delay, d1	37.2	18.6	12.4	40.8	25.0	17.9	37.7	28.8	20.2	37.5	24.6	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.5	0.1	0.0	0.7	0.2	1.2	1.1	3.2	0.0	5.2	0.3	0.1
Delay (s)	44.7	18.7	12.4	41.5	25.2	19.1	38.8	32.0	20.2	42.7	24.9	15.6
Level of Service	D	B	B	D	C	B	D	C	C	D	C	B
Approach Delay (s)		31.4			22.7			32.8			28.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
129: 6th St & California Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	210	120	40	220	10	300	30	50	30	50	10
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	12	244	140	47	256	12	349	35	58	35	58	12

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total (vph)	12	384	47	267	349	93	105
Volume Left (vph)	12	0	47	0	349	0	35
Volume Right (vph)	0	140	0	12	0	58	12
Hadj (s)	0.50	-0.25	0.50	-0.03	0.50	-0.44	0.00
Departure Headway (s)	7.6	6.8	7.8	7.2	7.5	6.6	7.8
Degree Utilization, x	0.02	0.73	0.10	0.54	0.73	0.17	0.23
Capacity (veh/h)	448	508	437	466	463	520	399
Control Delay (s)	9.6	24.7	10.4	17.0	26.9	9.7	13.1
Approach Delay (s)	24.2		16.1		23.3		13.1
Approach LOS	C		C		C		B

Intersection Summary			
Delay	20.9		
HCM Level of Service	C		
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
130: 6th St & Beaumont Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	190	50	90	180	90	40	180	60	130	260	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1802	3486		1802	1710	1441	1805	3462		1805	3478	
Flt Permitted	0.64	1.00		0.60	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1215	3486		1134	1710	1441	1805	3462		1805	3478	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	72	196	52	93	186	93	41	186	62	134	268	72
RTOR Reduction (vph)	0	36	0	0	0	54	0	45	0	0	31	0
Lane Group Flow (vph)	72	212	0	93	186	39	41	203	0	134	309	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Parking (#/hr)					0	0						
Turn Type	Perm			Perm		pm+ov	Prot			Prot		
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	9.9	9.9		9.9	9.9	16.1	1.1	10.6		6.2	15.7	
Effective Green, g (s)	9.9	9.9		9.9	9.9	16.1	1.1	10.6		6.2	15.7	
Actuated g/C Ratio	0.26	0.26		0.26	0.26	0.42	0.03	0.27		0.16	0.41	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	311	892		290	437	748	51	948		289	1411	
v/s Ratio Prot		0.06			c0.11	0.01	0.02	0.06		c0.07	c0.09	
v/s Ratio Perm	0.06			0.08		0.02						
v/c Ratio	0.23	0.24		0.32	0.43	0.05	0.80	0.21		0.46	0.22	
Uniform Delay, d1	11.4	11.4		11.7	12.0	6.7	18.7	10.8		14.7	7.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.1		0.6	0.7	0.0	59.0	0.1		1.2	0.1	
Delay (s)	11.8	11.5		12.3	12.7	6.8	77.7	11.0		15.9	7.6	
Level of Service	B	B		B	B	A	E	B		B	A	
Approach Delay (s)		11.6			11.1			20.4			9.9	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
131: Reche Canyon Rd & Reche Vista Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	10	200	10	10	1070	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1800
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1800	1528		1751	1615	1530
Flt Permitted	1.00	1.00		0.84	0.95	1.00
Satd. Flow (perm)	1800	1528		1500	1615	1530
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	12	247	12	12	1321	12
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	12	247	0	24	1321	12
Confl. Peds. (#/hr)		5	5			5
Turn Type		pm+ov	Perm			Prot
Protected Phases	4	2		8	2	2
Permitted Phases		4	8			
Actuated Green, G (s)	5.7	89.9		5.7	84.2	84.2
Effective Green, g (s)	5.7	89.9		5.7	84.2	84.2
Actuated g/C Ratio	0.06	0.90		0.06	0.84	0.84
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	103	1528		86	1361	1290
v/s Ratio Prot	0.01	c0.14			c0.82	0.01
v/s Ratio Perm		0.03		0.02		
v/c Ratio	0.12	0.16		0.28	0.97	0.01
Uniform Delay, d1	44.7	0.6		45.1	6.8	1.2
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0		1.8	17.8	0.0
Delay (s)	45.2	0.6		46.9	24.5	1.2
Level of Service	D	A		D	C	A
Approach Delay (s)	2.7			46.9	24.3	
Approach LOS	A			D	C	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	5.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
132: San Timoteo Canyon Rd & Alessandro Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	260	0	10	560	210	10	20	0	270	10	40
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	38	325	0	12	700	262	12	25	0	338	12	50

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	363	975	38	400
Volume Left (vph)	38	13	13	338
Volume Right (vph)	0	263	0	50
Hadj (s)	0.02	-0.16	0.07	0.09
Departure Headway (s)	6.7	6.2	8.3	6.9
Degree Utilization, x	0.67	1.67	0.09	0.76
Capacity (veh/h)	525	582	369	512
Control Delay (s)	22.3	326.9	12.0	28.5
Approach Delay (s)	22.3	326.9	12.0	28.5
Approach LOS	C	F	B	D

Intersection Summary			
Delay	190.8		
HCM Level of Service	F		
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
133: San Timoteo Canyon Rd & Live Oak Canyon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	480	10	10	750	80	10	10	10	160	10	40
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	22	516	11	11	806	86	11	11	11	172	11	43

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	548	903	32	226
Volume Left (vph)	22	11	11	172
Volume Right (vph)	11	86	11	43
Hadj (s)	0.00	-0.05	-0.13	0.04
Departure Headway (s)	5.9	5.8	7.8	7.1
Degree Utilization, x	0.89	1.45	0.07	0.44
Capacity (veh/h)	606	626	425	488
Control Delay (s)	39.2	228.5	11.4	15.5
Approach Delay (s)	39.2	228.5	11.4	15.5
Approach LOS	E	F	B	C

Intersection Summary			
Delay	135.6		
HCM Level of Service	F		
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
134: San Timoteo Canyon Rd & Redlands Blvd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	20	630	60	90	790	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	685	65	98	859	22

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	707	163	880
Volume Left (vph)	0	65	859
Volume Right (vph)	685	0	22
Hadj (s)	-0.58	0.08	0.18
Departure Headway (s)	5.6	7.1	6.3
Degree Utilization, x	1.10	0.32	1.55
Capacity (veh/h)	649	504	572
Control Delay (s)	86.8	13.4	274.0
Approach Delay (s)	86.8	13.4	274.0
Approach LOS	F	B	F

Intersection Summary			
Delay	174.1		
HCM Level of Service	F		
Intersection Capacity Utilization	108.2%	ICU Level of Service	G
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
135: Crescent Ave & Alessandro Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	40	40	200	110	110	270
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	44	44	222	122	122	300
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			89		633	67
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			89		633	67
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			85		68	70
cM capacity (veh/h)			1519		381	1003

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	89	344	422
Volume Left	0	222	122
Volume Right	44	0	300
cSH	1700	1519	681
Volume to Capacity	0.05	0.15	0.62
Queue Length 95th (ft)	0	13	108
Control Delay (s)	0.0	5.5	18.5
Lane LOS		A	C
Approach Delay (s)	0.0	5.5	18.5
Approach LOS			C

Intersection Summary			
Average Delay	11.3		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
136: Sunset Dr & Alessandro Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	10	10	40	10	10	10	260	20	10	240	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	22	11	11	44	11	11	11	286	22	11	264	11

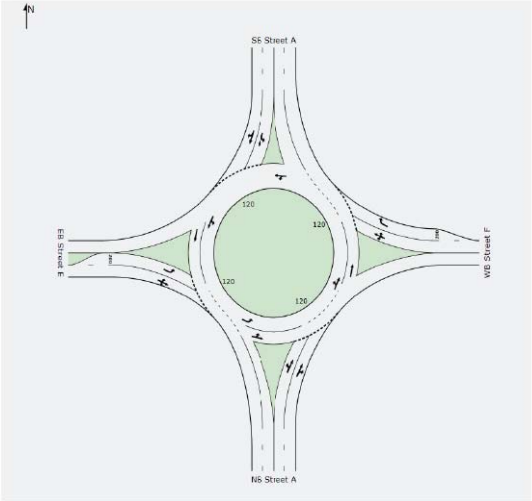
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	44	66	319	286
Volume Left (vph)	22	44	11	11
Volume Right (vph)	11	11	22	11
Hadj (s)	-0.05	0.03	-0.03	-0.02
Departure Headway (s)	5.3	5.4	4.5	4.6
Degree Utilization, x	0.07	0.10	0.40	0.36
Capacity (veh/h)	591	592	774	760
Control Delay (s)	8.7	9.0	10.4	10.1
Approach Delay (s)	8.7	9.0	10.4	10.1
Approach LOS	A	A	B	B

Intersection Summary			
Delay	10.1		
HCM Level of Service	B		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

Title: Intersection 1 - Existing Plus Build-out - PM Peak Hour
Intersection Type: Roundabout

Lane Use & Performance

	Demand Flow veh/h	HV %	Capacity veh/h	Deg. Satn. v/c	Lane Util. %	Average Delay sec	Level of Service	Percentile Back of Queue Vehicles veh	Percentile Back of Queue Distance ft	Prob. Blockage %
South: NB Street A										
Lane 1	686	0.0	536	1.281	100	144.2	LOS F	58.1	1451.0	2.2
Lane 2	764	0.0	596	1.281	100	142.9	LOS F	63.8	1598.6	5.0
Approach	1450	0.0		1.281		143.5	LOS F	63.9	1598.6	
East: WB Street F										
Lane 1	203	0.0	382	0.532	100	17.7	LOS B	2.7	68.1	0.0
Lane 2	257	0.0	483	0.532	100	14.6	LOS B	3.0	75.0	0.0
Approach	460	0.0		0.532		160.0	LOS B	3.0	75.0	
North: SB Street A										
Lane 1	897	0.0	1313	0.683	100	7.8	LOS A	7.2	181.2	0.0
Lane 2	1003	0.0	1467	0.683	100	6.4	LOS A	7.3	183.5	0.0
Approach	1900	0.0		0.683		7.0	LOS A	7.3	183.5	
West: EB Street E										
Lane 1	461	0.0	544	0.848	100	29.1	LOS C	8.3	207.8	6.1
Lane 2	519	0.0	612	0.848	100	26.8	LOS C	8.9	222.0	0.0
Approach	980	0.0		0.848		27.9	LOS C	8.9	222.0	
All Vehicles	4790			1.281		53.5	LOS D	63.9	1598.6	



HCM Signalized Intersection Capacity Analysis
2: Street E & Street D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	130	440	610	50	70	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1900	1591	3502	1900	1805	1591
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1900	1591	3502	1900	1805	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	478	663	54	76	250
RTOR Reduction (vph)	0	365	0	0	0	205
Lane Group Flow (vph)	141	113	663	54	76	45
Confl. Peds. (#/hr)		5			5	5
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	10.7	10.7	14.4	29.1	8.1	8.1
Effective Green, g (s)	10.7	10.7	14.4	29.1	8.1	8.1
Actuated g/C Ratio	0.24	0.24	0.32	0.64	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	450	377	1116	1223	323	285
v/s Ratio Prot	c0.07		c0.19	0.03	c0.04	
v/s Ratio Perm		0.07				0.03
v/c Ratio	0.31	0.30	0.59	0.04	0.24	0.16
Uniform Delay, d1	14.2	14.2	12.9	3.0	15.9	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.4	0.9	0.0	0.4	0.3
Delay (s)	14.6	14.6	13.8	3.0	16.3	15.9
Level of Service	B	B	B	A	B	B
Approach Delay (s)	14.6			13.0	16.0	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

 © 2000-2011 Akcelik & Associates Pty Ltd

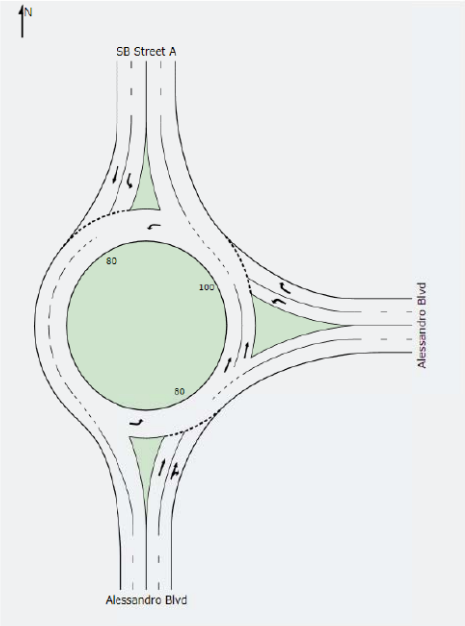
LANE OUTPUT

*Use the **Control** sheet to create output data in this sheet. For detailed information, refer to the **Intro** sheet.*

Title: Intersection 3 - Existing Plus Build-out - PM Peak Hour
Intersection Type: Roundabout

Lane Use & Performance

	Demand Flow veh/h	HV %	Capacity veh/h	Deg. Satn. v/c	Lane Util. %	Average Delay sec	Level of Service	Percentile Back of Queue Vehicles veh	Percentile Back of Queue Distance ft	Prob. Blockage %
South: NB Alessandro Blvd										
Lane 1	165	0.0	817	0.202	100	8.5	LOS A	1.2	30.1	0.0
Lane 2	175	0.0	867	0.202	100	9.8	LOS A	1.2	30.7	0.0
Approach	340	0.0		0.202		9.2	LOS A	1.2	30.7	
East: WB Alessandro Blvd										
Lane 1	270	0.0	891	0.303	100	13.4	LOS B	1.6	41.1	0.0
Lane 2	530	0.0	1062	0.499	100	7.6	LOS A	3.5	87.4	0.0
Approach	800	0.0		0.499		9.5	LOS A	3.5	87.4	
North: SB Street A										
Lane 1	500	0.0	1133	0.441	100	13.6	LOS B	2.9	72.2	0.0
Lane 2	270	0.0	922	0.293	100	7.4	LOS A	1.6	39.7	0.0
Approach	770	0.0		0.441		11.4	LOS B	2.9	72.2	
All Vehicles	1910			0.499		10.2	LOS B	3.5	87.4	



VOLUMES
UTILITY APPLICATION FOR SIDRA INTERSECTION 5.1 © 2000-2011 Akcelik & Associates Pty Ltd

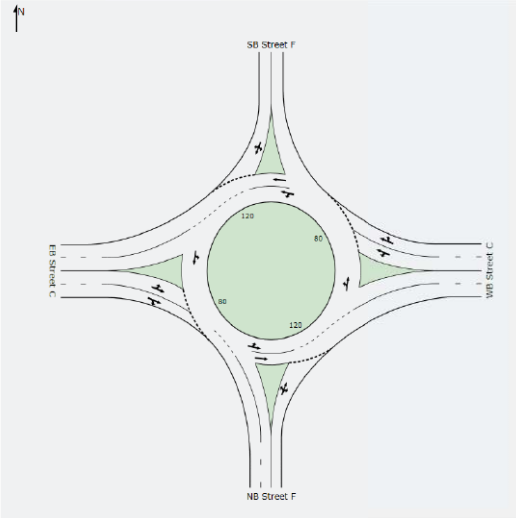
LANE OUTPUT

*Use the **Control** sheet to create output data in this sheet. For detailed information, refer to the **Intro** sheet.*

Title: Intersection 4 - Existing Plus Build-out - PM Peak Hour
Intersection Type: Roundabout

Lane Use & Performance

	Demand Flow veh/h	HV %	Capacity veh/h	Deg. Satn. v/c	Lane Util. %	Average Delay sec	Level of Service	Percentile Back of Queue Vehicles veh	Percentile Back of Queue Distance ft	Prob. Blockage %
South: NB Street F										
Lane 1	640	0.0	719	0.891	100	27.2	LOS D	13.9	346.9	0.0
Approach	640	0.0		0.891		27.2	LOS D	13.9	346.9	
East: WB Street C										
Lane 1	140	0.0	731	0.191	100	9.7	LOS A	1.2	28.9	0.0
Lane 2	150	0.0	784	0.191	100	8.8	LOS A	1.2	29.7	0.0
Approach	290	0.0		0.191		9.2	LOS A	1.2	29.7	
North: SB Street F										
Lane 1	230	0.0	578	0.398	100	12.7	LOS B	2.2	55.4	0.0
Approach	230	0.0		0.398		12.7	LOS B	2.2	55.4	
West: EB Street C										
Lane 1	386	0.0	1240	0.312	100	6.7	LOS A	1.8	45.2	0.0
Lane 2	404	0.0	1296	0.312	100	7.6	LOS A	1.8	45.6	0.0
Approach	790	0.0		0.312		7.2	LOS A	1.8	45.6	
All Vehicles	1950			0.891		14.7	LOS B	13.9	346.9	



HCM Signalized Intersection Capacity Analysis
6: Street C & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	520	340	170	300	630	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1567	1805	1900	1900	1588
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1567	1805	1900	1900	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	536	351	175	309	649	278
RTOR Reduction (vph)	0	224	0	0	0	171
Lane Group Flow (vph)	536	127	175	309	649	107
Confl. Peds. (#/hr)	5	5				5
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	24.9	24.9	9.1	42.0	28.9	28.9
Effective Green, g (s)	24.9	24.9	9.1	42.0	28.9	28.9
Actuated g/C Ratio	0.33	0.33	0.12	0.56	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	600	521	219	1065	733	613
v/s Ratio Prot	c0.30		c0.10	0.16	c0.34	
v/s Ratio Perm		0.08				0.07
v/c Ratio	0.89	0.24	0.80	0.29	0.89	0.17
Uniform Delay, d1	23.7	18.2	32.0	8.6	21.5	15.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.6	0.2	18.1	0.2	12.4	0.1
Delay (s)	39.4	18.4	50.1	8.8	33.8	15.3
Level of Service	D	B	D	A	C	B
Approach Delay (s)	31.1			23.7	28.3	
Approach LOS	C			C	C	

Intersection Summary			
HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Street B & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	10	50	30	950	630	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1573	1805	1900	1900	1573
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1573	1805	1900	1900	1573
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	54	33	1033	685	11
RTOR Reduction (vph)	0	50	0	0	0	3
Lane Group Flow (vph)	11	4	33	1033	685	8
Confl. Peds. (#/hr)	5	5				5
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	3.4	3.4	2.1	33.9	27.8	27.8
Effective Green, g (s)	3.4	3.4	2.1	33.9	27.8	27.8
Actuated g/C Ratio	0.08	0.08	0.05	0.75	0.61	0.61
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	135	118	84	1422	1166	965
v/s Ratio Prot	c0.01		0.02	c0.54	0.36	
v/s Ratio Perm		0.00				0.01
v/c Ratio	0.08	0.03	0.39	0.73	0.59	0.01
Uniform Delay, d1	19.5	19.4	21.0	3.1	5.3	3.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	3.0	1.9	0.8	0.0
Delay (s)	19.8	19.5	24.0	5.0	6.0	3.4
Level of Service	B	B	C	A	A	A
Approach Delay (s)	19.6			5.6	6.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
10: Locust Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	0	30	5	5	5	70	670	0	10	890	100
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	60	0	36	6	6	6	83	798	0	12	1060	119
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2067	2058	1070	2093	2177	808	1184			803		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2067	2058	1070	2093	2177	808	1184			803		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	87	80	85	98	86			99		
cM capacity (veh/h)	31	47	269	29	39	381	595			827		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	95	18	83	798	0	12	1060	119
Volume Left	60	6	83	0	0	12	0	0
Volume Right	36	6	0	0	0	0	0	119
cSH	46	48	595	1700	1700	827	1700	1700
Volume to Capacity	2.07	0.37	0.14	0.47	0.00	0.01	0.62	0.07
Queue Length 95th (ft)	245	33	12	0	0	1	0	0
Control Delay (s)	683.4	118.1	12.0	0.0	0.0	9.4	0.0	0.0
Lane LOS	F	F	B			A		
Approach Delay (s)	683.4	118.1	1.1			0.1		
Approach LOS	F	F						

Intersection Summary			
Average Delay	31.3		
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
11: Ironwood Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	10	30	30	30	0	20	620	10	10	670	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.97			1.00		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1763			1854		1805	1894		1805	1900	1561
Flt Permitted		0.97			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1763			1854		1805	1894		1805	1900	1561
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	85	11	32	32	32	0	21	660	11	11	713	160
RTOR Reduction (vph)	0	8	0	0	0	0	0	1	0	0	0	29
Lane Group Flow (vph)	0	120	0	0	64	0	21	670	0	11	713	131
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)		39.9			8.3		3.3	54.3		1.5	52.5	52.5
Effective Green, g (s)		39.9			8.3		3.3	54.3		1.5	52.5	52.5
Actuated g/C Ratio		0.33			0.07		0.03	0.45		0.01	0.44	0.44
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		586			128		50	857		23	831	683
v/s Ratio Prot		c0.07			c0.03		c0.01	0.35		0.01	c0.38	
v/s Ratio Perm												0.08
v/c Ratio		0.20			0.50		0.42	0.78		0.48	0.86	0.19
Uniform Delay, d1		28.7			53.8		57.4	27.8		58.9	30.4	20.7
Progression Factor		0.71			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.7			3.1		5.6	4.7		14.8	8.7	0.1
Delay (s)		21.0			56.9		63.0	32.5		73.7	39.1	20.9
Level of Service		C			E		E	C		E	D	C
Approach Delay (s)		21.0			56.9			33.5			36.3	
Approach LOS		C			E			C			D	

Intersection Summary			
HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
12: Ironwood Ave & Theodore St

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	120	30	20	270	10
Sign Control	Yield			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	13	156	39	26	351	13
Pedestrians	5			5		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	724	5	869	711	5	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	724	5	869	711	5	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	95	86	79	91	78	
cM capacity (veh/h)	275	1080	187	280	1623	

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2
Volume Total	13	156	65	351	13
Volume Left	0	0	39	351	0
Volume Right	0	156	0	0	13
cSH	275	1080	216	1623	1700
Volume to Capacity	0.05	0.14	0.30	0.22	0.01
Queue Length 95th (ft)	4	13	30	21	0
Control Delay (s)	18.7	8.9	28.7	7.8	0.0
Lane LOS	C	A	D	A	
Approach Delay (s)	9.7		28.7	7.5	
Approach LOS	A		D		

Intersection Summary			
Average Delay	10.4		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
13: Spruce Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	10	10	40	10	30	10	630	580	280	440	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	11	11	11	45	11	34	11	716	659	318	500	11
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1930	2550	516	2232	2226	1055	516			1380		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1930	2550	516	2232	2226	1055	516			1380		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	0	98	0	27	88	99			36		
cM capacity (veh/h)	10	10	559	0	16	274	1055			501		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	34	91	11	1375	318	511
Volume Left	11	45	11	0	318	0
Volume Right	11	34	0	659	0	11
cSH	14	0	1055	1700	501	1700
Volume to Capacity	2.37	Err	0.01	0.81	0.64	0.30
Queue Length 95th (ft)	125	Err	1	0	110	0
Control Delay (s)	1163.3	Err	8.4	0.0	23.9	0.0
Lane LOS	F	F	A		C	
Approach Delay (s)	1163.3	Err	0.1		9.2	
Approach LOS	F	F				

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	101.3%	ICU Level of Service	G
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
14: SR-60 EB Ramps & Redlands Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	330	130	90	970	410	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1764		1805	1900	1900	1615
Flt Permitted	0.97		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1764		1805	1900	1900	1615
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	384	151	105	1128	477	93
RTOR Reduction (vph)	24	0	0	0	0	27
Lane Group Flow (vph)	511	0	105	1128	477	66
Confl. Peds. (#/hr)						
Turn Type			Prot			pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases						6
Actuated Green, G (s)	19.4		5.5	31.9	22.4	41.8
Effective Green, g (s)	19.4		5.5	31.9	22.4	41.8
Actuated g/C Ratio	0.33		0.09	0.54	0.38	0.70
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	577		167	1022	718	1247
v/s Ratio Prot	c0.29		0.06	c0.59	0.25	0.02
v/s Ratio Perm						0.02
v/c Ratio	0.89		0.63	1.10	0.66	0.05
Uniform Delay, d1	18.9		25.9	13.7	15.3	2.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	15.1		7.2	61.0	2.3	0.0
Delay (s)	33.9		33.1	74.7	17.7	2.7
Level of Service	C		C	E	B	A
Approach Delay (s)	33.9			71.2	15.2	
Approach LOS	C			E	B	

Intersection Summary			
HCM Average Control Delay	49.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	59.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
15: SR 60 WB Ramp & Theodore St

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	10	170	1410	260	150	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1590	3502	5187	5187	1589
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1590	3502	5187	5187	1589
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	185	1533	283	163	22
RTOR Reduction (vph)	0	163	0	0	0	19
Lane Group Flow (vph)	11	22	1533	283	163	3
Confl. Peds. (#/hr)	5	5				5
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	7.7	7.7	38.0	49.6	7.6	7.6
Effective Green, g (s)	7.7	7.7	38.0	49.6	7.6	7.6
Actuated g/C Ratio	0.12	0.12	0.58	0.76	0.12	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	213	187	2038	3940	604	185
v/s Ratio Prot	0.01		c0.44	0.05	c0.03	
v/s Ratio Perm		c0.01				0.00
v/c Ratio	0.05	0.12	0.75	0.07	0.27	0.01
Uniform Delay, d1	25.6	25.8	10.1	2.0	26.3	25.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	1.6	0.0	0.2	0.0
Delay (s)	25.7	26.0	11.8	2.0	26.6	25.6
Level of Service	C	C	B	A	C	C
Approach Delay (s)	26.0			10.2	26.4	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
16: SR-60 EB Ramps & Theodore St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	0	1640	0	0	0	0	1680	350	0	310	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		0.88					0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		0.99					1.00	0.98		1.00	0.97
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		2804					5187	1590		5187	1574
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		2804					5187	1590		5187	1574
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	0	1783	0	0	0	0	1826	380	0	337	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	73	0	0	2
Lane Group Flow (vph)	22	0	1783	0	0	0	0	1826	307	0	337	9
Confl. Peds. (#/hr)			5						5			5
Turn Type	custom		Free						Perm			Perm
Protected Phases								2			6	
Permitted Phases	4		Free						2			6
Actuated Green, G (s)	1.2		47.8					38.6	38.6		38.6	38.6
Effective Green, g (s)	1.2		47.8					38.6	38.6		38.6	38.6
Actuated g/C Ratio	0.03		1.00					0.81	0.81		0.81	0.81
Clearance Time (s)	4.0							4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0							3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	45		2804					4189	1284		4189	1271
v/s Ratio Prot								0.35			0.06	
v/s Ratio Perm	0.01		c0.64						0.19			0.01
v/c Ratio	0.49		0.64					0.44	0.24		0.08	0.01
Uniform Delay, d1	23.0		0.0					1.4	1.1		0.9	0.9
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	8.1		1.1					0.1	0.1		0.0	0.0
Delay (s)	31.1		1.1					1.4	1.2		1.0	0.9
Level of Service	C		A					A	A		A	A
Approach Delay (s)		1.5			0.0			1.4			1.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	1.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	47.8	Sum of lost time (s)	0.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
18: Eucalyptus Ave & Redlands Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	130	830	320	10	90	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.98	0.97	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.89	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.99	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1638	1495	1900	1590	1805	1900
Flt Permitted	0.99	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1638	1495	1900	1590	1805	1900
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	902	348	11	98	522
RTOR Reduction (vph)	155	315	0	7	0	0
Lane Group Flow (vph)	374	199	348	4	98	522
Confl. Peds. (#/hr)	5	5		5		
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	16.3	16.3	15.8	15.8	3.4	23.2
Effective Green, g (s)	16.3	16.3	15.8	15.8	3.4	23.2
Actuated g/C Ratio	0.34	0.34	0.33	0.33	0.07	0.49
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	562	513	632	529	129	928
v/s Ratio Prot	c0.23		0.18		0.05	c0.27
v/s Ratio Perm		0.13		0.00		
v/c Ratio	0.67	0.39	0.55	0.01	0.76	0.56
Uniform Delay, d1	13.3	11.8	12.9	10.6	21.6	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	0.5	1.0	0.0	22.3	0.8
Delay (s)	16.3	12.3	14.0	10.6	44.0	9.4
Level of Service	B	B	B	B	D	A
Approach Delay (s)	14.3		13.9			14.8
Approach LOS	B		B			B

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	47.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Eucalytus Ave & Theodore St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	0	190	110	10	30	690	2050	90	20	1760	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		0.88	1.00	1.00		0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00		0.98	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00		0.85	1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1799		2799	1799	1667		3502	5187	1569	1805	5187	1589
Flt Permitted	0.73		1.00	0.76	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1380		2799	1434	1667		3502	5187	1569	1805	5187	1589
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	0	207	120	11	33	750	2228	98	22	1913	185
RTOR Reduction (vph)	0	0	177	0	28	0	0	0	13	0	0	37
Lane Group Flow (vph)	54	0	30	120	16	0	750	2228	85	22	1913	148
Confl. Peds. (#/hr)	5		5	5		5			5			5
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8					2			6
Actuated Green, G (s)	11.9		11.9	11.9	11.9		21.0	55.9	55.9	2.7	37.6	37.6
Effective Green, g (s)	11.9		11.9	11.9	11.9		21.0	55.9	55.9	2.7	37.6	37.6
Actuated g/C Ratio	0.14		0.14	0.14	0.14		0.25	0.68	0.68	0.03	0.46	0.46
Clearance Time (s)	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	199		404	207	240		891	3515	1063	59	2364	724
v/s Ratio Prot					0.01		c0.21	0.43		0.01	c0.37	
v/s Ratio Perm	0.04		0.01	c0.08					0.05			0.09
v/c Ratio	0.27		0.07	0.58	0.07		0.84	0.63	0.08	0.37	0.81	0.20
Uniform Delay, d1	31.4		30.5	33.0	30.5		29.2	7.5	4.5	39.1	19.4	13.5
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7		0.1	3.9	0.1		7.3	0.4	0.0	3.9	2.1	0.1
Delay (s)	32.2		30.6	36.9	30.6		36.4	7.9	4.6	43.0	21.5	13.6
Level of Service	C		C	D	C		D	A	A	D	C	B
Approach Delay (s)		30.9			35.2			14.7			21.0	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	82.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
20: Alessandro Blvd & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	310	90	20	350	10	80	0	20	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	333	97	22	376	11	86	0	22	0	0	0
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	392			435			816	822	392	816	865	392
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	392			435			816	822	392	816	865	392
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			70	100	97	100	100	100
cM capacity (veh/h)	1173			1131			289	303	656	280	286	656

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	430	409	86	22	0
Volume Left	0	22	86	0	0
Volume Right	97	11	0	22	0
cSH	1173	1131	289	656	1700
Volume to Capacity	0.00	0.02	0.30	0.03	0.00
Queue Length 95th (ft)	0	1	30	3	0
Control Delay (s)	0.0	0.6	22.6	10.7	0.0
Lane LOS		A	C	B	A
Approach Delay (s)	0.0	0.6	20.2		0.0
Approach LOS			C		A

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
21: Alessandro Blvd & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	160	70	120	180	30	60	570	60	20	720	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1798		1805	1852		1805	1868		1805	1862	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1798		1805	1852		1805	1868		1805	1862	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	97	172	75	129	194	32	65	613	65	22	774	97
RTOR Reduction (vph)	0	19	0	0	7	0	0	3	0	0	4	0
Lane Group Flow (vph)	97	228	0	129	219	0	65	675	0	22	867	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.0	15.6		8.1	17.7		6.9	43.8		2.6	39.5	
Effective Green, g (s)	6.0	15.6		8.1	17.7		6.9	43.8		2.6	39.5	
Actuated g/C Ratio	0.07	0.18		0.09	0.21		0.08	0.51		0.03	0.46	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	126	326		170	381		145	950		55	854	
v/s Ratio Prot	0.05	c0.13		c0.07	0.12		0.04	c0.36		0.01	c0.47	
v/s Ratio Perm												
v/c Ratio	0.77	0.70		0.76	0.57		0.45	0.71		0.40	1.01	
Uniform Delay, d1	39.4	33.1		38.0	30.8		37.8	16.3		41.0	23.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	24.2	6.4		17.5	2.1		2.2	2.5		4.7	34.5	
Delay (s)	63.5	39.5		55.5	32.9		40.0	18.8		45.7	57.8	
Level of Service	E	D		E	C		D	B		D	E	
Approach Delay (s)		46.3			41.1			20.6			57.5	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM Average Control Delay	41.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	86.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
23: Alessandro Blvd & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	10	20	10	10	10	110	370	10	10	190	220
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	53	11	21	11	11	11	116	389	11	11	200	232

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	63	21	32	505	11	442
Volume Left (vph)	53	0	11	116	0	11
Volume Right (vph)	0	21	11	0	11	232
Hadj (s)	0.42	-0.70	-0.13	0.11	-0.70	-0.31
Departure Headway (s)	7.4	6.3	7.0	5.5	4.7	5.3
Degree Utilization, x	0.13	0.04	0.06	0.77	0.01	0.65
Capacity (veh/h)	444	514	452	643	750	667
Control Delay (s)	10.3	8.3	10.5	23.2	6.5	17.6
Approach Delay (s)	9.8		10.5	22.9		17.6
Approach LOS	A		B	C		C

Intersection Summary			
Delay	19.3		
HCM Level of Service	C		
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
24: Cactus Ave & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	240	160	50	310	70	100	70	30	20	40	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97		1.00	0.99		1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Frt	1.00	0.94		1.00	1.00	0.85		1.00	0.85		0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.99	
Satd. Flow (prot)	1805	3360		1805	1900	1574		1846	1591		1831	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.99	
Satd. Flow (perm)	1805	3360		1805	1900	1574		1846	1591		1831	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	267	178	56	344	78	111	78	33	22	44	11
RTOR Reduction (vph)	0	115	0	0	0	53	0	0	26	0	7	0
Lane Group Flow (vph)	11	330	0	56	344	25	0	189	7	0	70	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8			2			
Actuated Green, G (s)	0.9	12.4		6.4	17.9	17.9		11.5	11.5		8.6	
Effective Green, g (s)	0.9	12.4		6.4	17.9	17.9		11.5	11.5		8.6	
Actuated g/C Ratio	0.02	0.23		0.12	0.33	0.33		0.21	0.21		0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	30	759		210	619	513		387	333		287	
v/s Ratio Prot	0.01	0.10		c0.03	c0.18			c0.10			c0.04	
v/s Ratio Perm						0.02			0.00			
v/c Ratio	0.37	0.43		0.27	0.56	0.05		0.49	0.02		0.24	
Uniform Delay, d1	26.7	18.2		22.1	15.2	12.7		19.1	17.2		20.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	7.4	0.4		0.7	1.1	0.0		1.0	0.0		0.4	
Delay (s)	34.2	18.6		22.8	16.3	12.7		20.1	17.3		20.7	
Level of Service	C	B		C	B	B		C	B		C	
Approach Delay (s)		19.0			16.5			19.7			20.7	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	54.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Cactus Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	130	150	60	170	20	170	460	30	30	660	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.92		1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3295		1805	3543		1805	3610	1595	1805	5056	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3295		1805	3543		1805	3610	1595	1805	5056	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	108	140	161	65	183	22	183	495	32	32	710	129
RTOR Reduction (vph)	0	128	0	0	14	0	0	0	17	0	27	0
Lane Group Flow (vph)	108	173	0	65	191	0	183	495	15	32	812	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.8	12.0		5.5	8.7		9.6	22.3	27.8	2.6	15.3	
Effective Green, g (s)	8.8	12.0		5.5	8.7		9.6	22.3	27.8	2.6	15.3	
Actuated g/C Ratio	0.15	0.21		0.09	0.15		0.16	0.38	0.48	0.04	0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	272	677		170	528		297	1378	869	80	1325	
v/s Ratio Prot	c0.06	c0.05		0.04	c0.05		c0.10	0.14	0.00	0.02	c0.16	
v/s Ratio Perm									0.01			
v/c Ratio	0.40	0.26		0.38	0.36		0.62	0.36	0.02	0.40	0.61	
Uniform Delay, d1	22.4	19.5		24.9	22.4		22.7	12.9	8.1	27.1	18.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.2		1.4	0.4		3.8	0.2	0.0	3.3	0.8	
Delay (s)	23.4	19.7		26.3	22.8		26.5	13.1	8.1	30.4	19.8	
Level of Service	C	B		C	C		C	B	A	C	B	
Approach Delay (s)		20.6			23.6			16.3			20.2	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
27: Cactus Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	150	30	50	670	200	180	50	210	40	30	180	90
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	160	32	53	713	213	191	53	223	43	32	191	96

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	176	69	713	404	165	154	128	191
Volume Left (vph)	160	0	713	0	53	0	32	0
Volume Right (vph)	0	53	0	191	0	43	0	96
Hadj (s)	0.45	-0.54	0.50	-0.33	0.16	-0.19	0.13	-0.35
Departure Headway (s)	8.4	7.4	7.6	6.7	8.1	7.8	8.1	7.6
Degree Utilization, x	0.41	0.14	1.50	0.76	0.37	0.33	0.29	0.41
Capacity (veh/h)	414	463	479	524	431	449	430	458
Control Delay (s)	15.9	10.5	255.6	26.7	14.7	13.4	13.1	14.6
Approach Delay (s)	14.4		172.7		14.1		14.0	
Approach LOS	B		F		B		B	

Intersection Summary			
Delay	102.7		
HCM Level of Service	F		
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
28: John F Kennedy Dr & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	20	20	570	50	90	10	340	210	100	660	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.93		1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3317		1805	3233		1805	5187	1601	1805	5095	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3317		1805	3233		1805	5187	1601	1805	5095	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	22	22	613	54	97	11	366	226	108	710	86
RTOR Reduction (vph)	0	21	0	0	78	0	0	0	119	0	12	0
Lane Group Flow (vph)	54	23	0	613	73	0	11	366	107	108	784	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	2.3	2.3		9.4	9.4		1.0	13.5	22.9	7.3	19.8	
Effective Green, g (s)	2.3	2.3		9.4	9.4		1.0	13.5	22.9	7.3	19.8	
Actuated g/C Ratio	0.05	0.05		0.19	0.19		0.02	0.28	0.47	0.15	0.41	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	86	157		350	627		37	1444	888	272	2080	
v/s Ratio Prot	0.03	0.01		c0.34	c0.02		0.01	0.07	0.02	c0.06	c0.15	
v/s Ratio Perm									0.04			
v/c Ratio	0.63	0.15		1.75	0.12		0.30	0.25	0.12	0.40	0.38	
Uniform Delay, d1	22.7	22.2		19.6	16.1		23.4	13.6	7.2	18.6	10.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	13.5	0.4		349.7	0.1		4.5	0.1	0.1	1.0	0.1	
Delay (s)	36.1	22.6		369.3	16.2		27.9	13.7	7.2	19.6	10.2	
Level of Service	D	C		F	B		C	B	A	B	B	
Approach Delay (s)		30.1			299.5			11.5			11.3	
Approach LOS		C			F			B			B	

Intersection Summary			
HCM Average Control Delay	105.1	HCM Level of Service	F
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
29: Ironwood Ave & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	320	130	140	300	70	180	710	120	50	680	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1600	1805	3496		1805	3610	1592	1805	3610	1593
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1600	1805	3496		1805	3610	1592	1805	3610	1593
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	155	330	134	144	309	72	186	732	124	52	701	186
RTOR Reduction (vph)	0	0	58	0	20	0	0	0	32	0	0	64
Lane Group Flow (vph)	155	330	76	144	361	0	186	732	92	52	701	122
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6
Actuated Green, G (s)	14.9	19.9	35.8	12.9	17.9		15.9	64.9	77.8	6.3	55.3	70.2
Effective Green, g (s)	14.9	19.9	35.8	12.9	17.9		15.9	64.9	77.8	6.3	55.3	70.2
Actuated g/C Ratio	0.12	0.17	0.30	0.11	0.15		0.13	0.54	0.65	0.05	0.46	0.59
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	224	599	477	194	521		239	1952	1032	95	1664	932
v/s Ratio Prot	c0.09	0.09	0.02	0.08	c0.10		c0.10	0.20	0.01	0.03	c0.19	0.02
v/s Ratio Perm			0.03						0.05			0.06
v/c Ratio	0.69	0.55	0.16	0.74	0.69		0.78	0.38	0.09	0.55	0.42	0.13
Uniform Delay, d1	50.4	45.9	31.0	51.9	48.4		50.3	15.9	7.9	55.5	21.6	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.92	0.82	0.53	1.00	1.00	1.00
Incremental Delay, d2	8.9	1.1	0.2	14.2	4.0		13.7	0.5	0.0	6.3	0.8	0.1
Delay (s)	59.2	47.0	31.2	66.1	52.4		60.0	13.5	4.2	61.8	22.4	11.3
Level of Service	E	D	C	E	D		E	B	A	E	C	B
Approach Delay (s)		46.7			56.2			20.7			22.4	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
30: SR-60 WB Ramps & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	190	10	130	450	1140	0	0	630	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	
Frpb, ped/bikes					1.00	0.98	1.00	1.00			0.99	
Flpb, ped/bikes					1.00	1.00	1.00	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.95	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1814	1587	1805	3610			3388	
Flt Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1814	1587	1805	3610			3388	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	202	11	138	479	1213	0	0	670	383
RTOR Reduction (vph)	0	0	0	0	0	54	0	0	0	0	56	0
Lane Group Flow (vph)	0	0	0	0	213	84	479	1213	0	0	997	0
Confl. Peds. (#/hr)						5						5
Turn Type				Split		Perm	Prot					
Protected Phases				8	8		5	2			6	
Permitted Phases						8						
Actuated Green, G (s)					19.6	19.6	37.2	92.4			51.2	
Effective Green, g (s)					19.6	19.6	37.2	92.4			51.2	
Actuated g/C Ratio					0.16	0.16	0.31	0.77			0.43	
Clearance Time (s)					4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					296	259	560	2780			1446	
v/s Ratio Prot					c0.12		c0.27	0.34			c0.29	
v/s Ratio Perm						0.05						
v/c Ratio					0.72	0.32	0.86	0.44			0.69	
Uniform Delay, d1					47.6	44.3	38.9	4.8			27.9	
Progression Factor					1.00	1.00	1.00	1.00			0.57	
Incremental Delay, d2					8.1	0.7	12.2	0.5			2.5	
Delay (s)					55.7	45.1	51.0	5.3			18.5	
Level of Service					E	D	D	A			B	
Approach Delay (s)		0.0			51.5			18.2			18.5	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
31: SR-60 EB Ramps & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	540	10	420	0	0	0	0	860	200	140	740	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0		4.0	4.0	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1715	1722	1591					5014		1805	3610	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1715	1722	1591					5014		1805	3610	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	557	10	433	0	0	0	0	887	206	144	763	0
RTOR Reduction (vph)	0	0	75	0	0	0	0	48	0	0	0	0
Lane Group Flow (vph)	284	283	358	0	0	0	0	1045	0	144	763	0
Confl. Peds. (#/hr)			5						5			
Turn Type	Split		Perm							Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	21.7	21.7	21.7					19.6		6.5	30.1	
Effective Green, g (s)	21.7	21.7	21.7					19.6		6.5	30.1	
Actuated g/C Ratio	0.36	0.36	0.36					0.33		0.11	0.50	
Clearance Time (s)	4.0	4.0	4.0					4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	622	625	577					1643		196	1817	
v/s Ratio Prot	0.17	0.16						c0.21		c0.08	0.21	
v/s Ratio Perm			c0.22									
v/c Ratio	0.46	0.45	0.62					0.64		0.73	0.42	
Uniform Delay, d1	14.5	14.5	15.7					17.1		25.8	9.4	
Progression Factor	1.00	1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.5	2.1					0.8		13.3	0.2	
Delay (s)	15.1	15.0	17.7					17.9		39.1	9.5	
Level of Service	B	B	B					B		D	A	
Approach Delay (s)		16.2			0.0			17.9			14.2	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
32: Sunnymead Blvd & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	530	560	570	60	100	360	150	800	110	340	740	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.91		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.88		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1597	1805	3187		1805	5082		3502	3610	1597
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1597	1805	3187		1805	5082		3502	3610	1597
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	570	602	613	65	108	387	161	860	118	366	796	118
RTOR Reduction (vph)	0	0	42	0	247	0	0	14	0	0	0	47
Lane Group Flow (vph)	570	602	571	65	248	0	161	964	0	366	796	71
Confl. Peds. (#/hr)			5						5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	22.8	32.1	48.8	5.6	14.9		16.7	49.4		16.9	49.6	72.4
Effective Green, g (s)	22.8	32.1	48.8	5.6	14.9		16.7	49.4		16.9	49.6	72.4
Actuated g/C Ratio	0.19	0.27	0.41	0.05	0.12		0.14	0.41		0.14	0.41	0.60
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	665	966	703	84	396		251	2092		493	1492	1017
v/s Ratio Prot	c0.16	0.17	c0.11	0.04	0.08		0.09	0.19		0.10	c0.22	0.01
v/s Ratio Perm			0.24									0.03
v/c Ratio	0.86	0.62	0.81	0.77	0.88dr		0.64	0.46		0.74	0.53	0.07
Uniform Delay, d1	47.0	38.6	31.5	56.6	49.9		48.8	25.6		49.5	26.5	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.89	0.58		1.34	0.48	0.03
Incremental Delay, d2	10.6	1.3	7.1	34.8	3.1		5.0	0.7		5.0	1.1	0.0
Delay (s)	57.6	39.9	38.6	91.4	53.0		48.3	15.5		71.4	14.0	0.3
Level of Service	E	D	D	F	D		D	B		E	B	A
Approach Delay (s)		45.1			57.4			20.1			29.1	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	36.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
33: SR-60 WB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	170	10	140	490	1180	0	0	1000	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					1.00		0.97	0.95			0.91	
Frpb, ped/bikes					0.99		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.94		1.00	1.00			0.97	
Flt Protected					0.97		0.95	1.00			1.00	
Satd. Flow (prot)					1727		3502	3610			4994	
Flt Permitted					0.97		0.95	1.00			1.00	
Satd. Flow (perm)					1727		3502	3610			4994	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	175	10	144	505	1216	0	0	1031	289
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	38	0
Lane Group Flow (vph)	0	0	0	0	304	0	505	1216	0	0	1282	0
Confl. Peds. (#/hr)						5						5
Turn Type				Split			Prot					
Protected Phases				8	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					25.6		29.0	86.4			53.4	
Effective Green, g (s)					25.6		29.0	86.4			53.4	
Actuated g/C Ratio					0.21		0.24	0.72			0.44	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					368		846	2599			2222	
v/s Ratio Prot					c0.18		c0.14	0.34			c0.26	
v/s Ratio Perm												
v/c Ratio					0.83		0.60	0.47			0.58	
Uniform Delay, d1					45.1		40.3	7.1			24.9	
Progression Factor					1.00		0.83	0.40			1.00	
Incremental Delay, d2					14.0		0.9	0.5			1.1	
Delay (s)					59.1		34.3	3.3			26.0	
Level of Service					E		C	A			C	
Approach Delay (s)		0.0			59.1			12.4			26.0	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
34: Eucalyptus Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	150	60	50	110	80	60	900	40	140	1070	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1587	1805	1900	1587	1805	3610	1567	1805	3610	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1587	1805	1900	1587	1805	3610	1567	1805	3610	1566
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	44	165	66	55	121	88	66	989	44	154	1176	55
RTOR Reduction (vph)	0	0	57	0	0	76	0	0	9	0	0	9
Lane Group Flow (vph)	44	165	9	55	121	12	66	989	35	154	1176	46
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.6	15.8	15.8	6.3	16.5	16.5	7.2	66.5	66.5	15.4	74.7	74.7
Effective Green, g (s)	5.6	15.8	15.8	6.3	16.5	16.5	7.2	66.5	66.5	15.4	74.7	74.7
Actuated g/C Ratio	0.05	0.13	0.13	0.05	0.14	0.14	0.06	0.55	0.55	0.13	0.62	0.62
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	84	250	209	95	261	218	108	2001	868	232	2247	975
v/s Ratio Prot	0.02	c0.09		c0.03	0.06		0.04	c0.27		c0.09	c0.33	
v/s Ratio Perm			0.01			0.01			0.02			0.03
v/c Ratio	0.52	0.66	0.04	0.58	0.46	0.06	0.61	0.49	0.04	0.66	0.52	0.05
Uniform Delay, d1	55.9	49.5	45.5	55.6	47.7	45.0	55.0	16.4	12.2	49.8	12.7	8.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.15	0.73	0.73
Incremental Delay, d2	5.8	6.4	0.1	8.3	1.3	0.1	9.8	0.9	0.1	5.3	0.7	0.1
Delay (s)	61.7	55.9	45.6	63.8	49.0	45.1	64.9	17.3	12.3	62.8	10.0	6.5
Level of Service	E	E	D	E	D	D	E	B	B	E	A	A
Approach Delay (s)		54.4			50.8			20.0			15.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
35: Locust Ave & Moreno Beach Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	10	180	10	10	110
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	10	10	188	10	10	115
Pedestrians	5			5		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			21		406	21
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			21		406	21
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		98	89
cM capacity (veh/h)			1608		532	1058

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	21	198	10	115
Volume Left	0	188	10	0
Volume Right	10	0	0	115
cSH	1700	1608	532	1058
Volume to Capacity	0.01	0.12	0.02	0.11
Queue Length 95th (ft)	0	10	1	9
Control Delay (s)	0.0	7.2	11.9	8.8
Lane LOS		A	B	A
Approach Delay (s)	0.0	7.2	9.1	
Approach LOS			A	

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
36: Ironwood Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	90	110	110	130	10	120	110	90	0	160	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.92		1.00	0.99			0.96			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1805	1711		1805	1876			1777			1813	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (perm)	1805	1711		1805	1876			1777			1813	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	62	93	113	113	134	10	124	113	93	0	165	62
RTOR Reduction (vph)	0	31	0	0	2	0	0	13	0	0	12	0
Lane Group Flow (vph)	62	175	0	113	142	0	0	317	0	0	215	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	7.2	41.4		16.8	51.0			26.6			19.2	
Effective Green, g (s)	7.2	41.4		16.8	51.0			26.6			19.2	
Actuated g/C Ratio	0.06	0.34		0.14	0.42			0.22			0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	108	590		253	797			394			290	
v/s Ratio Prot	c0.03	c0.10		c0.06	0.08			c0.18			c0.12	
v/s Ratio Perm												
v/c Ratio	0.57	0.30		0.45	0.18			0.80			0.74	
Uniform Delay, d1	54.9	28.7		47.3	21.5			44.2			48.0	
Progression Factor	1.00	1.00		0.71	0.65			1.00			0.99	
Incremental Delay, d2	7.2	1.3		1.2	0.5			11.3			9.7	
Delay (s)	62.1	29.9		35.1	14.4			55.5			57.4	
Level of Service	E	C		D	B			E			E	
Approach Delay (s)		37.4			23.5			55.5			57.4	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM Average Control Delay	43.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
37: SR-60 EB Ramps & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	50	820	40	20	100	120	600	20	20	370	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes		0.99		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.89		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1659		1805	1900	1590	1805	3610	1571	1805	5138	
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1659		1805	1900	1590	1805	3610	1571	1805	5138	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	144	52	845	41	21	103	124	619	21	21	381	21
RTOR Reduction (vph)	0	106	0	0	0	95	0	0	15	0	5	0
Lane Group Flow (vph)	0	935	0	41	21	8	124	619	6	21	397	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)		35.7		6.2	6.2	6.2	10.5	24.6	24.6	2.5	16.6	
Effective Green, g (s)		35.7		6.2	6.2	6.2	10.5	24.6	24.6	2.5	16.6	
Actuated g/C Ratio		0.42		0.07	0.07	0.07	0.12	0.29	0.29	0.03	0.20	
Clearance Time (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		697		132	139	116	223	1045	455	53	1003	
v/s Ratio Prot		c0.56		c0.02	0.01		c0.07	c0.17		0.01	0.08	
v/s Ratio Perm						0.00			0.00			
v/c Ratio		1.34		0.31	0.15	0.06	0.56	0.59	0.01	0.40	0.40	
Uniform Delay, d1		24.6		37.4	36.9	36.7	35.1	25.9	21.5	40.5	29.8	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		163.1		1.3	0.5	0.2	3.0	0.9	0.0	4.8	0.3	
Delay (s)		187.8		38.7	37.4	36.9	38.0	26.8	21.6	45.3	30.1	
Level of Service		F		D	D	D	D	C	C	D	C	
Approach Delay (s)		187.8			37.4			28.5			30.8	
Approach LOS		F			D			C			C	

Intersection Summary			
HCM Average Control Delay	98.8	HCM Level of Service	F
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
38: John Kennedy Dr & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	290	150	140	250	40	120	490	100	100	560	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3405		1805	3528		1805	3610	1587	1805	3610	1586
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3405		1805	3528		1805	3610	1587	1805	3610	1586
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	322	167	156	278	44	133	544	111	111	622	78
RTOR Reduction (vph)	0	66	0	0	13	0	0	0	60	0	0	43
Lane Group Flow (vph)	67	423	0	156	309	0	133	544	51	111	622	35
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	7.0	21.5		14.2	28.7		14.1	55.6	55.6	12.7	54.2	54.2
Effective Green, g (s)	7.0	21.5		14.2	28.7		14.1	55.6	55.6	12.7	54.2	54.2
Actuated g/C Ratio	0.06	0.18		0.12	0.24		0.12	0.46	0.46	0.11	0.45	0.45
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	105	610		214	844		212	1673	735	191	1631	716
v/s Ratio Prot	0.04	c0.12		c0.09	0.09		c0.07	0.15		0.06	c0.17	
v/s Ratio Perm									0.03			0.02
v/c Ratio	0.64	0.69		0.73	0.37		0.63	0.33	0.07	0.58	0.38	0.05
Uniform Delay, d1	55.3	46.2		51.0	38.1		50.4	20.3	17.9	51.1	21.8	18.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.34	0.36	0.06
Incremental Delay, d2	12.0	3.4		11.7	0.3		5.7	0.5	0.2	3.6	0.5	0.1
Delay (s)	67.3	49.6		62.8	38.3		56.1	20.9	18.0	72.3	8.3	1.1
Level of Service	E	D		E	D		E	C	B	E	A	A
Approach Delay (s)		51.7			46.3			26.4			16.4	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
39: Iris Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	440	170	140	350	120	180	480	170	220	450	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3443		1805	3456		1805	5187	1587	1805	5149	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3443		1805	3456		1805	5187	1587	1805	5149	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	41	454	175	144	361	124	186	495	175	227	464	21
RTOR Reduction (vph)	0	38	0	0	32	0	0	0	111	0	4	0
Lane Group Flow (vph)	41	591	0	144	453	0	186	495	64	227	481	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	5.6	27.3		12.9	34.6		17.2	43.9	43.9	19.9	46.6	
Effective Green, g (s)	5.6	27.3		12.9	34.6		17.2	43.9	43.9	19.9	46.6	
Actuated g/C Ratio	0.05	0.23		0.11	0.29		0.14	0.37	0.37	0.17	0.39	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	84	783		194	996		259	1898	581	299	2000	
v/s Ratio Prot	0.02	c0.17		c0.08	0.13		0.10	c0.10		c0.13	c0.09	
v/s Ratio Perm									0.04			
v/c Ratio	0.49	0.75		0.74	0.45		0.72	0.26	0.11	0.76	0.24	
Uniform Delay, d1	55.8	43.2		51.9	35.0		49.1	26.7	25.1	47.8	24.8	
Progression Factor	1.00	1.00		1.00	1.00		1.35	0.46	0.46	1.00	1.00	
Incremental Delay, d2	4.4	4.2		14.2	0.3		8.1	0.3	0.3	10.6	0.3	
Delay (s)	60.2	47.4		66.1	35.3		74.1	12.4	11.9	58.3	25.0	
Level of Service	E	D		E	D		E	B	B	E	C	
Approach Delay (s)		48.2			42.4			25.7			35.7	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
40: Iris Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	700	110	220	700	80	60	90	120	70	140	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.91		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3529		1805	3610	1595	1805	3275		1805	3395	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3529		1805	3610	1595	1805	3275		1805	3395	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	737	116	232	737	84	63	95	126	74	147	84
RTOR Reduction (vph)	0	8	0	0	0	39	0	110	0	0	72	0
Lane Group Flow (vph)	63	845	0	232	737	45	63	111	0	74	159	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot		pm+ov	Prot			Prot		
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	5.3	25.6		7.1	27.4	33.7	5.3	8.0		6.3	9.0	
Effective Green, g (s)	5.3	25.6		7.1	27.4	33.7	5.3	8.0		6.3	9.0	
Actuated g/C Ratio	0.08	0.41		0.11	0.43	0.53	0.08	0.13		0.10	0.14	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	152	1434		203	1570	954	152	416		181	485	
v/s Ratio Prot	0.03	c0.24		c0.13	0.20	0.00	0.03	0.03		c0.04	c0.05	
v/s Ratio Perm						0.02						
v/c Ratio	0.41	0.59		1.14	0.47	0.05	0.41	0.27		0.41	0.33	
Uniform Delay, d1	27.4	14.6		27.9	12.6	7.0	27.4	24.8		26.6	24.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.6		106.9	0.2	0.0	1.8	0.3		1.5	0.4	
Delay (s)	29.2	15.2		134.9	12.9	7.0	29.2	25.2		28.1	24.7	
Level of Service	C	B		F	B	A	C	C		C	C	
Approach Delay (s)		16.2			39.3			26.1			25.5	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
41: Iris Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	390	290	590	710	90	270	510	320	210	640	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	4823		3502	5090		3502	3610	1600	3502	3537	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	4823		3502	5090		3502	3610	1600	3502	3537	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	167	406	302	615	740	94	281	531	333	219	667	94
RTOR Reduction (vph)	0	128	0	0	14	0	0	0	72	0	10	0
Lane Group Flow (vph)	167	580	0	615	820	0	281	531	261	219	751	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.9	16.3		15.2	22.6		10.1	25.8	41.0	8.1	23.8	
Effective Green, g (s)	8.9	16.3		15.2	22.6		10.1	25.8	41.0	8.1	23.8	
Actuated g/C Ratio	0.11	0.20		0.19	0.28		0.12	0.32	0.50	0.10	0.29	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	383	966		654	1413		435	1144	885	348	1034	
v/s Ratio Prot	0.05	0.12		c0.18	c0.16		c0.08	0.15	0.06	0.06	c0.21	
v/s Ratio Perm									0.11			
v/c Ratio	0.44	0.60		0.94	0.58		0.65	0.46	0.29	0.63	0.73	
Uniform Delay, d1	33.9	29.6		32.7	25.3		33.9	22.3	11.8	35.2	25.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	1.1		21.7	0.6		3.3	0.3	0.2	3.5	2.6	
Delay (s)	34.7	30.6		54.3	25.9		37.2	22.6	12.0	38.8	28.4	
Level of Service	C	C		D	C		D	C	B	D	C	
Approach Delay (s)		31.4			38.0			23.1			30.7	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
43: Iris Ave & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	640	30	70	1030	10	40	20	30	10	60	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.95			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1805	5146		1805	5178			1766			1723	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (perm)	1805	5146		1805	5178			1766			1723	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	106	681	32	74	1096	11	43	21	32	11	64	117
RTOR Reduction (vph)	0	3	0	0	1	0	0	19	0	0	57	0
Lane Group Flow (vph)	106	710	0	74	1106	0	0	77	0	0	135	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	7.3	25.9		6.4	25.0			6.8			10.6	
Effective Green, g (s)	7.3	25.9		6.4	25.0			6.8			10.6	
Actuated g/C Ratio	0.11	0.39		0.10	0.38			0.10			0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	201	2029		176	1970			183			278	
v/s Ratio Prot	c0.06	0.14		0.04	c0.21			c0.04			c0.08	
v/s Ratio Perm												
v/c Ratio	0.53	0.35		0.42	0.56			0.42			0.49	
Uniform Delay, d1	27.6	14.0		27.9	16.0			27.6			25.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.5	0.1		1.6	0.4			1.6			1.3	
Delay (s)	30.1	14.1		29.5	16.4			29.2			26.4	
Level of Service	C	B		C	B			C			C	
Approach Delay (s)		16.2			17.2			29.2			26.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	65.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
44: Iris Ave & Via Del Lago

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	640	20	20	1080	0	20	10	20	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5161		1805	5187		1805	1900	1610	1805	1746	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	5161		1805	5187		1805	1900	1610	1805	1746	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	22	688	22	22	1161	0	22	11	22	11	11	11
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	20	0	11	0
Lane Group Flow (vph)	22	708	0	22	1161	0	22	11	2	11	11	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	0.8	25.2		2.5	26.9		0.8	0.8	3.3	0.8	0.8	
Effective Green, g (s)	0.8	25.2		2.5	26.9		0.8	0.8	3.3	0.8	0.8	
Actuated g/C Ratio	0.02	0.56		0.06	0.59		0.02	0.02	0.07	0.02	0.02	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	32	2871		100	3080		32	34	259	32	31	
v/s Ratio Prot	c0.01	0.14		0.01	c0.22		c0.01	0.01	0.00	0.01	c0.01	
v/s Ratio Perm									0.00			
v/c Ratio	0.69	0.25		0.22	0.38		0.69	0.32	0.01	0.34	0.36	
Uniform Delay, d1	22.1	5.2		20.5	4.8		22.1	22.0	19.5	22.0	22.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	47.1	0.0		1.1	0.1		47.1	5.5	0.0	6.3	7.0	
Delay (s)	69.2	5.2		21.6	4.9		69.2	27.5	19.5	28.3	29.0	
Level of Service	E	A		C	A		E	C	B	C	C	
Approach Delay (s)		7.1			5.2			41.0			28.8	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
45: Krameria Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	120	60	220	90	150	30	610	170	130	500	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes		0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.96		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1798		1805	1900	1587	1805	3478		1805	1900	1555
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1798		1805	1900	1587	1805	3478		1805	1900	1555
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	126	63	232	95	158	32	642	179	137	526	32
RTOR Reduction (vph)	0	13	0	0	0	130	0	17	0	0	0	15
Lane Group Flow (vph)	0	208	0	232	95	28	32	804	0	137	526	17
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)		19.0		21.3	21.3	21.3	5.2	49.2		14.5	58.5	58.5
Effective Green, g (s)		19.0		21.3	21.3	21.3	5.2	49.2		14.5	58.5	58.5
Actuated g/C Ratio		0.16		0.18	0.18	0.18	0.04	0.41		0.12	0.49	0.49
Clearance Time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		285		320	337	282	78	1426		218	926	758
v/s Ratio Prot		c0.12		c0.13	0.05		0.02	0.23		c0.08	c0.28	
v/s Ratio Perm						0.02						0.01
v/c Ratio		0.73		0.72	0.28	0.10	0.41	0.56		0.63	0.57	0.02
Uniform Delay, d1		48.0		46.6	42.7	41.3	55.9	27.2		50.2	21.8	15.9
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		0.90	0.85	1.05
Incremental Delay, d2		9.0		7.9	0.5	0.2	3.5	1.6		5.2	2.4	0.1
Delay (s)		57.0		54.5	43.2	41.5	59.4	28.8		50.3	20.9	16.7
Level of Service		E		D	D	D	E	C		D	C	B
Approach Delay (s)		57.0			48.0			29.9			26.5	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
46: Krameria Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	70	170	70	60	60	120	700	40	100	780	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.89		1.00	0.93		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3191		1805	3313		1805	3578		1805	3475	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3191		1805	3313		1805	3578		1805	3475	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	161	75	183	75	65	65	129	753	43	108	839	247
RTOR Reduction (vph)	0	154	0	0	57	0	0	4	0	0	26	0
Lane Group Flow (vph)	161	104	0	75	73	0	129	792	0	108	1060	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	9.0	11.3		6.5	8.8		8.0	28.5		7.8	28.3	
Effective Green, g (s)	9.0	11.3		6.5	8.8		8.0	28.5		7.8	28.3	
Actuated g/C Ratio	0.13	0.16		0.09	0.13		0.11	0.41		0.11	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	232	514		167	416		206	1455		201	1403	
v/s Ratio Prot	c0.09	c0.03		0.04	0.02		c0.07	0.22		0.06	c0.31	
v/s Ratio Perm												
v/c Ratio	0.69	0.20		0.45	0.18		0.63	0.54		0.54	0.76	
Uniform Delay, d1	29.2	25.5		30.1	27.4		29.6	15.9		29.4	17.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.7	0.2		1.9	0.2		5.8	0.4		2.8	2.4	
Delay (s)	37.9	25.7		32.0	27.6		35.5	16.3		32.2	20.3	
Level of Service	D	C		C	C		D	B		C	C	
Approach Delay (s)		30.4			29.2			18.9			21.4	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
47: Krameria Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	70	80	20	40	20	70	280	20	20	330	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.92		1.00	0.95		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	3296		1805	3432		1805	3610	1615	1805	3495	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	3296		1805	3432		1805	3610	1615	1805	3495	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	128	74	85	21	43	21	74	298	21	21	351	85
RTOR Reduction (vph)	0	71	0	0	19	0	0	0	11	0	21	0
Lane Group Flow (vph)	128	88	0	21	45	0	74	298	10	21	415	0
Confl. Peds. (#/hr)			5									5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	5.6	7.7		2.2	4.3		3.4	19.3	21.5	1.1	17.0	
Effective Green, g (s)	5.6	7.7		2.2	4.3		3.4	19.3	21.5	1.1	17.0	
Actuated g/C Ratio	0.12	0.17		0.05	0.09		0.07	0.42	0.46	0.02	0.37	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	424	548		86	319		133	1505	889	43	1283	
v/s Ratio Prot	c0.04	c0.03		0.01	0.01		c0.04	0.08	0.00	0.01	c0.12	
v/s Ratio Perm									0.01			
v/c Ratio	0.30	0.16		0.24	0.14		0.56	0.20	0.01	0.49	0.32	
Uniform Delay, d1	18.6	16.5		21.2	19.3		20.7	8.6	6.7	22.3	10.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.1		1.5	0.2		5.0	0.1	0.0	8.5	0.1	
Delay (s)	19.0	16.7		22.7	19.5		25.7	8.6	6.7	30.8	10.7	
Level of Service	B	B		C	B		C	A	A	C	B	
Approach Delay (s)		17.7			20.3			11.8			11.6	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	46.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
48: Alessandro Blvd & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	500	130	20	520	50	120	190	10	40	180	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1588	1805	3610	1589	3502	1885		1805	3397	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1588	1805	3610	1589	3502	1885		1805	3397	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	133	510	133	20	531	51	122	194	10	41	184	102
RTOR Reduction (vph)	0	0	42	0	0	21	0	2	0	0	86	0
Lane Group Flow (vph)	133	510	91	20	531	30	122	202	0	41	200	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot			Prot		
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	14.1	73.9	81.7	3.3	63.1	70.2	7.8	19.7		7.1	19.0	
Effective Green, g (s)	14.1	73.9	81.7	3.3	63.1	70.2	7.8	19.7		7.1	19.0	
Actuated g/C Ratio	0.12	0.62	0.68	0.03	0.53	0.59	0.06	0.16		0.06	0.16	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	212	2223	1134	50	1898	930	228	309		107	538	
v/s Ratio Prot	c0.07	0.14	0.01	0.01	c0.15	0.00	0.03	c0.11		0.02	c0.06	
v/s Ratio Perm			0.05			0.02						
v/c Ratio	0.63	0.23	0.08	0.40	0.28	0.03	0.54	0.65		0.38	0.37	
Uniform Delay, d1	50.4	10.3	6.5	57.4	15.8	10.5	54.3	47.0		54.3	45.2	
Progression Factor	1.02	0.88	1.34	1.00	1.00	1.00	0.76	0.68		1.00	1.00	
Incremental Delay, d2	5.2	0.2	0.0	5.2	0.4	0.0	2.4	4.9		2.3	0.4	
Delay (s)	56.5	9.3	8.7	62.6	16.2	10.5	43.9	36.9		56.6	45.6	
Level of Service	E	A	A	E	B	B	D	D		E	D	
Approach Delay (s)		17.3			17.2			39.5			47.0	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
49: Alessandro Blvd & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	350	190	110	340	10	160	290	80	20	260	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1589	1805	1900	1577	1805	1900	1586	1805	1846	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1589	1805	1900	1577	1805	1900	1586	1805	1846	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	52	365	198	115	354	10	167	302	83	21	271	52
RTOR Reduction (vph)	0	0	74	0	0	2	0	0	45	0	6	0
Lane Group Flow (vph)	52	365	124	115	354	8	167	302	38	21	317	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	4.1	23.2	23.2	12.9	32.0	39.5	13.4	26.8	39.7	7.5	20.9	
Effective Green, g (s)	4.1	23.2	23.2	12.9	32.0	39.5	13.4	26.8	39.7	7.5	20.9	
Actuated g/C Ratio	0.05	0.27	0.27	0.15	0.37	0.46	0.16	0.31	0.46	0.09	0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	86	510	427	269	704	794	280	589	729	157	447	
v/s Ratio Prot	0.03	c0.19		0.06	c0.19	0.00	c0.09	0.16	0.01	0.01	c0.17	
v/s Ratio Perm			0.08			0.00			0.02			
v/c Ratio	0.60	0.72	0.29	0.43	0.50	0.01	0.60	0.51	0.05	0.13	0.71	
Uniform Delay, d1	40.4	28.6	25.1	33.4	21.0	12.8	34.0	24.4	12.9	36.4	30.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.4	4.7	0.4	1.1	0.6	0.0	3.4	0.8	0.0	0.4	5.1	
Delay (s)	51.8	33.4	25.5	34.5	21.6	12.8	37.4	25.2	13.0	36.8	35.1	
Level of Service	D	C	C	C	C	B	D	C	B	D	D	
Approach Delay (s)		32.4			24.5			27.0			35.2	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
50: Alessandro Blvd & Morrison St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	80	400	420	30	40	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1900	3610	1578	1805	1603
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1900	3610	1578	1805	1603
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	421	442	32	42	53
RTOR Reduction (vph)	0	0	0	23	0	33
Lane Group Flow (vph)	84	421	442	9	42	20
Confl. Peds. (#/hr)				5	5	5
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	5.8	19.9	10.1	10.1	7.4	13.2
Effective Green, g (s)	5.8	19.9	10.1	10.1	7.4	13.2
Actuated g/C Ratio	0.16	0.56	0.29	0.29	0.21	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	297	1071	1033	451	378	781
v/s Ratio Prot	0.05	c0.22	0.12		c0.02	0.00
v/s Ratio Perm				0.01		0.01
v/c Ratio	0.28	0.39	0.43	0.02	0.11	0.03
Uniform Delay, d1	12.9	4.3	10.2	9.0	11.3	7.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2	0.3	0.0	0.1	0.0
Delay (s)	13.5	4.6	10.5	9.1	11.4	7.0
Level of Service	B	A	B	A	B	A
Approach Delay (s)		6.0	10.4		9.0	
Approach LOS		A	B		A	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	35.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
51: Alessandro Blvd & Nason St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	260	70	50	280	80	100	320	80	40	200	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1592	1805	1900	1592	1805	3485		1805	3610	1576
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1592	1805	1900	1592	1805	3485		1805	3610	1576
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	283	76	54	304	87	109	348	87	43	217	43
RTOR Reduction (vph)	0	0	53	0	0	63	0	23	0	0	0	35
Lane Group Flow (vph)	76	283	23	54	304	24	109	412	0	43	217	8
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	5.9	16.9	16.9	4.0	15.0	15.0	8.6	16.4		2.2	10.0	10.0
Effective Green, g (s)	5.9	16.9	16.9	4.0	15.0	15.0	8.6	16.4		2.2	10.0	10.0
Actuated g/C Ratio	0.11	0.30	0.30	0.07	0.27	0.27	0.15	0.30		0.04	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	192	579	485	130	514	430	280	1030		72	650	284
v/s Ratio Prot	c0.04	0.15		0.03	c0.16		c0.06	c0.12		0.02	0.06	
v/s Ratio Perm			0.01			0.01						0.00
v/c Ratio	0.40	0.49	0.05	0.42	0.59	0.05	0.39	0.40		0.60	0.33	0.03
Uniform Delay, d1	23.1	15.8	13.6	24.6	17.6	15.0	21.1	15.6		26.2	19.8	18.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.7	0.0	2.1	1.8	0.1	0.9	0.3		12.6	0.3	0.0
Delay (s)	24.5	16.4	13.7	26.8	19.4	15.1	22.0	15.9		38.8	20.1	18.8
Level of Service	C	B	B	C	B	B	C	B		D	C	B
Approach Delay (s)		17.3			19.5			17.1			22.6	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
52: Cactus Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	520	160	40	510	40	90	190	10	40	260	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3468		1805	3566		1805	3581		1805	1900	1585
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3468		1805	3566		1805	3581		1805	1900	1585
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	41	536	165	41	526	41	93	196	10	41	268	62
RTOR Reduction (vph)	0	18	0	0	3	0	0	4	0	0	0	50
Lane Group Flow (vph)	41	683	0	41	564	0	93	202	0	41	268	12
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	7.1	62.3		7.1	62.3		11.5	28.0		6.6	23.1	23.1
Effective Green, g (s)	7.1	62.3		7.1	62.3		11.5	28.0		6.6	23.1	23.1
Actuated g/C Ratio	0.06	0.52		0.06	0.52		0.10	0.23		0.05	0.19	0.19
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	107	1800		107	1851		173	836		99	366	305
v/s Ratio Prot	c0.02	c0.20		0.02	0.16		c0.05	0.06		0.02	c0.14	
v/s Ratio Perm												0.01
v/c Ratio	0.38	0.38		0.38	0.30		0.54	0.24		0.41	0.73	0.04
Uniform Delay, d1	54.3	17.3		54.3	16.5		51.7	37.4		54.8	45.5	39.4
Progression Factor	1.36	0.27		1.31	0.56		1.00	1.00		1.32	0.87	0.59
Incremental Delay, d2	2.0	0.5		2.2	0.4		3.2	0.2		2.8	7.3	0.1
Delay (s)	76.0	5.3		73.3	9.6		54.9	37.5		75.3	46.8	23.1
Level of Service	E	A		E	A		D	D		E	D	C
Approach Delay (s)		9.2			13.9			42.9			46.0	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
53: Cactus Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	290	150	340	460	50	110	480	230	40	440	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1586	1805	3551		1805	3610	1567	1805	3583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1586	1805	3551		1805	3610	1567	1805	3583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	315	163	370	500	54	120	522	250	43	478	22
RTOR Reduction (vph)	0	0	114	0	6	0	0	0	189	0	3	0
Lane Group Flow (vph)	43	315	49	370	548	0	120	522	61	43	497	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	6.2	36.2	36.2	32.8	62.8		13.0	29.4	29.4	5.6	22.0	
Effective Green, g (s)	6.2	36.2	36.2	32.8	62.8		13.0	29.4	29.4	5.6	22.0	
Actuated g/C Ratio	0.05	0.30	0.30	0.27	0.52		0.11	0.24	0.24	0.05	0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	93	573	478	493	1858		196	884	384	84	657	
v/s Ratio Prot	0.02	c0.17		c0.20	0.15		0.07	c0.14		0.02	c0.14	
v/s Ratio Perm			0.03						0.04			
v/c Ratio	0.46	0.55	0.10	0.75	0.29		0.61	0.59	0.16	0.51	0.76	
Uniform Delay, d1	55.3	35.1	30.2	39.9	16.1		51.1	40.0	35.6	55.9	46.5	
Progression Factor	0.54	0.65	1.88	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.4	3.6	0.4	6.3	0.4		5.6	1.1	0.2	5.2	5.0	
Delay (s)	33.2	26.3	57.2	46.2	16.5		56.7	41.0	35.8	61.0	51.4	
Level of Service	C	C	E	D	B		E	D	D	E	D	
Approach Delay (s)		36.5			28.4			41.7			52.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	38.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
55: Cactus Ave & Nason St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	260	30	10	360	70	30	20	10	140	40	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1866		1805	1849		1805	1900	1573	1805	1900	1590
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1866		1805	1849		1805	1900	1573	1805	1900	1590
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	151	302	35	12	419	81	35	23	12	163	47	256
RTOR Reduction (vph)	0	4	0	0	7	0	0	0	11	0	0	193
Lane Group Flow (vph)	151	333	0	12	493	0	35	23	1	163	47	63
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	8.1	32.0		1.2	25.1		2.5	7.3	7.3	12.2	17.0	17.0
Effective Green, g (s)	8.1	32.0		1.2	25.1		2.5	7.3	7.3	12.2	17.0	17.0
Actuated g/C Ratio	0.12	0.47		0.02	0.37		0.04	0.11	0.11	0.18	0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	213	869		32	676		66	202	167	321	470	393
v/s Ratio Prot	c0.08	0.18		0.01	c0.27		c0.02	c0.01		c0.09	0.02	
v/s Ratio Perm									0.00			0.04
v/c Ratio	0.71	0.38		0.38	0.73		0.53	0.11	0.01	0.51	0.10	0.16
Uniform Delay, d1	29.2	11.9		33.4	18.9		32.5	27.8	27.5	25.5	19.9	20.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.3	0.3		7.2	3.9		8.0	0.3	0.0	1.3	0.1	0.2
Delay (s)	39.5	12.2		40.6	22.8		40.5	28.0	27.5	26.8	20.0	20.5
Level of Service	D	B		D	C		D	C	C	C	C	C
Approach Delay (s)		20.6			23.2			34.2			22.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	68.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
56: Alessandro Blvd & Frederick St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	1050	100	70	900	210	80	280	40	270	370	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1586	1805	5024		3502	3535		3502	3610	1589
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1586	1805	5024		3502	3535		3502	3610	1589
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	204	1129	108	75	968	226	86	301	43	290	398	129
RTOR Reduction (vph)	0	0	48	0	25	0	0	12	0	0	0	99
Lane Group Flow (vph)	204	1129	60	75	1169	0	86	332	0	290	398	30
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	16.1	59.5	59.5	10.8	54.2		5.6	16.9		16.8	28.1	28.1
Effective Green, g (s)	16.1	59.5	59.5	10.8	54.2		5.6	16.9		16.8	28.1	28.1
Actuated g/C Ratio	0.13	0.50	0.50	0.09	0.45		0.05	0.14		0.14	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	242	1790	786	162	2269		163	498		490	845	372
v/s Ratio Prot	c0.11	c0.31		0.04	c0.23		0.02	c0.09		c0.08	0.11	
v/s Ratio Perm			0.04									0.02
v/c Ratio	0.84	0.63	0.08	0.46	0.52		0.53	0.67		0.59	0.47	0.08
Uniform Delay, d1	50.7	22.2	15.8	51.8	23.5		55.9	48.9		48.4	39.6	35.9
Progression Factor	0.68	0.68	0.96	0.72	0.46		0.87	0.78		1.00	1.00	1.00
Incremental Delay, d2	21.2	1.6	0.2	1.9	0.8		3.0	3.3		1.9	0.4	0.1
Delay (s)	55.8	16.8	15.4	39.1	11.5		51.7	41.2		50.3	40.0	36.0
Level of Service	E	B	B	D	B		D	D		D	D	D
Approach Delay (s)		22.2			13.1			43.3			43.0	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
57: Alessandro Blvd & Graham St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1140	150	120	1030	110	150	160	60	120	130	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1585	1805	5103		1805	3447		1805	3470	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1585	1805	5103		1805	3447		1805	3470	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	1200	158	126	1084	116	158	168	63	126	137	42
RTOR Reduction (vph)	0	0	66	0	8	0	0	41	0	0	34	0
Lane Group Flow (vph)	74	1200	92	126	1192	0	158	190	0	126	145	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	8.0	59.3	59.3	15.3	66.6		19.1	20.4		9.0	10.3	
Effective Green, g (s)	8.0	59.3	59.3	15.3	66.6		19.1	20.4		9.0	10.3	
Actuated g/C Ratio	0.07	0.49	0.49	0.13	0.55		0.16	0.17		0.08	0.09	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	120	1784	783	230	2832		287	586		135	298	
v/s Ratio Prot	0.04	c0.33		c0.07	0.23		c0.09	0.06		c0.07	0.04	
v/s Ratio Perm			0.06									
v/c Ratio	0.62	0.67	0.12	0.55	0.42		0.55	0.32		0.93	0.49	
Uniform Delay, d1	54.5	23.0	16.3	49.1	15.5		46.5	43.7		55.2	52.3	
Progression Factor	0.94	0.93	1.07	0.91	0.54		0.88	0.86		1.00	1.00	
Incremental Delay, d2	7.3	1.6	0.2	2.4	0.4		2.3	0.3		57.1	1.3	
Delay (s)	58.5	22.9	17.6	47.0	8.7		43.2	38.0		112.3	53.6	
Level of Service	E	C	B	D	A		D	D		F	D	
Approach Delay (s)		24.2			12.4			40.1			77.8	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
58: Alessandro Blvd & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	910	110	50	880	170	150	300	60	220	380	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1593	1805	5047		1805	3510		1805	3610	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1593	1805	5047		1805	3510		1805	3610	1599
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	96	968	117	53	936	181	160	319	64	234	404	181
RTOR Reduction (vph)	0	0	40	0	18	0	0	18	0	0	0	75
Lane Group Flow (vph)	96	968	77	53	1099	0	160	365	0	234	404	106
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	12.1	61.2	79.3	5.6	54.7		18.1	18.6		18.6	19.1	31.2
Effective Green, g (s)	12.1	61.2	79.3	5.6	54.7		18.1	18.6		18.6	19.1	31.2
Actuated g/C Ratio	0.10	0.51	0.66	0.05	0.46		0.15	0.16		0.16	0.16	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	182	2645	1106	84	2301		272	544		280	575	416
v/s Ratio Prot	c0.05	0.19	0.01	0.03	c0.22		0.09	c0.10		c0.13	0.11	0.03
v/s Ratio Perm			0.04									0.04
v/c Ratio	0.53	0.37	0.07	0.63	0.48		0.59	0.67		0.84	0.70	0.26
Uniform Delay, d1	51.2	17.7	7.2	56.2	22.7		47.5	47.8		49.2	47.8	35.2
Progression Factor	1.17	0.35	0.20	0.72	0.51		0.58	0.55		1.00	1.00	1.00
Incremental Delay, d2	2.0	0.3	0.0	12.5	0.6		3.0	3.1		18.9	3.9	0.3
Delay (s)	61.9	6.5	1.5	53.2	12.3		30.6	29.1		68.2	51.6	35.5
Level of Service	E	A	A	D	B		C	C		E	D	D
Approach Delay (s)		10.5			14.1			29.6			52.8	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
59: Alessandro Blvd & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	820	100	60	870	110	210	270	100	200	340	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5092		1805	5089		1805	3449		1805	3508	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	5092		1805	5089		1805	3449		1805	3508	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	99	901	110	66	956	121	231	297	110	220	374	77
RTOR Reduction (vph)	0	9	0	0	10	0	0	42	0	0	19	0
Lane Group Flow (vph)	99	1002	0	66	1067	0	231	365	0	220	432	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	12.1	55.1		7.2	50.2		21.1	18.3		23.4	20.6	
Effective Green, g (s)	12.1	55.1		7.2	50.2		21.1	18.3		23.4	20.6	
Actuated g/C Ratio	0.10	0.46		0.06	0.42		0.18	0.15		0.19	0.17	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	182	2338		108	2129		317	526		352	602	
v/s Ratio Prot	c0.05	0.20		0.04	c0.21		c0.13	0.11		0.12	c0.12	
v/s Ratio Perm												
v/c Ratio	0.54	0.43		0.61	0.50		0.73	0.69		0.62	0.72	
Uniform Delay, d1	51.3	21.8		55.0	25.7		46.7	48.2		44.3	47.0	
Progression Factor	0.79	1.06		0.53	0.38		0.78	0.66		1.00	1.00	
Incremental Delay, d2	3.0	0.5		8.4	0.7		8.1	3.9		3.4	4.1	
Delay (s)	43.8	23.7		37.6	10.4		44.5	35.8		47.7	51.0	
Level of Service	D	C		D	B		D	D		D	D	
Approach Delay (s)		25.5			12.0			39.0			49.9	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
60: Alessandro Blvd & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	590	210	140	610	110	290	470	70	200	660	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1587	1805	5055		1805	3610	1589	1805	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1587	1805	5055		1805	3610	1589	1805	3610	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	278	608	216	144	629	113	299	485	72	206	680	196
RTOR Reduction (vph)	0	0	144	0	21	0	0	0	59	0	0	147
Lane Group Flow (vph)	278	608	72	144	721	0	299	485	13	206	680	49
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	15.0	40.0	40.0	10.0	35.0		24.0	22.3	22.3	31.7	30.0	30.0
Effective Green, g (s)	15.0	40.0	40.0	10.0	35.0		24.0	22.3	22.3	31.7	30.0	30.0
Actuated g/C Ratio	0.12	0.33	0.33	0.08	0.29		0.20	0.19	0.19	0.26	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	226	1203	529	150	1474		361	671	295	477	903	397
v/s Ratio Prot	c0.15	0.17		c0.08	c0.14		c0.17	0.13		0.11	c0.19	
v/s Ratio Perm			0.05						0.01			0.03
v/c Ratio	1.23	0.51	0.14	0.96	0.49		0.83	0.72	0.05	0.43	0.75	0.12
Uniform Delay, d1	52.5	32.1	27.9	54.8	35.1		46.0	45.9	40.1	36.7	41.6	34.8
Progression Factor	0.71	0.67	1.27	0.95	0.88		0.85	0.38	0.04	1.00	1.00	1.00
Incremental Delay, d2	133.6	1.4	0.5	59.9	1.1		12.9	3.4	0.1	0.6	3.6	0.1
Delay (s)	171.0	22.9	35.9	111.8	32.0		52.2	20.7	1.8	37.3	45.2	35.0
Level of Service	F	C	D	F	C		D	C	A	D	D	C
Approach Delay (s)		62.8			45.0			30.1			41.8	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM Average Control Delay	45.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
61: Cactus Ave & Frederick St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	90	1460	1110	190	290	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	3610	3610	1591	3502	1600
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	3610	3610	1591	3502	1600
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	92	1490	1133	194	296	112
RTOR Reduction (vph)	0	0	0	44	0	38
Lane Group Flow (vph)	92	1490	1133	150	296	74
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	15.0	96.5	77.5	93.0	15.5	30.5
Effective Green, g (s)	15.0	96.5	77.5	93.0	15.5	30.5
Actuated g/C Ratio	0.12	0.80	0.65	0.78	0.13	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	226	2903	2331	1286	452	460
v/s Ratio Prot	0.05	c0.41	0.31	0.02	c0.08	0.02
v/s Ratio Perm				0.08		0.03
v/c Ratio	0.41	0.51	0.49	0.12	0.65	0.16
Uniform Delay, d1	48.4	3.9	11.0	3.3	49.7	34.8
Progression Factor	0.94	1.99	1.12	5.46	0.56	0.34
Incremental Delay, d2	0.9	0.5	0.7	0.0	3.3	0.2
Delay (s)	46.4	8.3	13.0	18.3	31.2	12.1
Level of Service	D	A	B	B	C	B
Approach Delay (s)		10.5	13.8		26.0	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
62: Cactus Ave & Graham St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1300	340	20	930	60	250	70	20	120	80	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1587	1805	5135		3502	3476		1805	3610	1603
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1587	1805	5135		3502	3476		1805	3610	1603
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	73	1354	354	21	969	62	260	73	21	125	83	94
RTOR Reduction (vph)	0	0	84	0	4	0	0	20	0	0	0	28
Lane Group Flow (vph)	73	1354	270	21	1027	0	260	74	0	125	83	66
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	11.5	78.2	78.2	2.8	69.5		14.6	8.2		14.8	8.4	19.9
Effective Green, g (s)	11.5	78.2	78.2	2.8	69.5		14.6	8.2		14.8	8.4	19.9
Actuated g/C Ratio	0.10	0.65	0.65	0.02	0.58		0.12	0.07		0.12	0.07	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	173	2353	1034	42	2974		426	238		223	253	319
v/s Ratio Prot	c0.04	c0.38		0.01	0.20		c0.07	0.02		0.07	c0.02	0.02
v/s Ratio Perm			0.17									0.02
v/c Ratio	0.42	0.58	0.26	0.50	0.35		0.61	0.31		0.56	0.33	0.21
Uniform Delay, d1	51.1	11.6	8.8	57.9	13.3		50.0	53.2		49.5	53.1	43.2
Progression Factor	0.91	0.55	0.24	0.96	1.17		1.00	1.00		0.73	0.95	0.99
Incremental Delay, d2	1.5	0.9	0.5	7.9	0.3		2.6	0.8		3.1	0.7	0.3
Delay (s)	48.1	7.3	2.6	63.3	15.8		52.6	54.0		39.1	51.3	43.2
Level of Service	D	A	A	E	B		D	D		D	D	D
Approach Delay (s)		8.1			16.8			53.0			43.7	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
63: Cactus Ave & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	880	550	20	530	90	410	350	20	90	410	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1595	1805	3522		3502	3577		1805	3557	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1595	1805	3522		3502	3577		1805	3557	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	957	598	22	576	98	446	380	22	98	446	43
RTOR Reduction (vph)	0	0	74	0	10	0	0	4	0	0	7	0
Lane Group Flow (vph)	87	957	524	22	664	0	446	398	0	98	482	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	10.6	54.9	77.4	4.3	48.6		22.5	33.3		11.5	22.3	
Effective Green, g (s)	10.6	54.9	77.4	4.3	48.6		22.5	33.3		11.5	22.3	
Actuated g/C Ratio	0.09	0.46	0.65	0.04	0.41		0.19	0.28		0.10	0.19	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	159	1652	1029	65	1426		657	993		173	661	
v/s Ratio Prot	0.05	c0.27	0.10	0.01	c0.19		c0.13	0.11		0.05	c0.14	
v/s Ratio Perm			0.23									
v/c Ratio	0.55	0.58	0.51	0.34	0.47		0.68	0.40		0.57	0.73	
Uniform Delay, d1	52.4	24.0	11.3	56.5	26.2		45.4	35.2		51.9	46.0	
Progression Factor	0.79	0.58	0.94	1.01	0.59		1.00	1.00		0.33	0.34	
Incremental Delay, d2	3.3	1.3	0.3	3.0	1.1		2.8	0.3		4.1	3.9	
Delay (s)	44.7	15.3	10.9	59.9	16.5		48.2	35.5		21.2	19.7	
Level of Service	D	B	B	E	B		D	D		C	B	
Approach Delay (s)		15.2			17.9			42.2			20.0	
Approach LOS		B			B			D			B	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
64: Cactus Ave & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	690	110	30	540	50	60	230	30	60	350	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3527		1805	3558		1805	3541		1805	3563	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3527		1805	3558		1805	3541		1805	3563	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	61	697	111	30	545	51	61	232	30	61	354	30
RTOR Reduction (vph)	0	7	0	0	4	0	0	10	0	0	6	0
Lane Group Flow (vph)	61	801	0	30	592	0	61	252	0	61	378	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	8.2	72.1		5.4	69.3		8.3	14.6		11.9	18.2	
Effective Green, g (s)	8.2	72.1		5.4	69.3		8.3	14.6		11.9	18.2	
Actuated g/C Ratio	0.07	0.60		0.05	0.58		0.07	0.12		0.10	0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	123	2119		81	2055		125	431		179	540	
v/s Ratio Prot	c0.03	c0.23		0.02	c0.17		c0.03	0.07		c0.03	c0.11	
v/s Ratio Perm												
v/c Ratio	0.50	0.38		0.37	0.29		0.49	0.59		0.34	0.70	
Uniform Delay, d1	53.9	12.4		55.6	12.8		53.8	49.8		50.4	48.3	
Progression Factor	1.06	0.31		0.88	1.12		1.00	1.00		0.64	0.34	
Incremental Delay, d2	2.7	0.4		2.7	0.3		3.0	2.0		1.1	3.8	
Delay (s)	59.6	4.3		51.4	14.7		56.8	51.9		33.1	20.3	
Level of Service	E	A		D	B		E	D		C	C	
Approach Delay (s)		8.2			16.5			52.8			22.1	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
65: Cactus Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	580	160	60	470	110	110	610	50	120	690	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3480		1805	3496		1805	3610	1585	1805	3610	1585
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3480		1805	3496		1805	3610	1585	1805	3610	1585
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	580	160	60	470	110	110	610	50	120	690	60
RTOR Reduction (vph)	0	19	0	0	16	0	0	0	36	0	0	42
Lane Group Flow (vph)	50	721	0	60	564	0	110	610	14	120	690	18
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	8.0	48.1		7.8	47.9		12.1	34.0	34.0	14.1	36.0	36.0
Effective Green, g (s)	8.0	48.1		7.8	47.9		12.1	34.0	34.0	14.1	36.0	36.0
Actuated g/C Ratio	0.07	0.40		0.06	0.40		0.10	0.28	0.28	0.12	0.30	0.30
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	120	1395		117	1395		182	1023	449	212	1083	476
v/s Ratio Prot	0.03	c0.21		c0.03	0.16		0.06	0.17		c0.07	c0.19	
v/s Ratio Perm									0.01			0.01
v/c Ratio	0.42	0.52		0.51	0.40		0.60	0.60	0.03	0.57	0.64	0.04
Uniform Delay, d1	53.8	27.2		54.3	25.8		51.7	37.1	31.1	50.1	36.3	29.7
Progression Factor	0.63	0.37		0.82	0.98		1.17	0.89	1.45	1.06	0.96	1.31
Incremental Delay, d2	2.2	1.3		3.6	0.8		5.4	2.5	0.1	2.8	2.4	0.1
Delay (s)	36.0	11.5		48.2	26.2		65.8	35.5	45.1	56.0	37.3	39.2
Level of Service	D	B		D	C		E	D	D	E	D	D
Approach Delay (s)		13.0			28.3			40.4			40.0	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
66: Alessandro Blvd & Sycamore Canyon Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1570	120	10	1340	70	140	30	20	120	100	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	0.88	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	3502	5187	1591	3502	3610	2793	3502	3610	1592
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	3502	5187	1591	3502	3610	2793	3502	3610	1592
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	82	1619	124	10	1381	72	144	31	21	124	103	196
RTOR Reduction (vph)	0	0	42	0	0	22	0	0	18	0	0	127
Lane Group Flow (vph)	82	1619	82	10	1381	50	144	31	3	124	103	69
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.8	36.4	36.4	2.3	31.9	31.9	10.3	9.2	11.5	10.5	9.4	9.4
Effective Green, g (s)	6.8	36.4	36.4	2.3	31.9	31.9	10.3	9.2	11.5	10.5	9.4	9.4
Actuated g/C Ratio	0.09	0.49	0.49	0.03	0.43	0.43	0.14	0.12	0.15	0.14	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	165	2538	790	108	2224	682	485	446	582	494	456	201
v/s Ratio Prot	c0.05	c0.31		0.00	0.27		c0.04	0.01	0.00	0.04	0.03	
v/s Ratio Perm			0.05			0.03			0.00			c0.04
v/c Ratio	0.50	0.64	0.10	0.09	0.62	0.07	0.30	0.07	0.01	0.25	0.23	0.34
Uniform Delay, d1	32.2	14.1	10.2	35.0	16.5	12.5	28.8	28.8	26.6	28.4	29.2	29.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.5	0.1	0.4	0.5	0.0	0.3	0.1	0.0	0.3	0.3	1.0
Delay (s)	34.5	14.6	10.3	35.4	17.1	12.6	29.1	28.9	26.6	28.7	29.5	30.7
Level of Service	C	B	B	D	B	B	C	C	C	C	C	C
Approach Delay (s)		15.2			17.0			28.8			29.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	74.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
67: Alessandro Blvd & SR-215 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1200	530	0	1020	0	0	0	0	230	0	430
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	4.0
Lane Util. Factor		0.91			0.91					0.95	0.91	0.95
Frpb, ped/bikes		1.00			1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00			1.00					1.00	1.00	1.00
Frt		0.95			1.00					1.00	0.87	0.85
Flt Protected		1.00			1.00					0.95	0.99	1.00
Satd. Flow (prot)		4949			5187					1715	1488	1534
Flt Permitted		1.00			1.00					0.95	0.99	1.00
Satd. Flow (perm)		4949			5187					1715	1488	1534
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1237	546	0	1052	0	0	0	0	237	0	443
RTOR Reduction (vph)	0	43	0	0	0	0	0	0	0	0	91	91
Lane Group Flow (vph)	0	1740	0	0	1052	0	0	0	0	213	146	139
Confl. Peds. (#/hr)						5						
Turn Type										Perm		Perm
Protected Phases		4			8						6	
Permitted Phases										6		6
Actuated Green, G (s)		90.0			90.0					22.0	22.0	22.0
Effective Green, g (s)		90.0			90.0					22.0	22.0	22.0
Actuated g/C Ratio		0.75			0.75					0.18	0.18	0.18
Clearance Time (s)		4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3712			3890					314	273	281
v/s Ratio Prot		c0.35			0.20							
v/s Ratio Perm										c0.12	0.10	0.09
v/c Ratio		0.47			0.27					0.68	0.53	0.49
Uniform Delay, d1		5.8			4.7					45.7	44.4	44.0
Progression Factor		1.00			0.17					1.00	1.00	1.00
Incremental Delay, d2		0.4			0.1					5.7	2.0	1.4
Delay (s)		6.2			0.9					51.4	46.3	45.4
Level of Service		A			A					D	D	D
Approach Delay (s)		6.2			0.9			0.0			47.6	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
68: Alessandro Blvd & SR-215 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	380	1060	0	0	820	290	330	10	170	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.91			0.91		0.95	0.91	0.95			
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (prot)	1805	5187			4959		1715	1634	1534			
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (perm)	1805	5187			4959		1715	1634	1534			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	392	1093	0	0	845	299	340	10	175	0	0	0
RTOR Reduction (vph)	0	0	0	0	49	0	0	3	124	0	0	0
Lane Group Flow (vph)	392	1093	0	0	1095	0	184	181	33	0	0	0
Confl. Peds. (#/hr)	5					5						
Turn Type	Prot						Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases									2			
Actuated Green, G (s)	44.0	92.9			44.9		19.1	19.1	19.1			
Effective Green, g (s)	44.0	92.9			44.9		19.1	19.1	19.1			
Actuated g/C Ratio	0.37	0.77			0.37		0.16	0.16	0.16			
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	662	4016			1855		273	260	244			
v/s Ratio Prot	c0.22	0.21			c0.22		0.11	c0.11				
v/s Ratio Perm									0.02			
v/c Ratio	0.59	0.27			0.59		0.67	0.69	0.14			
Uniform Delay, d1	30.7	3.9			30.2		47.5	47.7	43.4			
Progression Factor	1.05	0.75			1.00		1.00	1.00	1.00			
Incremental Delay, d2	1.3	0.2			1.4		6.4	7.8	0.3			
Delay (s)	33.4	3.1			31.6		53.9	55.5	43.6			
Level of Service	C	A			C		D	E	D			
Approach Delay (s)		11.1			31.6			51.4			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
69: Alessandro Blvd & Old 215 Frontage Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	1020	20	10	980	100	20	40	10	90	40	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3599		1805	3610	1615	3502	3502		1805	3610	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3599		1805	3610	1615	3502	3502		1805	3610	1615
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	192	1030	20	10	990	101	20	40	10	91	40	162
RTOR Reduction (vph)	0	1	0	0	0	47	0	9	0	0	0	140
Lane Group Flow (vph)	192	1049	0	10	990	54	20	41	0	91	40	22
Confl. Peds. (#/hr)			5									
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	18.2	81.4		1.5	64.7	64.7	4.7	7.4		13.7	16.4	16.4
Effective Green, g (s)	18.2	81.4		1.5	64.7	64.7	4.7	7.4		13.7	16.4	16.4
Actuated g/C Ratio	0.15	0.68		0.01	0.54	0.54	0.04	0.06		0.11	0.14	0.14
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	531	2441		23	1946	871	137	216		206	493	221
v/s Ratio Prot	0.05	c0.29		0.01	c0.27		0.01	c0.01		c0.05	0.01	
v/s Ratio Perm						0.03						0.01
v/c Ratio	0.36	0.43		0.43	0.51	0.06	0.15	0.19		0.44	0.08	0.10
Uniform Delay, d1	45.7	8.8		58.8	17.6	13.2	55.7	53.4		49.6	45.2	45.3
Progression Factor	1.00	1.00		0.74	1.02	1.37	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.6		12.1	0.9	0.1	0.5	0.4		1.5	0.1	0.2
Delay (s)	46.1	9.3		55.5	18.9	18.2	56.2	53.9		51.1	45.3	45.5
Level of Service	D	A		E	B	B	E	D		D	D	D
Approach Delay (s)		15.0			19.2			54.5			47.2	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
70: Alessandro Blvd & Day St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1010	20	10	1000	60	20	20	20	10	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.93		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5169		1805	3610	1564	1797	1743		1798	1663	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.73	1.00		0.73	1.00	
Satd. Flow (perm)	1805	5169		1805	3610	1564	1381	1743		1381	1663	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	52	1041	21	10	1031	62	21	21	21	10	10	31
RTOR Reduction (vph)	0	1	0	0	0	5	0	20	0	0	29	0
Lane Group Flow (vph)	52	1061	0	10	1031	57	21	22	0	10	12	0
Confl. Peds. (#/hr)			5			5	5		5	5		5
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	10.1	98.7		1.4	90.0	90.0	7.9	7.9		7.9	7.9	
Effective Green, g (s)	10.1	98.7		1.4	90.0	90.0	7.9	7.9		7.9	7.9	
Actuated g/C Ratio	0.08	0.82		0.01	0.75	0.75	0.07	0.07		0.07	0.07	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	152	4252		21	2708	1173	91	115		91	109	
v/s Ratio Prot	c0.03	0.21		0.01	c0.29			0.01			0.01	
v/s Ratio Perm						0.04	c0.02			0.01		
v/c Ratio	0.34	0.25		0.48	0.38	0.05	0.23	0.19		0.11	0.11	
Uniform Delay, d1	51.8	2.4		58.9	5.2	3.9	53.2	53.0		52.7	52.7	
Progression Factor	0.84	0.99		0.89	2.09	1.79	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.1		14.9	0.4	0.1	1.3	0.8		0.5	0.5	
Delay (s)	44.8	2.5		67.3	11.4	7.1	54.5	53.9		53.3	53.2	
Level of Service	D	A		E	B	A	D	D		D	D	
Approach Delay (s)		4.5			11.6			54.1			53.2	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
71: Alessandro Blvd & Elsworth St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	1060	70	80	910	90	110	160	100	90	160	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.94		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5133		1805	5103		1805	1779		1805	1900	1589
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5133		1805	5103		1805	1779		1805	1900	1589
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	1116	74	84	958	95	116	168	105	95	168	84
RTOR Reduction (vph)	0	4	0	0	7	0	0	24	0	0	0	68
Lane Group Flow (vph)	116	1186	0	84	1046	0	116	249	0	95	168	16
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	13.2	61.7		8.4	56.9		11.6	22.3		11.6	22.3	22.3
Effective Green, g (s)	13.2	61.7		8.4	56.9		11.6	22.3		11.6	22.3	22.3
Actuated g/C Ratio	0.11	0.51		0.07	0.47		0.10	0.19		0.10	0.19	0.19
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	199	2639		126	2420		174	331		174	353	295
v/s Ratio Prot	c0.06	c0.23		0.05	0.20		0.06	c0.14		0.05	c0.09	
v/s Ratio Perm												0.01
v/c Ratio	0.58	0.45		0.67	0.43		0.67	0.75		0.55	0.48	0.05
Uniform Delay, d1	50.8	18.4		54.4	20.9		52.3	46.2		51.7	43.6	40.2
Progression Factor	1.07	1.23		0.55	1.04		0.82	0.62		1.00	1.00	1.00
Incremental Delay, d2	4.3	0.5		11.3	0.5		8.2	8.2		3.5	1.0	0.1
Delay (s)	58.4	23.2		41.1	22.1		51.1	36.8		55.2	44.6	40.2
Level of Service	E	C		D	C		D	D		E	D	D
Approach Delay (s)		26.4			23.5			41.1			46.5	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
72: Cactus Ave & SR-215 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	930	110	750	160	0	0	0	0	0	0	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0							4.0
Lane Util. Factor		0.95	1.00	1.00	0.95							1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00							1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00							1.00
Frt		1.00	0.85	1.00	1.00							0.86
Flt Protected		1.00	1.00	0.95	1.00							1.00
Satd. Flow (prot)		3610	1569	1805	3610							1644
Flt Permitted		1.00	1.00	0.95	1.00							1.00
Satd. Flow (perm)		3610	1569	1805	3610							1644
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	1000	118	806	172	0	0	0	0	0	0	65
RTOR Reduction (vph)	0	0	74	0	0	0	0	0	0	0	0	60
Lane Group Flow (vph)	0	1000	44	806	172	0	0	0	0	0	0	5
Confl. Peds. (#/hr)			5									5
Turn Type			Perm	Prot								custom
Protected Phases		4		3 6	8							6
Permitted Phases			4									
Actuated Green, G (s)		34.2	34.2	77.8	102.2							9.8
Effective Green, g (s)		34.2	34.2	77.8	102.2							9.8
Actuated g/C Ratio		0.29	0.29	0.65	0.85							0.08
Clearance Time (s)		4.0	4.0		4.0							4.0
Vehicle Extension (s)		3.0	3.0		3.0							3.0
Lane Grp Cap (vph)		1029	447	1170	3075							134
v/s Ratio Prot		c0.28		c0.45	0.05							0.00
v/s Ratio Perm			0.03									
v/c Ratio		0.97	0.10	0.69	0.06							0.04
Uniform Delay, d1		42.4	31.6	13.4	1.4							50.8
Progression Factor		1.00	1.00	1.03	1.34							1.00
Incremental Delay, d2		22.0	0.4	1.7	0.0							0.1
Delay (s)		64.5	32.0	15.5	1.9							50.9
Level of Service		E	C	B	A							D
Approach Delay (s)		61.0			13.1			0.0			50.9	
Approach LOS		E			B			A			D	

Intersection Summary			
HCM Average Control Delay	39.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
73: Cactus Ave & SR-215 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	840	150	0	850	90	30	20	10	50	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98			0.99		1.00	0.95		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3528			3549		1805	1805		1805	1615	
Flt Permitted	0.29	1.00			1.00		0.74	1.00		0.74	1.00	
Satd. Flow (perm)	556	3528			3549		1414	1805		1401	1615	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	20	848	152	0	859	91	30	20	10	51	0	20
RTOR Reduction (vph)	0	8	0	0	4	0	0	9	0	0	18	0
Lane Group Flow (vph)	20	992	0	0	946	0	30	21	0	51	2	0
Confl. Peds. (#/hr)						5						
Turn Type	Perm						Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)	102.0	102.0			102.0		10.0	10.0		10.0	10.0	
Effective Green, g (s)	102.0	102.0			102.0		10.0	10.0		10.0	10.0	
Actuated g/C Ratio	0.85	0.85			0.85		0.08	0.08		0.08	0.08	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	473	2999			3017		118	150		117	135	
v/s Ratio Prot		c0.28			0.27			0.01			0.00	
v/s Ratio Perm	0.04						0.02			c0.04		
v/c Ratio	0.04	0.33			0.31		0.25	0.14		0.44	0.01	
Uniform Delay, d1	1.4	1.9			1.8		51.5	51.0		52.3	50.5	
Progression Factor	0.02	0.79			0.11		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1			0.2		1.1	0.4		2.6	0.0	
Delay (s)	0.1	1.6			0.4		52.6	51.4		54.9	50.5	
Level of Service	A	A			A		D	D		D	D	
Approach Delay (s)		1.5			0.4			52.0			53.7	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	4.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
74: Cactus Ave & Elsworth St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	1180	30	40	1120	90	430	120	180	130	50	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	0.95	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99		0.95	0.98	1.00
Satd. Flow (prot)	1805	3610	1585	1805	5187	1564	1715	1641		1715	1765	1587
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99		0.95	0.98	1.00
Satd. Flow (perm)	1805	3610	1585	1805	5187	1564	1715	1641		1715	1765	1587
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	103	1216	31	41	1155	93	443	124	186	134	52	144
RTOR Reduction (vph)	0	0	11	0	0	47	0	32	0	0	0	130
Lane Group Flow (vph)	103	1216	20	41	1155	46	385	336	0	91	95	14
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	7.8	54.2	54.2	5.6	52.0	52.0	32.2	32.2		12.0	12.0	12.0
Effective Green, g (s)	7.8	54.2	54.2	5.6	52.0	52.0	32.2	32.2		12.0	12.0	12.0
Actuated g/C Ratio	0.06	0.45	0.45	0.05	0.43	0.43	0.27	0.27		0.10	0.10	0.10
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	117	1631	716	84	2248	678	460	440		172	177	159
v/s Ratio Prot	c0.06	c0.34		0.02	0.22		c0.22	0.20		0.05	c0.05	
v/s Ratio Perm			0.01			0.03						0.01
v/c Ratio	0.88	0.75	0.03	0.49	0.51	0.07	0.84	0.76		0.53	0.54	0.09
Uniform Delay, d1	55.6	27.2	18.3	55.8	24.8	19.8	41.4	40.4		51.3	51.4	49.0
Progression Factor	0.60	0.66	0.90	0.59	0.46	0.55	1.00	1.00		0.82	0.82	1.75
Incremental Delay, d2	47.8	3.1	0.1	4.0	0.8	0.2	12.5	7.7		2.8	3.0	0.2
Delay (s)	81.4	21.0	16.5	36.9	12.2	11.1	53.9	48.1		44.8	44.8	85.8
Level of Service	F	C	B	D	B	B	D	D		D	D	F
Approach Delay (s)		25.5			12.9			51.1			62.7	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
75: Central Ave & Lochmoor Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	980	220	50	660	110	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3494		1805	3610	1805	1600
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3494		1805	3610	1805	1600
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1065	239	54	717	120	22
RTOR Reduction (vph)	16	0	0	0	0	13
Lane Group Flow (vph)	1288	0	54	717	120	9
Confl. Peds. (#/hr)		5	5			5
Turn Type			Prot			pm+ov
Protected Phases	4		3	8	2	3
Permitted Phases						2
Actuated Green, G (s)	29.5		3.6	37.1	7.0	10.6
Effective Green, g (s)	29.5		3.6	37.1	7.0	10.6
Actuated g/C Ratio	0.57		0.07	0.71	0.13	0.20
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1978		125	2571	243	448
v/s Ratio Prot	c0.37		c0.03	0.20	c0.07	0.00
v/s Ratio Perm						0.00
v/c Ratio	0.65		0.43	0.28	0.49	0.02
Uniform Delay, d1	7.8		23.3	2.7	20.9	16.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		2.4	0.1	1.6	0.0
Delay (s)	8.5		25.7	2.8	22.5	16.6
Level of Service	A		C	A	C	B
Approach Delay (s)	8.5			4.4	21.6	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
76: Central Ave & Sycamore Canyon Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	620	420	190	440	60	240	70	110	40	80	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1588	3502	3545		1805	1900	1615	1805	3610	1592
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1588	3502	3545		1805	1900	1615	1805	3610	1592
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	660	447	202	468	64	255	74	117	43	85	21
RTOR Reduction (vph)	0	0	313	0	9	0	0	0	87	0	0	19
Lane Group Flow (vph)	21	660	134	202	523	0	255	74	30	43	85	2
Confl. Peds. (#/hr)			5	5			5					5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	2.2	18.5	18.5	8.9	25.2		12.9	16.0	16.0	2.5	5.6	5.6
Effective Green, g (s)	2.2	18.5	18.5	8.9	25.2		12.9	16.0	16.0	2.5	5.6	5.6
Actuated g/C Ratio	0.04	0.30	0.30	0.14	0.41		0.21	0.26	0.26	0.04	0.09	0.09
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	64	1550	475	504	1443		376	491	417	73	327	144
v/s Ratio Prot	0.01	c0.13		0.06	c0.15		c0.14	c0.04		c0.02	0.02	
v/s Ratio Perm			0.08						0.02			0.00
v/c Ratio	0.33	0.43	0.28	0.40	0.36		0.68	0.15	0.07	0.59	0.26	0.01
Uniform Delay, d1	29.1	17.4	16.6	24.1	12.8		22.6	17.7	17.3	29.2	26.2	25.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	0.2	0.3	0.5	0.2		4.8	0.1	0.1	11.6	0.4	0.0
Delay (s)	32.1	17.6	16.9	24.6	12.9		27.4	17.9	17.4	40.8	26.6	25.7
Level of Service	C	B	B	C	B		C	B	B	D	C	C
Approach Delay (s)		17.6			16.1			23.2			30.6	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	61.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
77: SR 60 EB Ramps & Central Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	10	100	0	0	0	0	180	530	500	630	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.95					0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Frt	1.00	0.88	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1582	1534					3610	1615	3502	3610	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1582	1534					3610	1615	3502	3610	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	22	11	110	0	0	0	0	198	582	549	692	0
RTOR Reduction (vph)	0	47	54	0	0	0	0	0	218	0	0	0
Lane Group Flow (vph)	22	15	5	0	0	0	0	198	364	549	692	0
Confl. Peds. (#/hr)							5					5
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	6	6						4		3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	4.2	4.2	4.2					21.9	21.9	11.9	37.8	
Effective Green, g (s)	4.2	4.2	4.2					21.9	21.9	11.9	37.8	
Actuated g/C Ratio	0.08	0.08	0.08					0.44	0.44	0.24	0.76	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	152	133	129					1581	707	833	2729	
v/s Ratio Prot	c0.01	0.01						0.05		c0.16	0.19	
v/s Ratio Perm			0.00						c0.23			
v/c Ratio	0.14	0.11	0.04					0.13	0.51	0.66	0.25	
Uniform Delay, d1	21.2	21.2	21.0					8.4	10.2	17.2	1.8	
Progression Factor	1.00	1.00	1.00					1.00	1.00	0.99	0.66	
Incremental Delay, d2	0.4	0.4	0.1					0.2	2.7	1.8	0.2	
Delay (s)	21.7	21.6	21.2					8.5	12.9	18.9	1.4	
Level of Service	C	C	C					A	B	B	A	
Approach Delay (s)		21.4			0.0			11.8			9.2	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
78: SR60 WB Ramps & Central Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	320	140	190	0	0	780
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3502	1615	3610			3610
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3502	1615	3610			3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	348	152	207	0	0	848
RTOR Reduction (vph)	0	120	0	0	0	0
Lane Group Flow (vph)	348	32	207	0	0	848
Confl. Peds. (#/hr)				5		
Turn Type		Perm				
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	10.4	10.4	31.6			31.6
Effective Green, g (s)	10.4	10.4	31.6			31.6
Actuated g/C Ratio	0.21	0.21	0.63			0.63
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	728	336	2282			2282
v/s Ratio Prot	c0.10		0.06			c0.23
v/s Ratio Perm		0.02				
v/c Ratio	0.48	0.09	0.09			0.37
Uniform Delay, d1	17.4	16.0	3.6			4.4
Progression Factor	1.00	1.00	0.15			1.00
Incremental Delay, d2	0.5	0.1	0.1			0.5
Delay (s)	17.9	16.1	0.6			4.9
Level of Service	B	B	A			A
Approach Delay (s)	17.4		0.6			4.9
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1930	10	260	1180	640	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.91		0.97	0.91	0.94	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	5183		3502	5187	5095	
Flt Permitted	1.00		0.95	1.00	0.95	
Satd. Flow (perm)	5183		3502	5187	5095	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	1969	10	265	1204	653	10
RTOR Reduction (vph)	1	0	0	0	2	0
Lane Group Flow (vph)	1978	0	265	1204	661	0
Confl. Peds. (#/hr)		5	5			
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	33.0		7.1	44.1	14.0	
Effective Green, g (s)	33.0		7.1	44.1	14.0	
Actuated g/C Ratio	0.50		0.11	0.67	0.21	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2588		376	3461	1079	
v/s Ratio Prot	c0.38		c0.08	0.23	c0.13	
v/s Ratio Perm						
v/c Ratio	0.76		0.70	0.35	0.61	
Uniform Delay, d1	13.4		28.5	4.8	23.6	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.4		5.9	0.1	1.0	
Delay (s)	14.8		34.4	4.8	24.6	
Level of Service	B		C	A	C	
Approach Delay (s)	14.8			10.2	24.6	
Approach LOS	B			B	C	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
80: Alessandro Blvd & Mission Grove Pkwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	2050	110	410	1330	60	170	180	260	120	140	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91		0.97	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5187	1589	3502	5147		3502	1900	1591	1805	3479	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	5187	1589	3502	5147		3502	1900	1591	1805	3479	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	93	2113	113	423	1371	62	175	186	268	124	144	41
RTOR Reduction (vph)	0	0	63	0	4	0	0	0	179	0	33	0
Lane Group Flow (vph)	93	2113	50	423	1429	0	175	186	89	124	152	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	16.8	40.1	40.1	9.0	32.3		15.5	14.5	14.5	10.3	9.3	
Effective Green, g (s)	16.8	40.1	40.1	9.0	32.3		15.5	14.5	14.5	10.3	9.3	
Actuated g/C Ratio	0.19	0.45	0.45	0.10	0.36		0.17	0.16	0.16	0.11	0.10	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	337	2314	709	351	1849		604	306	257	207	360	
v/s Ratio Prot	0.05	c0.41		c0.12	0.28		0.05	c0.10		c0.07	0.04	
v/s Ratio Perm			0.03						0.06			
v/c Ratio	0.28	0.91	0.07	1.21	0.77		0.29	0.61	0.34	0.60	0.42	
Uniform Delay, d1	31.3	23.3	14.2	40.5	25.5		32.4	35.1	33.5	37.8	37.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	6.1	0.0	116.2	2.1		0.3	3.4	0.8	4.6	0.8	
Delay (s)	31.8	29.3	14.3	156.7	27.6		32.7	38.5	34.3	42.4	38.6	
Level of Service	C	C	B	F	C		C	D	C	D	D	
Approach Delay (s)		28.7			57.0			35.1			40.1	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
81: Martin Luther King Blvd & Chicago Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	1170	430	180	560	140	170	370	50	270	920	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1593	3502	3610	1594	3502	3610	1594	3502	3610	1595
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1593	3502	3610	1594	3502	3610	1594	3502	3610	1595
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	168	1232	453	189	589	147	179	389	53	284	968	189
RTOR Reduction (vph)	0	0	18	0	0	83	0	0	5	0	0	45
Lane Group Flow (vph)	168	1232	435	189	589	64	179	389	48	284	968	144
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	38.1	45.1	7.0	35.1	44.1	7.0	31.9	38.9	9.0	33.9	43.9
Effective Green, g (s)	10.0	38.1	45.1	7.0	35.1	44.1	7.0	31.9	38.9	9.0	33.9	43.9
Actuated g/C Ratio	0.10	0.37	0.44	0.07	0.34	0.43	0.07	0.31	0.38	0.09	0.33	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	177	1348	767	240	1242	752	240	1129	670	309	1200	749
v/s Ratio Prot	c0.09	c0.34	0.04	0.05	0.16	0.01	0.05	0.11	0.00	c0.08	c0.27	0.02
v/s Ratio Perm			0.23			0.03			0.03			0.07
v/c Ratio	0.95	0.91	0.57	0.79	0.47	0.08	0.75	0.34	0.07	0.92	0.81	0.19
Uniform Delay, d1	45.7	30.4	21.2	46.8	26.2	17.1	46.6	27.0	20.1	46.1	31.1	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.3	9.7	1.0	15.6	0.3	0.0	11.9	0.2	0.0	30.7	4.1	0.1
Delay (s)	98.0	40.1	22.2	62.4	26.5	17.1	58.5	27.2	20.1	76.9	35.1	18.2
Level of Service	F	D	C	E	C	B	E	C	C	E	D	B
Approach Delay (s)		41.0			32.3			35.6			41.1	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
82: Martin Luther King Blvd & Iowa Ave

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	110	1350	650	280	560	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	0.99	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	3610	3610	1603	3494	1454
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	3610	3610	1603	3494	1454
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	121	1484	714	308	615	242
RTOR Reduction (vph)	0	0	0	59	4	34
Lane Group Flow (vph)	121	1484	714	249	635	184
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	7.4	31.8	20.4	39.3	18.9	26.3
Effective Green, g (s)	7.4	31.8	20.4	39.3	18.9	26.3
Actuated g/C Ratio	0.13	0.54	0.35	0.67	0.32	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	228	1956	1255	1182	1125	751
v/s Ratio Prot	0.07	c0.41	0.20	0.07	c0.18	0.03
v/s Ratio Perm				0.09		0.10
v/c Ratio	0.53	0.76	0.57	0.21	0.56	0.24
Uniform Delay, d1	24.0	10.5	15.6	3.7	16.5	10.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	1.7	0.6	0.1	0.7	0.2
Delay (s)	26.4	12.2	16.2	3.8	17.1	10.2
Level of Service	C	B	B	A	B	B
Approach Delay (s)		13.3	12.4		15.4	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
83: Martin Luther King Blvd & Canyon Crest Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	1320	680	250	370	50	300	140	250	200	360	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1596	3502	3610	1590	3502	3610	1591	3502	3610	1602
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1596	3502	3610	1590	3502	3610	1591	3502	3610	1602
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	124	1483	764	281	416	56	337	157	281	225	404	180
RTOR Reduction (vph)	0	0	154	0	0	34	0	0	226	0	0	124
Lane Group Flow (vph)	124	1483	610	281	416	22	337	157	55	225	404	56
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.1	33.5	43.0	13.3	34.7	34.7	9.5	17.2	17.2	7.4	15.1	27.2
Effective Green, g (s)	12.1	33.5	43.0	13.3	34.7	34.7	9.5	17.2	17.2	7.4	15.1	27.2
Actuated g/C Ratio	0.14	0.38	0.49	0.15	0.40	0.40	0.11	0.20	0.20	0.08	0.17	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	250	1988	858	533	1433	631	381	710	313	297	624	572
v/s Ratio Prot	0.07	c0.29	c0.08	c0.08	0.12		0.10	0.04		0.06	c0.11	0.01
v/s Ratio Perm			0.30			0.01			0.03			0.02
v/c Ratio	0.50	0.75	0.71	0.53	0.29	0.04	0.88	0.22	0.18	0.76	0.65	0.10
Uniform Delay, d1	34.8	23.3	17.3	34.2	18.0	16.1	38.4	29.5	29.2	39.1	33.7	21.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	1.6	2.8	0.9	0.1	0.0	20.9	0.2	0.3	10.5	2.3	0.1
Delay (s)	36.4	24.8	20.1	35.1	18.1	16.1	59.3	29.6	29.5	49.7	36.0	21.5
Level of Service	D	C	C	D	B	B	E	C	C	D	D	C
Approach Delay (s)		23.9			24.3			42.5			36.6	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
84: Martin Luther King Blvd & SR-60 EB Off Ramp

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	410	1340	10	400	0	0	0	0	10	0	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		0.91	0.91	1.00	0.95					1.00	1.00	
Frt		0.91	0.85	1.00	1.00					1.00	0.85	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3136	1470	1805	3610					1805	1615	
Flt Permitted		1.00	1.00	0.18	1.00					0.95	1.00	
Satd. Flow (perm)		3136	1470	349	3610					1805	1615	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	451	1473	11	440	0	0	0	0	11	0	297
RTOR Reduction (vph)	0	310	309	0	0	0	0	0	0	0	235	0
Lane Group Flow (vph)	0	878	427	11	440	0	0	0	0	11	62	0
Turn Type			Perm	Perm						Perm		
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		21.8	21.8	21.8	21.8					7.8	7.8	
Effective Green, g (s)		21.8	21.8	21.8	21.8					7.8	7.8	
Actuated g/C Ratio		0.58	0.58	0.58	0.58					0.21	0.21	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1818	852	202	2093					374	335	
v/s Ratio Prot		0.28			0.12						c0.04	
v/s Ratio Perm			c0.29	0.03						0.01		
v/c Ratio		0.48	0.50	0.05	0.21					0.03	0.18	
Uniform Delay, d1		4.6	4.7	3.4	3.8					11.9	12.3	
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	
Incremental Delay, d2		0.2	0.5	0.1	0.1					0.0	0.3	
Delay (s)		4.8	5.1	3.5	3.8					11.9	12.5	
Level of Service		A	A	A	A					B	B	
Approach Delay (s)		4.9			3.8			0.0			12.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	37.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
85: Martin Luther King Blvd & SR-60 WB On Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	410	0	400	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	477	0	465	0	0	0

Direction, Lane #	EB 1	EB 2	NB 1	NB 2
Volume Total (vph)	238	238	310	155
Volume Left (vph)	238	238	310	155
Volume Right (vph)	0	0	0	0
Hadj (s)	0.50	0.50	0.50	0.50
Departure Headway (s)	6.4	6.4	6.4	6.4
Degree Utilization, x	0.42	0.42	0.55	0.28
Capacity (veh/h)	544	546	540	543
Control Delay (s)	12.8	12.8	15.8	10.6
Approach Delay (s)	12.8		14.1	
Approach LOS	B		B	

Intersection Summary			
Delay	13.4		
HCM Level of Service	B		
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
86: Central Ave & Chicago Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	20	10	540	30	210	70	330	690	580	960	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1796		3502	1900	1615	1805	3610	1591	3502	3610	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1796		3502	1900	1615	1805	3610	1591	3502	3610	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	22	11	600	33	233	78	367	767	644	1067	11
RTOR Reduction (vph)	0	10	0	0	0	182	0	0	529	0	0	3
Lane Group Flow (vph)	22	23	0	600	33	51	78	367	238	644	1067	8
Confl. Peds. (#/hr)			5	5					5	5		
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	2.4	4.7		12.5	14.8	14.8	5.4	21.0	21.0	13.6	29.2	29.2
Effective Green, g (s)	2.4	4.7		12.5	14.8	14.8	5.4	21.0	21.0	13.6	29.2	29.2
Actuated g/C Ratio	0.04	0.07		0.18	0.22	0.22	0.08	0.31	0.31	0.20	0.43	0.43
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	64	125		646	415	353	144	1118	493	702	1555	696
v/s Ratio Prot	0.01	0.01		c0.17	0.02		0.04	0.10		c0.18	c0.30	
v/s Ratio Perm						c0.03			0.15			0.01
v/c Ratio	0.34	0.18		0.93	0.08	0.14	0.54	0.33	0.48	0.92	0.69	0.01
Uniform Delay, d1	31.9	29.7		27.2	21.1	21.4	30.0	18.0	19.0	26.5	15.6	11.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	0.7		19.6	0.1	0.2	4.1	0.2	0.7	16.8	1.3	0.0
Delay (s)	35.1	30.4		46.9	21.2	21.6	34.1	18.2	19.7	43.3	16.9	11.1
Level of Service	D	C		D	C	C	C	B	B	D	B	B
Approach Delay (s)		32.3			39.1			20.2			26.7	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
87: Central Ave & El Cerrito Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	940	60	40	570	50	30	40	30	70	50	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99			0.96		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1805	3578		1805	3562			1788		1802	1677	
Flt Permitted	0.95	1.00		0.95	1.00			0.71		0.77	1.00	
Satd. Flow (perm)	1805	3578		1805	3562			1297		1461	1677	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	191	1056	67	45	640	56	34	45	34	79	56	202
RTOR Reduction (vph)	0	4	0	0	7	0	0	24	0	0	164	0
Lane Group Flow (vph)	191	1119	0	45	689	0	0	89	0	79	94	0
Confl. Peds. (#/hr)	5					5			5	5		
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	8.4	27.0		2.2	20.8			9.4		9.4	9.4	
Effective Green, g (s)	8.4	27.0		2.2	20.8			9.4		9.4	9.4	
Actuated g/C Ratio	0.17	0.53		0.04	0.41			0.19		0.19	0.19	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	300	1909		78	1464			241		271	312	
v/s Ratio Prot	c0.11	c0.31		0.02	0.19						0.06	
v/s Ratio Perm								c0.07		0.05		
v/c Ratio	0.64	0.59		0.58	0.47			0.37		0.29	0.30	
Uniform Delay, d1	19.7	8.0		23.7	10.9			18.0		17.7	17.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	4.4	0.5		9.9	0.2			1.0		0.6	0.5	
Delay (s)	24.1	8.5		33.7	11.1			19.0		18.3	18.3	
Level of Service	C	A		C	B			B		B	B	
Approach Delay (s)		10.7			12.5			19.0			18.3	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	50.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
88: Central Ave & Canyon Crest Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	840	230	130	600	110	120	280	120	310	650	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3482		1805	3610	1595	1805	3610	1595	3502	3537	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3482		1805	3610	1595	1805	3610	1595	3502	3537	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	903	247	140	645	118	129	301	129	333	699	97
RTOR Reduction (vph)	0	23	0	0	0	52	0	0	19	0	11	0
Lane Group Flow (vph)	43	1127	0	140	645	66	129	301	110	333	785	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	3.9	36.4		8.1	40.6	50.7	8.1	25.3	33.4	10.1	27.3	
Effective Green, g (s)	3.9	36.4		8.1	40.6	50.7	8.1	25.3	33.4	10.1	27.3	
Actuated g/C Ratio	0.04	0.38		0.08	0.42	0.53	0.08	0.26	0.35	0.11	0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	73	1322		152	1528	910	152	952	622	369	1007	
v/s Ratio Prot	0.02	c0.32		c0.08	0.18	0.01	0.07	0.08	0.01	c0.10	c0.22	
v/s Ratio Perm						0.03			0.05			
v/c Ratio	0.59	0.85		0.92	0.42	0.07	0.85	0.32	0.18	0.90	0.78	
Uniform Delay, d1	45.2	27.3		43.6	19.4	11.1	43.3	28.4	21.7	42.4	31.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.6	5.5		50.0	0.2	0.0	33.2	0.2	0.1	24.4	3.9	
Delay (s)	56.8	32.8		93.6	19.6	11.1	76.5	28.5	21.8	66.8	35.4	
Level of Service	E	C		F	B	B	E	C	C	E	D	
Approach Delay (s)		33.7			30.0			38.1			44.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	36.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
89: Country Club Dr & Chicago Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	30	40	950	80	60	1380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.99	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1802	1593	3610	1577	1805	3610
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1802	1593	3610	1577	1805	3610
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	43	1011	85	64	1468
RTOR Reduction (vph)	0	40	0	25	0	0
Lane Group Flow (vph)	32	3	1011	60	64	1468
Confl. Peds. (#/hr)	5	5		5	5	
Turn Type		custom		Perm	Prot	
Protected Phases			2		1	6
Permitted Phases	8	8		2		
Actuated Green, G (s)	3.3	3.3	22.6	22.6	3.1	29.7
Effective Green, g (s)	3.3	3.3	22.6	22.6	3.1	29.7
Actuated g/C Ratio	0.08	0.08	0.55	0.55	0.08	0.72
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	145	128	1990	869	136	2615
v/s Ratio Prot			0.28		0.04	c0.41
v/s Ratio Perm	c0.02	0.00		0.04		
v/c Ratio	0.22	0.03	0.51	0.07	0.47	0.56
Uniform Delay, d1	17.6	17.4	5.7	4.3	18.2	2.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	0.2	0.0	2.6	0.3
Delay (s)	18.4	17.5	5.9	4.3	20.7	2.9
Level of Service	B	B	A	A	C	A
Approach Delay (s)	17.9		5.8			3.6
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	41.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
90: Arlington Ave & SR-91 WB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1090	200	470	680	230	0	0	0	670	90	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97				1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	1805	5187	1578	1805	3610	1574				1715	1738	1594
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	1805	5187	1578	1805	3610	1574				1715	1738	1594
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	51	1112	204	480	694	235	0	0	0	684	92	388
RTOR Reduction (vph)	0	0	126	0	0	115	0	0	0	0	0	94
Lane Group Flow (vph)	51	1112	78	480	694	120	0	0	0	383	393	294
Confl. Peds. (#/hr)	5		5	5		5						5
Turn Type	Prot		Perm	Prot		Perm				Split		pm+ov
Protected Phases	7	4		3	8					6	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	8.0	26.6	26.6	30.0	48.6	48.6				26.4	26.4	34.4
Effective Green, g (s)	8.0	26.6	26.6	30.0	48.6	48.6				26.4	26.4	34.4
Actuated g/C Ratio	0.08	0.28	0.28	0.32	0.51	0.51				0.28	0.28	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	152	1452	442	570	1847	805				477	483	644
v/s Ratio Prot	0.03	c0.21		c0.27	0.19					0.22	c0.23	0.04
v/s Ratio Perm			0.05			0.08						0.15
v/c Ratio	0.34	0.77	0.18	0.84	0.38	0.15				0.80	0.81	0.46
Uniform Delay, d1	41.0	31.3	25.9	30.3	14.0	12.3				31.9	32.0	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	1.3	3.9	0.9	10.9	0.6	0.4				9.4	10.1	0.5
Delay (s)	42.3	35.3	26.8	41.2	14.6	12.7				41.3	42.1	23.7
Level of Service	D	D	C	D	B	B				D	D	C
Approach Delay (s)		34.3			23.3			0.0			35.7	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
91: Arlington Ave & SR-91 EB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	1040	230	160	1170	240	180	320	480	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.86	1.00	0.91	0.91	0.88			
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1805	3610	1597	1805	6536	1589	1643	3449	2842			
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1805	3610	1597	1805	6536	1589	1643	3449	2842			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	372	1106	245	170	1245	255	191	340	511	0	0	0
RTOR Reduction (vph)	0	0	71	0	0	106	0	0	416	0	0	0
Lane Group Flow (vph)	372	1106	174	170	1245	149	172	359	95	0	0	0
Confl. Peds. (#/hr)	5		5	5		5						
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm			
Protected Phases	7	4	2	3	8		2	2				
Permitted Phases			4			8			2			
Actuated Green, G (s)	23.0	45.2	62.0	16.0	38.2	38.2	16.8	16.8	16.8			
Effective Green, g (s)	23.0	45.2	62.0	16.0	38.2	38.2	16.8	16.8	16.8			
Actuated g/C Ratio	0.26	0.50	0.69	0.18	0.42	0.42	0.19	0.19	0.19			
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	461	1813	1171	321	2774	674	307	644	531			
v/s Ratio Prot	c0.21	c0.31	0.03	c0.09	0.19		c0.10	0.10				
v/s Ratio Perm			0.08			0.09			0.03			
v/c Ratio	0.81	0.61	0.15	0.53	0.45	0.22	0.56	0.56	0.18			
Uniform Delay, d1	31.4	16.1	4.9	33.6	18.4	16.4	33.2	33.2	30.8			
Progression Factor	1.00	1.00	1.00	0.75	0.67	0.41	1.00	1.00	1.00			
Incremental Delay, d2	10.0	1.5	0.1	1.5	0.5	0.7	2.3	1.1	0.2			
Delay (s)	41.4	17.6	4.9	26.9	12.9	7.4	35.6	34.3	31.0			
Level of Service	D	B	A	C	B	A	D	C	C			
Approach Delay (s)		20.9			13.5			32.9			0.0	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
92: Arlington Ave & Maude St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1500	160	90	1300	10	140	0	60	10	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.85			0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1805	5098		1805	5180		1805	1590			1726	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00			0.89	
Satd. Flow (perm)	1805	5098		1805	5180		1414	1590			1576	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	1546	165	93	1340	10	144	0	62	10	0	10
RTOR Reduction (vph)	0	8	0	0	0	0	0	52	0	0	8	0
Lane Group Flow (vph)	10	1703	0	93	1350	0	144	10	0	0	12	0
Confl. Peds. (#/hr)	5		5	5		5			5	5		
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	1.4	55.3		8.0	61.9		14.7	14.7			14.7	
Effective Green, g (s)	1.4	55.3		8.0	61.9		14.7	14.7			14.7	
Actuated g/C Ratio	0.02	0.61		0.09	0.69		0.16	0.16			0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	28	3132		160	3563		231	260			257	
v/s Ratio Prot	0.01	c0.33		c0.05	0.26			0.01				
v/s Ratio Perm							c0.10				0.01	
v/c Ratio	0.36	0.54		0.58	0.38		0.62	0.04			0.05	
Uniform Delay, d1	43.9	10.0		39.4	5.9		35.1	31.7			31.7	
Progression Factor	1.15	0.80		1.06	1.36		1.00	1.00			1.00	
Incremental Delay, d2	6.5	0.6		5.0	0.3		5.2	0.1			0.1	
Delay (s)	56.7	8.6		46.6	8.4		40.2	31.8			31.8	
Level of Service	E	A		D	A		D	C			C	
Approach Delay (s)		8.9			10.8			37.7			31.8	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
93: Arlington Ave & Horace St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1250	100	30	1050	10	130	20	50	10	20	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.99		1.00	1.00			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	1.00
Satd. Flow (prot)	1802	3562		1803	3604			1766			1866	1589
Flt Permitted	0.22	1.00		0.14	1.00			0.78			0.91	1.00
Satd. Flow (perm)	415	3562		272	3604			1430			1736	1589
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	53	1330	106	32	1117	11	138	21	53	11	21	74
RTOR Reduction (vph)	0	4	0	0	1	0	0	17	0	0	0	56
Lane Group Flow (vph)	53	1432	0	32	1127	0	0	195	0	0	32	18
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	64.5	64.5		64.5	64.5			17.5			17.5	17.5
Effective Green, g (s)	64.5	64.5		64.5	64.5			17.5			17.5	17.5
Actuated g/C Ratio	0.72	0.72		0.72	0.72			0.19			0.19	0.19
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	297	2553		195	2583			278			338	309
v/s Ratio Prot		c0.40			0.31							
v/s Ratio Perm	0.13			0.12				c0.14			0.02	0.01
v/c Ratio	0.18	0.56		0.16	0.44			0.70			0.09	0.06
Uniform Delay, d1	4.1	6.0		4.1	5.3			33.8			29.7	29.5
Progression Factor	0.04	0.31		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.2	0.8		1.8	0.5			7.8			0.1	0.1
Delay (s)	1.3	2.7		5.9	5.8			41.6			29.9	29.6
Level of Service	A	A		A	A			D			C	C
Approach Delay (s)		2.6			5.8			41.6			29.7	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
94: Arlington Ave & Victoria Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1230	30	300	1010	40	30	130	430	50	240	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3595		1805	3585		1805	1900	1602	1805	1900	1588
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3595		1805	3585		1805	1900	1602	1805	1900	1588
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	85	1309	32	319	1074	43	32	138	457	53	255	85
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	36	0	0	69
Lane Group Flow (vph)	85	1340	0	319	1115	0	32	138	421	53	255	16
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			6
Actuated Green, G (s)	7.8	43.4		20.1	55.7		3.9	18.4	38.5	5.4	19.9	19.9
Effective Green, g (s)	7.8	43.4		20.1	55.7		3.9	18.4	38.5	5.4	19.9	19.9
Actuated g/C Ratio	0.08	0.42		0.19	0.54		0.04	0.18	0.37	0.05	0.19	0.19
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	136	1510		351	1933		68	338	597	94	366	306
v/s Ratio Prot	0.05	c0.37		c0.18	0.31		0.02	0.07	c0.14	0.03	c0.13	
v/s Ratio Perm									0.13			0.01
v/c Ratio	0.62	0.89		0.91	0.58		0.47	0.41	0.71	0.56	0.70	0.05
Uniform Delay, d1	46.3	27.7		40.7	15.9		48.7	37.6	27.6	47.8	38.9	34.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.6	6.7		26.2	0.4		5.1	0.8	3.8	7.5	5.7	0.1
Delay (s)	55.0	34.4		66.9	16.3		53.8	38.4	31.4	55.3	44.6	34.1
Level of Service	D	C		E	B		D	D	C	E	D	C
Approach Delay (s)		35.6			27.6			34.1			43.8	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	103.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
95: Arlington Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	580	1030	470	690	330	650	830	170	400	1480	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3610	2814	3502	3610	1597	3502	3610	1595	3502	5170	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3610	2814	3502	3610	1597	3502	3610	1595	3502	5170	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	630	1120	511	750	359	707	902	185	435	1609	33
RTOR Reduction (vph)	0	0	1	0	0	51	0	0	32	0	2	0
Lane Group Flow (vph)	43	630	1119	511	750	308	707	902	153	435	1640	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	4.6	25.2	40.2	12.0	32.6	48.7	15.0	34.0	46.0	16.1	35.1	
Effective Green, g (s)	4.6	25.2	40.2	12.0	32.6	48.7	15.0	34.0	46.0	16.1	35.1	
Actuated g/C Ratio	0.04	0.24	0.39	0.12	0.32	0.47	0.15	0.33	0.45	0.16	0.34	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	80	881	1095	407	1139	753	509	1188	772	546	1757	
v/s Ratio Prot	0.02	0.17	c0.15	c0.15	0.21	0.06	c0.20	0.25	0.02	0.12	c0.32	
v/s Ratio Perm			0.25			0.13			0.07			
v/c Ratio	0.54	0.72	1.02	1.26	0.66	0.41	1.39	0.76	0.20	0.80	0.93	
Uniform Delay, d1	48.3	35.8	31.5	45.6	30.5	17.9	44.1	31.0	17.4	42.0	33.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.8	2.8	33.0	133.7	1.4	0.4	186.9	2.8	0.1	7.9	9.6	
Delay (s)	55.1	38.5	64.5	179.3	31.9	18.2	231.0	33.8	17.6	49.9	42.6	
Level of Service	E	D	E	F	C	B	F	C	B	D	D	
Approach Delay (s)		55.2			75.4			109.9			44.2	
Approach LOS		E			E			F			D	

Intersection Summary			
HCM Average Control Delay	70.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	103.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
96: Century Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	10	10	20	10	40	20	1450	10	50	2730	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.92		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1787			1711		1805	5181		1805	5174	
Flt Permitted		0.77			0.92		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1417			1598		1805	5181		1805	5174	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	34	11	11	23	11	46	23	1667	11	57	3138	46
RTOR Reduction (vph)	0	10	0	0	42	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	46	0	0	38	0	23	1678	0	57	3183	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		6.7			6.7		2.5	60.5		4.9	62.9	
Effective Green, g (s)		6.7			6.7		2.5	60.5		4.9	62.9	
Actuated g/C Ratio		0.08			0.08		0.03	0.72		0.06	0.75	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		113			127		54	3727		105	3870	
v/s Ratio Prot							0.01	0.32		c0.03	c0.62	
v/s Ratio Perm		c0.03			0.02							
v/c Ratio		0.41			0.30		0.43	0.45		0.54	0.82	
Uniform Delay, d1		36.8			36.5		40.1	4.9		38.5	6.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.4			1.3		5.3	0.1		5.6	1.5	
Delay (s)		39.2			37.8		45.4	5.0		44.1	8.5	
Level of Service		D			D		D	A		D	A	
Approach Delay (s)		39.2			37.8			5.5			9.1	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	84.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
97: Via Vista Dr & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	30	50	20	30	40	50	1510	20	100	2550	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1801	1900	1615	1805	1900	1588	1805	5175		1805	5155	
Flt Permitted	0.54	1.00	1.00	0.74	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1025	1900	1615	1398	1900	1588	1805	5175		1805	5155	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	33	54	22	33	43	54	1641	22	109	2772	98
RTOR Reduction (vph)	0	0	48	0	0	40	0	1	0	0	2	0
Lane Group Flow (vph)	65	33	6	22	33	3	54	1662	0	109	2868	0
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	15.0	9.8	9.8	9.8	7.2	7.2	5.2	46.3		16.7	57.8	
Effective Green, g (s)	15.0	9.8	9.8	9.8	7.2	7.2	5.2	46.3		16.7	57.8	
Actuated g/C Ratio	0.16	0.11	0.11	0.11	0.08	0.08	0.06	0.51		0.18	0.63	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	212	204	173	161	150	125	103	2621		330	3260	
v/s Ratio Prot	c0.02	0.02		0.00	0.02		0.03	c0.32		0.06	c0.56	
v/s Ratio Perm	c0.03		0.00	0.01		0.00						
v/c Ratio	0.31	0.16	0.03	0.14	0.22	0.03	0.52	0.63		0.33	0.88	
Uniform Delay, d1	33.2	37.1	36.6	36.9	39.5	38.9	41.9	16.4		32.5	13.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.4	0.1	0.4	0.7	0.1	4.7	0.5		0.6	3.0	
Delay (s)	34.0	37.4	36.6	37.3	40.2	39.0	46.6	16.9		33.1	16.9	
Level of Service	C	D	D	D	D	D	D	B		C	B	
Approach Delay (s)		35.7			39.0			17.8			17.5	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	91.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
98: Canyon Crest Dr & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	0	10	590	10	30	10	1470	280	80	2640	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		0.94	1.00		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85		1.00	0.89		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3023		5090	1666		1805	5187	1595	1805	5181	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3023		5090	1666		1805	5187	1595	1805	5181	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	0	10	615	10	31	10	1531	292	83	2750	21
RTOR Reduction (vph)	0	10	0	0	27	0	0	0	92	0	0	0
Lane Group Flow (vph)	10	0	0	615	14	0	10	1531	200	83	2771	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	1.2	1.1		9.1	9.0		1.1	40.2	49.3	5.6	44.7	
Effective Green, g (s)	1.2	1.1		9.1	9.0		1.1	40.2	49.3	5.6	44.7	
Actuated g/C Ratio	0.02	0.02		0.13	0.12		0.02	0.56	0.68	0.08	0.62	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	30	46		643	208		28	2896	1181	140	3217	
v/s Ratio Prot	c0.01	0.00		c0.12	0.01		0.01	c0.30	0.02	0.05	c0.53	
v/s Ratio Perm									0.10			
v/c Ratio	0.33	0.00		0.96	0.07		0.36	0.53	0.17	0.59	0.86	
Uniform Delay, d1	35.0	34.9		31.3	27.8		35.1	10.0	4.0	32.1	11.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.5	0.0		24.9	0.1		7.7	0.2	0.1	6.6	2.6	
Delay (s)	41.5	34.9		56.2	27.9		42.8	10.1	4.1	38.7	13.7	
Level of Service	D	C		E	C		D	B	A	D	B	
Approach Delay (s)		38.2			54.4			9.4			14.4	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
99: Oleander Ave/Harley Knox Blvd & Perris Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	120	210	40	500	620	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1787	1567	1805	1900	1900	1577
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1787	1567	1805	1900	1900	1577
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	128	223	43	532	660	117
RTOR Reduction (vph)	0	195	0	0	0	11
Lane Group Flow (vph)	128	28	43	532	660	106
Confl. Peds. (#/hr)	5	5	5			5
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	13.6	13.6	6.0	88.4	78.4	78.4
Effective Green, g (s)	13.6	13.6	6.0	88.4	78.4	78.4
Actuated g/C Ratio	0.12	0.12	0.05	0.80	0.71	0.71
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	221	194	98	1527	1354	1124
v/s Ratio Prot			0.02	c0.28	c0.35	
v/s Ratio Perm	c0.07	0.02				0.07
v/c Ratio	0.58	0.14	0.44	0.35	0.49	0.09
Uniform Delay, d1	45.5	43.0	50.4	2.9	7.0	4.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.3	3.1	0.6	1.3	0.2
Delay (s)	49.2	43.3	53.5	3.6	8.2	5.0
Level of Service	D	D	D	A	A	A
Approach Delay (s)	45.5			7.3	7.7	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
101: Ramona Expy & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1310	100	50	1120	0	200	0	100	0	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	4.6				4.9
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95				1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98				0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00				1.00
Frt	1.00	0.99		1.00	1.00		1.00	0.85				0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00				1.00
Satd. Flow (prot)	1805	5124		1805	5187		1805	3017				1588
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00				1.00
Satd. Flow (perm)	1805	5124		1805	5187		1805	3017				1588
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1424	109	54	1217	0	217	0	109	0	0	11
RTOR Reduction (vph)	0	5	0	0	0	0	0	89	0	0	0	11
Lane Group Flow (vph)	11	1528	0	54	1217	0	217	20	0	0	0	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)	1.5	67.4		7.8	73.7		14.8	20.2				1.1
Effective Green, g (s)	1.5	67.4		7.8	73.7		14.8	20.2				1.1
Actuated g/C Ratio	0.01	0.61		0.07	0.67		0.13	0.18				0.01
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	4.6				4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				3.0
Lane Grp Cap (vph)	25	3140		128	3475		243	554				16
v/s Ratio Prot	0.01	c0.30		c0.03	0.23		c0.12	c0.01				
v/s Ratio Perm												0.00
v/c Ratio	0.44	0.49		0.42	0.35		0.89	0.04				0.01
Uniform Delay, d1	53.8	11.8		48.9	7.8		46.8	36.9				53.9
Progression Factor	1.24	0.36		0.76	0.78		1.00	1.00				1.00
Incremental Delay, d2	11.2	0.5		2.1	0.3		31.0	0.0				0.2
Delay (s)	77.8	4.8		39.5	6.4		77.8	36.9				54.1
Level of Service	E	A		D	A		E	D				D
Approach Delay (s)		5.3			7.8			64.1			54.1	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
102: Ramona Expy & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	990	210	70	730	80	240	290	80	240	420	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5187	1586	3502	5101		3502	3610	1587	3502	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5187	1586	3502	5101		3502	3610	1587	3502	3610	1588
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	222	1100	233	78	811	89	267	322	89	267	467	156
RTOR Reduction (vph)	0	0	126	0	10	0	0	0	72	0	0	127
Lane Group Flow (vph)	222	1100	107	78	890	0	267	322	17	267	467	29
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	12.2	50.5	50.5	6.7	45.0		12.7	20.8	20.8	12.7	20.8	20.8
Effective Green, g (s)	12.2	50.5	50.5	6.7	45.0		12.7	20.8	20.8	12.7	20.8	20.8
Actuated g/C Ratio	0.11	0.46	0.46	0.06	0.41		0.12	0.19	0.19	0.12	0.19	0.19
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	388	2381	728	213	2087		404	683	300	404	683	300
v/s Ratio Prot	c0.06	c0.21		0.02	0.17		c0.08	0.09		0.08	c0.13	
v/s Ratio Perm			0.07						0.01			0.02
v/c Ratio	0.57	0.46	0.15	0.37	0.43		0.66	0.47	0.06	0.66	0.68	0.10
Uniform Delay, d1	46.4	20.4	17.3	49.6	23.3		46.6	39.7	36.6	46.6	41.5	36.9
Progression Factor	1.49	0.44	0.26	0.71	1.71		0.84	1.21	3.06	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.6	0.4	1.0	0.6		4.0	0.5	0.1	4.0	2.8	0.1
Delay (s)	71.1	9.5	4.9	36.4	40.4		43.0	48.7	112.0	50.6	44.4	37.0
Level of Service	E	A	A	D	D		D	D	F	D	D	D
Approach Delay (s)		17.6			40.0			54.8			45.0	
Approach LOS		B			D			D			D	

Intersection Summary			
HCM Average Control Delay	35.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
103: Ramona Expy & Evans Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	300	740	310	20	460	160	170	350	20	190	400	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	5187	1593	1805	3610	1586	3502	3577		3502	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	5187	1593	1805	3610	1586	3502	3577		3502	3610	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	309	763	320	21	474	165	175	361	21	196	412	258
RTOR Reduction (vph)	0	0	0	0	0	117	0	3	0	0	0	177
Lane Group Flow (vph)	309	763	320	21	474	48	175	379	0	196	412	81
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Free	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6						4
Actuated Green, G (s)	13.8	43.6	110.0	2.4	32.2	32.2	9.5	33.7		10.3	34.5	34.5
Effective Green, g (s)	13.8	43.6	110.0	2.4	32.2	32.2	9.5	33.7		10.3	34.5	34.5
Actuated g/C Ratio	0.13	0.40	1.00	0.02	0.29	0.29	0.09	0.31		0.09	0.31	0.31
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	439	2056	1593	39	1057	464	302	1096		328	1132	498
v/s Ratio Prot	c0.09	0.15		0.01	c0.13		0.05	0.11		c0.06	c0.11	
v/s Ratio Perm			c0.20			0.03						0.05
v/c Ratio	0.70	0.37	0.20	0.54	0.45	0.10	0.58	0.35		0.60	0.36	0.16
Uniform Delay, d1	46.1	23.5	0.0	53.3	31.7	28.4	48.3	29.6		47.9	29.2	27.3
Progression Factor	0.90	0.75	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.6	0.5	0.3	13.5	1.4	0.5	2.7	0.9		2.9	0.9	0.7
Delay (s)	46.0	18.1	0.3	66.8	33.0	28.8	51.0	30.5		50.8	30.2	28.0
Level of Service	D	B	A	E	C	C	D	C		D	C	C
Approach Delay (s)		20.2			33.1			36.9			34.2	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
104: Morgan St & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	10	30	30	10	20	20	640	10	20	760	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.2		4.0	4.1	4.1	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.96		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.89		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3086		1805	1900	1581	1805	3600		1805	3610	1592
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3086		1805	1900	1581	1805	3600		1805	3610	1592
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	11	32	32	11	21	21	674	11	21	800	21
RTOR Reduction (vph)	0	31	0	0	0	20	0	1	0	0	0	6
Lane Group Flow (vph)	32	12	0	32	11	1	21	684	0	21	800	15
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	5.1	4.2		4.9	4.1	4.1	3.2	80.2		3.2	80.2	80.2
Effective Green, g (s)	5.1	4.2		4.9	4.1	4.1	3.2	80.2		3.2	80.2	80.2
Actuated g/C Ratio	0.05	0.04		0.04	0.04	0.04	0.03	0.73		0.03	0.73	0.73
Clearance Time (s)	4.0	4.2		4.0	4.1	4.1	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	84	118		80	71	59	53	2625		53	2632	1161
v/s Ratio Prot	c0.02	0.00		0.02	c0.01		c0.01	0.19		0.01	c0.22	
v/s Ratio Perm						0.00						0.01
v/c Ratio	0.38	0.10		0.40	0.15	0.01	0.40	0.26		0.40	0.30	0.01
Uniform Delay, d1	50.9	51.1		51.1	51.3	51.0	52.5	5.0		52.5	5.2	4.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.41	0.41		0.89	0.65	0.49
Incremental Delay, d2	2.9	0.4		3.3	1.0	0.1	4.7	0.2		4.6	0.3	0.0
Delay (s)	53.8	51.5		54.4	52.3	51.1	78.5	2.3		51.2	3.6	2.0
Level of Service	D	D		D	D	D	E	A		D	A	A
Approach Delay (s)		52.5			52.9			4.6			4.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
105: Morgan St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	20	40	50	20	50	80	340	80	80	490	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1587	1805	1900	1587	1805	3486		1805	3610	1586
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1587	1805	1900	1587	1805	3486		1805	3610	1586
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	55	22	44	55	22	55	88	374	88	88	538	88
RTOR Reduction (vph)	0	0	41	0	0	52	0	10	0	0	0	31
Lane Group Flow (vph)	55	22	3	55	22	3	88	452	0	88	538	57
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	7.4	7.7	7.7	5.6	5.9	5.9	9.4	71.3		9.4	71.3	71.3
Effective Green, g (s)	7.4	7.7	7.7	5.6	5.9	5.9	9.4	71.3		9.4	71.3	71.3
Actuated g/C Ratio	0.07	0.07	0.07	0.05	0.05	0.05	0.09	0.65		0.09	0.65	0.65
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	121	133	111	92	102	85	154	2260		154	2340	1028
v/s Ratio Prot	0.03	c0.01		c0.03	0.01		c0.05	0.13		0.05	c0.15	
v/s Ratio Perm			0.00			0.00						0.04
v/c Ratio	0.45	0.17	0.03	0.60	0.22	0.03	0.57	0.20		0.57	0.23	0.06
Uniform Delay, d1	49.4	48.1	47.7	51.1	49.8	49.4	48.4	7.8		48.4	8.0	7.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.13	0.65		1.00	1.00	1.00
Incremental Delay, d2	2.7	0.6	0.1	10.0	1.1	0.2	4.7	0.2		5.0	0.2	0.1
Delay (s)	52.1	48.7	47.8	61.1	50.9	49.5	59.4	5.3		53.4	8.2	7.2
Level of Service	D	D	D	E	D	D	E	A		D	A	A
Approach Delay (s)		49.9			54.6			13.9			13.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
106: Rider St & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	130	40	150	60	110	20	480	140	160	600	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1791	1825		1796	1900	1583	1805	3463		1805	3589	
Flt Permitted	0.72	1.00		0.51	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1350	1825		959	1900	1583	1805	3463		1805	3589	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	137	42	158	63	116	21	505	147	168	632	21
RTOR Reduction (vph)	0	11	0	0	0	94	0	18	0	0	1	0
Lane Group Flow (vph)	53	168	0	158	63	22	21	634	0	168	652	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	21.2	21.2		21.2	21.2	21.2	3.1	58.8		15.4	71.1	
Effective Green, g (s)	21.2	21.2		21.2	21.2	21.2	3.1	58.8		15.4	71.1	
Actuated g/C Ratio	0.19	0.19		0.19	0.19	0.19	0.03	0.53		0.14	0.65	
Clearance Time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	260	352		185	366	305	51	1851		253	2320	
v/s Ratio Prot		0.09			0.03		0.01	c0.18		c0.09	0.18	
v/s Ratio Perm	0.04			c0.16		0.01						
v/c Ratio	0.20	0.48		0.85	0.17	0.07	0.41	0.34		0.66	0.28	
Uniform Delay, d1	37.3	39.5		42.9	37.1	36.4	52.6	14.6		44.8	8.4	
Progression Factor	1.00	1.00		0.94	0.94	1.21	1.46	0.38		1.10	2.17	
Incremental Delay, d2	0.4	1.0		29.2	0.2	0.1	5.2	0.5		6.3	0.3	
Delay (s)	37.7	40.5		69.6	35.1	44.0	81.8	6.0		55.7	18.5	
Level of Service	D	D		E	D	D	F	A		E	B	
Approach Delay (s)		39.8			54.3			8.4			26.1	
Approach LOS		D			D			A			C	

Intersection Summary			
HCM Average Control Delay	26.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
107: Rider St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	240	70	10	180	30	50	190	30	60	240	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.98		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3472		1805	3523		1805	3528		1805	3299	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3472		1805	3523		1805	3528		1805	3299	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	274	253	74	11	189	32	53	200	32	63	253	274
RTOR Reduction (vph)	0	31	0	0	15	0	0	9	0	0	138	0
Lane Group Flow (vph)	274	296	0	11	206	0	53	223	0	63	389	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	20.7	34.5		1.2	15.0		7.6	50.3		8.0	50.7	
Effective Green, g (s)	20.7	34.5		1.2	15.0		7.6	50.3		8.0	50.7	
Actuated g/C Ratio	0.19	0.31		0.01	0.14		0.07	0.46		0.07	0.46	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	340	1089		20	480		125	1613		131	1521	
v/s Ratio Prot	c0.15	0.09		0.01	c0.06		0.03	0.06		c0.03	c0.12	
v/s Ratio Perm												
v/c Ratio	0.81	0.27		0.55	0.43		0.42	0.14		0.48	0.26	
Uniform Delay, d1	42.7	28.3		54.1	43.6		49.1	17.3		49.0	18.1	
Progression Factor	0.84	0.81		1.00	1.00		1.00	1.00		1.53	0.39	
Incremental Delay, d2	12.7	0.1		28.9	0.6		2.3	0.2		2.7	0.4	
Delay (s)	48.6	23.2		83.0	44.2		51.4	17.5		77.8	7.5	
Level of Service	D	C		F	D		D	B		E	A	
Approach Delay (s)		34.8			46.0			23.8			15.0	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
112: Placentia Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	40	10	50	20	60	10	590	40	100	690	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1828		1805	1900	1586	1805	3571		1805	3591	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1828		1805	1900	1586	1805	3571		1805	3591	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	42	11	53	21	63	11	621	42	105	726	21
RTOR Reduction (vph)	0	10	0	0	0	57	0	3	0	0	1	0
Lane Group Flow (vph)	32	43	0	53	21	6	11	660	0	105	746	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	4.2	7.7		6.8	10.3	10.3	1.5	65.6		11.7	75.8	
Effective Green, g (s)	4.2	7.7		6.8	10.3	10.3	1.5	65.6		11.7	75.8	
Actuated g/C Ratio	0.04	0.07		0.06	0.09	0.09	0.01	0.60		0.11	0.69	
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	69	128		112	178	149	25	2130		192	2475	
v/s Ratio Prot	0.02	c0.02		c0.03	c0.01		0.01	0.18		c0.06	c0.21	
v/s Ratio Perm						0.00						
v/c Ratio	0.46	0.33		0.47	0.12	0.04	0.44	0.31		0.55	0.30	
Uniform Delay, d1	51.8	48.7		49.9	45.7	45.4	53.8	11.0		46.6	6.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.21	0.31		1.14	1.09	
Incremental Delay, d2	4.9	1.5		3.1	0.3	0.1	10.9	0.3		3.1	0.3	
Delay (s)	56.7	50.3		53.0	46.0	45.5	76.0	3.7		56.4	7.6	
Level of Service	E	D		D	D	D	E	A		E	A	
Approach Delay (s)		52.7			48.5			4.9			13.6	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
113: Placentia Ave & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	0	0	0	0	0	0	0			0		
vC1, stage 1 conf vol	0	0		0	0							
vC2, stage 2 conf vol	0	0		0	0							
vCu, unblocked vol	0	0	0	0	0	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	1029	900	1091	1029	900	1091	1636			1636		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	0	0	0	0	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	0.0	0.0	0.0		0.0	
Approach LOS	A	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
114: Orange Ave & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	90	110	50	20	80	30	40	160	30	20	150	80
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	92	112	51	20	82	31	41	163	31	20	153	82

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	255	133	41	194	20	235
Volume Left (vph)	92	20	41	0	20	0
Volume Right (vph)	51	31	0	31	0	82
Hadj (s)	-0.05	-0.11	0.50	-0.11	0.50	-0.24
Departure Headway (s)	5.4	5.6	6.5	5.9	6.5	5.7
Degree Utilization, x	0.38	0.21	0.07	0.32	0.04	0.37
Capacity (veh/h)	617	579	518	573	519	591
Control Delay (s)	11.7	10.0	8.8	10.4	8.5	10.9
Approach Delay (s)	11.7	10.0	10.1		10.7	
Approach LOS	B	B	B		B	

Intersection Summary			
Delay	10.7		
HCM Level of Service	B		
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
115: Nuevo Rd & Evans Rd

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	200	480	360	50	60	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1900	1900	1569	1805	1564
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1900	1900	1569	1805	1564
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	522	391	54	65	196
RTOR Reduction (vph)	0	0	0	28	0	150
Lane Group Flow (vph)	217	522	391	26	65	46
Confl. Peds. (#/hr)	5			5	5	5
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	18.5	76.0	53.5	53.5	26.0	26.0
Effective Green, g (s)	18.5	76.0	53.5	53.5	26.0	26.0
Actuated g/C Ratio	0.17	0.69	0.49	0.49	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	304	1313	924	763	427	370
v/s Ratio Prot	c0.12	0.27	c0.21		c0.04	
v/s Ratio Perm				0.02		0.03
v/c Ratio	0.71	0.40	0.42	0.03	0.15	0.13
Uniform Delay, d1	43.2	7.2	18.3	14.8	33.3	33.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	0.9	1.4	0.1	0.8	0.7
Delay (s)	51.0	8.1	19.7	14.8	34.0	33.7
Level of Service	D	A	B	B	C	C
Approach Delay (s)		20.7	19.1		33.8	
Approach LOS		C	B		C	

Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
122: Ramona Expy & Bridge St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	20	750	490	40	70	70
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	21	773	505	41	72	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	546				1340	526
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	546				1340	526
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				57	87
cM capacity (veh/h)	1033				166	556

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	21	773	546	144
Volume Left	21	0	0	72
Volume Right	0	0	41	72
cSH	1033	1700	1700	333
Volume to Capacity	0.02	0.45	0.32	0.43
Queue Length 95th (ft)	2	0	0	53
Control Delay (s)	8.6	0.0	0.0	27.3
Lane LOS	A			D
Approach Delay (s)	0.2		0.0	27.3
Approach LOS				D

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
123: Bridge St & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	40	30	10	390	700	110
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	42	31	10	406	729	115
Pedestrians				5	5	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1219	791	844			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1219	791	844			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	92	99			
cM capacity (veh/h)	198	391	801			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	73	10	406	844
Volume Left	42	10	0	0
Volume Right	31	0	0	115
cSH	251	801	1700	1700
Volume to Capacity	0.29	0.01	0.24	0.50
Queue Length 95th (ft)	29	1	0	0
Control Delay (s)	25.1	9.6	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	25.1	0.2		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
124: Gilman Springs Rd & SR-79 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	590	0	0	210	200	170	10	10	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	31	608	0	0	216	206	175	10	10	0	0	0
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)									10			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	428			613			897	1103	618	907	897	226
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	428			613			897	1103	618	907	897	226
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			31	95	98	100	100	100
cM capacity (veh/h)	1143			972			255	207	489	237	273	814

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	31	608	216	206	196
Volume Left	31	0	0	0	175
Volume Right	0	0	0	206	10
cSH	1143	1700	1700	1700	266
Volume to Capacity	0.03	0.36	0.13	0.12	0.74
Queue Length 95th (ft)	2	0	0	0	131
Control Delay (s)	8.2	0.0	0.0	0.0	48.8
Lane LOS	A				E
Approach Delay (s)	0.4		0.0		48.8
Approach LOS					E

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
125: Gilman Springs Rd & SR-79 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	410	350	10	390	0	0	0	0	220	10	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	427	365	10	406	0	0	0	0	229	10	10
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												7
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	411			797			875	864	437	864	1229	416
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	411			797			875	864	437	864	1229	416
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	15	94	98
cM capacity (veh/h)	1154			834			251	289	621	271	176	635

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	427	365	10	406	250
Volume Left	0	0	10	0	229
Volume Right	0	365	0	0	10
cSH	1700	1700	834	1700	278
Volume to Capacity	0.25	0.21	0.01	0.24	0.90
Queue Length 95th (ft)	0	0	1	0	202
Control Delay (s)	0.0	0.0	9.4	0.0	70.4
Lane LOS			A		F
Approach Delay (s)	0.0		0.2		70.4
Approach LOS					F

Intersection Summary			
Average Delay	12.1		
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
126: Ramona Expy & SR-79(Sanderson Ave)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	370	130	30	260	250	70	470	50	440	860	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1599	3502	3610	1604	3502	3610	1598	3502	3610	1597
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1599	3502	3610	1604	3502	3610	1598	3502	3610	1597
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	196	381	134	31	268	258	72	485	52	454	887	340
RTOR Reduction (vph)	0	0	81	0	0	108	0	0	35	0	0	164
Lane Group Flow (vph)	196	381	53	31	268	150	72	485	17	454	887	176
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.1	15.3	22.4	5.4	13.6	27.8	7.1	16.7	22.1	14.2	23.8	30.9
Effective Green, g (s)	7.1	15.3	22.4	5.4	13.6	27.8	7.1	16.7	22.1	14.2	23.8	30.9
Actuated g/C Ratio	0.11	0.23	0.33	0.08	0.20	0.41	0.11	0.25	0.33	0.21	0.35	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	368	817	624	280	726	755	368	892	617	736	1271	824
v/s Ratio Prot	c0.06	c0.11	0.01	0.01	0.07	0.04	0.02	0.13	0.00	c0.13	c0.25	0.02
v/s Ratio Perm			0.02			0.05			0.01			0.09
v/c Ratio	0.53	0.47	0.09	0.11	0.37	0.20	0.20	0.54	0.03	0.62	0.70	0.21
Uniform Delay, d1	28.7	22.6	15.5	28.9	23.3	12.8	27.6	22.1	15.5	24.2	18.8	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.4	0.1	0.2	0.3	0.1	0.3	0.7	0.0	1.5	1.7	0.1
Delay (s)	30.2	23.0	15.6	29.0	23.6	12.9	27.9	22.8	15.5	25.8	20.5	11.2
Level of Service	C	C	B	C	C	B	C	C	B	C	C	B
Approach Delay (s)		23.6			19.0			22.8			20.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
129: 6th St & California Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	290	160	30	230	20	210	70	50	20	30	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	22	312	172	32	247	22	226	75	54	22	32	11

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total (vph)	22	484	32	269	226	129	65
Volume Left (vph)	22	0	32	0	226	0	22
Volume Right (vph)	0	172	0	22	0	54	11
Hadj (s)	0.50	-0.25	0.50	-0.06	0.50	-0.29	-0.03
Departure Headway (s)	7.0	6.2	7.3	6.7	7.5	6.7	7.6
Degree Utilization, x	0.04	0.83	0.07	0.50	0.47	0.24	0.14
Capacity (veh/h)	492	567	468	514	451	504	425
Control Delay (s)	9.1	31.8	9.6	15.0	15.7	10.6	11.8
Approach Delay (s)	30.8		14.5		13.9		11.8
Approach LOS	D		B		B		B

Intersection Summary			
Delay	20.9		
HCM Level of Service	C		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
130: 6th St & Beaumont Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	250	50	80	210	150	40	290	70	120	240	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1802	3512		1802	1634	1376	1805	3496		1805	3485	
Flt Permitted	0.61	1.00		0.56	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1150	3512		1059	1634	1376	1805	3496		1805	3485	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	128	266	53	85	223	160	43	309	74	128	255	64
RTOR Reduction (vph)	0	25	0	0	0	91	0	31	0	0	30	0
Lane Group Flow (vph)	128	294	0	85	223	69	43	352	0	128	289	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Parking (#/hr)					8	8						
Turn Type	Perm			Perm		pm+ov	Prot			Prot		
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	11.7	11.7		11.7	11.7	17.9	2.3	11.8		6.2	15.7	
Effective Green, g (s)	11.7	11.7		11.7	11.7	17.9	2.3	11.8		6.2	15.7	
Actuated g/C Ratio	0.28	0.28		0.28	0.28	0.43	0.06	0.28		0.15	0.38	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	323	985		297	458	723	100	989		268	1312	
v/s Ratio Prot		0.08			c0.14	0.01	0.02	c0.10		c0.07	c0.08	
v/s Ratio Perm	0.11			0.08		0.04						
v/c Ratio	0.40	0.30		0.29	0.49	0.09	0.43	0.36		0.48	0.22	
Uniform Delay, d1	12.1	11.8		11.7	12.5	7.1	19.1	11.9		16.3	8.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.2		0.5	0.8	0.1	3.0	0.2		1.3	0.1	
Delay (s)	12.9	11.9		12.3	13.3	7.1	22.0	12.1		17.6	8.9	
Level of Service	B	B		B	B	A	C	B		B	A	
Approach Delay (s)		12.2			11.0			13.1			11.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	41.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
131: Reche Canyon Rd & Reche Vista Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	10	1210	10	10	450	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1800
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1800	1529		1753	1615	1530
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	1800	1529		1797	1615	1530
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	11	1301	11	11	484	11
RTOR Reduction (vph)	0	0	0	0	0	1
Lane Group Flow (vph)	11	1301	0	22	484	10
Confl. Peds. (#/hr)		5	5			5
Turn Type		pm+ov	Perm			Prot
Protected Phases	4	2		8	2	2
Permitted Phases		4	8			
Actuated Green, G (s)	2.6	55.8		2.6	53.2	53.2
Effective Green, g (s)	2.6	55.8		2.6	53.2	53.2
Actuated g/C Ratio	0.04	0.85		0.04	0.81	0.81
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	71	1529		71	1306	1237
v/s Ratio Prot	0.01	c0.69			0.30	0.01
v/s Ratio Perm		0.16		0.01		
v/c Ratio	0.15	0.85		0.31	0.37	0.01
Uniform Delay, d1	30.5	2.7		30.7	1.7	1.2
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	4.8		2.5	0.2	0.0
Delay (s)	31.6	7.5		33.2	1.9	1.2
Level of Service	C	A		C	A	A
Approach Delay (s)	7.7			33.2	1.9	
Approach LOS	A			C	A	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	0.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
132: San Timoteo Canyon Rd & Alessandro Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	600	0	0	300	280	10	30	10	230	10	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	667	0	0	333	311	11	33	11	256	11	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	700	644	56	289
Volume Left (vph)	33	0	11	256
Volume Right (vph)	0	311	11	22
Hadj (s)	0.01	-0.29	-0.08	0.13
Departure Headway (s)	6.4	6.1	8.4	7.5
Degree Utilization, x	1.24	1.09	0.13	0.60
Capacity (veh/h)	558	598	401	473
Control Delay (s)	145.7	88.4	12.7	20.9
Approach Delay (s)	145.7	88.4	12.7	20.9
Approach LOS	F	F	B	C

Intersection Summary			
Delay	98.1		
HCM Level of Service	F		
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
133: San Timoteo Canyon Rd & Live Oak Canyon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	750	10	10	540	170	10	10	10	120	0	20
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	24	893	12	12	643	202	12	12	12	143	0	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	929	857	36	167
Volume Left (vph)	24	12	12	143
Volume Right (vph)	12	202	12	24
Hadj (s)	0.00	-0.14	-0.13	0.09
Departure Headway (s)	5.6	5.5	7.7	7.3
Degree Utilization, x	1.46	1.31	0.08	0.34
Capacity (veh/h)	631	665	446	482
Control Delay (s)	230.2	168.7	11.4	13.9
Approach Delay (s)	230.2	168.7	11.4	13.9
Approach LOS	F	F	B	B

Intersection Summary			
Delay	181.6		
HCM Level of Service	F		
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
134: San Timoteo Canyon Rd & Redlands Blvd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	60	760	30	20	750	80
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	844	33	22	833	89

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	911	56	922
Volume Left (vph)	0	33	833
Volume Right (vph)	844	0	89
Hadj (s)	-0.56	0.12	0.12
Departure Headway (s)	5.4	7.1	6.0
Degree Utilization, x	1.35	0.11	1.54
Capacity (veh/h)	677	500	602
Control Delay (s)	186.2	11.0	269.9
Approach Delay (s)	186.2	11.0	269.9
Approach LOS	F	B	F

Intersection Summary			
Delay	221.9		
HCM Level of Service	F		
Intersection Capacity Utilization	108.6%	ICU Level of Service	G
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
135: Crescent Ave & Alessandro Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	60	40	240	60	70	200
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	43	261	65	76	217
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			109		674	87
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			109		674	87
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			83		78	78
cM capacity (veh/h)			1494		349	977

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	109	326	293
Volume Left	0	261	76
Volume Right	43	0	217
cSH	1700	1494	666
Volume to Capacity	0.06	0.17	0.44
Queue Length 95th (ft)	0	16	56
Control Delay (s)	0.0	6.6	14.6
Lane LOS		A	B
Approach Delay (s)	0.0	6.6	14.6
Approach LOS			B

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
136: Sunset Dr & Alessandro Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	10	10	10	10	10	10	260	30	20	300	20
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	10	10	10	10	10	10	10	265	31	20	306	20

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	31	31	306	347
Volume Left (vph)	10	10	10	20
Volume Right (vph)	10	10	31	20
Hadj (s)	-0.13	-0.13	-0.05	-0.02
Departure Headway (s)	5.3	5.3	4.4	4.4
Degree Utilization, x	0.04	0.04	0.37	0.42
Capacity (veh/h)	600	599	799	800
Control Delay (s)	8.5	8.5	10.0	10.5
Approach Delay (s)	8.5	8.5	10.0	10.5
Approach LOS	A	A	A	B

Intersection Summary			
Delay	10.1		
HCM Level of Service	B		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
10: Locust Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	0	60	5	0	5	20	830	0	0	610	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	0.97		1.00	1.00			1.00	0.97
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1794	1573		1794	1573		1805	1900			1900	1573
Flt Permitted	0.75	1.00		0.71	1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)	1423	1573		1346	1573		1805	1900			1900	1573
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	45	0	68	6	0	6	23	943	0	0	693	23
RTOR Reduction (vph)	0	61	0	0	5	0	0	0	0	0	0	7
Lane Group Flow (vph)	45	7	0	6	1	0	23	943	0	0	693	16
Confl. Peds. (#/hr)	5		5	5		5			5			5
Turn Type	Perm			Perm			Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	6.2	6.2		6.2	6.2		1.1	42.3			37.2	37.2
Effective Green, g (s)	6.2	6.2		6.2	6.2		1.1	42.3			37.2	37.2
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.02	0.75			0.66	0.66
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	156	173		148	173		35	1422			1251	1036
v/s Ratio Prot		0.00			0.00		0.01	c0.50			0.36	
v/s Ratio Perm	c0.03			0.00								0.01
v/c Ratio	0.29	0.04		0.04	0.00		0.66	0.66			0.55	0.02
Uniform Delay, d1	23.1	22.5		22.5	22.4		27.5	3.5			5.2	3.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	1.0	0.1		0.1	0.0		36.6	1.2			0.5	0.0
Delay (s)	24.1	22.6		22.6	22.4		64.2	4.7			5.7	3.3
Level of Service	C	C		C	C		E	A			A	A
Approach Delay (s)		23.2			22.5			6.1			5.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
13: Spruce Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	10	10	10	10	130	10	500	130	220	280	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.99			0.98		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.93			0.88		1.00	1.00	0.85	1.00	0.99	
Flt Protected		1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1748			1634		1805	1900	1573	1805	1888	
Flt Permitted		1.00			0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1748			1606		1805	1900	1573	1805	1888	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	0	12	12	12	12	155	12	595	155	262	333	12
RTOR Reduction (vph)	0	10	0	0	133	0	0	0	86	0	1	0
Lane Group Flow (vph)	0	14	0	0	46	0	12	595	69	262	344	0
Confl. Peds. (#/hr)	5		5	5		5			5			5
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		8.0			8.0		1.3	25.2	25.2	11.1	35.0	
Effective Green, g (s)		8.0			8.0		1.3	25.2	25.2	11.1	35.0	
Actuated g/C Ratio		0.14			0.14		0.02	0.45	0.45	0.20	0.62	
Clearance Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		248			228		42	850	704	356	1174	
v/s Ratio Prot		0.01					0.01	c0.31		c0.15	0.18	
v/s Ratio Perm					c0.03				0.04			
v/c Ratio		0.06			0.20		0.29	0.70	0.10	0.74	0.29	
Uniform Delay, d1		20.9			21.3		27.0	12.5	9.0	21.2	4.9	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			0.4		3.7	2.5	0.1	7.7	0.1	
Delay (s)		21.0			21.8		30.8	15.1	9.0	28.9	5.1	
Level of Service		C			C		C	B	A	C	A	
Approach Delay (s)		21.0			21.8			14.1			15.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
20: Alessandro Blvd & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	260	50	20	420	0	190	0	30	0	0	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	313	60	24	506	0	229	0	36	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	373	530	229	36	0
Volume Left (vph)	0	24	229	0	0
Volume Right (vph)	60	0	0	36	0
Hadj (s)	-0.10	0.01	0.20	-0.60	0.00
Departure Headway (s)	5.4	5.3	6.4	3.2	6.9
Degree Utilization, x	0.56	0.77	0.41	0.03	0.00
Capacity (veh/h)	639	670	512	1121	442
Control Delay (s)	14.9	23.8	13.6	6.3	9.9
Approach Delay (s)	14.9	23.8	12.6		0.0
Approach LOS	B	C	B		A

Intersection Summary			
Delay	18.4		
HCM Level of Service	C		
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
27: Cactus Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	150	50	180	40	30	20	210	410	130	180	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00			0.95			0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	0.94			0.90			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1805	3462		1805	1767			3227			3413	
Flt Permitted	0.95	1.00		0.95	1.00			0.93			0.58	
Satd. Flow (perm)	1805	3462		1805	1767			3005			2010	
Peak-hour factor, PHF	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Adj. Flow (vph)	205	205	68	247	55	41	27	288	562	178	247	123
RTOR Reduction (vph)	0	53	0	0	36	0	0	359	0	0	40	0
Lane Group Flow (vph)	205	220	0	247	60	0	0	518	0	0	508	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	12.2	10.3		7.1	5.2			16.6			16.6	
Effective Green, g (s)	12.2	10.3		7.1	5.2			16.6			16.6	
Actuated g/C Ratio	0.27	0.22		0.15	0.11			0.36			0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	479	775		279	200			1084			725	
v/s Ratio Prot	c0.11	c0.06		c0.14	0.03							
v/s Ratio Perm								0.17			c0.25	
v/c Ratio	0.43	0.28		0.89	0.30			0.48			0.85dl	
Uniform Delay, d1	14.0	14.8		19.1	18.7			11.4			12.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.6	0.2		26.6	0.8			0.3			3.1	
Delay (s)	14.6	15.0		45.6	19.6			11.7			15.7	
Level of Service	B	B		D	B			B			B	
Approach Delay (s)		14.8			38.3			11.7			15.7	
Approach LOS		B			D			B			B	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
28: John F Kennedy Dr & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	50	10	280	80	210	20	490	560	110	330	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.89		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3512		3502	3185		1805	5187	1601	1805	4960	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3512		3502	3185		1805	5187	1601	1805	4960	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	104	65	13	364	104	273	26	636	727	143	429	156
RTOR Reduction (vph)	0	12	0	0	208	0	0	0	373	0	53	0
Lane Group Flow (vph)	104	66	0	364	169	0	26	636	354	143	532	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	6.9	5.5		11.3	9.9		1.2	16.0	27.3	7.2	22.0	
Effective Green, g (s)	6.9	5.5		11.3	9.9		1.2	16.0	27.3	7.2	22.0	
Actuated g/C Ratio	0.12	0.10		0.20	0.18		0.02	0.29	0.49	0.13	0.39	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	222	345		707	563		39	1482	895	232	1949	
v/s Ratio Prot	0.06	0.02		c0.10	c0.05		0.01	0.12	c0.08	c0.08	0.11	
v/s Ratio Perm									0.14			
v/c Ratio	0.47	0.19		0.51	0.30		0.67	0.43	0.40	0.62	0.27	
Uniform Delay, d1	22.8	23.2		19.9	20.0		27.2	16.3	9.1	23.1	11.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	0.3		0.6	0.3		35.5	0.2	0.3	4.8	0.1	
Delay (s)	24.4	23.5		20.5	20.3		62.7	16.5	9.4	27.9	11.6	
Level of Service	C	C		C	C		E	B	A	C	B	
Approach Delay (s)		24.0			20.4			13.6			14.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
36: Ironwood Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	150	140	180	120	10	80	70	150	10	100	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00			1.00	0.97		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.93		1.00	0.99			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		1.00	
Satd. Flow (prot)	1805	1733		1805	1873			1851	1561		1826	
Flt Permitted	0.95	1.00		0.95	1.00			0.97	1.00		1.00	
Satd. Flow (perm)	1805	1733		1805	1873			1851	1561		1826	
Peak-hour factor, PHF	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Adj. Flow (vph)	42	211	197	254	169	14	113	99	211	14	141	42
RTOR Reduction (vph)	0	24	0	0	2	0	0	0	177	0	9	0
Lane Group Flow (vph)	42	384	0	254	181	0	0	212	34	0	188	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases									2			
Actuated Green, G (s)	6.3	45.6		21.8	61.1			19.1	19.1		17.5	
Effective Green, g (s)	6.3	45.6		21.8	61.1			19.1	19.1		17.5	
Actuated g/C Ratio	0.05	0.38		0.18	0.51			0.16	0.16		0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	95	659		328	954			295	248		266	
v/s Ratio Prot	0.02	c0.22		c0.14	0.10			c0.11			c0.10	
v/s Ratio Perm									0.02			
v/c Ratio	0.44	0.58		0.77	0.19			0.72	0.14		0.71	
Uniform Delay, d1	55.1	29.6		46.8	16.0			47.9	43.4		48.8	
Progression Factor	1.00	1.00		0.84	0.79			1.00	1.00		1.00	
Incremental Delay, d2	3.3	3.7		10.8	0.4			8.1	0.2		8.3	
Delay (s)	58.4	33.4		50.1	13.0			56.0	43.6		57.2	
Level of Service	E	C		D	B			E	D		E	
Approach Delay (s)		35.7			34.6			49.8			57.2	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM Average Control Delay	42.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
37: SR-60 EB Ramps & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	60	530	20	10	20	120	780	30	30	340	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes		1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1845	1591	1805	1900	1591	1805	3610	1573	1805	5069	
Flt Permitted		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1845	1591	1805	1900	1591	1805	3610	1573	1805	5069	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	106	71	624	24	12	24	141	918	35	35	400	59
RTOR Reduction (vph)	0	0	485	0	0	23	0	0	17	0	12	0
Lane Group Flow (vph)	0	177	139	24	12	1	141	918	18	35	447	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		14.7	14.7	3.8	3.8	3.8	8.9	29.5	29.5	2.2	22.8	
Effective Green, g (s)		14.7	14.7	3.8	3.8	3.8	8.9	29.5	29.5	2.2	22.8	
Actuated g/C Ratio		0.22	0.22	0.06	0.06	0.06	0.13	0.45	0.45	0.03	0.34	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		410	353	104	109	91	243	1609	701	60	1746	
v/s Ratio Prot		c0.10		c0.01	0.01		c0.08	c0.25		0.02	0.09	
v/s Ratio Perm			0.09			0.00			0.01			
v/c Ratio		0.43	0.39	0.23	0.11	0.02	0.58	0.57	0.03	0.58	0.26	
Uniform Delay, d1		22.2	21.9	29.8	29.6	29.4	26.9	13.6	10.3	31.5	15.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.7	0.7	1.1	0.4	0.1	3.5	0.5	0.0	13.6	0.1	
Delay (s)		22.9	22.7	30.9	30.0	29.5	30.4	14.1	10.3	45.2	15.7	
Level of Service		C	C	C	C	C	C	B	B	D	B	
Approach Delay (s)		22.7			30.2			16.1			17.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	66.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
53: Cactus Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	430	230	280	360	40	180	590	350	80	520	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1591	3502	3549		3502	3610	1584	3502	3557	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1591	3502	3549		3502	3610	1584	3502	3557	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	85	524	280	341	439	49	220	720	427	98	634	61
RTOR Reduction (vph)	0	0	18	0	6	0	0	0	117	0	6	0
Lane Group Flow (vph)	85	524	262	341	482	0	220	720	310	98	689	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot		pm+ov	Prot		
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	8.8	48.2	59.2	16.8	56.2		11.0	30.2	47.0	8.8	28.0	
Effective Green, g (s)	8.8	48.2	59.2	16.8	56.2		11.0	30.2	47.0	8.8	28.0	
Actuated g/C Ratio	0.07	0.40	0.49	0.14	0.47		0.09	0.25	0.39	0.07	0.23	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	132	763	838	490	1662		321	909	620	257	830	
v/s Ratio Prot	0.05	c0.28	0.03	c0.10	0.14		0.06	c0.20	0.07	0.03	c0.19	
v/s Ratio Perm			0.14						0.13			
v/c Ratio	0.64	0.69	0.31	0.70	0.29		0.69	0.79	0.50	0.38	0.83	
Uniform Delay, d1	54.1	29.7	18.2	49.2	19.6		52.8	42.0	27.6	53.0	43.7	
Progression Factor	0.62	0.92	0.54	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.3	4.5	0.2	4.3	0.4		6.0	4.8	0.6	0.9	6.9	
Delay (s)	42.9	31.7	10.1	53.4	20.1		58.8	46.7	28.2	54.0	50.6	
Level of Service	D	C	B	D	C		E	D	C	D	D	
Approach Delay (s)		26.0			33.8			42.9			51.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
94: Arlington Ave & Victoria Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	700	40	450	1220	270	40	360	440	150	290	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3575		1805	3493		1805	1900	1602	1805	1900	1586
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3575		1805	3493		1805	1900	1602	1805	1900	1586
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	737	42	474	1284	284	42	379	463	158	305	116
RTOR Reduction (vph)	0	3	0	0	15	0	0	0	27	0	0	72
Lane Group Flow (vph)	147	776	0	474	1553	0	42	379	436	158	305	44
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			6
Actuated Green, G (s)	10.0	32.7		36.3	59.0		5.6	32.1	68.4	12.9	39.4	39.4
Effective Green, g (s)	10.0	32.7		36.3	59.0		5.6	32.1	68.4	12.9	39.4	39.4
Actuated g/C Ratio	0.08	0.25		0.28	0.45		0.04	0.25	0.53	0.10	0.30	0.30
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	139	899		504	1585		78	469	843	179	576	481
v/s Ratio Prot	c0.08	0.22		0.26	c0.44		0.02	c0.20	0.14	c0.09	0.16	
v/s Ratio Perm									0.13			0.03
v/c Ratio	1.06	0.86		0.94	0.98		0.54	0.81	0.52	0.88	0.53	0.09
Uniform Delay, d1	60.0	46.5		45.8	34.9		60.9	46.1	20.0	57.8	37.6	32.5
Progression Factor	1.27	0.85		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	85.5	7.2		25.9	17.8		7.0	13.9	0.5	36.2	3.5	0.4
Delay (s)	161.8	47.0		71.7	52.7		67.9	60.0	20.6	94.0	41.1	32.8
Level of Service	F	D		E	D		E	E	C	F	D	C
Approach Delay (s)		65.2			57.1			39.7			53.9	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM Average Control Delay	54.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
95: Arlington Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	500	630	130	590	240	1170	1590	450	200	470	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.94	0.95	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3610	2824	3502	3610	1594	5090	3610	1591	3502	5136	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3610	2824	3502	3610	1594	5090	3610	1591	3502	5136	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	556	700	144	656	267	1300	1767	500	222	522	33
RTOR Reduction (vph)	0	0	61	0	0	33	0	0	41	0	8	0
Lane Group Flow (vph)	56	556	639	144	656	234	1300	1767	459	222	547	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	5.5	24.7	63.1	7.0	26.2	33.2	38.4	48.2	55.2	7.0	16.8	
Effective Green, g (s)	5.5	24.7	63.1	7.0	26.2	33.2	38.4	48.2	55.2	7.0	16.8	
Actuated g/C Ratio	0.05	0.24	0.61	0.07	0.25	0.32	0.37	0.47	0.54	0.07	0.16	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	96	867	1732	238	919	514	1899	1691	915	238	839	
v/s Ratio Prot	0.03	c0.15	0.14	0.04	c0.18	0.03	0.26	c0.49	0.03	c0.06	0.11	
v/s Ratio Perm			0.09			0.12			0.25			
v/c Ratio	0.58	0.64	0.37	0.61	0.71	0.46	0.68	1.04	0.50	0.93	0.65	
Uniform Delay, d1	47.6	35.1	9.9	46.6	34.9	27.7	27.2	27.4	15.1	47.7	40.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.7	1.6	0.1	4.3	2.7	0.6	1.0	34.7	0.4	40.1	1.8	
Delay (s)	56.3	36.8	10.1	50.9	37.6	28.3	28.2	62.0	15.6	87.8	42.1	
Level of Service	E	D	B	D	D	C	C	E	B	F	D	
Approach Delay (s)		23.4			37.1			43.2			55.2	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM Average Control Delay	39.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	102.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
107: Rider St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	290	30	20	450	140	110	230	20	160	130	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.96		1.00	0.99		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3553		1805	3467		1802	3563		1802	3263	
Flt Permitted	0.95	1.00		0.95	1.00		0.51	1.00		0.51	1.00	
Satd. Flow (perm)	1805	3553		1805	3467		971	3563		966	3263	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	163	337	35	23	523	163	128	267	23	186	151	209
RTOR Reduction (vph)	0	7	0	0	28	0	0	5	0	0	130	0
Lane Group Flow (vph)	163	365	0	23	658	0	128	285	0	186	230	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Actuated Green, G (s)	14.8	41.8		2.4	29.4		47.6	39.6		52.0	41.8	
Effective Green, g (s)	14.8	41.8		2.4	29.4		47.6	39.6		52.0	41.8	
Actuated g/C Ratio	0.13	0.38		0.02	0.27		0.43	0.36		0.47	0.38	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	243	1350		39	927		481	1283		534	1240	
v/s Ratio Prot	c0.09	0.10		0.01	c0.19		0.02	0.08		c0.03	0.07	
v/s Ratio Perm							0.10			c0.13		
v/c Ratio	0.67	0.27		0.59	0.71		0.27	0.22		0.35	0.19	
Uniform Delay, d1	45.3	23.6		53.3	36.4		19.1	24.5		17.2	22.7	
Progression Factor	0.86	0.96		1.00	1.00		1.00	1.00		0.87	0.89	
Incremental Delay, d2	7.1	0.1		20.8	2.5		0.3	0.4		0.4	0.3	
Delay (s)	45.9	22.8		74.1	39.0		19.4	24.9		15.3	20.6	
Level of Service	D	C		E	D		B	C		B	C	
Approach Delay (s)		29.8			40.1			23.2			18.8	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM Average Control Delay	29.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
122: Ramona Expy & Bridge St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	70	460	680	80	40	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	1900	1873		1805	1615
Flt Permitted	0.21	1.00	1.00		0.95	1.00
Satd. Flow (perm)	405	1900	1873		1805	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	500	739	87	43	43
RTOR Reduction (vph)	0	0	7	0	0	35
Lane Group Flow (vph)	76	500	819	0	43	8
Turn Type	Perm					Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Actuated Green, G (s)	21.4	21.4	21.4		6.8	6.8
Effective Green, g (s)	21.4	21.4	21.4		6.8	6.8
Actuated g/C Ratio	0.59	0.59	0.59		0.19	0.19
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	239	1123	1107		339	303
v/s Ratio Prot		0.26	c0.44		c0.02	
v/s Ratio Perm	0.19					0.01
v/c Ratio	0.32	0.45	0.74		0.13	0.03
Uniform Delay, d1	3.7	4.1	5.4		12.2	12.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.8	0.3	2.7		0.2	0.0
Delay (s)	4.5	4.4	8.1		12.4	12.0
Level of Service	A	A	A		B	B
Approach Delay (s)		4.4	8.1		12.2	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	36.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
123: Bridge St & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	120	30	20	660	340	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.97		1.00	1.00	0.98	
Flt Protected	0.96		0.95	1.00	1.00	
Satd. Flow (prot)	1769		1802	1900	1861	
Flt Permitted	0.96		0.49	1.00	1.00	
Satd. Flow (perm)	1769		934	1900	1861	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	133	33	22	733	378	56
RTOR Reduction (vph)	19	0	0	0	8	0
Lane Group Flow (vph)	147	0	22	733	426	0
Confl. Peds. (#/hr)	5	5	5			5
Turn Type			Perm			
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	6.8		20.0	20.0	20.0	
Effective Green, g (s)	6.8		20.0	20.0	20.0	
Actuated g/C Ratio	0.20		0.57	0.57	0.57	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	346		537	1092	1070	
v/s Ratio Prot	c0.08			c0.39	0.23	
v/s Ratio Perm			0.02			
v/c Ratio	0.43		0.04	0.67	0.40	
Uniform Delay, d1	12.3		3.2	5.1	4.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.8		0.0	1.6	0.2	
Delay (s)	13.1		3.3	6.8	4.3	
Level of Service	B		A	A	A	
Approach Delay (s)	13.1			6.7	4.3	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	34.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
124: Gilman Springs Rd & SR-79 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	310	0	0	350	240	280	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0				
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00				
Frpb, ped/bikes	1.00	1.00			1.00	0.98		1.00				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00				
Frt	1.00	1.00			1.00	0.85		1.00				
Flt Protected	0.95	1.00			1.00	1.00		0.95				
Satd. Flow (prot)	1802	1900			1900	1578		1800				
Flt Permitted	0.51	1.00			1.00	1.00		0.95				
Satd. Flow (perm)	958	1900			1900	1578		1800				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	21	323	0	0	365	250	292	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	151	0	0	0	0	0	0
Lane Group Flow (vph)	21	323	0	0	365	99	0	292	0	0	0	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	12.5	12.5			12.5	12.5		11.2				
Effective Green, g (s)	12.5	12.5			12.5	12.5		11.2				
Actuated g/C Ratio	0.39	0.39			0.39	0.39		0.35				
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0				
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0				
Lane Grp Cap (vph)	378	749			749	622		636				
v/s Ratio Prot		0.17			c0.19							
v/s Ratio Perm	0.02					0.06		0.16				
v/c Ratio	0.06	0.43			0.49	0.16		0.46				
Uniform Delay, d1	5.9	7.0			7.2	6.2		7.9				
Progression Factor	1.00	1.00			1.00	1.00		1.00				
Incremental Delay, d2	0.1	0.4			0.5	0.1		0.5				
Delay (s)	6.0	7.4			7.7	6.3		8.4				
Level of Service	A	A			A	A		A				
Approach Delay (s)		7.3			7.1			8.4			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	31.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
125: Gilman Springs Rd & SR-79 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	210	190	10	660	0	0	0	0	150	0	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frpb, ped/bikes		1.00	0.98	1.00	1.00						1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1900	1577	1801	1900						1799	1578
Flt Permitted		1.00	1.00	0.62	1.00						0.95	1.00
Satd. Flow (perm)		1900	1577	1173	1900						1799	1578
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	223	202	11	702	0	0	0	0	160	0	43
RTOR Reduction (vph)	0	0	86	0	0	0	0	0	0	0	0	34
Lane Group Flow (vph)	0	223	116	11	702	0	0	0	0	0	160	9
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		20.2	20.2	20.2	20.2						7.0	7.0
Effective Green, g (s)		20.2	20.2	20.2	20.2						7.0	7.0
Actuated g/C Ratio		0.57	0.57	0.57	0.57						0.20	0.20
Clearance Time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		1090	905	673	1090						358	314
v/s Ratio Prot		0.12			c0.37							
v/s Ratio Perm			0.07	0.01							0.09	0.01
v/c Ratio		0.20	0.13	0.02	0.64						0.45	0.03
Uniform Delay, d1		3.6	3.4	3.2	5.1						12.4	11.4
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		0.1	0.1	0.0	1.3						0.9	0.0
Delay (s)		3.7	3.5	3.2	6.4						13.3	11.4
Level of Service		A	A	A	A						B	B
Approach Delay (s)		3.6			6.3			0.0			12.9	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	35.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
132: San Timoteo Canyon Rd & Alessandro Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	260	0	10	560	210	10	20	0	270	10	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			0.99	
Frt		1.00			0.96			1.00			0.98	
Flt Protected		0.99			1.00			0.98			0.96	
Satd. Flow (prot)		1790			1720			1769			1675	
Flt Permitted		0.86			0.99			0.87			0.73	
Satd. Flow (perm)		1549			1712			1561			1280	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	38	325	0	12	700	262	12	25	0	338	12	50
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	363	0	0	959	0	0	37	0	0	395	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		51.0			51.0			28.6			28.6	
Effective Green, g (s)		51.0			51.0			28.6			28.6	
Actuated g/C Ratio		0.57			0.57			0.32			0.32	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		882			974			498			409	
v/s Ratio Prot												
v/s Ratio Perm		0.23			c0.56			0.02			c0.31	
v/c Ratio		0.41			0.98			0.07			0.96	
Uniform Delay, d1		10.9			18.9			21.3			30.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			25.0			0.1			35.1	
Delay (s)		11.2			43.9			21.3			65.1	
Level of Service		B			D			C			E	
Approach Delay (s)		11.2			43.9			21.3			65.1	
Approach LOS		B			D			C			E	

Intersection Summary			
HCM Average Control Delay	41.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	89.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
133: San Timoteo Canyon Rd & Live Oak Canyon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	480	10	10	750	80	10	10	10	160	10	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			0.99			0.95			0.97	
Flt Protected		1.00			1.00			0.98			0.96	
Satd. Flow (prot)		1790			1771			1674			1673	
Flt Permitted		0.96			0.99			0.89			0.76	
Satd. Flow (perm)		1713			1760			1507			1313	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	22	516	11	11	806	86	11	11	11	172	11	43
RTOR Reduction (vph)	0	1	0	0	4	0	0	8	0	0	11	0
Lane Group Flow (vph)	0	548	0	0	899	0	0	25	0	0	215	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		37.9			37.9			16.2			16.2	
Effective Green, g (s)		37.9			37.9			16.2			16.2	
Actuated g/C Ratio		0.59			0.59			0.25			0.25	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1013			1041			381			332	
v/s Ratio Prot												
v/s Ratio Perm		0.32			c0.51			0.02			c0.16	
v/c Ratio		0.54			0.86			0.07			0.65	
Uniform Delay, d1		7.9			10.9			18.2			21.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			7.5			0.1			4.3	
Delay (s)		8.5			18.5			18.3			25.7	
Level of Service		A			B			B			C	
Approach Delay (s)		8.5			18.5			18.3			25.7	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	64.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
134: San Timoteo Canyon Rd & Redlands Blvd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	20	630	60	90	790	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	1.00	1.00		0.98	0.95	
Satd. Flow (prot)	1800	1522		1761	1709	
Flt Permitted	1.00	1.00		0.86	0.95	
Satd. Flow (perm)	1800	1522		1545	1709	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	685	65	98	859	22
RTOR Reduction (vph)	0	0	0	0	1	0
Lane Group Flow (vph)	22	685	0	163	880	0
Confl. Peds. (#/hr)		5	5		5	5
Turn Type		pm+ov	Perm			
Protected Phases	4	2		8	2	
Permitted Phases		4	8			
Actuated Green, G (s)	9.5	48.2		9.5	38.7	
Effective Green, g (s)	9.5	48.2		9.5	38.7	
Actuated g/C Ratio	0.16	0.83		0.16	0.66	
Clearance Time (s)	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	294	1522		252	1136	
v/s Ratio Prot	0.01	c0.30			c0.51	
v/s Ratio Perm		0.15		0.11		
v/c Ratio	0.07	0.45		0.65	0.77	
Uniform Delay, d1	20.6	1.4		22.8	6.7	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.2		5.6	3.4	
Delay (s)	20.7	1.6		28.4	10.1	
Level of Service	C	A		C	B	
Approach Delay (s)	2.2			28.4	10.1	
Approach LOS	A			C	B	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	5.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
10: Locust Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	0	30	5	5	5	70	670	0	10	890	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.93		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1789	1568		1789	1732		1805	1900		1805	1900	1568
Flt Permitted	0.75	1.00		0.73	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1412	1568		1382	1732		1805	1900		1805	1900	1568
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	60	0	36	6	6	6	83	798	0	12	1060	119
RTOR Reduction (vph)	0	33	0	0	5	0	0	0	0	0	0	21
Lane Group Flow (vph)	60	3	0	6	7	0	83	798	0	12	1060	98
Confl. Peds. (#/hr)	5		5	5		5			5			5
Turn Type	Perm			Perm			Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	7.3	7.3		7.3	7.3		5.4	59.4		1.3	55.3	55.3
Effective Green, g (s)	7.3	7.3		7.3	7.3		5.4	59.4		1.3	55.3	55.3
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.07	0.74		0.02	0.69	0.69
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	129	143		126	158		122	1411		29	1313	1084
v/s Ratio Prot		0.00			0.00		c0.05	0.42		0.01	c0.56	
v/s Ratio Perm	c0.04			0.00								0.06
v/c Ratio	0.47	0.02		0.05	0.04		0.68	0.57		0.41	0.81	0.09
Uniform Delay, d1	34.5	33.1		33.2	33.2		36.5	4.6		39.0	8.6	4.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1		0.2	0.1		14.5	0.5		9.3	3.7	0.0
Delay (s)	37.1	33.2		33.3	33.3		50.9	5.1		48.3	12.4	4.1
Level of Service	D	C		C	C		D	A		D	B	A
Approach Delay (s)		35.6			33.3			9.4			11.9	
Approach LOS		D			C			A			B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
13: Spruce Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	40	10	30	10	630	580	280	440	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.95			0.95		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1764			1734		1805	1900	1570	1805	1893	
Flt Permitted		0.91			0.82		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1637			1466		1805	1900	1570	1805	1893	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	11	11	11	45	11	34	11	716	659	318	500	11
RTOR Reduction (vph)	0	10	0	0	29	0	0	0	282	0	1	0
Lane Group Flow (vph)	0	23	0	0	61	0	11	716	377	318	510	0
Confl. Peds. (#/hr)	5		5	5		5			5			5
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		6.8			6.8		1.2	37.1	37.1	17.1	53.0	
Effective Green, g (s)		6.8			6.8		1.2	37.1	37.1	17.1	53.0	
Actuated g/C Ratio		0.09			0.09		0.02	0.51	0.51	0.23	0.73	
Clearance Time (s)		4.0			4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		152			137		30	966	798	423	1374	
v/s Ratio Prot							0.01	c0.38		c0.18	0.27	
v/s Ratio Perm		0.01			c0.04				0.24			
v/c Ratio		0.15			0.45		0.37	0.74	0.47	0.75	0.37	
Uniform Delay, d1		30.4			31.3		35.5	14.2	11.6	26.0	3.8	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5			2.3		7.4	3.1	0.4	7.4	0.2	
Delay (s)		30.9			33.6		43.0	17.3	12.1	33.4	3.9	
Level of Service		C			C		D	B	B	C	A	
Approach Delay (s)		30.9			33.6			15.0			15.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
20: Alessandro Blvd & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	310	90	20	350	10	80	0	20	0	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	333	97	22	376	11	86	0	22	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	430	409	86	22	0
Volume Left (vph)	0	22	86	0	0
Volume Right (vph)	97	11	0	22	0
Hadj (s)	-0.14	-0.01	0.20	-0.60	0.00
Departure Headway (s)	4.5	4.7	6.0	3.2	6.0
Degree Utilization, x	0.54	0.53	0.14	0.02	0.00
Capacity (veh/h)	780	753	526	1121	507
Control Delay (s)	12.7	12.7	10.0	6.3	9.0
Approach Delay (s)	12.7	12.7	9.2		0.0
Approach LOS	B	B	A		A

Intersection Summary			
Delay	12.3		
HCM Level of Service	B		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
27: Cactus Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	30	50	670	200	180	50	210	40	30	180	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.91		1.00	0.93			0.98			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1805	3240		1805	1752			3500			3402	
Flt Permitted	0.95	1.00		0.95	1.00			0.84			0.89	
Satd. Flow (perm)	1805	3240		1805	1752			2957			3049	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	160	32	53	713	213	191	53	223	43	32	191	96
RTOR Reduction (vph)	0	48	0	0	35	0	0	15	0	0	58	0
Lane Group Flow (vph)	160	37	0	713	369	0	0	304	0	0	261	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	8.9	5.8		32.5	29.4			11.5			11.5	
Effective Green, g (s)	8.9	5.8		32.5	29.4			11.5			11.5	
Actuated g/C Ratio	0.14	0.09		0.53	0.48			0.19			0.19	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	260	304		949	833			550			567	
v/s Ratio Prot	0.09	0.01		c0.40	c0.21							
v/s Ratio Perm								c0.10			0.09	
v/c Ratio	0.62	0.12		0.75	0.44			0.55			0.46	
Uniform Delay, d1	24.8	25.7		11.5	10.8			22.8			22.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	4.3	0.2		3.4	0.4			1.2			0.6	
Delay (s)	29.1	25.8		14.9	11.1			24.0			23.0	
Level of Service	C	C		B	B			C			C	
Approach Delay (s)		28.0			13.5			24.0			23.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
28: John F Kennedy Dr & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	20	20	570	50	90	10	340	210	100	660	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.93		1.00	0.90		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3317		3502	3233		1805	5187	1601	1805	5095	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3317		3502	3233		1805	5187	1601	1805	5095	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	22	22	613	54	97	11	366	226	108	710	86
RTOR Reduction (vph)	0	21	0	0	78	0	0	0	119	0	12	0
Lane Group Flow (vph)	54	23	0	613	73	0	11	366	107	108	784	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	2.3	2.3		9.4	9.4		1.0	13.5	22.9	7.3	19.8	
Effective Green, g (s)	2.3	2.3		9.4	9.4		1.0	13.5	22.9	7.3	19.8	
Actuated g/C Ratio	0.05	0.05		0.19	0.19		0.02	0.28	0.47	0.15	0.41	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	86	157		679	627		37	1444	888	272	2080	
v/s Ratio Prot	0.03	0.01		c0.18	c0.02		0.01	0.07	0.02	c0.06	c0.15	
v/s Ratio Perm									0.04			
v/c Ratio	0.63	0.15		0.90	0.12		0.30	0.25	0.12	0.40	0.38	
Uniform Delay, d1	22.7	22.2		19.1	16.1		23.4	13.6	7.2	18.6	10.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	13.5	0.4		15.3	0.1		4.5	0.1	0.1	1.0	0.1	
Delay (s)	36.1	22.6		34.4	16.2		27.9	13.7	7.2	19.6	10.2	
Level of Service	D	C		C	B		C	B	A	B	B	
Approach Delay (s)		30.1			30.8			11.5			11.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
36: Ironwood Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	90	110	110	130	10	120	110	90	0	160	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00			1.00	0.97		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.92		1.00	0.99			1.00	0.85		0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		1.00	
Satd. Flow (prot)	1805	1711		1805	1876			1852	1561		1813	
Flt Permitted	0.95	1.00		0.95	1.00			0.97	1.00		1.00	
Satd. Flow (perm)	1805	1711		1805	1876			1852	1561		1813	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	62	93	113	113	134	10	124	113	93	0	165	62
RTOR Reduction (vph)	0	29	0	0	2	0	0	0	77	0	12	0
Lane Group Flow (vph)	62	177	0	113	142	0	0	237	16	0	215	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases									2			
Actuated Green, G (s)	8.4	47.1		16.8	55.5			20.7	20.7		19.4	
Effective Green, g (s)	8.4	47.1		16.8	55.5			20.7	20.7		19.4	
Actuated g/C Ratio	0.07	0.39		0.14	0.46			0.17	0.17		0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	126	672		253	868			319	269		293	
v/s Ratio Prot	c0.03	c0.10		c0.06	0.08			c0.13			c0.12	
v/s Ratio Perm									0.01			
v/c Ratio	0.49	0.26		0.45	0.16			0.74	0.06		0.73	
Uniform Delay, d1	53.7	24.7		47.3	18.8			47.1	41.5		47.9	
Progression Factor	1.00	1.00		0.71	0.66			1.00	1.00		1.00	
Incremental Delay, d2	3.0	1.0		1.2	0.4			9.0	0.1		9.2	
Delay (s)	56.8	25.6		35.1	12.8			56.1	41.6		57.0	
Level of Service	E	C		D	B			E	D		E	
Approach Delay (s)		32.8			22.6			52.0			57.0	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	41.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
37: SR-60 EB Ramps & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	50	820	40	20	100	120	600	20	20	370	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes		1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1833	1590	1805	1900	1590	1805	3610	1571	1805	5138	
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1833	1590	1805	1900	1590	1805	3610	1571	1805	5138	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	144	52	845	41	21	103	124	619	21	21	381	21
RTOR Reduction (vph)	0	0	381	0	0	95	0	0	14	0	5	0
Lane Group Flow (vph)	0	196	464	41	21	8	124	619	7	21	397	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		30.1	30.1	5.9	5.9	5.9	10.6	25.1	25.1	2.3	16.8	
Effective Green, g (s)		30.1	30.1	5.9	5.9	5.9	10.6	25.1	25.1	2.3	16.8	
Actuated g/C Ratio		0.38	0.38	0.07	0.07	0.07	0.13	0.32	0.32	0.03	0.21	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		695	603	134	141	118	241	1141	497	52	1087	
v/s Ratio Prot		0.11		c0.02	0.01		c0.07	c0.17		0.01	0.08	
v/s Ratio Perm			c0.29			0.00			0.00			
v/c Ratio		0.28	0.77	0.31	0.15	0.06	0.51	0.54	0.01	0.40	0.37	
Uniform Delay, d1		17.1	21.6	34.8	34.4	34.2	32.0	22.4	18.6	37.9	26.7	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	6.0	1.3	0.5	0.2	1.9	0.5	0.0	5.1	0.2	
Delay (s)		17.4	27.6	36.1	34.9	34.4	33.9	22.9	18.7	42.9	27.0	
Level of Service		B	C	D	C	C	C	C	B	D	C	
Approach Delay (s)		25.7			34.9			24.6			27.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	79.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
53: Cactus Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	290	150	340	460	50	110	480	230	40	440	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1591	3502	3551		3502	3610	1588	3502	3583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1591	3502	3551		3502	3610	1588	3502	3583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	315	163	370	500	54	120	522	250	43	478	22
RTOR Reduction (vph)	0	0	33	0	6	0	0	0	148	0	3	0
Lane Group Flow (vph)	43	315	130	370	548	0	120	522	102	43	497	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot		pm+ov	Prot		
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	7.2	49.5	60.2	21.8	64.1		10.7	27.1	48.9	5.6	22.0	
Effective Green, g (s)	7.2	49.5	60.2	21.8	64.1		10.7	27.1	48.9	5.6	22.0	
Actuated g/C Ratio	0.06	0.41	0.50	0.18	0.53		0.09	0.23	0.41	0.05	0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	108	784	851	636	1897		312	815	647	163	657	
v/s Ratio Prot	0.02	c0.17	0.01	c0.11	0.15		0.03	c0.14	0.03	0.01	c0.14	
v/s Ratio Perm			0.07						0.04			
v/c Ratio	0.40	0.40	0.15	0.58	0.29		0.38	0.64	0.16	0.26	0.76	
Uniform Delay, d1	54.3	24.8	16.1	44.9	15.4		51.5	42.0	22.5	55.2	46.5	
Progression Factor	0.49	0.65	0.21	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.3	1.5	0.1	1.4	0.4		0.8	1.7	0.1	0.9	5.0	
Delay (s)	28.6	17.6	3.5	46.3	15.8		52.3	43.8	22.6	56.1	51.4	
Level of Service	C	B	A	D	B		D	D	C	E	D	
Approach Delay (s)		14.1			28.0			39.0			51.8	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
94: Arlington Ave & Victoria Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1230	30	300	1010	40	30	130	430	50	240	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3595		1805	3585		1805	1900	1602	1805	1900	1588
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3595		1805	3585		1805	1900	1602	1805	1900	1588
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	85	1309	32	319	1074	43	32	138	457	53	255	85
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	36	0	0	69
Lane Group Flow (vph)	85	1340	0	319	1115	0	32	138	421	53	255	16
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			6
Actuated Green, G (s)	7.8	43.4		20.1	55.7		3.9	18.4	38.5	5.4	19.9	19.9
Effective Green, g (s)	7.8	43.4		20.1	55.7		3.9	18.4	38.5	5.4	19.9	19.9
Actuated g/C Ratio	0.08	0.42		0.19	0.54		0.04	0.18	0.37	0.05	0.19	0.19
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	136	1510		351	1933		68	338	597	94	366	306
v/s Ratio Prot	0.05	c0.37		c0.18	0.31		0.02	0.07	c0.14	0.03	c0.13	
v/s Ratio Perm									0.13			0.01
v/c Ratio	0.62	0.89		0.91	0.58		0.47	0.41	0.71	0.56	0.70	0.05
Uniform Delay, d1	46.3	27.7		40.7	15.9		48.7	37.6	27.6	47.8	38.9	34.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.6	6.7		26.2	0.4		5.1	0.8	3.8	7.5	5.7	0.1
Delay (s)	55.0	34.4		66.9	16.3		53.8	38.4	31.4	55.3	44.6	34.1
Level of Service	D	C		E	B		D	D	C	E	D	C
Approach Delay (s)		35.6			27.6			34.1			43.8	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	103.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
95: Arlington Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	580	1030	470	690	330	650	830	170	400	1480	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.94	0.95	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3610	2816	3502	3610	1596	5090	3610	1594	3502	5170	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3610	2816	3502	3610	1596	5090	3610	1594	3502	5170	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	630	1120	511	750	359	707	902	185	435	1609	33
RTOR Reduction (vph)	0	0	2	0	0	54	0	0	21	0	1	0
Lane Group Flow (vph)	43	630	1118	511	750	305	707	902	164	435	1641	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	9.7	27.6	50.6	17.0	34.9	52.9	23.0	42.1	59.1	18.0	37.1	
Effective Green, g (s)	9.7	27.6	50.6	17.0	34.9	52.9	23.0	42.1	59.1	18.0	37.1	
Actuated g/C Ratio	0.08	0.23	0.42	0.14	0.29	0.44	0.19	0.35	0.49	0.15	0.31	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	145	825	1181	493	1044	699	970	1259	833	522	1589	
v/s Ratio Prot	0.02	0.17	c0.18	c0.15	0.21	0.07	0.14	0.25	0.03	0.12	c0.32	
v/s Ratio Perm			0.22			0.13			0.08			
v/c Ratio	0.30	0.76	0.95	1.04	0.72	0.44	0.73	0.72	0.20	0.83	1.03	
Uniform Delay, d1	52.3	43.5	33.8	51.9	38.5	23.5	45.9	34.1	17.4	49.9	41.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	4.2	15.1	50.3	2.4	0.4	2.8	2.0	0.1	11.0	31.4	
Delay (s)	53.4	47.7	48.8	102.1	40.9	24.0	48.7	36.1	17.5	60.8	73.2	
Level of Service	D	D	D	F	D	C	D	D	B	E	E	
Approach Delay (s)		48.5			56.5			39.1			70.6	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM Average Control Delay	54.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
107: Rider St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	240	70	10	180	30	50	190	30	60	240	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.98		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3472		1805	3523		1804	3528		1801	3299	
Flt Permitted	0.95	1.00		0.95	1.00		0.40	1.00		0.60	1.00	
Satd. Flow (perm)	1805	3472		1805	3523		764	3528		1140	3299	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	274	253	74	11	189	32	53	200	32	63	253	274
RTOR Reduction (vph)	0	31	0	0	15	0	0	9	0	0	134	0
Lane Group Flow (vph)	274	296	0	11	206	0	53	223	0	63	393	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Actuated Green, G (s)	20.7	34.5		1.2	15.0		58.0	52.2		58.6	52.5	
Effective Green, g (s)	20.7	34.5		1.2	15.0		58.0	52.2		58.6	52.5	
Actuated g/C Ratio	0.19	0.31		0.01	0.14		0.53	0.47		0.53	0.48	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	340	1089		20	480		458	1674		644	1575	
v/s Ratio Prot	c0.15	0.09		0.01	c0.06		c0.01	0.06		0.01	c0.12	
v/s Ratio Perm							0.05			0.05		
v/c Ratio	0.81	0.27		0.55	0.43		0.12	0.13		0.10	0.25	
Uniform Delay, d1	42.7	28.3		54.1	43.6		12.8	16.2		12.4	17.1	
Progression Factor	0.84	0.81		1.00	1.00		1.00	1.00		0.69	0.35	
Incremental Delay, d2	12.7	0.1		28.9	0.6		0.1	0.2		0.1	0.4	
Delay (s)	48.5	23.2		83.0	44.2		13.0	16.4		8.7	6.4	
Level of Service	D	C		F	D		B	B		A	A	
Approach Delay (s)		34.7			46.0			15.7			6.7	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
122: Ramona Expy & Bridge St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	20	750	490	40	70	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	1900	1881		1805	1615
Flt Permitted	0.40	1.00	1.00		0.95	1.00
Satd. Flow (perm)	756	1900	1881		1805	1615
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	21	773	505	41	72	72
RTOR Reduction (vph)	0	0	5	0	0	57
Lane Group Flow (vph)	21	773	541	0	72	15
Turn Type	Perm					Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Actuated Green, G (s)	19.9	19.9	19.9		7.4	7.4
Effective Green, g (s)	19.9	19.9	19.9		7.4	7.4
Actuated g/C Ratio	0.56	0.56	0.56		0.21	0.21
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	426	1071	1060		378	339
v/s Ratio Prot		c0.41	0.29		c0.04	
v/s Ratio Perm	0.03					0.01
v/c Ratio	0.05	0.72	0.51		0.19	0.04
Uniform Delay, d1	3.5	5.7	4.7		11.5	11.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	2.4	0.4		0.2	0.1
Delay (s)	3.5	8.1	5.1		11.7	11.2
Level of Service	A	A	A		B	B
Approach Delay (s)		8.0	5.1		11.5	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	35.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
123: Bridge St & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	40	30	10	390	700	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frpb, ped/bikes	0.99		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.94		1.00	1.00	0.98	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1723		1803	1900	1859	
Flt Permitted	0.97		0.25	1.00	1.00	
Satd. Flow (perm)	1723		482	1900	1859	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	42	31	10	406	729	115
RTOR Reduction (vph)	28	0	0	0	7	0
Lane Group Flow (vph)	45	0	10	406	837	0
Confl. Peds. (#/hr)	5	5	5			5
Turn Type			Perm			
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	3.5		22.6	22.6	22.6	
Effective Green, g (s)	3.5		22.6	22.6	22.6	
Actuated g/C Ratio	0.10		0.66	0.66	0.66	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	177		319	1259	1232	
v/s Ratio Prot	c0.03			0.21	c0.45	
v/s Ratio Perm			0.02			
v/c Ratio	0.26		0.03	0.32	0.68	
Uniform Delay, d1	14.1		2.0	2.5	3.5	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.8		0.0	0.1	1.5	
Delay (s)	14.9		2.0	2.6	5.0	
Level of Service	B		A	A	A	
Approach Delay (s)	14.9			2.6	5.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	34.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
124: Gilman Springs Rd & SR-79 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	590	0	0	210	200	170	10	10	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.98		1.00	0.98			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1801	1900			1900	1578		1810	1579			
Flt Permitted	0.62	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1181	1900			1900	1578		1810	1579			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	31	608	0	0	216	206	175	10	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	112	0	0	7	0	0	0
Lane Group Flow (vph)	31	608	0	0	216	94	0	185	3	0	0	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	12.8	12.8			12.8	12.8		7.2	7.2			
Effective Green, g (s)	12.8	12.8			12.8	12.8		7.2	7.2			
Actuated g/C Ratio	0.46	0.46			0.46	0.46		0.26	0.26			
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	540	869			869	721		465	406			
v/s Ratio Prot		c0.32			0.11							
v/s Ratio Perm	0.03					0.06		0.10	0.00			
v/c Ratio	0.06	0.70			0.25	0.13		0.40	0.01			
Uniform Delay, d1	4.2	6.1			4.7	4.4		8.6	7.7			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.0	2.5			0.2	0.1		0.6	0.0			
Delay (s)	4.3	8.5			4.8	4.5		9.2	7.7			
Level of Service	A	A			A	A		A	A			
Approach Delay (s)		8.3			4.6			9.1			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	28.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
125: Gilman Springs Rd & SR-79 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	410	350	10	390	0	0	0	0	220	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frpb, ped/bikes		1.00	0.98	1.00	1.00						1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1900	1578	1802	1900						1808	1578
Flt Permitted		1.00	1.00	0.48	1.00						0.95	1.00
Satd. Flow (perm)		1900	1578	913	1900						1808	1578
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	427	365	10	406	0	0	0	0	229	10	10
RTOR Reduction (vph)	0	0	188	0	0	0	0	0	0	0	0	7
Lane Group Flow (vph)	0	427	177	10	406	0	0	0	0	0	239	3
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		15.0	15.0	15.0	15.0						7.9	7.9
Effective Green, g (s)		15.0	15.0	15.0	15.0						7.9	7.9
Actuated g/C Ratio		0.49	0.49	0.49	0.49						0.26	0.26
Clearance Time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		922	766	443	922						462	403
v/s Ratio Prot		c0.22			0.21							
v/s Ratio Perm			0.11	0.01							0.13	0.00
v/c Ratio		0.46	0.23	0.02	0.44						0.52	0.01
Uniform Delay, d1		5.3	4.6	4.1	5.2						9.9	8.6
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		0.4	0.2	0.0	0.3						1.0	0.0
Delay (s)		5.6	4.8	4.2	5.5						10.8	8.6
Level of Service		A	A	A	A						B	A
Approach Delay (s)		5.2			5.5			0.0			10.8	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	30.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
132: San Timoteo Canyon Rd & Alessandro Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	600	0	0	300	280	10	30	10	230	10	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			0.99	
Frt		1.00			0.93			0.97			0.99	
Flt Protected		1.00			1.00			0.99			0.96	
Satd. Flow (prot)		1796			1662			1723			1693	
Flt Permitted		0.96			1.00			0.92			0.71	
Satd. Flow (perm)		1720			1662			1601			1257	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	667	0	0	333	311	11	33	11	256	11	22
RTOR Reduction (vph)	0	0	0	0	57	0	0	8	0	0	5	0
Lane Group Flow (vph)	0	700	0	0	587	0	0	47	0	0	284	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		24.9			24.9			15.9			15.9	
Effective Green, g (s)		24.9			24.9			15.9			15.9	
Actuated g/C Ratio		0.49			0.49			0.31			0.31	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		843			815			501			393	
v/s Ratio Prot					0.35							
v/s Ratio Perm		c0.41						0.03			c0.23	
v/c Ratio		0.83			0.72			0.09			0.72	
Uniform Delay, d1		11.1			10.2			12.4			15.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		7.0			3.1			0.1			6.5	
Delay (s)		18.1			13.4			12.4			22.0	
Level of Service		B			B			B			C	
Approach Delay (s)		18.1			13.4			12.4			22.0	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
133: San Timoteo Canyon Rd & Live Oak Canyon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	750	10	10	540	170	10	10	10	120	0	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			0.99	
Frt		1.00			0.97			0.95			0.98	
Flt Protected		1.00			1.00			0.98			0.96	
Satd. Flow (prot)		1794			1730			1673			1678	
Flt Permitted		0.97			0.99			0.89			0.73	
Satd. Flow (perm)		1745			1708			1507			1279	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	24	893	12	12	643	202	12	12	12	143	0	24
RTOR Reduction (vph)	0	0	0	0	12	0	0	9	0	0	9	0
Lane Group Flow (vph)	0	929	0	0	845	0	0	27	0	0	158	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		39.9			39.9			13.4			13.4	
Effective Green, g (s)		39.9			39.9			13.4			13.4	
Actuated g/C Ratio		0.63			0.63			0.21			0.21	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1100			1077			319			271	
v/s Ratio Prot												
v/s Ratio Perm		c0.53			0.49			0.02			c0.12	
v/c Ratio		0.84			0.78			0.08			0.58	
Uniform Delay, d1		9.2			8.6			20.0			22.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		6.1			3.8			0.1			3.2	
Delay (s)		15.3			12.4			20.1			25.6	
Level of Service		B			B			C			C	
Approach Delay (s)		15.3			12.4			20.1			25.6	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
134: San Timoteo Canyon Rd & Redlands Blvd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	60	760	30	20	750	80
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	0.99	
Flt Protected	1.00	1.00		0.97	0.96	
Satd. Flow (prot)	1800	1526		1743	1696	
Flt Permitted	1.00	1.00		0.78	0.96	
Satd. Flow (perm)	1800	1526		1395	1696	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	844	33	22	833	89
RTOR Reduction (vph)	0	0	0	0	3	0
Lane Group Flow (vph)	67	844	0	55	919	0
Confl. Peds. (#/hr)		5	5		5	5
Turn Type		pm+ov	Perm			
Protected Phases	4	2		8	2	
Permitted Phases		4	8			
Actuated Green, G (s)	4.2	42.5		4.2	38.3	
Effective Green, g (s)	4.2	42.5		4.2	38.3	
Actuated g/C Ratio	0.08	0.81		0.08	0.73	
Clearance Time (s)	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	144	1526		112	1237	
v/s Ratio Prot	0.04	c0.40			c0.54	
v/s Ratio Perm		0.15		0.04		
v/c Ratio	0.47	0.55		0.49	0.74	
Uniform Delay, d1	23.1	1.7		23.1	4.2	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	0.4		3.4	2.5	
Delay (s)	25.4	2.2		26.5	6.6	
Level of Service	C	A		C	A	
Approach Delay (s)	3.9			26.5	6.6	
Approach LOS	A			C	A	

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	52.5	Sum of lost time (s)	5.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Traffic Impact Analysis Report

for the World Logistics Center

Appendix E

Intersection LOS Worksheets
for 2022 No-Project Conditions

This page intentionally left blank

HCM Unsignalized Intersection Capacity Analysis
3: Alessandro Blvd & Theodore St

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	130	10	40	90	10	30
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	165	13	51	114	13	38
Pedestrians			5			5
Lane Width (ft)			12.0			12.0
Walking Speed (ft/s)			4.0			4.0
Percent Blockage			0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	119	56			165	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	119	56			165	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	81	99			99	
cM capacity (veh/h)	870	1012			1426	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	165	13	51	114	51
Volume Left	165	0	0	0	13
Volume Right	0	13	0	114	0
cSH	870	1012	1700	1700	1426
Volume to Capacity	0.19	0.01	0.03	0.07	0.01
Queue Length 95th (ft)	17	1	0	0	1
Control Delay (s)	10.1	8.6	0.0	0.0	1.9
Lane LOS	B	A			A
Approach Delay (s)	10.0		0.0		1.9
Approach LOS	A				

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
6: Alessandro Blvd & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	10	90	130	690	270	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1593	1805	5187	5187	1576
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1593	1805	5187	5187	1576
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	11	101	146	775	303	11
RTOR Reduction (vph)	0	90	0	0	0	7
Lane Group Flow (vph)	11	11	146	775	303	4
Confl. Peds. (#/hr)	5	5				5
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	3.8	3.8	6.9	22.7	11.8	11.8
Effective Green, g (s)	3.8	3.8	6.9	22.7	11.8	11.8
Actuated g/C Ratio	0.11	0.11	0.20	0.66	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	199	175	361	3413	1774	539
v/s Ratio Prot	0.01		c0.08	c0.15	0.06	
v/s Ratio Perm		c0.01				0.00
v/c Ratio	0.06	0.06	0.40	0.23	0.17	0.01
Uniform Delay, d1	13.7	13.8	12.0	2.4	7.9	7.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.7	0.0	0.0	0.0
Delay (s)	13.9	13.9	12.8	2.4	8.0	7.5
Level of Service	B	B	B	A	A	A
Approach Delay (s)	13.9			4.0	8.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	34.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
10: Locust Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	120	0	50	5	0	5	30	870	0	0	640	90
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	136	0	57	6	0	6	34	989	0	0	727	102
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1800	1794	737	1851	1896	999	835			994		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1800	1794	737	1851	1896	999	835			994		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	86	88	100	98	96			100		
cM capacity (veh/h)	59	77	418	47	67	296	804			701		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	193	11	34	989	0	0	727	102
Volume Left	136	6	34	0	0	0	0	0
Volume Right	57	6	0	0	0	0	0	102
cSH	78	82	804	1700	1700	1700	1700	1700
Volume to Capacity	2.47	0.14	0.04	0.58	0.00	0.00	0.43	0.06
Queue Length 95th (ft)	458	11	3	0	0	0	0	0
Control Delay (s)	780.1	56.0	9.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	F	A					
Approach Delay (s)	780.1	56.0	0.3			0.0		
Approach LOS	F	F						

Intersection Summary			
Average Delay	73.7		
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
11: Ironwood Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	10	40	10	10	10	50	540	10	10	550	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.96			0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1757			1766		1805	1894		1805	1900	1561
Flt Permitted		0.97			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1757			1766		1805	1894		1805	1900	1561
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	119	12	48	12	12	12	60	643	12	12	655	95
RTOR Reduction (vph)	0	9	0	0	12	0	0	1	0	0	0	19
Lane Group Flow (vph)	0	170	0	0	25	0	60	654	0	12	655	76
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)		41.6			5.0		8.3	54.4		3.0	49.1	49.1
Effective Green, g (s)		41.6			5.0		8.3	54.4		3.0	49.1	49.1
Actuated g/C Ratio		0.35			0.04		0.07	0.45		0.02	0.41	0.41
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		609			74		125	859		45	777	639
v/s Ratio Prot		c0.10			c0.01		c0.03	c0.35		0.01	c0.34	
v/s Ratio Perm												0.05
v/c Ratio		0.28			0.33		0.48	0.76		0.27	0.84	0.12
Uniform Delay, d1		28.4			55.9		53.8	27.4		57.4	32.0	22.0
Progression Factor		0.74			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.1			2.6		2.9	4.0		3.2	8.3	0.1
Delay (s)		21.1			58.5		56.7	31.4		60.6	40.3	22.1
Level of Service		C			E		E	C		E	D	C
Approach Delay (s)		21.1			58.5			33.5			38.3	
Approach LOS		C			E			C			D	

Intersection Summary			
HCM Average Control Delay	34.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
12: Ironwood Ave & Theodore St

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	100	30	10	100	60
Sign Control	Yield			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	12	123	37	12	123	74
Pedestrians	5			5		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	331	5	382	257	5	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	331	5	382	257	5	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	98	89	92	98	92	
cM capacity (veh/h)	542	1080	471	596	1623	

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2
Volume Total	12	123	49	123	74
Volume Left	0	0	37	123	0
Volume Right	0	123	0	0	74
cSH	542	1080	497	1623	1700
Volume to Capacity	0.02	0.11	0.10	0.08	0.04
Queue Length 95th (ft)	2	10	8	6	0
Control Delay (s)	11.8	8.8	13.0	7.4	0.0
Lane LOS	B	A	B	A	
Approach Delay (s)	9.0		13.0	4.6	
Approach LOS	A		B		

Intersection Summary			
Average Delay	7.3		
Intersection Capacity Utilization	21.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
13: Spruce Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	10	10	110	10	60	10	500	120	320	270	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	12	12	131	12	71	12	595	143	381	321	12
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1498	1861	123	1516	1724	308	338			743		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1498	1861	123	1516	1724	308	338			743		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	71	99	0	76	90	99			56		
cM capacity (veh/h)	41	41	904	42	50	688	1227			870		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	24	214	12	298	298	143	381	129	129	76
Volume Left	0	131	12	0	0	0	381	0	0	0
Volume Right	12	71	0	0	0	143	0	0	0	12
cSH	78	62	1227	1700	1700	1700	870	1700	1700	1700
Volume to Capacity	0.30	3.46	0.01	0.18	0.18	0.08	0.44	0.08	0.08	0.04
Queue Length 95th (ft)	28	Err	1	0	0	0	56	0	0	0
Control Delay (s)	70.1	Err	8.0	0.0	0.0	0.0	12.3	0.0	0.0	0.0
Lane LOS	F	F	A				B			
Approach Delay (s)	70.1	9999.0	0.1				6.6			
Approach LOS	F	F								

Intersection Summary			
Average Delay	1262.4		
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
14: SR-60 EB Ramps & Redlands Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	190	40	70	480	370	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1782		1805	5187	5187	1615
Flt Permitted	0.96		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1782		1805	5187	5187	1615
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	224	47	82	565	435	35
RTOR Reduction (vph)	13	0	0	0	0	15
Lane Group Flow (vph)	258	0	82	565	435	20
Confl. Peds. (#/hr)						
Turn Type			Prot			pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases						6
Actuated Green, G (s)	10.8		4.0	19.8	11.8	22.6
Effective Green, g (s)	10.8		4.0	19.8	11.8	22.6
Actuated g/C Ratio	0.28		0.10	0.51	0.31	0.59
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	499		187	2661	1586	1113
v/s Ratio Prot	c0.14		c0.05	0.11	c0.08	0.01
v/s Ratio Perm						0.01
v/c Ratio	0.52		0.44	0.21	0.27	0.02
Uniform Delay, d1	11.7		16.2	5.1	10.2	3.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		1.6	0.0	0.1	0.0
Delay (s)	12.6		17.9	5.2	10.2	3.4
Level of Service	B		B	A	B	A
Approach Delay (s)	12.6			6.8	9.7	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	38.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
15: SR-60 WB Ramps & Theodore St

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	120	60	90	70	60	80
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	129	65	97	75	65	86
Pedestrians			5			5
Lane Width (ft)			12.0			12.0
Walking Speed (ft/s)			4.0			4.0
Percent Blockage			0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	354	139			172	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	354	139			172	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	93			95	
cM capacity (veh/h)	615	910			1417	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	194	172	151
Volume Left	129	0	65
Volume Right	65	75	0
cSH	690	1700	1417
Volume to Capacity	0.28	0.10	0.05
Queue Length 95th (ft)	29	0	4
Control Delay (s)	12.2	0.0	3.5
Lane LOS	B		A
Approach Delay (s)	12.2	0.0	3.5
Approach LOS	B		

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
16: SR-60 EB Ramps & Theodore St

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	90	200	50	80	130	60
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	120	267	67	107	173	80
Pedestrians				5	5	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				0	0	
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	458	218	253			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	458	218	253			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	68	95			
cM capacity (veh/h)	534	823	1324			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	387	67	107	253
Volume Left	120	67	0	0
Volume Right	267	0	0	80
cSH	1193	1324	1700	1700
Volume to Capacity	0.32	0.05	0.06	0.15
Queue Length 95th (ft)	35	4	0	0
Control Delay (s)	12.2	7.9	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.2	3.0		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
19: Fir Ave & Theodore St

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	110	10	20	40	20	320
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	126	11	23	46	23	368
Pedestrians				5	5	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				0	0	
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	120	28	391			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	120	28	391			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	99	98			
cM capacity (veh/h)	860	1049	1179			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	138	23	46	23	368
Volume Left	126	23	0	0	0
Volume Right	11	0	0	0	368
cSH	938	1179	1700	1700	1700
Volume to Capacity	0.15	0.02	0.03	0.01	0.22
Queue Length 95th (ft)	13	1	0	0	0
Control Delay (s)	9.8	8.1	0.0	0.0	0.0
Lane LOS	A	A			
Approach Delay (s)	9.8	2.7		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
20: Alessandro Blvd & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	210	140	20	530	0	260	0	30	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	253	169	24	639	0	313	0	36	0	0	0
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	644			427			715	1034	221	823	1118	329
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	644			427			715	1034	221	823	1118	329
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			0	100	95	100	100	100
cM capacity (veh/h)	947			1139			312	227	783	249	203	667

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	127	295	343	319	313	36	0
Volume Left	0	0	24	0	313	0	0
Volume Right	0	169	0	0	0	36	0
cSH	947	1700	1139	1700	312	783	1700
Volume to Capacity	0.00	0.17	0.02	0.19	1.00	0.05	0.00
Queue Length 95th (ft)	0	0	2	0	273	4	0
Control Delay (s)	0.0	0.0	0.8	0.0	89.6	9.8	0.0
Lane LOS			A		F	A	A
Approach Delay (s)	0.0		0.4		81.3		0.0
Approach LOS					F		A

Intersection Summary			
Average Delay	20.0		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
21: Alessandro Blvd & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	90	70	40	190	20	130	660	30	20	460	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.99		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3351		1805	3553		1805	3584		1805	3424	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3351		1805	3553		1805	3584		1805	3424	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	69	103	80	46	218	23	149	759	34	23	529	241
RTOR Reduction (vph)	0	67	0	0	11	0	0	3	0	0	57	0
Lane Group Flow (vph)	69	116	0	46	230	0	149	790	0	23	713	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	3.4	9.1		4.5	10.2		7.1	27.0		1.0	20.9	
Effective Green, g (s)	3.4	9.1		4.5	10.2		7.1	27.0		1.0	20.9	
Actuated g/C Ratio	0.06	0.16		0.08	0.18		0.12	0.47		0.02	0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	107	529		141	629		222	1680		31	1242	
v/s Ratio Prot	c0.04	0.03		0.03	c0.06		c0.08	0.22		0.01	c0.21	
v/s Ratio Perm												
v/c Ratio	0.64	0.22		0.33	0.37		0.67	0.47		0.74	0.57	
Uniform Delay, d1	26.5	21.1		25.1	20.9		24.1	10.4		28.2	14.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.6	0.2		1.4	0.4		7.7	0.2		64.1	0.6	
Delay (s)	39.1	21.4		26.5	21.2		31.9	10.6		92.3	15.4	
Level of Service	D	C		C	C		C	B		F	B	
Approach Delay (s)		26.2			22.1			14.0			17.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	57.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
23: Alessandro Blvd & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	60	60	30	50	110	20	20	390	80	10	250	70
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	75	75	38	62	138	25	25	488	100	12	312	88

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	75	113	225	513	100	169	244
Volume Left (vph)	75	0	63	25	0	13	0
Volume Right (vph)	0	38	25	0	100	0	88
Hadj (s)	0.50	-0.23	-0.01	0.02	-0.70	0.04	-0.25
Departure Headway (s)	8.6	7.8	7.7	6.9	6.1	7.3	7.0
Degree Utilization, x	0.18	0.24	0.48	0.98	0.17	0.34	0.47
Capacity (veh/h)	404	442	451	513	569	484	506
Control Delay (s)	12.2	12.1	17.7	59.3	9.2	12.8	14.9
Approach Delay (s)	12.2		17.7	51.1		14.0	
Approach LOS	B		C	F		B	

Intersection Summary			
Delay	30.2		
HCM Level of Service	D		
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
24: Cactus Ave & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	240	210	40	280	30	230	200	40	10	130	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97		1.00	0.98		1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Frt	1.00	0.93		1.00	1.00	0.85		1.00	0.85		0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		1.00	
Satd. Flow (prot)	1805	3315		1805	1900	1569		1851	1589		1875	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97	1.00		1.00	
Satd. Flow (perm)	1805	3315		1805	1900	1569		1851	1589		1875	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	13	312	273	52	364	39	299	260	52	13	169	13
RTOR Reduction (vph)	0	163	0	0	0	28	0	0	31	0	2	0
Lane Group Flow (vph)	13	422	0	52	364	11	0	559	21	0	193	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8			2			
Actuated Green, G (s)	1.1	17.2		6.0	22.1	22.1		28.9	28.9		13.7	
Effective Green, g (s)	1.1	17.2		6.0	22.1	22.1		28.9	28.9		13.7	
Actuated g/C Ratio	0.01	0.21		0.07	0.27	0.27		0.35	0.35		0.17	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	24	697		132	513	424		654	561		314	
v/s Ratio Prot	0.01	0.13		c0.03	c0.19			c0.30			c0.10	
v/s Ratio Perm						0.01			0.01			
v/c Ratio	0.54	0.61		0.39	0.71	0.02		0.85	0.04		0.61	
Uniform Delay, d1	40.1	29.2		36.2	27.0	21.9		24.5	17.3		31.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	22.7	1.5		1.9	4.5	0.0		10.6	0.0		3.5	
Delay (s)	62.8	30.7		38.1	31.4	22.0		35.1	17.4		35.1	
Level of Service	E	C		D	C	C		D	B		D	
Approach Delay (s)		31.4			31.4			33.6			35.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	81.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Cactus Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	150	60	30	140	50	100	660	70	20	370	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3440		1805	3455		1805	3610	1596	1805	4978	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3440		1805	3455		1805	3610	1596	1805	4978	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	141	176	71	35	165	59	118	776	82	24	435	141
RTOR Reduction (vph)	0	56	0	0	50	0	0	0	42	0	65	0
Lane Group Flow (vph)	141	191	0	35	174	0	118	776	40	24	511	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	9.0	12.0		5.5	8.5		11.9	22.1	27.6	1.1	11.3	
Effective Green, g (s)	9.0	12.0		5.5	8.5		11.9	22.1	27.6	1.1	11.3	
Actuated g/C Ratio	0.16	0.21		0.10	0.15		0.21	0.39	0.49	0.02	0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	287	728		175	518		379	1407	889	35	992	
v/s Ratio Prot	c0.08	c0.06		0.02	c0.05		0.07	c0.21	0.00	0.01	c0.10	
v/s Ratio Perm									0.02			
v/c Ratio	0.49	0.26		0.20	0.34		0.31	0.55	0.04	0.69	0.52	
Uniform Delay, d1	21.8	18.7		23.6	21.6		18.9	13.4	7.6	27.6	20.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.2		0.6	0.4		0.5	0.5	0.0	43.6	0.5	
Delay (s)	23.1	18.8		24.1	22.0		19.4	13.9	7.7	71.2	20.7	
Level of Service	C	B		C	C		B	B	A	E	C	
Approach Delay (s)		20.4			22.3			14.1			22.7	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
27: Cactus Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	170	10	50	0	10	20	20	290	0	10	280	90
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	233	14	68	0	14	27	27	397	0	14	384	123

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	240	75	41	226	199	205	315
Volume Left (vph)	233	0	0	27	0	14	0
Volume Right (vph)	0	68	27	0	0	0	123
Hadj (s)	0.49	-0.64	-0.40	0.06	0.00	0.03	-0.27
Departure Headway (s)	7.4	6.3	7.1	6.6	6.5	6.4	6.1
Degree Utilization, x	0.49	0.13	0.08	0.41	0.36	0.37	0.54
Capacity (veh/h)	462	534	450	527	530	537	569
Control Delay (s)	16.3	9.0	10.7	12.9	11.9	11.9	14.8
Approach Delay (s)	14.5		10.7	12.4		13.7	
Approach LOS	B		B	B		B	

Intersection Summary			
Delay	13.4		
HCM Level of Service	B		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
28: John F Kennedy Dr & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	70	10	200	100	230	20	420	190	110	410	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.90		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3536		1805	3201		1805	5187	1601	1805	4958	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3536		1805	3201		1805	5187	1601	1805	4958	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	156	91	13	260	130	299	26	545	247	143	532	195
RTOR Reduction (vph)	0	11	0	0	201	0	0	0	135	0	58	0
Lane Group Flow (vph)	156	93	0	260	228	0	26	545	112	143	669	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	10.3	9.3		11.6	10.6		2.5	15.2	26.8	7.1	19.8	
Effective Green, g (s)	10.3	9.3		11.6	10.6		2.5	15.2	26.8	7.1	19.8	
Actuated g/C Ratio	0.17	0.16		0.20	0.18		0.04	0.26	0.45	0.12	0.33	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	314	555		354	573		76	1332	833	216	1658	
v/s Ratio Prot	0.09	0.03		c0.14	c0.07		0.01	0.11	0.03	c0.08	c0.13	
v/s Ratio Perm									0.04			
v/c Ratio	0.50	0.17		0.73	0.40		0.34	0.41	0.13	0.66	0.40	
Uniform Delay, d1	22.1	21.6		22.4	21.5		27.6	18.3	9.4	24.9	15.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.1		7.7	0.5		2.7	0.2	0.1	7.4	0.2	
Delay (s)	23.3	21.7		30.0	21.9		30.2	18.5	9.5	32.3	15.3	
Level of Service	C	C		C	C		C	B	A	C	B	
Approach Delay (s)		22.7			25.0			16.1			18.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	59.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
29: Ironwood Ave & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	220	130	140	460	40	80	430	90	40	690	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1598	1805	3561		1805	3610	1592	1805	3610	1592
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1598	1805	3561		1805	3610	1592	1805	3610	1592
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	104	229	135	146	479	42	83	448	94	42	719	292
RTOR Reduction (vph)	0	0	72	0	7	0	0	0	34	0	0	90
Lane Group Flow (vph)	104	229	63	146	514	0	83	448	60	42	719	202
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6
Actuated Green, G (s)	11.2	20.6	31.5	14.2	23.6		10.9	62.1	76.3	7.1	58.3	69.5
Effective Green, g (s)	11.2	20.6	31.5	14.2	23.6		10.9	62.1	76.3	7.1	58.3	69.5
Actuated g/C Ratio	0.09	0.17	0.26	0.12	0.20		0.09	0.52	0.64	0.06	0.49	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	168	620	473	214	700		164	1868	1065	107	1754	975
v/s Ratio Prot	0.06	0.06	0.01	c0.08	c0.14		c0.05	c0.12	0.01	0.02	c0.20	0.02
v/s Ratio Perm			0.03						0.03			0.11
v/c Ratio	0.62	0.37	0.13	0.68	0.73		0.51	0.24	0.06	0.39	0.41	0.21
Uniform Delay, d1	52.3	44.0	33.8	50.7	45.3		52.0	15.9	8.3	54.4	19.8	12.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.82	0.49	1.00	1.00	1.00
Incremental Delay, d2	6.6	0.4	0.1	8.7	4.0		2.4	0.3	0.0	2.4	0.7	0.1
Delay (s)	59.0	44.3	33.9	59.4	49.2		54.4	13.4	4.1	56.7	20.5	12.2
Level of Service	E	D	C	E	D		D	B	A	E	C	B
Approach Delay (s)		44.6			51.5			17.5			19.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
30: SR-60 WB Ramps & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	450	10	150	300	620	0	0	830	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	
Frpb, ped/bikes					1.00	0.98	1.00	1.00			0.99	
Flpb, ped/bikes					1.00	1.00	1.00	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.96	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1811	1587	1805	3610			3448	
Flt Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1811	1587	1805	3610			3448	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	469	10	156	312	646	0	0	865	312
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	0	0	29	0
Lane Group Flow (vph)	0	0	0	0	479	132	312	646	0	0	1148	0
Confl. Peds. (#/hr)						5						5
Turn Type				Split		Perm	Prot					
Protected Phases				8	8		5	2			6	
Permitted Phases						8						
Actuated Green, G (s)					34.8	34.8	23.5	77.2			49.7	
Effective Green, g (s)					34.8	34.8	23.5	77.2			49.7	
Actuated g/C Ratio					0.29	0.29	0.20	0.64			0.41	
Clearance Time (s)					4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					525	460	353	2322			1428	
v/s Ratio Prot					c0.26		c0.17	0.18			c0.33	
v/s Ratio Perm						0.08						
v/c Ratio					0.91	0.29	0.88	0.28			0.80	
Uniform Delay, d1					41.1	33.0	46.9	9.3			30.9	
Progression Factor					1.00	1.00	1.00	1.00			0.70	
Incremental Delay, d2					20.2	0.3	22.1	0.3			4.7	
Delay (s)					61.3	33.3	69.0	9.6			26.4	
Level of Service					E	C	E	A			C	
Approach Delay (s)		0.0			54.5			28.9			26.4	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM Average Control Delay	33.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	110.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
31: SR-60 EB Ramps & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	0	510	0	0	0	0	630	150	190	1160	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0		4.0	4.0	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1715	1715	1591					5010		1805	3610	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1715	1715	1591					5010		1805	3610	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	297	0	560	0	0	0	0	692	165	209	1275	0
RTOR Reduction (vph)	0	0	14	0	0	0	0	53	0	0	0	0
Lane Group Flow (vph)	148	149	546	0	0	0	0	804	0	209	1275	0
Confl. Peds. (#/hr)			5						5			
Turn Type	Split		Perm							Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	27.5	27.5	27.5					17.4		10.1	31.5	
Effective Green, g (s)	27.5	27.5	27.5					17.4		10.1	31.5	
Actuated g/C Ratio	0.41	0.41	0.41					0.26		0.15	0.47	
Clearance Time (s)	4.0	4.0	4.0					4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	704	704	653					1301		272	1697	
v/s Ratio Prot	0.09	0.09						0.16		0.12	c0.35	
v/s Ratio Perm			c0.34									
v/c Ratio	0.21	0.21	0.84					0.62		0.77	0.75	
Uniform Delay, d1	12.7	12.8	17.7					21.9		27.3	14.5	
Progression Factor	1.00	1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.2	9.1					0.9		12.3	1.9	
Delay (s)	12.9	12.9	26.8					22.7		39.6	16.5	
Level of Service	B	B	C					C		D	B	
Approach Delay (s)		22.0			0.0			22.7			19.7	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	110.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
32: Sunnymead Blvd & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	210	390	20	70	480	110	820	90	380	920	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.91		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.87		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1596	1805	3137		1805	5101		3502	3610	1594
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1596	1805	3137		1805	5101		3502	3610	1594
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	348	228	424	22	76	522	120	891	98	413	1000	152
RTOR Reduction (vph)	0	0	74	0	258	0	0	10	0	0	0	62
Lane Group Flow (vph)	348	228	350	22	340	0	120	979	0	413	1000	90
Confl. Peds. (#/hr)			5						5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	16.2	31.9	45.3	4.2	19.9		13.4	49.2		18.7	54.5	70.7
Effective Green, g (s)	16.2	31.9	45.3	4.2	19.9		13.4	49.2		18.7	54.5	70.7
Actuated g/C Ratio	0.13	0.27	0.38	0.04	0.17		0.11	0.41		0.16	0.45	0.59
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	473	960	656	63	520		202	2091		546	1640	992
v/s Ratio Prot	c0.10	0.06	0.06	0.01	c0.11		0.07	0.19		c0.12	c0.28	0.01
v/s Ratio Perm			0.16									0.04
v/c Ratio	0.74	0.24	0.53	0.35	1.03dr		0.59	0.47		0.76	0.61	0.09
Uniform Delay, d1	49.8	34.5	29.1	56.6	46.8		50.7	25.8		48.5	24.7	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.52	0.41		1.47	0.20	0.04
Incremental Delay, d2	5.9	0.1	0.8	3.3	3.0		4.2	0.7		3.2	0.9	0.0
Delay (s)	55.7	34.6	30.0	59.9	49.8		81.1	11.2		74.3	6.0	0.5
Level of Service	E	C	C	E	D		F	B		E	A	A
Approach Delay (s)		40.0			50.1			18.7			23.5	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
33: SR-60 WB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	180	10	240	600	1130	0	0	1330	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					1.00		0.97	0.95			0.91	
Frpb, ped/bikes					0.99		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.92		1.00	1.00			0.96	
Flt Protected					0.98		0.95	1.00			1.00	
Satd. Flow (prot)					1704		3502	3610			4980	
Flt Permitted					0.98		0.95	1.00			1.00	
Satd. Flow (perm)					1704		3502	3610			4980	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	188	10	250	625	1177	0	0	1385	427
RTOR Reduction (vph)	0	0	0	0	39	0	0	0	0	0	45	0
Lane Group Flow (vph)	0	0	0	0	409	0	625	1177	0	0	1767	0
Confl. Peds. (#/hr)						5						5
Turn Type				Split			Prot					
Protected Phases				8	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					31.5		25.0	80.5			51.5	
Effective Green, g (s)					31.5		25.0	80.5			51.5	
Actuated g/C Ratio					0.26		0.21	0.67			0.43	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					447		730	2422			2137	
v/s Ratio Prot					c0.24		c0.18	0.33			c0.35	
v/s Ratio Perm												
v/c Ratio					0.91		0.86	0.49			0.83	
Uniform Delay, d1					42.9		45.8	9.6			30.3	
Progression Factor					1.00		0.85	0.65			1.00	
Incremental Delay, d2					23.1		8.4	0.6			3.8	
Delay (s)					66.0		47.2	6.9			34.1	
Level of Service					E		D	A			C	
Approach Delay (s)		0.0			66.0			20.9			34.1	
Approach LOS		A			E			C			C	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
34: Eucalyptus Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	90	60	110	200	160	70	870	60	140	1240	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1587	1805	1900	1587	1805	3610	1567	1805	3610	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1587	1805	1900	1587	1805	3610	1567	1805	3610	1566
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	100	67	122	222	178	78	967	67	156	1378	22
RTOR Reduction (vph)	0	0	58	0	0	143	0	0	15	0	0	3
Lane Group Flow (vph)	22	100	9	122	222	35	78	967	52	156	1378	19
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.2	16.3	16.3	10.6	22.7	22.7	9.4	61.5	61.5	15.6	67.7	67.7
Effective Green, g (s)	4.2	16.3	16.3	10.6	22.7	22.7	9.4	61.5	61.5	15.6	67.7	67.7
Actuated g/C Ratio	0.04	0.14	0.14	0.09	0.19	0.19	0.08	0.51	0.51	0.13	0.56	0.56
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	63	258	216	159	359	300	141	1850	803	235	2037	883
v/s Ratio Prot	0.01	0.05		c0.07	c0.12		0.04	0.27		c0.09	c0.38	
v/s Ratio Perm			0.01			0.02			0.03			0.01
v/c Ratio	0.35	0.39	0.04	0.77	0.62	0.12	0.55	0.52	0.07	0.66	0.68	0.02
Uniform Delay, d1	56.6	47.3	45.1	53.5	44.7	40.3	53.3	19.5	14.8	49.7	18.4	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.06	0.83	0.53
Incremental Delay, d2	3.3	1.0	0.1	19.6	3.2	0.2	4.6	1.1	0.2	5.9	1.6	0.0
Delay (s)	59.9	48.3	45.1	73.1	47.8	40.5	57.9	20.5	14.9	58.6	16.8	6.1
Level of Service	E	D	D	E	D	D	E	C	B	E	B	A
Approach Delay (s)		48.5			51.2			22.8			20.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
35: Locust Ave & Moreno Beach Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	10	180	10	10	120
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	12	12	217	12	12	145
Pedestrians	5			5		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			24		469	23
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			24		469	23
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			86		97	86
cM capacity (veh/h)			1604		479	1055

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	24	229	12	145
Volume Left	0	217	12	0
Volume Right	12	0	0	145
cSH	1700	1604	479	1055
Volume to Capacity	0.01	0.14	0.03	0.14
Queue Length 95th (ft)	0	12	2	12
Control Delay (s)	0.0	7.2	12.7	9.0
Lane LOS		A	B	A
Approach Delay (s)	0.0	7.2	9.2	
Approach LOS			A	

Intersection Summary			
Average Delay	7.6		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
36: Ironwood Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	150	150	230	120	10	100	120	160	10	200	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.93		1.00	0.99			0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1805	1728		1805	1873			1744			1846	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (perm)	1805	1728		1805	1873			1744			1846	
Peak-hour factor, PHF	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Adj. Flow (vph)	28	211	211	324	169	14	141	169	225	14	282	56
RTOR Reduction (vph)	0	30	0	0	3	0	0	22	0	0	6	0
Lane Group Flow (vph)	28	392	0	324	180	0	0	513	0	0	346	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	4.2	26.4		22.6	44.8			33.0			22.0	
Effective Green, g (s)	4.2	26.4		22.6	44.8			33.0			22.0	
Actuated g/C Ratio	0.04	0.22		0.19	0.37			0.28			0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	63	380		340	699			480			338	
v/s Ratio Prot	0.02	c0.23		c0.18	0.10			c0.29			c0.19	
v/s Ratio Perm												
v/c Ratio	0.44	1.03		0.95	0.26			1.07			1.02	
Uniform Delay, d1	56.8	46.8		48.2	26.1			43.5			49.0	
Progression Factor	1.00	1.00		0.86	0.81			1.00			1.00	
Incremental Delay, d2	4.9	54.2		36.3	0.9			60.8			55.4	
Delay (s)	61.7	101.0		77.9	22.1			104.3			104.6	
Level of Service	E	F		E	C			F			F	
Approach Delay (s)		98.6			57.7			104.3			104.6	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM Average Control Delay	90.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
37: SR-60 EB Ramps & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	60	520	20	10	130	110	850	30	340	480	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes		1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1839	2798	1805	1900	1590	1805	3610	1572	1805	4970	
Flt Permitted		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1839	2798	1805	1900	1590	1805	3610	1572	1805	4970	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	141	71	612	24	12	153	129	1000	35	400	565	176
RTOR Reduction (vph)	0	0	480	0	0	138	0	0	18	0	39	0
Lane Group Flow (vph)	0	212	132	24	12	15	129	1000	17	400	702	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		16.8	16.8	7.8	7.8	7.8	10.5	29.2	29.2	8.1	26.8	
Effective Green, g (s)		16.8	16.8	7.8	7.8	7.8	10.5	29.2	29.2	8.1	26.8	
Actuated g/C Ratio		0.22	0.22	0.10	0.10	0.10	0.13	0.37	0.37	0.10	0.34	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		397	603	181	190	159	243	1353	589	188	1710	
v/s Ratio Prot		c0.12		c0.01	0.01		0.07	c0.28		c0.22	0.14	
v/s Ratio Perm			0.05			0.01			0.01			
v/c Ratio		0.53	0.22	0.13	0.06	0.10	0.53	0.74	0.03	2.13	0.41	
Uniform Delay, d1		27.1	25.1	32.0	31.7	31.8	31.4	21.1	15.4	34.9	19.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.4	0.2	0.3	0.1	0.3	2.2	2.2	0.0	524.9	0.2	
Delay (s)		28.5	25.3	32.3	31.9	32.1	33.6	23.2	15.4	559.8	19.7	
Level of Service		C	C	C	C	C	C	C	B	F	B	
Approach Delay (s)		26.1			32.1			24.1			209.0	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM Average Control Delay	88.7	HCM Level of Service	F
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
38: John Kennedy Dr & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	330	110	200	530	80	300	880	190	260	850	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3460		1805	3531		1805	3610	1587	1805	3610	1586
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3460		1805	3531		1805	3610	1587	1805	3610	1586
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	103	379	126	230	609	92	345	1011	218	299	977	103
RTOR Reduction (vph)	0	30	0	0	11	0	0	0	131	0	0	62
Lane Group Flow (vph)	103	475	0	230	690	0	345	1011	87	299	977	41
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	11.2	26.5		15.0	30.3		28.6	37.0	37.0	25.5	33.9	33.9
Effective Green, g (s)	11.2	26.5		15.0	30.3		28.6	37.0	37.0	25.5	33.9	33.9
Actuated g/C Ratio	0.09	0.22		0.12	0.25		0.24	0.31	0.31	0.21	0.28	0.28
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	168	764		226	892		430	1113	489	384	1020	448
v/s Ratio Prot	0.06	0.14		c0.13	c0.20		c0.19	c0.28		0.17	0.27	
v/s Ratio Perm									0.05			0.03
v/c Ratio	0.61	0.62		1.02	0.77		0.80	0.91	0.18	0.78	0.96	0.09
Uniform Delay, d1	52.3	42.2		52.5	41.7		43.0	39.9	30.4	44.6	42.3	31.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.91	0.89	0.83
Incremental Delay, d2	6.5	1.6		64.5	4.2		10.3	12.3	0.8	4.1	10.4	0.2
Delay (s)	58.8	43.8		117.0	45.9		53.4	52.2	31.2	44.6	48.1	26.5
Level of Service	E	D		F	D		D	D	C	D	D	C
Approach Delay (s)		46.3			63.4			49.6			45.7	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	50.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
39: Iris Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	340	110	300	530	180	300	780	190	250	750	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3463		1805	3458		1805	5187	1587	1805	5094	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3463		1805	3458		1805	5187	1587	1805	5094	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	81	395	128	349	616	209	349	907	221	291	872	105
RTOR Reduction (vph)	0	29	0	0	30	0	0	0	129	0	12	0
Lane Group Flow (vph)	81	494	0	349	795	0	349	907	92	291	965	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.3	27.8		17.0	36.5		27.0	35.2	35.2	24.0	32.2	
Effective Green, g (s)	8.3	27.8		17.0	36.5		27.0	35.2	35.2	24.0	32.2	
Actuated g/C Ratio	0.07	0.23		0.14	0.30		0.22	0.29	0.29	0.20	0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	125	802		256	1052		406	1522	466	361	1367	
v/s Ratio Prot	0.04	0.14		c0.19	c0.23		c0.19	c0.17		0.16	c0.19	
v/s Ratio Perm									0.06			
v/c Ratio	0.65	0.62		1.36	0.76		0.86	0.60	0.20	0.81	0.71	
Uniform Delay, d1	54.4	41.3		51.5	37.7		44.7	36.3	31.8	45.8	39.6	
Progression Factor	1.00	1.00		1.00	1.00		0.88	0.64	0.84	1.00	1.00	
Incremental Delay, d2	11.0	1.4		186.6	3.1		1.8	0.2	0.1	12.3	3.1	
Delay (s)	65.4	42.7		238.1	40.9		40.9	23.3	26.9	58.1	42.7	
Level of Service	E	D		F	D		D	C	C	E	D	
Approach Delay (s)		45.8			99.5			28.0			46.2	
Approach LOS		D			F			C			D	

Intersection Summary			
HCM Average Control Delay	54.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
40: Iris Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	590	100	240	640	70	140	180	120	50	180	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.94		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3523		1805	3610	1591	1805	3372		1805	3384	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3523		1805	3610	1591	1805	3372		1805	3384	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	93	686	116	279	744	81	163	209	140	58	209	128
RTOR Reduction (vph)	0	10	0	0	0	41	0	107	0	0	92	0
Lane Group Flow (vph)	93	792	0	279	744	40	163	242	0	58	245	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot		pm+ov	Prot			Prot		
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	8.0	27.3		19.1	38.4	43.7	13.4	21.0		5.3	12.9	
Effective Green, g (s)	8.0	27.3		19.1	38.4	43.7	13.4	21.0		5.3	12.9	
Actuated g/C Ratio	0.09	0.31		0.22	0.43	0.49	0.15	0.24		0.06	0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	163	1084		389	1563	856	273	798		108	492	
v/s Ratio Prot	0.05	c0.22		c0.15	0.21	0.00	c0.09	0.07		0.03	c0.07	
v/s Ratio Perm						0.02						
v/c Ratio	0.57	0.73		0.72	0.48	0.05	0.60	0.30		0.54	0.50	
Uniform Delay, d1	38.7	27.4		32.3	18.0	11.7	35.1	27.8		40.5	34.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.8	2.6		6.2	0.2	0.0	3.5	0.2		5.1	0.8	
Delay (s)	43.5	30.0		38.5	18.2	11.7	38.6	28.1		45.6	35.7	
Level of Service	D	C		D	B	B	D	C		D	D	
Approach Delay (s)		31.4			22.8			31.4			37.2	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
41: Iris Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	380	310	610	600	160	390	530	520	160	490	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.93		1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	4805		3502	5007		3502	3610	1601	3502	3527	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	4805		3502	5007		3502	3610	1601	3502	3527	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	413	337	663	652	174	424	576	565	174	533	87
RTOR Reduction (vph)	0	139	0	0	43	0	0	0	76	0	13	0
Lane Group Flow (vph)	152	611	0	663	783	0	424	576	489	174	607	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.4	15.9		14.2	21.7		10.1	22.1	36.3	7.1	19.1	
Effective Green, g (s)	8.4	15.9		14.2	21.7		10.1	22.1	36.3	7.1	19.1	
Actuated g/C Ratio	0.11	0.21		0.19	0.29		0.13	0.29	0.48	0.09	0.25	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	391	1015		660	1443		470	1060	857	330	895	
v/s Ratio Prot	0.04	0.13		c0.19	c0.16		c0.12	0.16	c0.11	0.05	0.17	
v/s Ratio Perm									0.20			
v/c Ratio	0.39	0.60		1.00	0.54		0.90	0.54	0.57	0.53	0.68	
Uniform Delay, d1	31.1	26.8		30.5	22.6		32.1	22.4	13.9	32.5	25.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	1.0		36.1	0.4		20.3	0.6	0.9	1.5	2.1	
Delay (s)	31.7	27.9		66.7	23.0		52.4	22.9	14.9	34.0	27.4	
Level of Service	C	C		E	C		D	C	B	C	C	
Approach Delay (s)		28.5			42.5			28.0			28.8	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	75.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
42: Iris Ave & Nason St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	260	570	510	50	40	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00		0.99	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		0.91	0.85
Flt Protected	0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)	1805	5187	5107		1674	1527
Flt Permitted	0.95	1.00	1.00		0.98	1.00
Satd. Flow (perm)	1805	5187	5107		1674	1527
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	620	554	54	43	185
RTOR Reduction (vph)	0	0	17	0	66	46
Lane Group Flow (vph)	283	620	591	0	51	65
Confl. Peds. (#/hr)				5	5	5
Turn Type	Prot					pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases						6
Actuated Green, G (s)	8.5	23.0	10.5		4.0	12.5
Effective Green, g (s)	8.5	23.0	10.5		4.0	12.5
Actuated g/C Ratio	0.24	0.66	0.30		0.11	0.36
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	438	3409	1532		191	720
v/s Ratio Prot	c0.16	0.12	c0.12		c0.03	0.02
v/s Ratio Perm						0.02
v/c Ratio	0.65	0.18	0.39		0.27	0.09
Uniform Delay, d1	11.9	2.3	9.7		14.2	7.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.3	0.0	0.2		0.8	0.1
Delay (s)	15.2	2.4	9.9		14.9	7.5
Level of Service	B	A	A		B	A
Approach Delay (s)		6.4	9.9		11.3	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	35.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
43: Iris Ave & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	540	20	30	710	10	50	100	50	10	40	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.97			0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1805	5154		1805	5175			1806			1667	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (perm)	1805	5154		1805	5175			1806			1667	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	193	614	23	34	807	11	57	114	57	11	45	250
RTOR Reduction (vph)	0	3	0	0	1	0	0	11	0	0	162	0
Lane Group Flow (vph)	193	634	0	34	817	0	0	217	0	0	144	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	7.3	25.8		2.3	20.8			14.2			11.7	
Effective Green, g (s)	7.3	25.8		2.3	20.8			14.2			11.7	
Actuated g/C Ratio	0.10	0.37		0.03	0.30			0.20			0.17	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	188	1900		59	1538			366			279	
v/s Ratio Prot	c0.11	0.12		0.02	c0.16			c0.12			c0.09	
v/s Ratio Perm												
v/c Ratio	1.03	0.33		0.58	0.53			0.59			0.52	
Uniform Delay, d1	31.4	15.9		33.4	20.5			25.3			26.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	72.8	0.1		12.9	0.4			2.6			1.6	
Delay (s)	104.1	16.0		46.3	20.9			27.8			28.2	
Level of Service	F	B		D	C			C			C	
Approach Delay (s)		36.5			21.9			27.8			28.2	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
44: Iris Ave & Via Del Lago

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	510	20	50	650	10	30	0	40	20	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00		0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1805	5155		1805	5174		1805		1610	1805	1593	
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)	1805	5155		1805	5174		1805		1610	1805	1593	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	24	622	24	61	793	12	37	0	49	24	0	24
RTOR Reduction (vph)	0	3	0	0	1	0	0	0	43	0	23	0
Lane Group Flow (vph)	24	643	0	61	804	0	37	0	6	24	1	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	0.9	21.0		4.5	24.6		2.1		5.7	2.3	1.4	
Effective Green, g (s)	0.9	21.0		4.5	24.6		2.1		5.7	2.3	1.4	
Actuated g/C Ratio	0.02	0.47		0.10	0.55		0.05		0.13	0.05	0.03	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	36	2406		181	2828		84		347	92	50	
v/s Ratio Prot	0.01	0.12		c0.03	c0.16		c0.02		c0.00	0.01	0.00	
v/s Ratio Perm									0.00			
v/c Ratio	0.67	0.27		0.34	0.28		0.44		0.02	0.26	0.01	
Uniform Delay, d1	21.9	7.3		18.9	5.5		20.9		17.2	20.5	21.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2	38.0	0.1		1.1	0.1		3.7		0.0	1.5	0.1	
Delay (s)	59.9	7.4		20.0	5.5		24.5		17.2	22.0	21.3	
Level of Service	E	A		B	A		C		B	C	C	
Approach Delay (s)		9.3			6.5			20.4			21.6	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
45: Krameria Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	210	100	160	550	140	250	1010	200	100	810	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes		0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.97		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1802		1805	1900	1587	1805	3510		1805	1900	1555
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1802		1805	1900	1587	1805	3510		1805	1900	1555
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	85	223	106	170	585	149	266	1074	213	106	862	191
RTOR Reduction (vph)	0	11	0	0	0	39	0	14	0	0	0	73
Lane Group Flow (vph)	0	403	0	170	585	110	266	1273	0	106	862	118
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)		29.0		34.0	34.0	34.0	9.0	33.0		8.0	32.0	32.0
Effective Green, g (s)		29.0		34.0	34.0	34.0	9.0	33.0		8.0	32.0	32.0
Actuated g/C Ratio		0.24		0.28	0.28	0.28	0.08	0.28		0.07	0.27	0.27
Clearance Time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		435		511	538	450	135	965		120	507	415
v/s Ratio Prot		c0.22		0.09	c0.31		c0.15	0.36		0.06	c0.45	
v/s Ratio Perm						0.07						0.08
v/c Ratio		0.93		0.33	1.09	0.24	1.97	1.32		0.88	1.70	0.28
Uniform Delay, d1		44.5		34.0	43.0	33.1	55.5	43.5		55.5	44.0	34.9
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		0.91	0.54	0.46
Incremental Delay, d2		25.8		0.4	64.6	0.3	462.2	151.1		29.6	319.4	0.9
Delay (s)		70.2		34.4	107.6	33.4	517.7	194.6		80.3	343.0	16.9
Level of Service		E		C	F	C	F	F		F	F	B
Approach Delay (s)		70.2			81.6			249.9			265.2	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	198.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	120.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
46: Krameria Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	350	110	80	480	120	130	150	50	220	170	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.97		1.00	0.96		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3468		1805	3491		1805	3462		1805	3276	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3468		1805	3491		1805	3462		1805	3276	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	171	427	134	98	585	146	159	183	61	268	207	268
RTOR Reduction (vph)	0	30	0	0	23	0	0	43	0	0	211	0
Lane Group Flow (vph)	171	531	0	98	708	0	159	201	0	268	264	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	7.1	22.6		5.4	20.9		10.3	11.3		10.2	11.2	
Effective Green, g (s)	7.1	22.6		5.4	20.9		10.3	11.3		10.2	11.2	
Actuated g/C Ratio	0.11	0.35		0.08	0.32		0.16	0.17		0.16	0.17	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	196	1197		149	1114		284	597		281	560	
v/s Ratio Prot	c0.09	0.15		0.05	c0.20		0.09	0.06		c0.15	c0.08	
v/s Ratio Perm												
v/c Ratio	0.87	0.44		0.66	0.64		0.56	0.34		0.95	0.47	
Uniform Delay, d1	28.8	16.6		29.2	19.0		25.5	23.8		27.4	24.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	32.0	0.3		10.0	1.2		2.4	0.3		40.9	0.6	
Delay (s)	60.7	16.9		39.2	20.2		27.9	24.1		68.4	25.1	
Level of Service	E	B		D	C		C	C		E	C	
Approach Delay (s)		27.1			22.5			25.6			40.7	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
47: Krameria Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	330	260	240	150	150	120	230	1030	210	120	760	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.93		1.00	0.93		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	3324		1805	3369		1805	3610	1615	1805	3523	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	3324		1805	3369		1805	3610	1615	1805	3523	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	375	295	273	170	170	136	261	1170	239	136	864	148
RTOR Reduction (vph)	0	181	0	0	116	0	0	0	96	0	12	0
Lane Group Flow (vph)	375	387	0	170	190	0	261	1170	143	136	1000	0
Confl. Peds. (#/hr)			5									5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	13.4	16.2		10.1	12.9		15.1	37.1	47.2	9.1	31.1	
Effective Green, g (s)	13.4	16.2		10.1	12.9		15.1	37.1	47.2	9.1	31.1	
Actuated g/C Ratio	0.15	0.18		0.11	0.15		0.17	0.42	0.53	0.10	0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	530	608		206	491		308	1513	934	186	1238	
v/s Ratio Prot	0.11	c0.12		c0.09	0.06		c0.14	c0.32	0.02	0.08	0.28	
v/s Ratio Perm									0.07			
v/c Ratio	0.71	0.64		0.83	0.39		0.85	0.77	0.15	0.73	0.81	
Uniform Delay, d1	35.7	33.4		38.3	34.2		35.6	22.1	10.5	38.5	26.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.3	2.2		22.8	0.5		18.9	2.5	0.1	13.8	4.0	
Delay (s)	40.0	35.6		61.1	34.7		54.5	24.6	10.6	52.3	30.0	
Level of Service	D	D		E	C		D	C	B	D	C	
Approach Delay (s)		37.3			44.2			27.3			32.6	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	88.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
48: Alessandro Blvd & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	480	120	30	630	40	260	200	40	90	170	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1591	1805	3610	1591	3502	1847		1805	3312	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1591	1805	3610	1591	3502	1847		1805	3312	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	70	558	140	35	733	47	302	233	47	105	198	198
RTOR Reduction (vph)	0	0	49	0	0	19	0	7	0	0	137	0
Lane Group Flow (vph)	70	558	91	35	733	28	302	273	0	105	259	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot			Prot		
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	8.7	63.1	77.7	5.4	59.8	72.1	14.6	23.2		12.3	20.9	
Effective Green, g (s)	8.7	63.1	77.7	5.4	59.8	72.1	14.6	23.2		12.3	20.9	
Actuated g/C Ratio	0.07	0.53	0.65	0.05	0.50	0.60	0.12	0.19		0.10	0.17	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	131	1898	1083	81	1799	956	426	357		185	577	
v/s Ratio Prot	c0.04	c0.15	0.01	0.02	c0.20	0.00	0.09	c0.15		c0.06	0.08	
v/s Ratio Perm			0.05			0.01						
v/c Ratio	0.53	0.29	0.08	0.43	0.41	0.03	0.71	0.76		0.57	0.45	
Uniform Delay, d1	53.7	16.0	7.9	55.8	18.9	9.7	50.7	45.8		51.3	44.4	
Progression Factor	1.20	0.45	0.78	1.00	1.00	1.00	0.75	0.78		1.00	1.00	
Incremental Delay, d2	3.9	0.4	0.0	3.7	0.7	0.0	5.1	8.9		4.0	0.6	
Delay (s)	68.3	7.5	6.2	59.5	19.6	9.7	43.3	44.6		55.3	44.9	
Level of Service	E	A	A	E	B	A	D	D		E	D	
Approach Delay (s)		12.8			20.8			43.9			47.1	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
49: Alessandro Blvd & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	260	240	110	430	20	230	300	140	30	350	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1589	1805	1900	1577	1805	1900	1581	1805	1858	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1589	1805	1900	1577	1805	1900	1581	1805	1858	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	38	333	308	141	551	26	295	385	179	38	449	64
RTOR Reduction (vph)	0	0	146	0	0	5	0	0	101	0	5	0
Lane Group Flow (vph)	38	333	162	141	551	21	295	385	78	38	508	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	3.7	26.5	26.5	7.3	30.1	37.4	10.4	30.9	38.2	7.3	27.8	
Effective Green, g (s)	3.7	26.5	26.5	7.3	30.1	37.4	10.4	30.9	38.2	7.3	27.8	
Actuated g/C Ratio	0.04	0.30	0.30	0.08	0.34	0.42	0.12	0.35	0.43	0.08	0.32	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	76	572	479	150	650	742	213	667	758	150	587	
v/s Ratio Prot	0.02	0.18		c0.08	c0.29	0.00	c0.16	c0.20	0.01	0.02	c0.27	
v/s Ratio Perm			0.10			0.01			0.04			
v/c Ratio	0.50	0.58	0.34	0.94	0.85	0.03	1.38	0.58	0.10	0.25	0.86	
Uniform Delay, d1	41.2	26.1	23.9	40.1	26.8	14.7	38.8	23.2	14.7	37.8	28.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.1	1.5	0.4	55.0	10.0	0.0	199.6	1.2	0.1	0.9	12.6	
Delay (s)	46.3	27.6	24.3	95.1	36.8	14.7	238.4	24.4	14.8	38.7	40.9	
Level of Service	D	C	C	F	D	B	F	C	B	D	D	
Approach Delay (s)		27.2			47.5			95.9			40.8	
Approach LOS		C			D			F			D	

Intersection Summary			
HCM Average Control Delay	56.1	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	130	350	410	90	60	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1900	3610	1577	1805	1605
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1900	3610	1577	1805	1605
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	149	402	471	103	69	149
RTOR Reduction (vph)	0	0	0	74	0	83
Lane Group Flow (vph)	149	402	471	29	69	66
Confl. Peds. (#/hr)				5	5	5
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	8.8	23.7	10.9	10.9	7.6	16.4
Effective Green, g (s)	8.8	23.7	10.9	10.9	7.6	16.4
Actuated g/C Ratio	0.22	0.60	0.28	0.28	0.19	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	404	1146	1001	437	349	833
v/s Ratio Prot	0.08	c0.21	c0.13		c0.04	0.02
v/s Ratio Perm				0.02		0.02
v/c Ratio	0.37	0.35	0.47	0.07	0.20	0.08
Uniform Delay, d1	12.9	3.9	11.8	10.5	13.3	6.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.4	0.1	0.3	0.0
Delay (s)	13.5	4.1	12.2	10.5	13.6	6.9
Level of Service	B	A	B	B	B	A
Approach Delay (s)		6.6	11.9		9.0	
Approach LOS		A	B		A	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	39.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
51: Alessandro Blvd & Nason St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	170	150	250	330	200	80	400	100	140	480	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1590	1805	1900	1591	1805	3491		1805	3610	1574
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1590	1805	1900	1591	1805	3491		1805	3610	1574
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	82	200	176	294	388	235	94	471	118	165	565	118
RTOR Reduction (vph)	0	0	133	0	0	158	0	24	0	0	0	80
Lane Group Flow (vph)	82	200	43	294	388	77	94	565	0	165	565	38
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	5.4	16.9	16.9	11.3	22.8	22.8	5.4	18.3		7.2	20.1	20.1
Effective Green, g (s)	5.4	16.9	16.9	11.3	22.8	22.8	5.4	18.3		7.2	20.1	20.1
Actuated g/C Ratio	0.08	0.24	0.24	0.16	0.33	0.33	0.08	0.26		0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	140	461	386	293	622	520	140	917		186	1041	454
v/s Ratio Prot	0.05	0.11		c0.16	c0.20		0.05	c0.16		c0.09	0.16	
v/s Ratio Perm			0.03			0.05						0.02
v/c Ratio	0.59	0.43	0.11	1.00	0.62	0.15	0.67	0.62		0.89	0.54	0.08
Uniform Delay, d1	31.1	22.3	20.5	29.2	19.8	16.6	31.3	22.6		30.8	20.9	18.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.1	0.7	0.1	53.4	2.0	0.1	12.0	1.2		36.0	0.6	0.1
Delay (s)	37.2	23.0	20.7	82.6	21.8	16.7	43.2	23.9		66.8	21.5	18.2
Level of Service	D	C	C	F	C	B	D	C		E	C	B
Approach Delay (s)		24.7			40.0			26.5			29.9	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
52: Cactus Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	530	150	30	580	30	190	300	40	50	240	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3476		1805	3580		1805	3539		1805	1900	1585
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3476		1805	3580		1805	3539		1805	1900	1585
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	138	662	188	38	725	38	238	375	50	62	300	138
RTOR Reduction (vph)	0	19	0	0	2	0	0	10	0	0	0	110
Lane Group Flow (vph)	138	831	0	38	761	0	238	415	0	62	300	28
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	13.9	54.5		4.8	45.4		20.4	37.7		7.0	24.3	24.3
Effective Green, g (s)	13.9	54.5		4.8	45.4		20.4	37.7		7.0	24.3	24.3
Actuated g/C Ratio	0.12	0.45		0.04	0.38		0.17	0.31		0.06	0.20	0.20
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	209	1579		72	1354		307	1112		105	385	321
v/s Ratio Prot	c0.08	0.24		0.02	c0.21		c0.13	0.12		0.03	c0.16	
v/s Ratio Perm												0.02
v/c Ratio	0.66	0.53		0.53	0.56		0.78	0.37		0.59	0.78	0.09
Uniform Delay, d1	50.8	23.5		56.5	29.4		47.6	32.0		55.1	45.3	38.8
Progression Factor	1.01	0.74		1.25	0.76		1.00	1.00		1.02	0.87	0.75
Incremental Delay, d2	7.1	1.2		5.4	1.3		11.6	0.2		8.5	9.5	0.1
Delay (s)	58.6	18.5		76.2	23.6		59.2	32.2		64.6	48.8	29.2
Level of Service	E	B		E	C		E	C		E	D	C
Approach Delay (s)		24.1			26.1			41.9			45.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
53: Cactus Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	390	230	440	420	130	180	620	440	190	620	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.96		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3387		1805	3467		1805	3610	1586	1805	3565	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3387		1805	3467		1805	3610	1586	1805	3565	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	85	476	280	537	512	159	220	756	537	232	756	61
RTOR Reduction (vph)	0	72	0	0	24	0	0	0	393	0	5	0
Lane Group Flow (vph)	85	684	0	537	647	0	220	756	144	232	812	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.8	29.2		31.8	52.2		15.0	30.0	30.0	13.0	28.0	
Effective Green, g (s)	8.8	29.2		31.8	52.2		15.0	30.0	30.0	13.0	28.0	
Actuated g/C Ratio	0.07	0.24		0.27	0.44		0.12	0.25	0.25	0.11	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	132	824		478	1508		226	903	397	196	832	
v/s Ratio Prot	0.05	c0.20		c0.30	0.19		0.12	c0.21		c0.13	c0.23	
v/s Ratio Perm									0.09			
v/c Ratio	0.64	0.83		1.12	0.43		0.97	0.84	0.36	1.18	0.98	
Uniform Delay, d1	54.1	43.0		44.1	23.6		52.3	42.7	37.1	53.5	45.7	
Progression Factor	0.66	0.69		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.4	8.7		79.5	0.9		52.0	6.8	0.6	122.6	25.2	
Delay (s)	44.9	38.5		123.6	24.4		104.3	49.5	37.7	176.1	70.9	
Level of Service	D	D		F	C		F	D	D	F	E	
Approach Delay (s)		39.1			68.5			53.3			94.2	
Approach LOS		D			E			D			F	

Intersection Summary			
HCM Average Control Delay	64.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
55: Cactus Ave & Nason St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	300	110	50	360	130	180	70	60	130	50	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3450		1805	3452		1805	3335		1805	3084	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3450		1805	3452		1805	3335		1805	3084	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	386	361	133	60	434	157	217	84	72	157	60	470
RTOR Reduction (vph)	0	31	0	0	34	0	0	62	0	0	364	0
Lane Group Flow (vph)	386	463	0	60	557	0	217	94	0	157	166	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	24.2	37.5		6.5	19.8		13.1	11.3		11.9	10.1	
Effective Green, g (s)	24.2	37.5		6.5	19.8		13.1	11.3		11.9	10.1	
Actuated g/C Ratio	0.29	0.45		0.08	0.24		0.16	0.14		0.14	0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	525	1555		141	822		284	453		258	374	
v/s Ratio Prot	c0.21	0.13		0.03	c0.16		c0.12	0.03		0.09	c0.05	
v/s Ratio Perm												
v/c Ratio	0.74	0.30		0.43	0.68		0.76	0.21		0.61	0.44	
Uniform Delay, d1	26.6	14.5		36.6	28.8		33.6	32.0		33.5	33.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.3	0.1		2.1	2.2		11.6	0.2		4.0	0.8	
Delay (s)	31.9	14.6		38.6	31.0		45.1	32.2		37.5	34.8	
Level of Service	C	B		D	C		D	C		D	C	
Approach Delay (s)		22.2			31.7			39.7			35.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	83.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
56: Alessandro Blvd & Frederick St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	940	130	110	1150	100	120	320	60	150	550	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1586	1805	5118		3502	3516		3502	3610	1589
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1586	1805	5118		3502	3516		3502	3610	1589
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	135	979	135	115	1198	104	125	333	62	156	573	198
RTOR Reduction (vph)	0	0	70	0	6	0	0	15	0	0	0	154
Lane Group Flow (vph)	135	979	65	115	1296	0	125	380	0	156	573	44
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	14.2	56.6	56.6	12.9	55.3		7.8	26.5		8.0	26.7	26.7
Effective Green, g (s)	14.2	56.6	56.6	12.9	55.3		7.8	26.5		8.0	26.7	26.7
Actuated g/C Ratio	0.12	0.47	0.47	0.11	0.46		0.06	0.22		0.07	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	214	1703	748	194	2359		228	776		233	803	354
v/s Ratio Prot	c0.07	c0.27		0.06	0.25		0.04	0.11		c0.04	c0.16	
v/s Ratio Perm			0.04									0.03
v/c Ratio	0.63	0.57	0.09	0.59	0.55		0.55	0.49		0.67	0.71	0.12
Uniform Delay, d1	50.4	23.0	17.5	51.0	23.4		54.4	40.8		54.7	43.1	37.3
Progression Factor	0.82	0.60	1.13	1.10	0.78		1.07	1.12		1.00	1.00	1.00
Incremental Delay, d2	5.5	1.3	0.2	4.4	0.8		2.5	0.4		7.1	3.0	0.2
Delay (s)	47.0	15.1	19.9	60.3	19.0		60.8	46.3		61.8	46.1	37.5
Level of Service	D	B	B	E	B		E	D		E	D	D
Approach Delay (s)		19.1			22.3			49.8			46.9	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
57: Alessandro Blvd & Graham St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	900	200	310	1230	100	70	170	100	100	280	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1585	1805	5122		1805	3389		1805	3505	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1585	1805	5122		1805	3389		1805	3505	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	42	938	208	323	1281	104	73	177	104	104	292	62
RTOR Reduction (vph)	0	0	113	0	5	0	0	88	0	0	19	0
Lane Group Flow (vph)	42	938	95	323	1380	0	73	193	0	104	335	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	7.1	49.3	49.3	29.3	71.5		7.1	18.4		7.0	18.3	
Effective Green, g (s)	7.1	49.3	49.3	29.3	71.5		7.1	18.4		7.0	18.3	
Actuated g/C Ratio	0.06	0.41	0.41	0.24	0.60		0.06	0.15		0.06	0.15	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	107	1483	651	441	3052		107	520		105	535	
v/s Ratio Prot	0.02	c0.26		c0.18	0.27		0.04	0.06		c0.06	c0.10	
v/s Ratio Perm			0.06									
v/c Ratio	0.39	0.63	0.15	0.73	0.45		0.68	0.37		0.99	0.63	
Uniform Delay, d1	54.4	28.1	22.2	41.7	13.4		55.3	45.6		56.5	47.7	
Progression Factor	0.69	1.16	2.99	0.60	0.57		1.10	1.10		1.00	1.00	
Incremental Delay, d2	2.0	1.7	0.4	3.6	0.3		16.0	0.4		84.6	2.3	
Delay (s)	39.6	34.2	66.7	28.5	7.9		77.1	50.7		141.1	49.9	
Level of Service	D	C	E	C	A		E	D		F	D	
Approach Delay (s)		40.1			11.8			56.1			70.6	
Approach LOS		D			B			E			E	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
58: Alessandro Blvd & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	670	100	80	1330	170	160	290	40	170	550	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1592	1805	5089		1805	3538		1805	3610	1600
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1592	1805	5089		1805	3538		1805	3610	1600
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	728	109	87	1446	185	174	315	43	185	598	239
RTOR Reduction (vph)	0	0	49	0	12	0	0	11	0	0	0	15
Lane Group Flow (vph)	196	728	60	87	1619	0	174	347	0	185	598	224
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	20.8	54.5	66.5	11.1	44.8		12.0	26.4		12.0	26.4	47.2
Effective Green, g (s)	20.8	54.5	66.5	11.1	44.8		12.0	26.4		12.0	26.4	47.2
Actuated g/C Ratio	0.17	0.45	0.55	0.09	0.37		0.10	0.22		0.10	0.22	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	313	2356	935	167	1900		181	778		181	794	683
v/s Ratio Prot	c0.11	0.14	0.01	0.05	c0.32		0.10	0.10		c0.10	c0.17	0.06
v/s Ratio Perm			0.03									0.08
v/c Ratio	0.63	0.31	0.06	0.52	0.85		0.96	0.45		1.02	0.75	0.33
Uniform Delay, d1	46.0	20.8	12.4	51.9	34.6		53.8	40.5		54.0	43.8	25.4
Progression Factor	1.59	0.41	0.01	0.95	0.91		0.93	1.34		1.00	1.00	1.00
Incremental Delay, d2	3.1	0.3	0.0	2.5	4.4		52.9	0.4		72.8	4.1	0.3
Delay (s)	76.3	8.8	0.1	51.7	35.9		102.9	54.5		126.8	47.8	25.6
Level of Service	E	A	A	D	D		F	D		F	D	C
Approach Delay (s)		20.7			36.7			70.3			56.9	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM Average Control Delay	41.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
59: Alessandro Blvd & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	620	110	90	1190	90	170	240	70	80	270	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5056		1805	5126		1805	3475		1805	3427	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	5056		1805	5126		1805	3475		1805	3427	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	689	122	100	1322	100	189	267	78	89	300	133
RTOR Reduction (vph)	0	15	0	0	5	0	0	30	0	0	56	0
Lane Group Flow (vph)	56	796	0	100	1417	0	189	315	0	89	377	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	8.0	57.9		11.9	61.8		15.2	23.9		10.3	19.0	
Effective Green, g (s)	8.0	57.9		11.9	61.8		15.2	23.9		10.3	19.0	
Actuated g/C Ratio	0.07	0.48		0.10	0.51		0.13	0.20		0.09	0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	120	2440		179	2640		229	692		155	543	
v/s Ratio Prot	0.03	0.16		c0.06	c0.28		c0.10	0.09		0.05	c0.11	
v/s Ratio Perm												
v/c Ratio	0.47	0.33		0.56	0.54		0.83	0.45		0.57	0.70	
Uniform Delay, d1	53.9	19.1		51.5	19.5		51.1	42.3		52.7	47.8	
Progression Factor	1.15	0.41		0.90	0.64		0.65	0.96		1.00	1.00	
Incremental Delay, d2	2.6	0.3		2.1	0.4		19.8	0.4		5.1	3.9	
Delay (s)	64.5	8.2		48.6	12.9		52.8	41.0		57.8	51.6	
Level of Service	E	A		D	B		D	D		E	D	
Approach Delay (s)		11.8			15.2			45.2			52.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
60: Alessandro Blvd & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	360	180	140	830	80	350	570	80	160	760	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1587	1805	5111		1805	3610	1589	1805	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1587	1805	5111		1805	3610	1589	1805	3610	1588
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	172	414	207	161	954	92	402	655	92	184	874	276
RTOR Reduction (vph)	0	0	145	0	9	0	0	0	60	0	0	117
Lane Group Flow (vph)	172	414	62	161	1037	0	402	655	32	184	874	159
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.3	35.9	35.9	11.3	33.9		21.0	41.7	41.7	15.1	35.8	35.8
Effective Green, g (s)	13.3	35.9	35.9	11.3	33.9		21.0	41.7	41.7	15.1	35.8	35.8
Actuated g/C Ratio	0.11	0.30	0.30	0.09	0.28		0.18	0.35	0.35	0.13	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	200	1080	475	170	1444		316	1254	552	227	1077	474
v/s Ratio Prot	c0.10	0.11		0.09	c0.20		c0.22	0.18		0.10	c0.24	
v/s Ratio Perm			0.04						0.02			0.10
v/c Ratio	0.86	0.38	0.13	0.95	0.72		1.27	0.52	0.06	0.81	0.81	0.34
Uniform Delay, d1	52.4	33.3	30.7	54.1	38.7		49.5	31.2	26.1	51.1	39.0	32.8
Progression Factor	1.09	0.60	0.76	0.96	0.76		0.51	0.83	1.55	1.00	1.00	1.00
Incremental Delay, d2	27.9	1.0	0.5	50.2	2.8		140.9	0.3	0.0	19.3	4.7	0.4
Delay (s)	85.1	21.0	23.8	101.9	32.2		166.1	26.2	40.5	70.3	43.7	33.2
Level of Service	F	C	C	F	C		F	C	D	E	D	C
Approach Delay (s)		35.6			41.5			76.3			45.2	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	50.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
61: Cactus Ave & Frederick St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	170	1770	1820	330	560	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.95	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	5187	3610	1595	3502	1597
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	5187	3610	1595	3502	1597
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	181	1883	1936	351	596	138
RTOR Reduction (vph)	0	0	0	20	0	5
Lane Group Flow (vph)	181	1883	1936	331	596	133
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	15.7	85.8	66.1	92.3	26.2	41.9
Effective Green, g (s)	15.7	85.8	66.1	92.3	26.2	41.9
Actuated g/C Ratio	0.13	0.71	0.55	0.77	0.22	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	3709	1989	1280	765	611
v/s Ratio Prot	c0.10	0.36	c0.54	0.06	c0.17	0.03
v/s Ratio Perm				0.15		0.05
v/c Ratio	0.77	0.51	0.97	0.26	0.78	0.22
Uniform Delay, d1	50.4	7.7	26.1	4.0	44.2	27.5
Progression Factor	1.15	0.27	0.90	1.22	0.51	0.44
Incremental Delay, d2	9.1	0.3	8.0	0.0	4.7	0.2
Delay (s)	67.3	2.3	31.5	4.9	27.4	12.2
Level of Service	E	A	C	A	C	B
Approach Delay (s)		8.0	27.4		24.5	
Approach LOS		A	C		C	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
62: Cactus Ave & Graham St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	770	1440	70	1590	70	510	80	30	70	480	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1587	1805	5151		3502	3446		1805	3610	1596
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1587	1805	5151		3502	3446		1805	3610	1596
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	85	819	1532	74	1691	74	543	85	32	74	511	106
RTOR Reduction (vph)	0	0	145	0	3	0	0	25	0	0	0	1
Lane Group Flow (vph)	85	819	1387	74	1762	0	543	92	0	74	511	105
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	11.1	60.1	60.1	9.1	58.1		11.0	27.7		7.1	23.8	34.9
Effective Green, g (s)	11.1	60.1	60.1	9.1	58.1		11.0	27.7		7.1	23.8	34.9
Actuated g/C Ratio	0.09	0.50	0.50	0.08	0.48		0.09	0.23		0.06	0.20	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	167	2598	795	137	2494		321	795		107	716	517
v/s Ratio Prot	c0.05	0.16		0.04	0.34		c0.16	c0.03		0.04	c0.14	0.02
v/s Ratio Perm			c0.87									0.05
v/c Ratio	0.51	0.32	1.74	0.54	0.71		1.69	0.12		0.69	0.71	0.20
Uniform Delay, d1	51.9	17.8	29.9	53.4	24.3		54.5	36.5		55.4	44.9	32.1
Progression Factor	1.24	0.64	0.81	0.94	0.53		1.00	1.00		1.21	0.68	0.42
Incremental Delay, d2	2.1	0.3	339.4	1.6	0.6		324.4	0.1		16.0	3.1	0.2
Delay (s)	66.1	11.7	363.7	52.1	13.4		378.9	36.5		82.8	33.6	13.5
Level of Service	E	B	F	D	B		F	D		F	C	B
Approach Delay (s)		234.9			15.0			318.2			35.8	
Approach LOS		F			B			F			D	

Intersection Summary			
HCM Average Control Delay	148.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	121.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
63: Cactus Ave & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	560	290	80	1040	80	740	380	20	80	580	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5187	1600	1805	3567		3502	3580		1805	3580	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	5187	1600	1805	3567		3502	3580		1805	3580	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	589	305	84	1095	84	779	400	21	84	611	32
RTOR Reduction (vph)	0	0	44	0	5	0	0	3	0	0	3	0
Lane Group Flow (vph)	63	589	261	84	1174	0	779	418	0	84	640	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	5.6	35.7	67.8	8.4	38.5		32.1	51.1		8.8	27.8	
Effective Green, g (s)	5.6	35.7	67.8	8.4	38.5		32.1	51.1		8.8	27.8	
Actuated g/C Ratio	0.05	0.30	0.56	0.07	0.32		0.27	0.43		0.07	0.23	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	84	1543	904	126	1144		937	1524		132	829	
v/s Ratio Prot	0.03	0.11	0.08	c0.05	c0.33		c0.22	0.12		0.05	c0.18	
v/s Ratio Perm			0.09									
v/c Ratio	0.75	0.38	0.29	0.67	1.03		0.83	0.27		0.64	0.77	
Uniform Delay, d1	56.5	33.4	13.6	54.4	40.8		41.4	22.4		54.0	43.1	
Progression Factor	0.69	1.22	1.25	1.31	0.52		1.00	1.00		0.56	0.77	
Incremental Delay, d2	29.9	0.7	0.2	10.4	31.1		6.4	0.1		8.9	4.2	
Delay (s)	69.1	41.5	17.1	81.7	52.2		47.8	22.5		39.4	37.4	
Level of Service	E	D	B	F	D		D	C		D	D	
Approach Delay (s)		35.5			54.2			38.9			37.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
64: Cactus Ave & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	550	110	60	950	50	140	340	70	50	300	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3509		1805	3580		1805	3506		1805	3554	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3509		1805	3580		1805	3506		1805	3554	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	56	618	124	67	1067	56	157	382	79	56	337	34
RTOR Reduction (vph)	0	11	0	0	2	0	0	16	0	0	7	0
Lane Group Flow (vph)	56	731	0	67	1121	0	157	445	0	56	364	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	8.0	61.9		8.6	62.5		15.0	26.6		6.9	18.5	
Effective Green, g (s)	8.0	61.9		8.6	62.5		15.0	26.6		6.9	18.5	
Actuated g/C Ratio	0.07	0.52		0.07	0.52		0.12	0.22		0.06	0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	120	1810		129	1865		226	777		104	548	
v/s Ratio Prot	0.03	0.21		c0.04	c0.31		c0.09	0.13		0.03	c0.10	
v/s Ratio Perm												
v/c Ratio	0.47	0.40		0.52	0.60		0.69	0.57		0.54	0.66	
Uniform Delay, d1	53.9	17.8		53.7	20.1		50.3	41.6		55.0	47.8	
Progression Factor	0.56	1.53		1.19	0.24		1.00	1.00		0.81	1.20	
Incremental Delay, d2	2.7	0.6		2.4	1.0		8.9	1.0		5.0	2.9	
Delay (s)	32.8	27.9		66.2	5.7		59.2	42.7		49.5	60.2	
Level of Service	C	C		E	A		E	D		D	E	
Approach Delay (s)		28.2			9.1			46.9			58.8	
Approach LOS		C			A			D			E	

Intersection Summary			
HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
65: Cactus Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	460	180	140	730	70	270	830	110	80	960	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3441		1805	3557		1805	3610	1585	1805	3610	1585
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3441		1805	3557		1805	3610	1585	1805	3610	1585
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	66	505	198	154	802	77	297	912	121	88	1055	44
RTOR Reduction (vph)	0	35	0	0	6	0	0	0	68	0	0	26
Lane Group Flow (vph)	66	668	0	154	873	0	297	912	53	88	1055	18
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	5.6	35.0		11.1	40.5		20.9	46.0	46.0	11.9	37.0	37.0
Effective Green, g (s)	5.6	35.0		11.1	40.5		20.9	46.0	46.0	11.9	37.0	37.0
Actuated g/C Ratio	0.05	0.29		0.09	0.34		0.17	0.38	0.38	0.10	0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	84	1004		167	1200		314	1384	608	179	1113	489
v/s Ratio Prot	0.04	0.19		c0.09	c0.25		c0.16	0.25		0.05	c0.29	
v/s Ratio Perm									0.03			0.01
v/c Ratio	0.79	0.67		0.92	0.73		0.95	0.66	0.09	0.49	0.95	0.04
Uniform Delay, d1	56.6	37.4		54.0	34.9		49.0	30.5	23.6	51.2	40.6	29.0
Progression Factor	0.94	1.37		0.86	0.66		0.80	0.35	0.05	0.67	0.58	0.55
Incremental Delay, d2	35.2	3.3		42.8	3.3		26.4	1.5	0.2	1.5	13.1	0.1
Delay (s)	88.3	54.6		89.3	26.2		65.6	12.3	1.3	36.0	36.6	16.0
Level of Service	F	D		F	C		E	B	A	D	D	B
Approach Delay (s)		57.5			35.6			23.2			35.8	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM Average Control Delay	35.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
66: Alessandro Blvd & Sycamore Canyon Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	360	1780	120	30	1650	520	330	300	10	70	30	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	0.88	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	3502	5187	1588	3502	3610	2800	3502	3610	1589
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	3502	5187	1588	3502	3610	2800	3502	3610	1589
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	391	1935	130	33	1793	565	359	326	11	76	33	98
RTOR Reduction (vph)	0	0	33	0	0	156	0	0	8	0	0	92
Lane Group Flow (vph)	391	1935	97	33	1793	409	359	326	3	76	33	6
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	28.8	64.6	64.6	4.4	40.2	40.2	27.1	29.4	33.8	5.6	7.9	7.9
Effective Green, g (s)	28.8	64.6	64.6	4.4	40.2	40.2	27.1	29.4	33.8	5.6	7.9	7.9
Actuated g/C Ratio	0.24	0.54	0.54	0.04	0.34	0.34	0.23	0.24	0.28	0.05	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	433	2792	869	128	1738	532	791	884	882	163	238	105
v/s Ratio Prot	c0.22	0.37		0.01	c0.35		c0.10	0.09	0.00	c0.02	0.01	
v/s Ratio Perm			0.06			0.26			0.00			0.00
v/c Ratio	0.90	0.69	0.11	0.26	1.03	0.77	0.45	0.37	0.00	0.47	0.14	0.06
Uniform Delay, d1	44.2	20.4	13.6	56.2	39.9	35.7	40.1	37.6	31.0	55.7	52.8	52.6
Progression Factor	1.00	1.00	1.00	1.14	0.62	0.42	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.7	1.4	0.3	0.9	28.7	8.9	0.4	0.3	0.0	2.1	0.3	0.2
Delay (s)	66.0	21.8	13.9	65.2	53.3	24.0	40.5	37.9	31.0	57.8	53.1	52.8
Level of Service	E	C	B	E	D	C	D	D	C	E	D	D
Approach Delay (s)		28.4			46.5			39.1			54.7	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	38.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
67: Alessandro Blvd & SR-215 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1480	430	0	1850	0	0	0	0	310	0	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	4.0
Lane Util. Factor		0.91			0.91					0.95	0.91	0.95
Frpb, ped/bikes		1.00			1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00			1.00					1.00	1.00	1.00
Frt		0.97			1.00					1.00	0.92	0.85
Flt Protected		1.00			1.00					0.95	0.98	1.00
Satd. Flow (prot)		5012			5187					1715	1551	1534
Flt Permitted		1.00			1.00					0.95	0.98	1.00
Satd. Flow (perm)		5012			5187					1715	1551	1534
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	1626	473	0	2033	0	0	0	0	341	0	341
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0	10	10
Lane Group Flow (vph)	0	2067	0	0	2033	0	0	0	0	239	218	205
Confl. Peds. (#/hr)						5						
Turn Type										Perm		Perm
Protected Phases		4			8						6	
Permitted Phases										6		6
Actuated Green, G (s)		88.0			88.0					24.0	24.0	24.0
Effective Green, g (s)		88.0			88.0					24.0	24.0	24.0
Actuated g/C Ratio		0.73			0.73					0.20	0.20	0.20
Clearance Time (s)		4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3675			3804					343	310	307
v/s Ratio Prot		c0.41			0.39							
v/s Ratio Perm										0.14	0.14	0.13
v/c Ratio		0.56			0.53					0.70	0.70	0.67
Uniform Delay, d1		7.3			7.0					44.6	44.7	44.3
Progression Factor		0.08			1.03					1.00	1.00	1.00
Incremental Delay, d2		0.5			0.4					6.1	7.0	5.4
Delay (s)		1.1			7.6					50.7	51.7	49.7
Level of Service		A			A					D	D	D
Approach Delay (s)		1.1			7.6			0.0			50.7	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
68: Alessandro Blvd & SR-215 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	1680	0	0	1180	170	770	10	390	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.91			0.91		0.95	0.91	0.95			
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.98		1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (prot)	1805	5187			5077		1715	1633	1534			
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (perm)	1805	5187			5077		1715	1633	1534			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	1826	0	0	1283	185	837	11	424	0	0	0
RTOR Reduction (vph)	0	0	0	0	14	0	0	3	5	0	0	0
Lane Group Flow (vph)	130	1826	0	0	1454	0	444	443	377	0	0	0
Confl. Peds. (#/hr)	5					5						
Turn Type	Prot						Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases									2			
Actuated Green, G (s)	17.0	69.6			48.6		42.4	42.4	42.4			
Effective Green, g (s)	17.0	69.6			48.6		42.4	42.4	42.4			
Actuated g/C Ratio	0.14	0.58			0.41		0.35	0.35	0.35			
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	256	3008			2056		606	577	542			
v/s Ratio Prot	0.07	c0.35			c0.29		0.26	c0.27				
v/s Ratio Perm									0.25			
v/c Ratio	0.51	0.61			0.71		0.73	0.77	0.70			
Uniform Delay, d1	47.6	16.3			29.8		33.9	34.4	33.3			
Progression Factor	0.78	0.58			1.00		1.00	1.00	1.00			
Incremental Delay, d2	1.3	0.8			2.1		4.6	6.1	3.9			
Delay (s)	38.4	10.3			31.8		38.4	40.5	37.1			
Level of Service	D	B			C		D	D	D			
Approach Delay (s)		12.1			31.8			38.8			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
69: Alessandro Blvd & Old 215 Frontage Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	1420	360	0	1180	290	50	170	40	30	50	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97			1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3489			3610	1615	3502	3506		1805	3610	1615
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3489			3610	1615	3502	3506		1805	3610	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	340	1511	383	0	1255	309	53	181	43	32	53	170
RTOR Reduction (vph)	0	12	0	0	0	130	0	18	0	0	0	152
Lane Group Flow (vph)	340	1882	0	0	1255	179	53	206	0	32	53	18
Confl. Peds. (#/hr)			5									
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	16.6	90.0			69.4	69.4	5.6	13.8		4.2	12.4	12.4
Effective Green, g (s)	16.6	90.0			69.4	69.4	5.6	13.8		4.2	12.4	12.4
Actuated g/C Ratio	0.14	0.75			0.58	0.58	0.05	0.12		0.04	0.10	0.10
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	484	2617			2088	934	163	403		63	373	167
v/s Ratio Prot	0.10	c0.54			0.35		0.02	c0.06		c0.02	0.01	
v/s Ratio Perm						0.11						0.01
v/c Ratio	0.70	0.72			0.60	0.19	0.33	0.51		0.51	0.14	0.11
Uniform Delay, d1	49.3	8.1			16.4	12.0	55.4	49.9		56.9	49.0	48.8
Progression Factor	1.00	1.00			0.36	0.39	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.6	1.7			1.1	0.4	1.2	1.1		6.3	0.2	0.3
Delay (s)	53.9	9.9			7.0	5.1	56.5	51.0		63.2	49.1	49.0
Level of Service	D	A			A	A	E	D		E	D	D
Approach Delay (s)		16.6			6.6			52.1			50.8	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
70: Alessandro Blvd & Day St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	1180	140	20	1320	50	20	10	20	30	20	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.90		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5089		1805	3610	1564	1799	1688		1798	1627	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.43	1.00		0.74	1.00	
Satd. Flow (perm)	1805	5089		1805	3610	1564	814	1688		1395	1627	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	165	1216	144	21	1361	52	21	10	21	31	21	144
RTOR Reduction (vph)	0	5	0	0	0	4	0	19	0	0	133	0
Lane Group Flow (vph)	165	1355	0	21	1361	48	21	12	0	31	32	0
Confl. Peds. (#/hr)			5			5	5		5	5		5
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	16.7	95.4		3.3	82.0	82.0	9.3	9.3		9.3	9.3	
Effective Green, g (s)	16.7	95.4		3.3	82.0	82.0	9.3	9.3		9.3	9.3	
Actuated g/C Ratio	0.14	0.80		0.03	0.68	0.68	0.08	0.08		0.08	0.08	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	251	4046		50	2467	1069	63	131		108	126	
v/s Ratio Prot	c0.09	0.27		0.01	c0.38			0.01			0.02	
v/s Ratio Perm						0.03	c0.03			0.02		
v/c Ratio	0.66	0.33		0.42	0.55	0.04	0.33	0.09		0.29	0.26	
Uniform Delay, d1	48.9	3.4		57.4	9.7	6.2	52.4	51.4		52.2	52.1	
Progression Factor	0.84	1.36		0.90	0.36	0.28	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.4	0.2		5.3	0.8	0.1	3.1	0.3		1.5	1.1	
Delay (s)	45.6	4.8		56.8	4.3	1.8	55.5	51.7		53.7	53.2	
Level of Service	D	A		E	A	A	E	D		D	D	
Approach Delay (s)		9.2			5.0			53.2			53.2	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
71: Alessandro Blvd & Elsworth St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1110	100	140	1190	90	80	100	50	70	170	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5115		1805	5121		1805	1795		1805	1900	1589
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5115		1805	5121		1805	1795		1805	1900	1589
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	51	1133	102	143	1214	92	82	102	51	71	173	92
RTOR Reduction (vph)	0	6	0	0	4	0	0	20	0	0	0	79
Lane Group Flow (vph)	51	1229	0	143	1302	0	82	133	0	71	173	13
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	7.7	65.1		14.7	72.1		7.8	16.5		7.7	16.4	16.4
Effective Green, g (s)	7.7	65.1		14.7	72.1		7.8	16.5		7.7	16.4	16.4
Actuated g/C Ratio	0.06	0.54		0.12	0.60		0.06	0.14		0.06	0.14	0.14
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	116	2775		221	3077		117	247		116	260	217
v/s Ratio Prot	0.03	c0.24		c0.08	0.25		c0.05	0.07		0.04	c0.09	
v/s Ratio Perm												0.01
v/c Ratio	0.44	0.44		0.65	0.42		0.70	0.54		0.61	0.67	0.06
Uniform Delay, d1	54.1	16.5		50.2	12.8		55.0	48.2		54.7	49.2	45.1
Progression Factor	1.00	0.68		1.17	0.28		1.09	1.59		1.00	1.00	1.00
Incremental Delay, d2	2.6	0.5		5.6	0.4		16.5	2.2		9.2	6.3	0.1
Delay (s)	56.8	11.8		64.3	3.9		76.5	78.8		63.9	55.5	45.2
Level of Service	E	B		E	A		E	E		E	E	D
Approach Delay (s)		13.6			9.9			78.0			54.4	
Approach LOS		B			A			E			D	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
72: Cactus Ave & SR-215 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1560	50	740	680	0	0	0	0	0	0	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0							4.0
Lane Util. Factor		0.91	1.00	1.00	0.91							1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00							1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00							1.00
Frt		1.00	0.85	1.00	1.00							0.86
Flt Protected		1.00	1.00	0.95	1.00							1.00
Satd. Flow (prot)		5187	1573	1805	5187							1644
Flt Permitted		1.00	1.00	0.95	1.00							1.00
Satd. Flow (perm)		5187	1573	1805	5187							1644
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1696	54	804	739	0	0	0	0	0	0	457
RTOR Reduction (vph)	0	0	29	0	0	0	0	0	0	0	0	236
Lane Group Flow (vph)	0	1696	25	804	739	0	0	0	0	0	0	221
Confl. Peds. (#/hr)			5									5
Turn Type			Perm	Prot								custom
Protected Phases		4		3 6	8							6
Permitted Phases			4									
Actuated Green, G (s)		51.2	51.2	60.8	91.2							20.8
Effective Green, g (s)		51.2	51.2	60.8	91.2							20.8
Actuated g/C Ratio		0.43	0.43	0.51	0.76							0.17
Clearance Time (s)		4.0	4.0		4.0							4.0
Vehicle Extension (s)		3.0	3.0		3.0							3.0
Lane Grp Cap (vph)		2213	671	915	3942							285
v/s Ratio Prot		c0.33		c0.45	0.14							0.13
v/s Ratio Perm			0.02									
v/c Ratio		0.77	0.04	0.88	0.19							0.77
Uniform Delay, d1		29.3	20.0	26.3	4.0							47.4
Progression Factor		1.00	1.00	1.15	0.40							1.00
Incremental Delay, d2		2.6	0.1	7.8	0.1							12.3
Delay (s)		31.9	20.1	38.0	1.7							59.7
Level of Service		C	C	D	A							E
Approach Delay (s)		31.5			20.6			0.0			59.7	
Approach LOS		C			C			A			E	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
73: Cactus Ave & SR-215 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	1540	50	0	1800	200	290	140	10	240	0	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00			0.98		1.00	0.99		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5163			5095		1805	1880		1805	1615	
Flt Permitted	0.05	1.00			1.00		0.73	1.00		0.56	1.00	
Satd. Flow (perm)	104	5163			5095		1385	1880		1071	1615	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	1638	53	0	1915	213	309	149	11	255	0	43
RTOR Reduction (vph)	0	2	0	0	9	0	0	2	0	0	9	0
Lane Group Flow (vph)	21	1689	0	0	2119	0	309	158	0	255	34	0
Confl. Peds. (#/hr)						5						
Turn Type	Perm						Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)	79.6	79.6			79.6		32.4	32.4		32.4	32.4	
Effective Green, g (s)	79.6	79.6			79.6		32.4	32.4		32.4	32.4	
Actuated g/C Ratio	0.66	0.66			0.66		0.27	0.27		0.27	0.27	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	69	3425			3380		374	508		289	436	
v/s Ratio Prot		0.33			c0.42			0.08			0.02	
v/s Ratio Perm	0.20						0.22			c0.24		
v/c Ratio	0.30	0.49			0.63		0.83	0.31		0.88	0.08	
Uniform Delay, d1	8.5	10.1			11.6		41.2	34.9		42.0	32.7	
Progression Factor	0.35	0.00			0.26		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.0	0.3			0.6		13.8	0.4		25.5	0.1	
Delay (s)	10.0	0.4			3.6		55.0	35.3		67.5	32.7	
Level of Service	B	A			A		D	D		E	C	
Approach Delay (s)		0.5			3.6			48.3			62.4	
Approach LOS		A			A			D			E	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
74: Cactus Ave & Elsworth St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	1760	660	150	1610	60	70	30	30	60	170	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1585	1805	5187	1564	1715	1662		1715	1802	1587
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1585	1805	5187	1564	1715	1662		1715	1802	1587
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	213	1872	702	160	1713	64	74	32	32	64	181	138
RTOR Reduction (vph)	0	0	243	0	0	24	0	29	0	0	0	117
Lane Group Flow (vph)	213	1872	459	160	1713	40	67	42	0	58	187	21
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	31.3	52.4	52.4	23.2	44.3	44.3	10.3	10.3		18.1	18.1	18.1
Effective Green, g (s)	31.3	52.4	52.4	23.2	44.3	44.3	10.3	10.3		18.1	18.1	18.1
Actuated g/C Ratio	0.26	0.44	0.44	0.19	0.37	0.37	0.09	0.09		0.15	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	471	2265	692	349	1915	577	147	143		259	272	239
v/s Ratio Prot	c0.12	c0.36		0.09	c0.33		c0.04	0.03		0.03	c0.10	
v/s Ratio Perm			0.29			0.03						0.01
v/c Ratio	0.45	0.83	0.66	0.46	0.89	0.07	0.46	0.29		0.22	0.69	0.09
Uniform Delay, d1	37.2	29.8	26.8	42.8	35.6	24.5	52.2	51.4		44.8	48.3	43.8
Progression Factor	0.71	1.03	1.38	1.22	0.55	0.43	1.00	1.00		0.55	0.55	0.46
Incremental Delay, d2	0.7	3.5	4.7	0.4	2.8	0.1	2.2	1.1		0.4	6.5	0.1
Delay (s)	27.0	34.0	41.8	52.6	22.6	10.7	54.4	52.6		25.2	33.0	20.3
Level of Service	C	C	D	D	C	B	D	D		C	C	C
Approach Delay (s)		35.4			24.7			53.5			27.3	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
75: Central Ave & Lochmoor Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	630	560	140	600	280	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.93		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3311		1805	3610	1805	1598
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3311		1805	3610	1805	1598
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	750	667	167	714	333	214
RTOR Reduction (vph)	161	0	0	0	0	54
Lane Group Flow (vph)	1256	0	167	714	333	160
Confl. Peds. (#/hr)		5	5			5
Turn Type			Prot			pm+ov
Protected Phases	4		3	8	2	3
Permitted Phases						2
Actuated Green, G (s)	33.6		9.1	46.7	18.9	28.0
Effective Green, g (s)	33.6		9.1	46.7	18.9	28.0
Actuated g/C Ratio	0.46		0.12	0.63	0.26	0.38
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1512		223	2291	464	695
v/s Ratio Prot	c0.38		c0.09	0.20	c0.18	0.03
v/s Ratio Perm						0.07
v/c Ratio	0.83		0.75	0.31	0.72	0.23
Uniform Delay, d1	17.5		31.1	6.1	24.9	15.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0		12.9	0.1	5.2	0.2
Delay (s)	21.6		44.0	6.2	30.2	15.7
Level of Service	C		D	A	C	B
Approach Delay (s)	21.6			13.4	24.5	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	73.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
76: Central Ave & Sycamore Canyon Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	600	240	90	430	70	440	360	770	130	80	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1585	3502	3534		1805	1900	1615	1805	3610	1590
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1585	3502	3534		1805	1900	1615	1805	3610	1590
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	11	659	264	99	473	77	484	396	846	143	88	11
RTOR Reduction (vph)	0	0	203	0	14	0	0	0	371	0	0	10
Lane Group Flow (vph)	11	659	61	99	536	0	484	396	475	143	88	1
Confl. Peds. (#/hr)			5	5			5					5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	1.3	19.7	19.7	6.2	24.6		38.0	32.2	32.2	11.8	6.0	6.0
Effective Green, g (s)	1.3	19.7	19.7	6.2	24.6		38.0	32.2	32.2	11.8	6.0	6.0
Actuated g/C Ratio	0.02	0.23	0.23	0.07	0.29		0.44	0.37	0.37	0.14	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	27	1190	363	253	1012		798	712	605	248	252	111
v/s Ratio Prot	0.01	c0.13		0.03	c0.15		0.27	0.21		c0.08	0.02	
v/s Ratio Perm			0.04						c0.29			0.00
v/c Ratio	0.41	0.55	0.17	0.39	0.53		0.61	0.56	0.78	0.58	0.35	0.01
Uniform Delay, d1	41.9	29.2	26.5	38.0	25.8		18.3	21.2	23.8	34.7	38.1	37.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.7	0.6	0.2	1.0	0.5		1.3	0.9	6.6	3.2	0.8	0.0
Delay (s)	51.6	29.8	26.7	39.1	26.3		19.6	22.2	30.4	37.9	38.9	37.2
Level of Service	D	C	C	D	C		B	C	C	D	D	D
Approach Delay (s)		29.2			28.3			25.5			38.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
77: SR 60 EB Ramps & Central Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	10	230	0	0	0	0	1030	500	200	350	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.95					0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1557	1534					3610	1615	3502	3610	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1557	1534					3610	1615	3502	3610	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	44	11	253	0	0	0	0	1132	549	220	385	0
RTOR Reduction (vph)	0	107	117	0	0	0	0	0	270	0	0	0
Lane Group Flow (vph)	44	25	15	0	0	0	0	1132	279	220	385	0
Confl. Peds. (#/hr)							5					5
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	6	6						4		3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	5.6	5.6	5.6					25.4	25.4	7.0	36.4	
Effective Green, g (s)	5.6	5.6	5.6					25.4	25.4	7.0	36.4	
Actuated g/C Ratio	0.11	0.11	0.11					0.51	0.51	0.14	0.73	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	202	174	172					1834	820	490	2628	
v/s Ratio Prot	c0.02	0.02						c0.31		c0.06	0.11	
v/s Ratio Perm			0.01						0.17			
v/c Ratio	0.22	0.14	0.09					0.62	0.34	0.45	0.15	
Uniform Delay, d1	20.2	20.0	19.9					8.8	7.3	19.7	2.1	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.10	0.75	
Incremental Delay, d2	0.5	0.4	0.2					1.6	1.1	0.6	0.1	
Delay (s)	20.8	20.4	20.1					10.4	8.4	22.4	1.7	
Level of Service	C	C	C					B	A	C	A	
Approach Delay (s)		20.3			0.0			9.8			9.2	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
78: SR60 WB Ramps & Central Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	130	280	1050	0	0	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3502	1615	3610			3610
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3502	1615	3610			3610
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	153	329	1235	0	0	494
RTOR Reduction (vph)	0	37	0	0	0	0
Lane Group Flow (vph)	153	292	1235	0	0	494
Confl. Peds. (#/hr)				5		
Turn Type		Perm				
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	12.7	12.7	29.3			29.3
Effective Green, g (s)	12.7	12.7	29.3			29.3
Actuated g/C Ratio	0.25	0.25	0.59			0.59
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	890	410	2115			2115
v/s Ratio Prot	0.04		c0.34			0.14
v/s Ratio Perm		c0.18				
v/c Ratio	0.17	0.71	0.58			0.23
Uniform Delay, d1	14.5	17.0	6.5			5.0
Progression Factor	1.00	1.00	0.14			1.00
Incremental Delay, d2	0.1	5.8	1.0			0.3
Delay (s)	14.6	22.8	1.9			5.2
Level of Service	B	C	A			A
Approach Delay (s)	20.2		1.9			5.2
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1330	10	110	1870	1940	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.91		0.97	0.91	0.94	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	5181		3502	5187	5100	
Flt Permitted	1.00		0.95	1.00	0.95	
Satd. Flow (perm)	5181		3502	5187	5100	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1446	11	120	2033	2109	11
RTOR Reduction (vph)	1	0	0	0	1	0
Lane Group Flow (vph)	1456	0	120	2033	2119	0
Confl. Peds. (#/hr)		5	5			
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	33.7		5.8	43.5	38.0	
Effective Green, g (s)	33.7		5.8	43.5	38.0	
Actuated g/C Ratio	0.38		0.06	0.49	0.42	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1951		227	2521	2165	
v/s Ratio Prot	0.28		0.03	c0.39	c0.42	
v/s Ratio Perm						
v/c Ratio	0.75		0.53	0.81	0.98	
Uniform Delay, d1	24.2		40.5	19.4	25.4	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.6		2.2	2.0	14.5	
Delay (s)	25.8		42.7	21.4	39.9	
Level of Service	C		D	C	D	
Approach Delay (s)	25.8			22.6	39.9	
Approach LOS	C			C	D	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
80: Alessandro Blvd & Mission Grove Pkwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1490	40	220	1710	20	130	140	420	180	110	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91		0.97	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5187	1588	3502	5176		3502	1900	1590	1805	3450	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	5187	1588	3502	5176		3502	1900	1590	1805	3450	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	53	1585	43	234	1819	21	138	149	447	191	117	43
RTOR Reduction (vph)	0	0	26	0	1	0	0	0	166	0	39	0
Lane Group Flow (vph)	53	1585	17	234	1839	0	138	149	281	191	121	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	5.3	38.9	38.9	9.9	43.5		26.1	23.0	23.0	12.3	9.2	
Effective Green, g (s)	5.3	38.9	38.9	9.9	43.5		26.1	23.0	23.0	12.3	9.2	
Actuated g/C Ratio	0.05	0.39	0.39	0.10	0.43		0.26	0.23	0.23	0.12	0.09	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	96	2016	617	346	2249		913	437	365	222	317	
v/s Ratio Prot	0.03	c0.31		0.07	c0.36		0.04	0.08		c0.11	0.04	
v/s Ratio Perm			0.01						c0.18			
v/c Ratio	0.55	0.79	0.03	0.68	0.82		0.15	0.34	0.77	0.86	0.38	
Uniform Delay, d1	46.2	26.9	18.9	43.6	24.8		28.5	32.2	36.1	43.1	42.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.7	2.1	0.0	5.2	2.4		0.1	0.5	9.4	27.1	0.8	
Delay (s)	53.0	29.0	18.9	48.7	27.2		28.6	32.7	45.5	70.1	43.5	
Level of Service	D	C	B	D	C		C	C	D	E	D	
Approach Delay (s)		29.5			29.7			39.7			58.0	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	100.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
81: Martin Luther King Blvd & Chicago Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	820	170	60	540	150	420	940	260	120	350	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1599	3502	3610	1594	3502	3610	1594	3502	3610	1597
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1599	3502	3610	1594	3502	3610	1594	3502	3610	1597
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	182	932	193	68	614	170	477	1068	295	136	398	159
RTOR Reduction (vph)	0	0	98	0	0	26	0	0	13	0	0	30
Lane Group Flow (vph)	182	932	95	68	614	144	477	1068	282	136	398	129
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.2	31.5	48.9	7.2	28.5	35.7	17.4	37.6	44.8	7.2	27.4	37.6
Effective Green, g (s)	10.2	31.5	48.9	7.2	28.5	35.7	17.4	37.6	44.8	7.2	27.4	37.6
Actuated g/C Ratio	0.10	0.32	0.49	0.07	0.29	0.36	0.17	0.38	0.45	0.07	0.28	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	185	1143	850	253	1034	636	612	1364	782	253	994	668
v/s Ratio Prot	c0.10	c0.26	0.02	0.02	0.17	0.02	c0.14	c0.30	0.03	0.04	0.11	0.02
v/s Ratio Perm			0.04			0.07			0.15			0.06
v/c Ratio	0.98	0.82	0.11	0.27	0.59	0.23	0.78	0.78	0.36	0.54	0.40	0.19
Uniform Delay, d1	44.6	31.3	13.6	43.7	30.5	22.3	39.2	27.3	17.9	44.5	29.4	20.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	61.0	4.6	0.1	0.6	0.9	0.2	6.2	3.0	0.3	2.2	0.3	0.1
Delay (s)	105.6	35.9	13.7	44.2	31.4	22.4	45.5	30.4	18.2	46.7	29.6	20.9
Level of Service	F	D	B	D	C	C	D	C	B	D	C	C
Approach Delay (s)		42.3			30.7			32.3			31.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	34.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	99.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
82: Martin Luther King Blvd & Iowa Ave

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	180	1030	630	460	190	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	0.99	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	3610	3610	1601	3489	1458
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	3610	3610	1601	3489	1458
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	202	1157	708	517	213	112
RTOR Reduction (vph)	0	0	0	22	6	40
Lane Group Flow (vph)	202	1157	708	495	218	61
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	7.1	25.5	14.4	23.6	9.2	16.3
Effective Green, g (s)	7.1	25.5	14.4	23.6	9.2	16.3
Actuated g/C Ratio	0.17	0.60	0.34	0.55	0.22	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	2156	1217	1035	752	693
v/s Ratio Prot	c0.11	c0.32	0.20	c0.10	0.06	0.01
v/s Ratio Perm				0.21		0.03
v/c Ratio	0.67	0.54	0.58	0.48	0.29	0.09
Uniform Delay, d1	16.7	5.1	11.7	5.8	14.0	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	0.3	0.7	0.4	0.2	0.1
Delay (s)	22.6	5.4	12.4	6.2	14.2	8.5
Level of Service	C	A	B	A	B	A
Approach Delay (s)		7.9	9.8		12.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	42.7	Sum of lost time (s)	4.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
83: Martin Luther King Blvd & Canyon Crest Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	690	160	160	760	140	790	350	830	90	80	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1600	3502	3610	1590	3502	3610	1591	3502	3610	1605
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1600	3502	3610	1590	3502	3610	1591	3502	3610	1605
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	293	841	195	195	927	171	963	427	1012	110	98	98
RTOR Reduction (vph)	0	0	75	0	0	110	0	0	407	0	0	67
Lane Group Flow (vph)	293	841	120	195	927	61	963	427	605	110	98	31
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.1	33.1	55.3	10.4	32.4	32.4	22.2	22.2	22.2	8.4	8.4	19.5
Effective Green, g (s)	11.1	33.1	55.3	10.4	32.4	32.4	22.2	22.2	22.2	8.4	8.4	19.5
Actuated g/C Ratio	0.12	0.37	0.61	0.12	0.36	0.36	0.25	0.25	0.25	0.09	0.09	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	222	1906	1053	404	1298	572	863	889	392	326	337	419
v/s Ratio Prot	c0.16	0.16	0.03	0.06	c0.26		c0.28	0.12		0.03	0.03	0.01
v/s Ratio Perm			0.05			0.04			c0.38			0.01
v/c Ratio	1.32	0.44	0.11	0.48	0.71	0.11	1.12	0.48	1.54	0.34	0.29	0.07
Uniform Delay, d1	39.5	21.5	7.2	37.3	24.9	19.2	33.9	29.0	33.9	38.2	38.1	28.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	171.9	0.2	0.0	0.9	1.9	0.1	67.6	0.4	257.0	0.6	0.5	0.1
Delay (s)	211.4	21.7	7.3	38.2	26.8	19.3	101.6	29.4	290.9	38.9	38.6	28.2
Level of Service	F	C	A	D	C	B	F	C	F	D	D	C
Approach Delay (s)		61.4			27.5			168.5			35.3	
Approach LOS		E			C			F			D	

Intersection Summary			
HCM Average Control Delay	100.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	90.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
84: Martin Luther King Blvd & SR-60 EB Off Ramp

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	800	740	10	510	0	0	0	0	10	0	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		0.91	0.91	1.00	0.95					1.00	1.00	
Frt		0.96	0.85	1.00	1.00					1.00	0.85	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3328	1470	1805	3610					1805	1615	
Flt Permitted		1.00	1.00	0.19	1.00					0.95	1.00	
Satd. Flow (perm)		3328	1470	358	3610					1805	1615	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	909	841	11	580	0	0	0	0	11	0	477
RTOR Reduction (vph)	0	54	272	0	0	0	0	0	0	0	132	0
Lane Group Flow (vph)	0	1158	266	11	580	0	0	0	0	11	345	0
Turn Type			Perm	Perm						Perm		
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		21.2	21.2	21.2	21.2					13.6	13.6	
Effective Green, g (s)		21.2	21.2	21.2	21.2					13.6	13.6	
Actuated g/C Ratio		0.50	0.50	0.50	0.50					0.32	0.32	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1648	728	177	1788					574	513	
v/s Ratio Prot		c0.35			0.16						c0.21	
v/s Ratio Perm			0.18	0.03						0.01		
v/c Ratio		0.70	0.37	0.06	0.32					0.02	0.67	
Uniform Delay, d1		8.4	6.7	5.6	6.5					10.0	12.7	
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	
Incremental Delay, d2		1.4	0.3	0.1	0.1					0.0	3.5	
Delay (s)		9.7	7.0	5.8	6.6					10.0	16.1	
Level of Service		A	A	A	A					B	B	
Approach Delay (s)		8.9			6.6			0.0			16.0	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	42.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
85: Martin Luther King Blvd & SR-60 WB On Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	800	0	510	0	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	851	0	543	0	0	0

Direction, Lane #	EB 1	EB 2	NB 1	NB 2
Volume Total (vph)	426	426	362	181
Volume Left (vph)	426	426	362	181
Volume Right (vph)	0	0	0	0
Hadj (s)	0.50	0.50	0.50	0.50
Departure Headway (s)	6.8	6.8	7.3	7.3
Degree Utilization, x	0.80	0.80	0.74	0.37
Capacity (veh/h)	524	522	480	478
Control Delay (s)	30.6	30.6	26.9	13.3
Approach Delay (s)	30.6		22.4	
Approach LOS	D		C	

Intersection Summary			
Delay	27.4		
HCM Level of Service	D		
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
86: Central Ave & Chicago Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	0	630	10	440	10	1130	860	130	380	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900		3502	1900	1615	1805	3610	1590	3502	3610	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900		3502	1900	1615	1805	3610	1590	3502	3610	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	11	0	700	11	489	11	1256	956	144	422	11
RTOR Reduction (vph)	0	0	0	0	0	203	0	0	213	0	0	5
Lane Group Flow (vph)	11	11	0	700	11	286	11	1256	743	144	422	6
Confl. Peds. (#/hr)			5	5					5	5		
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	1.1	3.5		19.9	22.3	22.3	1.1	40.9	40.9	7.1	46.9	46.9
Effective Green, g (s)	1.1	3.5		19.9	22.3	22.3	1.1	40.9	40.9	7.1	46.9	46.9
Actuated g/C Ratio	0.01	0.04		0.23	0.26	0.26	0.01	0.47	0.47	0.08	0.54	0.54
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	23	76		797	485	412	23	1689	744	284	1937	867
v/s Ratio Prot	0.01	0.01		c0.20	0.01		0.01	0.35		c0.04	0.12	
v/s Ratio Perm						c0.18			c0.47			0.00
v/c Ratio	0.48	0.14		0.88	0.02	0.70	0.48	0.74	1.00	0.51	0.22	0.01
Uniform Delay, d1	42.9	40.5		32.6	24.4	29.5	42.9	19.0	23.2	38.5	10.6	9.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.8	0.9		10.8	0.0	5.0	14.8	1.8	32.3	1.4	0.1	0.0
Delay (s)	57.7	41.4		43.4	24.4	34.5	57.7	20.8	55.5	39.9	10.7	9.4
Level of Service	E	D		D	C	C	E	C	E	D	B	A
Approach Delay (s)		49.5			39.6			35.9			17.9	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM Average Control Delay	34.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
87: Central Ave & El Cerrito Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	780	50	20	760	40	80	70	40	40	20	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99			0.97		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1805	3577		1805	3580			1802		1802	1650	
Flt Permitted	0.95	1.00		0.95	1.00			0.79		0.61	1.00	
Satd. Flow (perm)	1805	3577		1805	3580			1462		1150	1650	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	138	830	53	21	809	43	85	74	43	43	21	149
RTOR Reduction (vph)	0	4	0	0	4	0	0	15	0	0	116	0
Lane Group Flow (vph)	138	879	0	21	848	0	0	187	0	43	54	0
Confl. Peds. (#/hr)	5					5			5	5		
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	8.2	29.7		1.1	22.6			12.4		12.4	12.4	
Effective Green, g (s)	8.2	29.7		1.1	22.6			12.4		12.4	12.4	
Actuated g/C Ratio	0.15	0.54		0.02	0.41			0.22		0.22	0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	268	1925		36	1466			328		258	371	
v/s Ratio Prot	c0.08	0.25		0.01	c0.24						0.03	
v/s Ratio Perm								c0.13		0.04		
v/c Ratio	0.51	0.46		0.58	0.58			0.57		0.17	0.15	
Uniform Delay, d1	21.7	7.8		26.8	12.6			19.0		17.2	17.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.2		21.8	0.6			2.4		0.3	0.2	
Delay (s)	23.3	8.0		48.6	13.2			21.4		17.5	17.3	
Level of Service	C	A		D	B			C		B	B	
Approach Delay (s)		10.1			14.0			21.4			17.4	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
88: Central Ave & Canyon Crest Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	760	110	100	710	260	160	1000	270	130	210	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3535		1805	3610	1594	1805	3610	1593	3502	3515	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3535		1805	3610	1594	1805	3610	1593	3502	3515	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	844	122	111	789	289	178	1111	300	144	233	44
RTOR Reduction (vph)	0	11	0	0	0	42	0	0	26	0	15	0
Lane Group Flow (vph)	56	955	0	111	789	247	178	1111	274	144	262	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	5.4	32.8		7.1	34.5	41.6	9.1	34.5	41.6	7.1	32.5	
Effective Green, g (s)	5.4	32.8		7.1	34.5	41.6	9.1	34.5	41.6	7.1	32.5	
Actuated g/C Ratio	0.06	0.34		0.07	0.35	0.43	0.09	0.35	0.43	0.07	0.33	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	100	1189		131	1277	746	168	1277	745	255	1172	
v/s Ratio Prot	0.03	c0.27		c0.06	0.22	0.02	c0.10	c0.31	0.03	0.04	0.07	
v/s Ratio Perm						0.13			0.15			
v/c Ratio	0.56	0.80		0.85	0.62	0.33	1.06	0.87	0.37	0.56	0.22	
Uniform Delay, d1	44.9	29.4		44.7	26.0	18.7	44.2	29.4	19.0	43.7	23.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.0	4.0		36.9	0.9	0.3	86.1	6.7	0.3	2.9	0.1	
Delay (s)	51.9	33.4		81.6	26.9	18.9	130.3	36.1	19.3	46.6	23.5	
Level of Service	D	C		F	C	B	F	D	B	D	C	
Approach Delay (s)		34.4			30.1			43.5			31.4	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	36.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
89: Country Club Dr & Chicago Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	70	100	1930	60	20	990
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.98	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1798	1589	3610	1571	1805	3610
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1798	1589	3610	1571	1805	3610
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	79	112	2169	67	22	1112
RTOR Reduction (vph)	0	100	0	5	0	0
Lane Group Flow (vph)	79	12	2169	62	22	1112
Confl. Peds. (#/hr)	5	5		5	5	
Turn Type		custom		Perm	Prot	
Protected Phases			2		1	6
Permitted Phases	8	8		2		
Actuated Green, G (s)	9.3	9.3	63.5	63.5	2.5	70.0
Effective Green, g (s)	9.3	9.3	63.5	63.5	2.5	70.0
Actuated g/C Ratio	0.11	0.11	0.73	0.73	0.03	0.80
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	192	169	2626	1143	52	2895
v/s Ratio Prot			c0.60		0.01	c0.31
v/s Ratio Perm	c0.04	0.01		0.04		
v/c Ratio	0.41	0.07	0.83	0.05	0.42	0.38
Uniform Delay, d1	36.4	35.1	8.1	3.4	41.7	2.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.2	2.3	0.0	5.5	0.1
Delay (s)	37.9	35.3	10.4	3.4	47.2	2.6
Level of Service	D	D	B	A	D	A
Approach Delay (s)	36.4		10.2			3.4
Approach LOS	D		B			A

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
90: Arlington Ave & SR-91 WB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	1080	140	500	1060	310	0	0	0	600	50	570
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97				1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	1805	5187	1572	1805	3610	1571				1715	1732	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	1805	5187	1572	1805	3610	1571				1715	1732	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	1174	152	543	1152	337	0	0	0	652	54	620
RTOR Reduction (vph)	0	0	66	0	0	149	0	0	0	0	0	11
Lane Group Flow (vph)	109	1174	86	543	1152	188	0	0	0	352	354	609
Confl. Peds. (#/hr)	5		5	5		5						5
Turn Type	Prot		Perm	Prot		Perm				Split		pm+ov
Protected Phases	7	4		3	8					6	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	26.2	32.8	32.8	54.1	60.7	60.7				31.1	31.1	57.3
Effective Green, g (s)	26.2	32.8	32.8	54.1	60.7	60.7				31.1	31.1	57.3
Actuated g/C Ratio	0.20	0.25	0.25	0.42	0.47	0.47				0.24	0.24	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	364	1309	397	751	1686	734				410	414	754
v/s Ratio Prot	0.06	c0.23		c0.30	0.32					c0.21	0.20	0.16
v/s Ratio Perm			0.05			0.12						0.22
v/c Ratio	0.30	0.90	0.22	0.72	0.68	0.26				0.86	0.86	0.81
Uniform Delay, d1	44.1	47.0	38.4	31.7	27.1	21.0				47.3	47.3	31.6
Progression Factor	1.00	1.00	1.00	0.56	0.53	0.12				1.00	1.00	1.00
Incremental Delay, d2	0.5	9.9	1.3	3.0	2.0	0.7				16.2	15.7	6.4
Delay (s)	44.6	56.8	39.7	20.6	16.2	3.2				63.5	63.0	37.9
Level of Service	D	E	D	C	B	A				E	E	D
Approach Delay (s)		54.1			15.2			0.0			51.4	
Approach LOS		D			B			A			D	

Intersection Summary			
HCM Average Control Delay	36.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
91: Arlington Ave & SR-91 EB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	1100	250	130	1540	400	280	430	560	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.86	1.00	0.91	0.91	0.88			
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1805	3610	1596	1805	6536	1586	1643	3440	2842			
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	1805	3610	1596	1805	6536	1586	1643	3440	2842			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	330	1170	266	138	1638	426	298	457	596	0	0	0
RTOR Reduction (vph)	0	0	50	0	0	90	0	0	369	0	0	0
Lane Group Flow (vph)	330	1170	216	138	1638	336	244	511	227	0	0	0
Confl. Peds. (#/hr)	5		5	5		5						
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm			
Protected Phases	7	4	2	3	8		2	2				
Permitted Phases			4			8			2			
Actuated Green, G (s)	28.9	70.4	99.0	19.0	60.5	60.5	28.6	28.6	28.6			
Effective Green, g (s)	28.9	70.4	99.0	19.0	60.5	60.5	28.6	28.6	28.6			
Actuated g/C Ratio	0.22	0.54	0.76	0.15	0.47	0.47	0.22	0.22	0.22			
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	401	1955	1265	264	3042	738	361	757	625			
v/s Ratio Prot	c0.18	c0.32	0.04	0.08	c0.25		0.15	c0.15				
v/s Ratio Perm			0.10			0.21			0.08			
v/c Ratio	0.82	0.60	0.17	0.52	0.54	0.46	0.68	0.68	0.36			
Uniform Delay, d1	48.1	20.2	4.2	51.3	24.8	23.6	46.5	46.4	43.0			
Progression Factor	0.71	0.32	0.08	0.70	0.53	0.37	1.00	1.00	1.00			
Incremental Delay, d2	6.9	0.7	0.0	1.6	0.6	1.7	4.9	2.4	0.4			
Delay (s)	40.8	7.1	0.4	37.5	13.8	10.4	51.4	48.8	43.3			
Level of Service	D	A	A	D	B	B	D	D	D			
Approach Delay (s)		12.4			14.6			46.9			0.0	
Approach LOS		B			B			D			A	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
92: Arlington Ave & Maude St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	1380	260	50	1640	10	290	10	160	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.98		1.00	1.00		1.00	0.86			0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1805	5037		1805	5181		1805	1606			1783	
Flt Permitted	0.95	1.00		0.95	1.00		0.78	1.00			0.91	
Satd. Flow (perm)	1805	5037		1805	5181		1485	1606			1648	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	1484	280	54	1763	11	312	11	172	11	11	11
RTOR Reduction (vph)	0	17	0	0	0	0	0	91	0	0	8	0
Lane Group Flow (vph)	43	1747	0	54	1774	0	312	92	0	0	25	0
Confl. Peds. (#/hr)	5		5	5		5			5	5		
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	5.6	74.2		8.8	77.4		35.0	35.0			35.0	
Effective Green, g (s)	5.6	74.2		8.8	77.4		35.0	35.0			35.0	
Actuated g/C Ratio	0.04	0.57		0.07	0.60		0.27	0.27			0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	78	2875		122	3085		400	432			444	
v/s Ratio Prot	0.02	c0.35		c0.03	0.34			0.06				
v/s Ratio Perm							c0.21				0.02	
v/c Ratio	0.55	0.61		0.44	0.57		0.78	0.21			0.06	
Uniform Delay, d1	61.0	18.3		58.2	16.2		43.9	36.8			35.2	
Progression Factor	0.90	0.32		0.65	0.61		1.00	1.00			1.00	
Incremental Delay, d2	6.7	0.8		2.0	0.6		9.5	0.2			0.1	
Delay (s)	61.9	6.7		39.9	10.4		53.4	37.1			35.3	
Level of Service	E	A		D	B		D	D			D	
Approach Delay (s)		8.0			11.3			47.4			35.3	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
93: Arlington Ave & Horace St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	1290	250	90	1330	10	240	90	40	10	40	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00			0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	1.00
Satd. Flow (prot)	1805	3503		1805	3605			1804			1880	1586
Flt Permitted	0.11	1.00		0.07	1.00			0.77			0.92	1.00
Satd. Flow (perm)	210	3503		133	3605			1436			1744	1586
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	1402	272	98	1446	11	261	98	43	11	43	109
RTOR Reduction (vph)	0	11	0	0	0	0	0	3	0	0	0	26
Lane Group Flow (vph)	43	1663	0	98	1457	0	0	399	0	0	54	83
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	81.7	81.7		81.7	81.7			40.3			40.3	40.3
Effective Green, g (s)	81.7	81.7		81.7	81.7			40.3			40.3	40.3
Actuated g/C Ratio	0.63	0.63		0.63	0.63			0.31			0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	132	2202		84	2266			445			541	492
v/s Ratio Prot		0.47			0.40							
v/s Ratio Perm	0.20			c0.74				c0.28			0.03	0.05
v/c Ratio	0.33	0.76		1.17	0.64			0.90			0.10	0.17
Uniform Delay, d1	11.3	17.1		24.1	15.1			42.8			31.9	32.6
Progression Factor	0.84	0.86		0.39	0.15			1.00			1.00	1.00
Incremental Delay, d2	5.5	2.1		113.8	0.6			20.0			0.1	0.2
Delay (s)	15.0	16.8		123.2	2.8			62.9			32.0	32.8
Level of Service	B	B		F	A			E			C	C
Approach Delay (s)		16.8			10.4			62.9			32.5	
Approach LOS		B			B			E			C	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
94: Arlington Ave & Victoria Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	980	50	520	1270	270	40	400	600	180	320	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3578		1805	3497		1805	1900	1601	1805	1900	1586
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3578		1805	3497		1805	1900	1601	1805	1900	1586
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	168	1032	53	547	1337	284	42	421	632	189	337	116
RTOR Reduction (vph)	0	3	0	0	14	0	0	0	8	0	0	66
Lane Group Flow (vph)	168	1082	0	547	1607	0	42	421	624	189	337	50
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			6
Actuated Green, G (s)	11.0	34.0		35.0	58.0		5.6	34.0	69.0	11.0	39.4	39.4
Effective Green, g (s)	11.0	34.0		35.0	58.0		5.6	34.0	69.0	11.0	39.4	39.4
Actuated g/C Ratio	0.08	0.26		0.27	0.45		0.04	0.26	0.53	0.08	0.30	0.30
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	153	936		486	1560		78	497	850	153	576	481
v/s Ratio Prot	0.09	c0.30		c0.30	0.46		0.02	c0.22	0.20	c0.10	0.18	
v/s Ratio Perm									0.19			0.03
v/c Ratio	1.10	1.16		1.13	1.03		0.54	0.85	0.73	1.24	0.59	0.10
Uniform Delay, d1	59.5	48.0		47.5	36.0		60.9	45.5	23.4	59.5	38.4	32.6
Progression Factor	1.15	0.80		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	86.9	78.4		79.9	30.9		7.0	16.2	3.3	149.6	4.3	0.4
Delay (s)	155.3	116.6		127.4	66.9		67.9	61.8	26.7	209.1	42.7	33.0
Level of Service	F	F		F	E		E	E	C	F	D	C
Approach Delay (s)		121.8			82.2			41.8			89.9	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM Average Control Delay	84.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	109.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
95: Arlington Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	720	890	180	690	280	1180	1610	560	310	730	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3610	2821	3502	3610	1593	3502	3610	1589	3502	5153	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3610	2821	3502	3610	1593	3502	3610	1589	3502	5153	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	800	989	200	767	311	1311	1789	622	344	811	33
RTOR Reduction (vph)	0	0	9	0	0	23	0	0	9	0	3	0
Lane Group Flow (vph)	56	800	980	200	767	288	1311	1789	613	344	841	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	6.1	33.9	76.4	7.0	34.8	45.8	42.5	59.1	66.1	11.0	27.6	
Effective Green, g (s)	6.1	33.9	76.4	7.0	34.8	45.8	42.5	59.1	66.1	11.0	27.6	
Actuated g/C Ratio	0.05	0.27	0.60	0.06	0.27	0.36	0.33	0.47	0.52	0.09	0.22	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	87	964	1697	193	989	574	1172	1680	877	303	1120	
v/s Ratio Prot	0.03	c0.22	0.19	c0.06	0.21	0.04	0.37	c0.50	0.04	c0.10	0.16	
v/s Ratio Perm			0.15			0.14			0.35			
v/c Ratio	0.64	0.83	0.58	1.04	0.78	0.50	1.12	1.06	0.70	1.14	0.75	
Uniform Delay, d1	59.4	43.8	15.4	60.0	42.5	31.7	42.2	34.0	23.0	58.0	46.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.2	6.0	0.5	74.6	3.9	0.7	65.2	41.6	2.5	93.4	2.9	
Delay (s)	74.5	49.8	15.9	134.6	46.4	32.4	107.5	75.5	25.4	151.4	49.4	
Level of Service	E	D	B	F	D	C	F	E	C	F	D	
Approach Delay (s)		32.4			56.8			78.4			78.9	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	64.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	127.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
96: Century Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	30	10	40	20	140	10	3130	20	70	1660	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.91		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1814			1683		1805	5181		1805	5176	
Flt Permitted		0.40			0.91		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		743			1554		1805	5181		1805	5176	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	79	34	11	45	22	157	11	3517	22	79	1865	22
RTOR Reduction (vph)	0	3	0	0	89	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	121	0	0	135	0	11	3539	0	79	1886	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		14.3			14.3		1.3	65.4		7.0	71.1	
Effective Green, g (s)		14.3			14.3		1.3	65.4		7.0	71.1	
Actuated g/C Ratio		0.14			0.14		0.01	0.66		0.07	0.72	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		108			225		24	3433		128	3729	
v/s Ratio Prot							0.01	c0.68		c0.04	0.36	
v/s Ratio Perm		c0.16			0.09							
v/c Ratio		1.12			0.60		0.46	1.03		0.62	0.51	
Uniform Delay, d1		42.2			39.5		48.4	16.6		44.5	6.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		121.4			4.5		13.2	24.0		8.6	0.1	
Delay (s)		163.6			44.0		61.6	40.6		53.1	6.2	
Level of Service		F			D		E	D		D	A	
Approach Delay (s)		163.6			44.0			40.7			8.1	
Approach LOS		F			D			D			A	

Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	98.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
97: Via Vista Dr & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	40	50	20	30	100	60	2910	20	20	1510	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1801	1900	1615	1805	1900	1588	1805	5181		1805	5163	
Flt Permitted	0.53	1.00	1.00	0.73	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1012	1900	1615	1383	1900	1588	1805	5181		1805	5163	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	180	45	56	22	34	112	67	3270	22	22	1697	45
RTOR Reduction (vph)	0	0	47	0	0	100	0	0	0	0	2	0
Lane Group Flow (vph)	180	45	9	22	34	12	67	3292	0	22	1740	0
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	21.6	15.0	15.0	13.2	10.6	10.6	6.8	61.3		2.6	57.1	
Effective Green, g (s)	21.6	15.0	15.0	13.2	10.6	10.6	6.8	61.3		2.6	57.1	
Actuated g/C Ratio	0.22	0.15	0.15	0.14	0.11	0.11	0.07	0.63		0.03	0.59	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	281	292	248	198	207	173	126	3257		48	3024	
v/s Ratio Prot	c0.05	0.02		0.00	0.02		0.04	c0.64		0.01	c0.34	
v/s Ratio Perm	c0.10		0.01	0.01		0.01						
v/c Ratio	0.64	0.15	0.03	0.11	0.16	0.07	0.53	1.01		0.46	0.58	
Uniform Delay, d1	33.6	35.8	35.1	36.9	39.4	39.0	43.8	18.1		46.8	12.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.9	0.2	0.1	0.2	0.4	0.2	4.3	18.4		6.8	0.3	
Delay (s)	38.5	36.0	35.1	37.1	39.8	39.2	48.1	36.5		53.5	12.9	
Level of Service	D	D	D	D	D	D	D	D		D	B	
Approach Delay (s)		37.4			39.1			36.8			13.4	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
98: Canyon Crest Dr & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	20	20	360	10	90	20	2970	840	30	1600	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		0.94	1.00		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.93		1.00	0.87		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3314		5090	1623		1805	5187	1594	1805	5181	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3314		5090	1623		1805	5187	1594	1805	5181	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	21	21	383	11	96	21	3160	894	32	1702	11
RTOR Reduction (vph)	0	20	0	0	82	0	0	0	170	0	0	0
Lane Group Flow (vph)	21	22	0	383	25	0	21	3160	724	32	1713	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	2.7	4.8		9.2	11.3		3.1	44.9	54.1	2.4	44.2	
Effective Green, g (s)	2.7	4.8		9.2	11.3		3.1	44.9	54.1	2.4	44.2	
Actuated g/C Ratio	0.03	0.06		0.12	0.15		0.04	0.58	0.70	0.03	0.57	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	63	206		606	237		72	3013	1198	56	2962	
v/s Ratio Prot	c0.01	0.01		0.08	0.02		0.01	c0.61	c0.07	0.02	c0.33	
v/s Ratio Perm									0.38			
v/c Ratio	0.33	0.11		0.63	0.11		0.29	1.05	0.60	0.57	0.58	
Uniform Delay, d1	36.4	34.2		32.4	28.6		36.0	16.2	6.0	36.9	10.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	0.2		2.2	0.2		2.2	31.0	0.9	13.3	0.3	
Delay (s)	39.5	34.5		34.6	28.8		38.3	47.2	6.9	50.3	10.9	
Level of Service	D	C		C	C		D	D	A	D	B	
Approach Delay (s)		36.2			33.3			38.3			11.6	
Approach LOS		D			C			D			B	

Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
99: Oleander Ave/Harley Knox Blvd & Perris Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	190	80	100	1250	600	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1787	1567	1805	1900	1900	1576
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1787	1567	1805	1900	1900	1576
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	221	93	116	1453	698	151
RTOR Reduction (vph)	0	77	0	0	0	19
Lane Group Flow (vph)	221	16	116	1453	698	132
Confl. Peds. (#/hr)	5	5	5			5
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	18.8	18.8	11.0	83.2	68.2	68.2
Effective Green, g (s)	18.8	18.8	11.0	83.2	68.2	68.2
Actuated g/C Ratio	0.17	0.17	0.10	0.76	0.62	0.62
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	305	268	181	1437	1178	977
v/s Ratio Prot			0.06	c0.76	0.37	
v/s Ratio Perm	c0.12	0.01				0.08
v/c Ratio	0.72	0.06	0.64	1.01	0.59	0.14
Uniform Delay, d1	43.2	38.2	47.6	13.4	12.6	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	0.1	7.5	26.5	2.2	0.3
Delay (s)	51.4	38.3	55.1	39.9	14.7	9.0
Level of Service	D	D	E	D	B	A
Approach Delay (s)	47.5			41.0	13.7	
Approach LOS	D			D	B	

Intersection Summary			
HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
100: Harley Knox Blvd & Evans Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)												
Lane Util. Factor												
Frt												
Flt Protected												
Satd. Flow (prot)												
Flt Permitted												
Satd. Flow (perm)												
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type							Perm			Perm		
Protected Phases								2			6	
Permitted Phases							2			6		
Actuated Green, G (s)												
Effective Green, g (s)												
Actuated g/C Ratio												
Clearance Time (s)												
Lane Grp Cap (vph)												
v/s Ratio Prot												
v/s Ratio Perm												
v/c Ratio												
Uniform Delay, d1												
Progression Factor												
Incremental Delay, d2												
Delay (s)												
Level of Service												
Approach Delay (s)		0.0			0.0			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	0.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	20.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
101: Ramona Expy & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	950	70	80	1710	290	90	20	60	90	10	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	4.6		4.0	4.9	4.9
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5126		1805	5187	1582	1805	3165		1805	3610	1588
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5126		1805	5187	1582	1805	3165		1805	3610	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	216	979	72	82	1763	299	93	21	62	93	10	134
RTOR Reduction (vph)	0	5	0	0	0	134	0	57	0	0	0	124
Lane Group Flow (vph)	216	1046	0	82	1763	165	93	26	0	93	10	10
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Actuated Green, G (s)	22.7	66.1		9.0	52.4	52.4	7.9	8.0		8.3	8.1	8.1
Effective Green, g (s)	22.7	66.1		9.0	52.4	52.4	7.9	8.0		8.3	8.1	8.1
Actuated g/C Ratio	0.21	0.60		0.08	0.48	0.48	0.07	0.07		0.08	0.07	0.07
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	4.6		4.0	4.9	4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	372	3080		148	2471	754	130	230		136	266	117
v/s Ratio Prot	c0.12	0.20		0.05	c0.34		c0.05	c0.01		0.05	0.00	
v/s Ratio Perm						0.10						0.01
v/c Ratio	0.58	0.34		0.55	0.71	0.22	0.72	0.11		0.68	0.04	0.08
Uniform Delay, d1	39.4	11.0		48.6	22.8	16.8	49.9	47.7		49.6	47.3	47.5
Progression Factor	1.13	0.28		1.04	0.61	0.63	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.2	0.3		3.1	1.3	0.5	17.0	0.2		13.3	0.1	0.3
Delay (s)	46.7	3.4		53.4	15.2	11.1	67.0	47.9		62.9	47.4	47.8
Level of Service	D	A		D	B	B	E	D		E	D	D
Approach Delay (s)		10.8			16.1			58.0			53.7	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
102: Ramona Expy & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	570	120	240	1330	240	390	510	150	100	300	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5187	1586	3502	5054		3502	3610	1587	3502	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5187	1586	3502	5054		3502	3610	1587	3502	3610	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	289	588	124	247	1371	247	402	526	155	103	309	216
RTOR Reduction (vph)	0	0	70	0	20	0	0	0	123	0	0	181
Lane Group Flow (vph)	289	588	54	247	1598	0	402	526	32	103	309	35
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	15.2	47.9	47.9	13.0	45.7		13.0	22.9	22.9	6.9	16.8	16.8
Effective Green, g (s)	15.2	47.9	47.9	13.0	45.7		13.0	22.9	22.9	6.9	16.8	16.8
Actuated g/C Ratio	0.14	0.44	0.44	0.12	0.42		0.12	0.21	0.21	0.06	0.15	0.15
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	484	2259	691	414	2100		414	752	330	220	551	243
v/s Ratio Prot	c0.08	0.11		0.07	c0.32		c0.11	c0.15		0.03	0.09	
v/s Ratio Perm			0.03						0.02			0.02
v/c Ratio	0.60	0.26	0.08	0.60	0.76		0.97	0.70	0.10	0.47	0.56	0.14
Uniform Delay, d1	44.5	19.8	18.1	46.0	27.5		48.3	40.4	35.2	49.8	43.2	40.4
Progression Factor	1.16	0.93	0.97	1.24	0.76		0.80	0.73	1.04	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.3	0.2	0.2	0.2		35.2	2.7	0.1	1.6	1.3	0.3
Delay (s)	53.6	18.6	17.7	57.2	21.2		73.7	31.9	36.6	51.4	44.5	40.6
Level of Service	D	B	B	E	C		E	C	D	D	D	D
Approach Delay (s)		28.6			25.9			48.1			44.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
103: Ramona Expy & Evans Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	440	390	150	10	1040	570	370	800	30	280	640	800
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	5187	1593	1805	3610	1586	3502	3588		3502	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	5187	1593	1805	3610	1586	3502	3588		3502	3610	1588
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	512	453	174	12	1209	663	430	930	35	326	744	930
RTOR Reduction (vph)	0	0	0	0	0	147	0	3	0	0	0	90
Lane Group Flow (vph)	512	453	174	12	1209	516	430	962	0	326	744	840
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Free	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6						4
Actuated Green, G (s)	9.0	40.8	110.0	1.2	33.0	33.0	8.0	35.3		12.7	40.0	40.0
Effective Green, g (s)	9.0	40.8	110.0	1.2	33.0	33.0	8.0	35.3		12.7	40.0	40.0
Actuated g/C Ratio	0.08	0.37	1.00	0.01	0.30	0.30	0.07	0.32		0.12	0.36	0.36
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	287	1924	1593	20	1083	476	255	1151		404	1313	577
v/s Ratio Prot	c0.15	0.09		0.01	c0.33		c0.12	0.27		0.09	0.21	
v/s Ratio Perm			0.11			0.33						c0.53
v/c Ratio	1.78	0.24	0.11	0.60	1.12	1.08	1.69	0.84		0.81	0.57	1.46
Uniform Delay, d1	50.5	23.8	0.0	54.2	38.5	38.5	51.0	34.7		47.5	28.1	35.0
Progression Factor	0.89	1.38	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	366.4	0.3	0.1	40.2	65.2	65.8	325.3	7.3		11.2	1.8	214.4
Delay (s)	411.2	33.2	0.1	94.3	103.7	104.3	376.3	41.9		58.7	29.8	249.4
Level of Service	F	C	A	F	F	F	F	D		E	C	F
Approach Delay (s)		198.1			103.8			145.0			136.6	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	139.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
104: Morgan St & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	20	70	30	10	20	220	950	10	30	520	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.2		4.0	4.1	4.1	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.88		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3103		1805	1900	1581	1805	3603		1805	3610	1591
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3103		1805	1900	1581	1805	3603		1805	3610	1591
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	22	75	32	11	22	237	1022	11	32	559	75
RTOR Reduction (vph)	0	70	0	0	0	21	0	0	0	0	0	33
Lane Group Flow (vph)	43	27	0	32	11	1	237	1033	0	32	559	42
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	5.2	6.8		4.7	6.4	6.4	19.7	75.9		5.1	61.3	61.3
Effective Green, g (s)	5.2	6.8		4.7	6.4	6.4	19.7	75.9		5.1	61.3	61.3
Actuated g/C Ratio	0.05	0.06		0.04	0.06	0.06	0.18	0.69		0.05	0.56	0.56
Clearance Time (s)	4.0	4.2		4.0	4.1	4.1	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	85	192		77	111	92	323	2486		84	2012	887
v/s Ratio Prot	c0.02	c0.01		0.02	0.01		c0.13	c0.29		0.02	0.15	
v/s Ratio Perm						0.00						0.03
v/c Ratio	0.51	0.14		0.42	0.10	0.01	0.73	0.42		0.38	0.28	0.05
Uniform Delay, d1	51.1	48.8		51.3	49.1	48.8	42.7	7.4		50.9	12.8	11.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.89	0.72		1.20	0.26	0.01
Incremental Delay, d2	4.7	0.3		3.6	0.4	0.1	7.5	0.5		2.7	0.3	0.1
Delay (s)	55.8	49.2		54.9	49.5	48.9	45.4	5.8		63.9	3.6	0.3
Level of Service	E	D		D	D	D	D	A		E	A	A
Approach Delay (s)		51.2			52.0			13.2			6.1	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
105: Morgan St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	90	110	70	150	280	100	330	30	30	210	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1587	1805	1900	1587	1805	3556		1805	3610	1586
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1587	1805	1900	1587	1805	3556		1805	3610	1586
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	176	106	129	82	176	329	118	388	35	35	247	106
RTOR Reduction (vph)	0	0	101	0	0	279	0	4	0	0	0	58
Lane Group Flow (vph)	176	106	28	82	176	50	118	419	0	35	247	48
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	15.1	23.7	23.7	8.2	16.8	16.8	12.4	56.9		5.2	49.7	49.7
Effective Green, g (s)	15.1	23.7	23.7	8.2	16.8	16.8	12.4	56.9		5.2	49.7	49.7
Actuated g/C Ratio	0.14	0.22	0.22	0.07	0.15	0.15	0.11	0.52		0.05	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	248	409	342	135	290	242	203	1839		85	1631	717
v/s Ratio Prot	c0.10	0.06		0.05	c0.09		c0.07	c0.12		0.02	0.07	
v/s Ratio Perm			0.02			0.03						0.03
v/c Ratio	0.71	0.26	0.08	0.61	0.61	0.21	0.58	0.23		0.41	0.15	0.07
Uniform Delay, d1	45.4	35.9	34.5	49.3	43.5	40.8	46.3	14.5		50.9	17.7	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.84	0.89		1.00	1.00	1.00
Incremental Delay, d2	9.0	0.3	0.1	7.5	3.6	0.4	3.8	0.3		3.2	0.2	0.2
Delay (s)	54.3	36.2	34.6	56.9	47.1	41.2	42.6	13.2		54.1	17.9	17.2
Level of Service	D	D	C	E	D	D	D	B		D	B	B
Approach Delay (s)		43.4			45.2			19.6			21.0	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	32.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
106: Rider St & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	110	20	130	160	260	110	870	80	40	430	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1795	1852		1795	1900	1583	1805	3555		1805	3517	
Flt Permitted	0.49	1.00		0.57	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	926	1852		1086	1900	1583	1805	3555		1805	3517	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	22	124	22	146	180	292	124	978	90	45	483	79
RTOR Reduction (vph)	0	7	0	0	0	189	0	5	0	0	9	0
Lane Group Flow (vph)	22	139	0	146	180	103	124	1063	0	45	553	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	19.8	19.8		19.8	19.8	19.8	12.8	68.6		7.0	62.8	
Effective Green, g (s)	19.8	19.8		19.8	19.8	19.8	12.8	68.6		7.0	62.8	
Actuated g/C Ratio	0.18	0.18		0.18	0.18	0.18	0.12	0.62		0.06	0.57	
Clearance Time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	167	333		195	342	285	210	2217		115	2008	
v/s Ratio Prot		0.08			0.09		c0.07	c0.30		0.02	0.16	
v/s Ratio Perm	0.02			c0.13		0.06						
v/c Ratio	0.13	0.42		0.75	0.53	0.36	0.59	0.48		0.39	0.28	
Uniform Delay, d1	37.9	40.0		42.7	40.9	39.5	46.1	11.1		49.5	12.0	
Progression Factor	1.00	1.00		0.75	0.73	0.59	1.27	0.71		1.22	0.26	
Incremental Delay, d2	0.4	0.9		13.0	1.3	0.7	3.1	0.5		2.2	0.3	
Delay (s)	38.2	40.9		45.1	31.2	23.9	61.5	8.4		62.3	3.5	
Level of Service	D	D		D	C	C	E	A		E	A	
Approach Delay (s)		40.5			31.0			13.9			7.9	
Approach LOS		D			C			B			A	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
107: Rider St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	290	30	20	450	140	110	210	20	160	130	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.96		1.00	0.99		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3553		1805	3467		1805	3558		1805	3263	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3553		1805	3467		1805	3558		1805	3263	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	163	337	35	23	523	163	128	244	23	186	151	209
RTOR Reduction (vph)	0	8	0	0	30	0	0	6	0	0	143	0
Lane Group Flow (vph)	163	364	0	23	656	0	128	261	0	186	217	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	13.9	41.5		2.4	30.0		15.6	31.3		18.8	34.5	
Effective Green, g (s)	13.9	41.5		2.4	30.0		15.6	31.3		18.8	34.5	
Actuated g/C Ratio	0.13	0.38		0.02	0.27		0.14	0.28		0.17	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	228	1340		39	946		256	1012		308	1023	
v/s Ratio Prot	c0.09	0.10		0.01	c0.19		0.07	c0.07		c0.10	c0.07	
v/s Ratio Perm												
v/c Ratio	0.71	0.27		0.59	0.69		0.50	0.26		0.60	0.21	
Uniform Delay, d1	46.1	23.8		53.3	35.9		43.6	30.4		42.2	27.8	
Progression Factor	0.91	0.94		1.00	1.00		1.00	1.00		0.92	0.83	
Incremental Delay, d2	10.1	0.1		20.8	2.2		1.5	0.6		3.3	0.5	
Delay (s)	52.2	22.4		74.1	38.1		45.1	31.0		42.3	23.6	
Level of Service	D	C		E	D		D	C		D	C	
Approach Delay (s)		31.4			39.3			35.6			30.0	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
108: Mid County Pkwy WB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	150	70	500	170	1230	0	0	640	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.98	1.00	1.00			1.00	0.97
Flpb, ped/bikes					1.00	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.97	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1830	1586	1805	3610			3610	1564
Flt Permitted					0.97	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)					1830	1586	1805	3610			3610	1564
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	163	76	543	185	1337	0	0	696	304
RTOR Reduction (vph)	0	0	0	0	0	15	0	0	0	0	0	194
Lane Group Flow (vph)	0	0	0	0	239	528	185	1337	0	0	696	110
Confl. Peds. (#/hr)				5		5	5					5
Turn Type				Perm		Perm	Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Actuated Green, G (s)					42.6	42.6	15.5	59.4			39.9	39.9
Effective Green, g (s)					42.6	42.6	15.5	59.4			39.9	39.9
Actuated g/C Ratio					0.39	0.39	0.14	0.54			0.36	0.36
Clearance Time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					709	614	254	1949			1309	567
v/s Ratio Prot							0.10	c0.37			0.19	
v/s Ratio Perm					0.13	c0.33						0.07
v/c Ratio					0.34	0.86	0.73	0.69			0.53	0.19
Uniform Delay, d1					23.7	30.9	45.2	18.5			27.7	24.0
Progression Factor					1.00	1.00	1.00	0.92			0.94	1.90
Incremental Delay, d2					0.3	11.5	7.4	1.5			1.5	0.8
Delay (s)					24.0	42.5	52.5	18.5			27.5	46.5
Level of Service					C	D	D	B			C	D
Approach Delay (s)		0.0			36.8			22.6			33.3	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	111.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
109: Mid County Pkwy EB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	630	50	180	0	0	0	0	770	60	160	630	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00						0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99						1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00						1.00		1.00	1.00	
Frt	1.00	0.88						0.99		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1794	1653						3563		1801	3610	
Flt Permitted	0.95	1.00						1.00		0.23	1.00	
Satd. Flow (perm)	1794	1653						3563		443	3610	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	685	54	196	0	0	0	0	837	65	174	685	0
RTOR Reduction (vph)	0	111	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	685	139	0	0	0	0	0	897	0	174	685	0
Confl. Peds. (#/hr)	5		5						5	5		
Turn Type	Perm									Perm		
Protected Phases		4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)	44.7	44.7						57.3		57.3	57.3	
Effective Green, g (s)	44.7	44.7						57.3		57.3	57.3	
Actuated g/C Ratio	0.41	0.41						0.52		0.52	0.52	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	729	672						1856		231	1880	
v/s Ratio Prot		0.08						0.25			0.19	
v/s Ratio Perm	c0.38									c0.39		
v/c Ratio	0.94	0.21						0.48		0.75	0.36	
Uniform Delay, d1	31.4	21.2						16.9		20.8	15.6	
Progression Factor	1.00	1.00						0.22		0.48	0.22	
Incremental Delay, d2	19.8	0.2						0.7		18.1	0.5	
Delay (s)	51.1	21.3						4.3		28.1	3.9	
Level of Service	D	C						A		C	A	
Approach Delay (s)		43.1			0.0			4.3			8.8	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	111.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
110: Mid County Pkwy WB Ramps & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	50	60	10	430	110	0	0	90	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes					1.00		1.00	1.00			1.00	0.97
Flpb, ped/bikes					1.00		1.00	1.00			1.00	1.00
Frt					0.99		1.00	1.00			1.00	0.85
Flt Protected					0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)					1828		1805	1900			1900	1564
Flt Permitted					0.98		0.95	1.00			1.00	1.00
Satd. Flow (perm)					1828		1805	1900			1900	1564
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	54	65	11	467	120	0	0	98	109
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	59
Lane Group Flow (vph)	0	0	0	0	126	0	467	120	0	0	98	50
Confl. Peds. (#/hr)				5		5	5					5
Turn Type				Perm			Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8								6
Actuated Green, G (s)					12.9		34.2	89.1			50.9	50.9
Effective Green, g (s)					12.9		34.2	89.1			50.9	50.9
Actuated g/C Ratio					0.12		0.31	0.81			0.46	0.46
Clearance Time (s)					4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					214		561	1539			879	724
v/s Ratio Prot							c0.26	0.06			c0.05	
v/s Ratio Perm					0.07							0.03
v/c Ratio					0.59		0.83	0.08			0.11	0.07
Uniform Delay, d1					46.0		35.2	2.1			16.7	16.4
Progression Factor					1.00		1.23	0.94			1.00	1.00
Incremental Delay, d2					4.3		9.8	0.1			0.3	0.2
Delay (s)					50.4		53.3	2.1			17.0	16.6
Level of Service					D		D	A			B	B
Approach Delay (s)		0.0			50.4			42.8			16.8	
Approach LOS		A			D			D			B	

Intersection Summary			
HCM Average Control Delay	38.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
111: Mid County Pkwy EB Ramps & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	10	230	0	0	0	0	510	190	10	140	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00	0.97					1.00	0.97	1.00	1.00	
Flpb, ped/bikes		0.99	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.96	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1818	1567					1900	1564	1805	1900	
Flt Permitted		0.96	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1818	1567					1900	1564	1805	1900	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	11	250	0	0	0	0	554	207	11	152	0
RTOR Reduction (vph)	0	0	230	0	0	0	0	0	39	0	0	0
Lane Group Flow (vph)	0	44	20	0	0	0	0	554	168	11	152	0
Confl. Peds. (#/hr)	5		5						5	5		
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		9.0	9.0					87.5	87.5	1.5	93.0	
Effective Green, g (s)		9.0	9.0					87.5	87.5	1.5	93.0	
Actuated g/C Ratio		0.08	0.08					0.80	0.80	0.01	0.85	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		149	128					1511	1244	25	1606	
v/s Ratio Prot								c0.29		c0.01	0.08	
v/s Ratio Perm		0.02	0.01						0.11			
v/c Ratio		0.30	0.16					0.37	0.13	0.44	0.09	
Uniform Delay, d1		47.5	47.0					3.2	2.6	53.8	1.4	
Progression Factor		1.00	1.00					1.00	1.00	1.33	0.07	
Incremental Delay, d2		1.1	0.6					0.7	0.2	11.8	0.1	
Delay (s)		48.6	47.6					3.9	2.8	83.6	0.2	
Level of Service		D	D					A	A	F	A	
Approach Delay (s)		47.7			0.0			3.6			5.8	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
112: Placentia Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	80	300	90	120	140	320	990	40	40	610	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1651		1805	1900	1586	1805	3586		1805	3589	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1651		1805	1900	1586	1805	3586		1805	3589	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	38	100	375	112	150	175	400	1238	50	50	762	25
RTOR Reduction (vph)	0	123	0	0	0	120	0	3	0	0	2	0
Lane Group Flow (vph)	38	352	0	112	150	55	400	1285	0	50	785	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	3.0	26.9		7.0	30.9	30.9	26.4	52.9		5.0	31.5	
Effective Green, g (s)	3.0	26.9		7.0	30.9	30.9	26.4	52.9		5.0	31.5	
Actuated g/C Ratio	0.03	0.24		0.06	0.28	0.28	0.24	0.48		0.05	0.29	
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	49	404		115	534	446	433	1725		82	1028	
v/s Ratio Prot	0.02	c0.21		c0.06	c0.08		c0.22	c0.36		0.03	0.22	
v/s Ratio Perm						0.03						
v/c Ratio	0.78	0.87		0.97	0.28	0.12	0.92	0.75		0.61	0.76	
Uniform Delay, d1	53.2	39.9		51.4	30.9	29.5	40.8	23.1		51.5	35.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.95	1.11		1.20	0.57	
Incremental Delay, d2	53.1	18.1		75.2	0.3	0.1	25.2	3.0		11.6	5.1	
Delay (s)	106.2	58.0		126.6	31.2	29.6	63.9	28.5		73.3	25.5	
Level of Service	F	E		F	C	C	E	C		E	C	
Approach Delay (s)		61.6			55.0			36.9			28.4	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM Average Control Delay	40.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
113: Placentia Ave & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											361	
pX, platoon unblocked												
vC, conflicting volume	0	0	0	0	0	0	0			0		
vC1, stage 1 conf vol	0	0		0	0							
vC2, stage 2 conf vol	0	0		0	0							
vCu, unblocked vol	0	0	0	0	0	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	1029	900	1091	1029	900	1091	1636			1636		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	0	0	0	0	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	0.0	0.0	0.0		0.0	
Approach LOS	A	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
114: Orange Ave & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	110	190	40	60	180	40	60	260	40	20	130	80
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	121	209	44	66	198	44	66	286	44	22	143	88

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	374	308	66	330	22	231
Volume Left (vph)	121	66	66	0	22	0
Volume Right (vph)	44	44	0	44	0	88
Hadj (s)	-0.01	-0.04	0.50	-0.09	0.50	-0.27
Departure Headway (s)	7.0	7.2	8.2	7.6	8.6	7.8
Degree Utilization, x	0.73	0.61	0.15	0.69	0.05	0.50
Capacity (veh/h)	482	461	415	451	378	416
Control Delay (s)	26.6	20.9	11.4	24.8	10.8	17.0
Approach Delay (s)	26.6	20.9	22.5		16.4	
Approach LOS	D	C	C		C	

Intersection Summary			
Delay	22.1		
HCM Level of Service	C		
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
115: Nuevo Rd & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	290	0	0	400	80	0	0	0	30	0	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0				4.0		4.0
Lane Util. Factor	1.00	1.00			1.00	1.00				1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00	0.97				1.00		0.97
Flpb, ped/bikes	1.00	1.00			1.00	1.00				0.99		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1805	1900			1900	1567				1787		1567
Flt Permitted	0.95	1.00			1.00	1.00				0.76		1.00
Satd. Flow (perm)	1805	1900			1900	1567				1425		1567
Peak-hour factor, PHF	0.90	0.90	0.92	0.92	0.90	0.90	0.92	0.92	0.92	0.90	0.92	0.90
Adj. Flow (vph)	189	322	0	0	444	89	0	0	0	33	0	311
RTOR Reduction (vph)	0	0	0	0	0	57	0	0	0	0	0	171
Lane Group Flow (vph)	189	322	0	0	444	32	0	0	0	33	0	140
Confl. Peds. (#/hr)	5					5				5		5
Turn Type	Prot					Perm	Perm			custom		custom
Protected Phases	7	4			8			2				
Permitted Phases						8	2			6		6
Actuated Green, G (s)	16.6	52.5			31.9	31.9				49.5		49.5
Effective Green, g (s)	16.6	52.5			31.9	31.9				49.5		49.5
Actuated g/C Ratio	0.15	0.48			0.29	0.29				0.45		0.45
Clearance Time (s)	4.0	4.0			4.0	4.0				4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	272	907			551	454				641		705
v/s Ratio Prot	c0.10	0.17			c0.23							
v/s Ratio Perm						0.02				0.02		c0.09
v/c Ratio	0.69	0.36			0.81	0.07				0.05		0.20
Uniform Delay, d1	44.3	18.1			36.2	28.3				17.0		18.3
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	7.5	0.2			8.4	0.1				0.2		0.6
Delay (s)	51.8	18.3			44.6	28.4				17.2		18.9
Level of Service	D	B			D	C				B		B
Approach Delay (s)		30.7			41.9			0.0			18.7	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
123: Bridge St & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	110	20	20	700	330	50
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	122	22	22	778	367	56
Pedestrians				5	5	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	805	188	422			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	805	188	422			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	61	97	98			
cM capacity (veh/h)	317	824	1148			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	144	22	389	389	183	183	56
Volume Left	122	22	0	0	0	0	0
Volume Right	22	0	0	0	0	0	56
cSH	350	1148	1700	1700	1700	1700	1700
Volume to Capacity	0.41	0.02	0.23	0.23	0.11	0.11	0.03
Queue Length 95th (ft)	49	1	0	0	0	0	0
Control Delay (s)	22.3	8.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A					
Approach Delay (s)	22.3	0.2			0.0		
Approach LOS	C						

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
124: Gilman Springs Rd & SR-79 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	540	0	0	440	250	260	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	21	562	0	0	458	260	271	0	0	0	0	0
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)									10			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	724			568			1072	1333	572	1072	1072	468
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	724			568			1072	1333	572	1072	1072	468
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			0	100	100	100	100	100
cM capacity (veh/h)	888			1010			194	151	519	195	216	596

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	21	562	458	260	271
Volume Left	21	0	0	0	271
Volume Right	0	0	0	260	0
cSH	888	1700	1700	1700	191
Volume to Capacity	0.02	0.33	0.27	0.15	1.42
Queue Length 95th (ft)	2	0	0	0	405
Control Delay (s)	9.2	0.0	0.0	0.0	261.1
Lane LOS	A				F
Approach Delay (s)	0.3		0.0		261.1
Approach LOS					F

Intersection Summary			
Average Delay	45.1		
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
125: Gilman Springs Rd & SR-79 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	210	180	40	670	0	0	0	0	360	0	60
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	223	191	43	713	0	0	0	0	383	0	64
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												7
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	718			420			1063	1031	233	1031	1223	723
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	718			420			1063	1031	233	1031	1223	723
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			100	100	100	0	100	85
cM capacity (veh/h)	889			1150			166	225	807	205	174	426

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	223	191	43	713	447
Volume Left	0	0	43	0	383
Volume Right	0	191	0	0	64
cSH	1700	1700	1150	1700	224
Volume to Capacity	0.13	0.11	0.04	0.42	2.00
Queue Length 95th (ft)	0	0	3	0	824
Control Delay (s)	0.0	0.0	8.3	0.0	500.3
Lane LOS			A		F
Approach Delay (s)	0.0		0.5		500.3
Approach LOS					F

Intersection Summary			
Average Delay	138.5		
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
126: Ramona Expy & SR-79(Sanderson Ave)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	330	250	50	30	350	520	130	760	30	310	640	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1595	3502	3610	1615	3502	3610	1594	3502	3610	1597
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1595	3502	3610	1615	3502	3610	1594	3502	3610	1597
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	363	275	55	33	385	571	143	835	33	341	703	286
RTOR Reduction (vph)	0	0	29	0	0	28	0	0	21	0	0	97
Lane Group Flow (vph)	363	275	26	33	385	543	143	835	12	341	703	189
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		pm+ov	Prot		pt+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	8 1	5	2	3	1	6	7
Permitted Phases			4						2			6
Actuated Green, G (s)	11.2	37.6	46.1	5.3	31.7	45.9	8.5	29.0	34.3	10.2	30.7	41.9
Effective Green, g (s)	11.2	37.6	46.1	5.3	31.7	45.9	8.5	29.0	34.3	10.2	30.7	41.9
Actuated g/C Ratio	0.11	0.38	0.47	0.05	0.32	0.47	0.09	0.30	0.35	0.10	0.31	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	400	1384	815	189	1167	756	303	1067	622	364	1130	747
v/s Ratio Prot	c0.10	0.08	0.00	0.01	0.11	c0.34	0.04	c0.23	0.00	c0.10	0.19	0.03
v/s Ratio Perm			0.01						0.01			0.09
v/c Ratio	0.91	0.20	0.03	0.17	0.33	0.72	0.47	0.78	0.02	0.94	0.62	0.25
Uniform Delay, d1	42.9	20.2	14.0	44.3	25.2	20.9	42.7	31.7	20.9	43.6	28.8	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.6	0.1	0.0	0.4	0.2	3.3	1.2	3.8	0.0	31.1	1.1	0.2
Delay (s)	66.6	20.3	14.0	44.8	25.3	24.2	43.8	35.5	20.9	74.7	29.8	18.2
Level of Service	E	C	B	D	C	C	D	D	C	E	C	B
Approach Delay (s)		44.0			25.3			36.2			38.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	35.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	98.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
129: 6th St & California Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	260	320	50	310	10	340	50	50	50	180	10
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
Hourly flow rate (vph)	21	268	330	52	320	10	351	52	52	52	186	10

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total (vph)	289	330	52	330	351	103	247
Volume Left (vph)	21	0	52	0	351	0	52
Volume Right (vph)	0	330	0	10	0	52	10
Hadj (s)	0.04	-0.70	0.50	-0.02	0.50	-0.35	0.02
Departure Headway (s)	8.5	7.8	9.2	8.7	9.0	8.2	8.9
Degree Utilization, x	0.68	0.71	0.13	0.80	0.88	0.23	0.61
Capacity (veh/h)	412	449	373	401	387	427	380
Control Delay (s)	26.9	26.5	12.5	37.1	49.3	12.4	25.1
Approach Delay (s)	26.7		33.7		40.9		25.1
Approach LOS	D		D		E		D

Intersection Summary			
Delay	31.8		
HCM Level of Service	D		
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
130: 6th St & Beaumont Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	240	90	310	290	120	40	180	80	130	440	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1801	3448		1801	1710	1437	1805	3428		1805	3524	
Flt Permitted	0.51	1.00		0.55	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	970	3448		1038	1710	1437	1805	3428		1805	3524	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	72	247	93	320	299	124	41	186	82	134	454	72
RTOR Reduction (vph)	0	50	0	0	0	57	0	62	0	0	17	0
Lane Group Flow (vph)	72	290	0	320	299	67	41	207	0	134	509	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Parking (#/hr)					0	0						
Turn Type	Perm			Perm		pm+ov	Prot			Prot		
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	23.3	23.3		23.3	23.3	30.6	2.3	14.2		7.3	19.2	
Effective Green, g (s)	23.3	23.3		23.3	23.3	30.6	2.3	14.2		7.3	19.2	
Actuated g/C Ratio	0.41	0.41		0.41	0.41	0.54	0.04	0.25		0.13	0.34	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	398	1414		426	701	875	73	857		232	1191	
v/s Ratio Prot		0.08			0.17	0.01	0.02	0.06		c0.07	c0.14	
v/s Ratio Perm	0.07			c0.31		0.04						
v/c Ratio	0.18	0.20		0.75	0.43	0.08	0.56	0.24		0.58	0.43	
Uniform Delay, d1	10.7	10.8		14.3	12.0	6.3	26.8	17.0		23.3	14.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		7.3	0.4	0.0	9.5	0.1		3.5	0.2	
Delay (s)	10.9	10.9		21.6	12.4	6.3	36.3	17.1		26.8	14.8	
Level of Service	B	B		C	B	A	D	B		C	B	
Approach Delay (s)		10.9			15.3			19.7			17.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
131: Reche Canyon Rd & Reche Vista Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	10	390	10	10	1090	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1800	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1900	1613		1848	1710	1615
Flt Permitted	1.00	1.00		0.84	0.95	1.00
Satd. Flow (perm)	1900	1613		1583	1710	1615
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	12	481	12	12	1346	12
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	12	481	0	24	1346	12
Confl. Peds. (#/hr)		5	5			5
Turn Type		pm+ov	Perm			Prot
Protected Phases	4	2		8	2	2
Permitted Phases		4	8			
Actuated Green, G (s)	7.4	102.4		7.4	95.0	95.0
Effective Green, g (s)	7.4	102.4		7.4	95.0	95.0
Actuated g/C Ratio	0.07	0.91		0.07	0.85	0.85
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	125	1613		104	1445	1365
v/s Ratio Prot	0.01	c0.25			c0.79	0.01
v/s Ratio Perm		0.05		0.02		
v/c Ratio	0.10	0.30		0.23	0.93	0.01
Uniform Delay, d1	49.4	0.6		49.8	6.3	1.4
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1		1.1	11.1	0.0
Delay (s)	49.7	0.7		50.9	17.4	1.4
Level of Service	D	A		D	B	A
Approach Delay (s)	1.9			50.9	17.3	
Approach LOS	A			D	B	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	112.4	Sum of lost time (s)	5.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
132: San Timoteo Canyon Rd & Alessandro Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	200	0	10	570	230	10	20	0	340	10	40
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	38	250	0	12	712	288	12	25	0	425	12	50

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	288	1013	38	488
Volume Left (vph)	38	13	13	425
Volume Right (vph)	0	288	0	50
Hadj (s)	0.03	-0.17	0.07	0.11
Departure Headway (s)	7.0	6.4	8.3	6.7
Degree Utilization, x	0.56	1.79	0.09	0.91
Capacity (veh/h)	486	566	396	528
Control Delay (s)	18.7	377.9	12.1	45.9
Approach Delay (s)	18.7	377.9	12.1	45.9
Approach LOS	C	F	B	E

Intersection Summary			
Delay	225.1		
HCM Level of Service	F		
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
133: San Timoteo Canyon Rd & Live Oak Canyon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	480	20	10	770	80	20	10	10	210	10	40
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	22	516	22	11	828	86	22	11	11	226	11	43

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	559	925	43	280
Volume Left (vph)	22	11	22	226
Volume Right (vph)	22	86	11	43
Hadj (s)	-0.02	-0.05	-0.05	0.07
Departure Headway (s)	6.2	6.2	8.3	7.2
Degree Utilization, x	0.96	1.60	0.10	0.56
Capacity (veh/h)	576	583	403	482
Control Delay (s)	53.7	292.8	12.2	19.2
Approach Delay (s)	53.7	292.8	12.2	19.2
Approach LOS	F	F	B	C

Intersection Summary			
Delay	169.8		
HCM Level of Service	F		
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
134: San Timoteo Canyon Rd & Redlands Blvd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	30	680	120	110	780	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	739	130	120	848	43

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	772	250	891
Volume Left (vph)	0	130	848
Volume Right (vph)	739	0	43
Hadj (s)	-0.57	0.10	0.16
Departure Headway (s)	5.8	7.1	6.5
Degree Utilization, x	1.24	0.49	1.62
Capacity (veh/h)	631	504	556
Control Delay (s)	142.6	16.8	303.6
Approach Delay (s)	142.6	16.8	303.6
Approach LOS	F	C	F

Intersection Summary			
Delay	201.2		
HCM Level of Service	F		
Intersection Capacity Utilization	111.7%	ICU Level of Service	H
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
135: Crescent Ave & Alessandro Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	40	30	270	110	120	270
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	44	33	300	122	133	300
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			78		783	61
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			78		783	61
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			80		55	70
cM capacity (veh/h)			1534		294	1010

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	78	422	433
Volume Left	0	300	133
Volume Right	33	0	300
cSH	1700	1534	577
Volume to Capacity	0.05	0.20	0.75
Queue Length 95th (ft)	0	18	165
Control Delay (s)	0.0	6.1	27.7
Lane LOS		A	D
Approach Delay (s)	0.0	6.1	27.7
Approach LOS			D

Intersection Summary			
Average Delay	15.6		
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
136: Sunset Dr & Alessandro Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	10	10	50	10	10	10	270	20	10	300	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	22	11	11	55	11	11	11	297	22	11	330	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	44	77	330	352
Volume Left (vph)	22	55	11	11
Volume Right (vph)	11	11	22	11
Hadj (s)	-0.05	0.06	-0.03	-0.01
Departure Headway (s)	5.6	5.6	4.6	4.6
Degree Utilization, x	0.07	0.12	0.42	0.45
Capacity (veh/h)	557	563	751	750
Control Delay (s)	9.0	9.4	11.0	11.4
Approach Delay (s)	9.0	9.4	11.0	11.4
Approach LOS	A	A	B	B

Intersection Summary			
Delay	10.9		
HCM Level of Service	B		
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Alessandro Blvd & Theodore St

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	100	10	60	160	20	50
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	123	12	74	198	25	62
Pedestrians			5			5
Lane Width (ft)			12.0			12.0
Walking Speed (ft/s)			4.0			4.0
Percent Blockage			0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	190	79			272	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	190	79			272	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	99			98	
cM capacity (veh/h)	785	983			1303	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	123	12	74	198	86
Volume Left	123	0	0	0	25
Volume Right	0	12	0	198	0
cSH	785	983	1700	1700	1303
Volume to Capacity	0.16	0.01	0.04	0.12	0.02
Queue Length 95th (ft)	14	1	0	0	1
Control Delay (s)	10.4	8.7	0.0	0.0	2.3
Lane LOS	B	A			A
Approach Delay (s)	10.3		0.0		2.3
Approach LOS	B				

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
6: Alessandro Blvd & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	10	140	90	300	950	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1615	1805	5187	5187	1615
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1615	1805	5187	5187	1615
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	144	93	309	979	10
RTOR Reduction (vph)	0	125	0	0	0	5
Lane Group Flow (vph)	10	19	93	309	979	5
Confl. Peds. (#/hr)						
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	5.6	5.6	4.6	28.8	20.2	20.2
Effective Green, g (s)	5.6	5.6	4.6	28.8	20.2	20.2
Actuated g/C Ratio	0.13	0.13	0.11	0.68	0.48	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	238	213	196	3523	2471	769
v/s Ratio Prot	0.01		c0.05	0.06	c0.19	
v/s Ratio Perm		c0.01				0.00
v/c Ratio	0.04	0.09	0.47	0.09	0.40	0.01
Uniform Delay, d1	16.1	16.2	17.8	2.3	7.2	5.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	1.8	0.0	0.1	0.0
Delay (s)	16.1	16.3	19.6	2.3	7.3	5.8
Level of Service	B	B	B	A	A	A
Approach Delay (s)	16.3			6.3	7.3	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	42.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
10: Locust Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	160	0	50	5	5	5	40	830	0	10	1110	140
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	190	0	60	6	6	6	48	988	0	12	1321	167
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2448	2439	1331	2498	2605	998	1493			993		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2448	2439	1331	2498	2605	998	1493			993		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	69	51	73	98	90			98		
cM capacity (veh/h)	15	28	189	12	22	296	454			701		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	250	18	48	988	0	12	1321	167
Volume Left	190	6	48	0	0	12	0	0
Volume Right	60	6	0	0	0	0	0	167
cSH	19	23	454	1700	1700	701	1700	1700
Volume to Capacity	12.99	0.78	0.10	0.58	0.00	0.02	0.78	0.10
Queue Length 95th (ft)	Err	57	9	0	0	1	0	0
Control Delay (s)	Err	354.2	13.9	0.0	0.0	10.2	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s)	Err	354.2	0.6			0.1		
Approach LOS	F	F						

Intersection Summary			
Average Delay	894.2		
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
11: Ironwood Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	10	30	10	10	0	20	710	10	10	600	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.97			1.00		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1763			1854		1805	1895		1805	1900	1561
Flt Permitted		0.97			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1763			1854		1805	1895		1805	1900	1561
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	85	11	32	11	11	0	21	755	11	11	638	149
RTOR Reduction (vph)	0	8	0	0	0	0	0	1	0	0	0	29
Lane Group Flow (vph)	0	120	0	0	22	0	21	765	0	11	638	120
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)		40.6			4.7		3.3	57.2		1.5	55.4	55.4
Effective Green, g (s)		40.6			4.7		3.3	57.2		1.5	55.4	55.4
Actuated g/C Ratio		0.34			0.04		0.03	0.48		0.01	0.46	0.46
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		596			73		50	903		23	877	721
v/s Ratio Prot		c0.07			c0.01		c0.01	c0.40		0.01	0.34	
v/s Ratio Perm												0.08
v/c Ratio		0.20			0.30		0.42	0.85		0.48	0.73	0.17
Uniform Delay, d1		28.2			56.1		57.4	27.6		58.9	26.2	18.8
Progression Factor		0.90			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.5			2.3		5.6	7.4		14.8	3.0	0.1
Delay (s)		25.9			58.4		63.0	35.0		73.7	29.2	19.0
Level of Service		C			E		E	D		E	C	B
Approach Delay (s)		25.9			58.4			35.8			27.9	
Approach LOS		C			E			D			C	

Intersection Summary			
HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
12: Ironwood Ave & Theodore St

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	150	40	20	140	30
Sign Control	Yield			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	13	195	52	26	182	39
Pedestrians	5			5		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	413	5	570	374	5	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	413	5	570	374	5	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	97	82	84	95	89	
cM capacity (veh/h)	469	1080	316	493	1623	

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2
Volume Total	13	195	78	182	39
Volume Left	0	0	52	182	0
Volume Right	0	195	0	0	39
cSH	469	1080	359	1623	1700
Volume to Capacity	0.03	0.18	0.22	0.11	0.02
Queue Length 95th (ft)	2	16	20	9	0
Control Delay (s)	12.9	9.1	17.8	7.5	0.0
Lane LOS	B	A	C	A	
Approach Delay (s)	9.3		17.8	6.2	
Approach LOS	A		C		

Intersection Summary			
Average Delay	9.2		
Intersection Capacity Utilization	24.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
13: Spruce Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	10	10	70	10	30	10	710	110	270	430	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	11	11	11	80	11	34	11	807	125	307	489	11
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1584	2072	179	1633	1953	413	505			937		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1584	2072	179	1633	1953	413	505			937		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	69	64	99	0	69	94	99			58		
cM capacity (veh/h)	36	31	833	33	37	588	1066			736		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	34	125	11	403	403	125	307	195	195	109
Volume Left	11	80	11	0	0	0	307	0	0	0
Volume Right	11	34	0	0	0	125	0	0	0	11
cSH	49	45	1066	1700	1700	1700	736	1700	1700	1700
Volume to Capacity	0.69	2.79	0.01	0.24	0.24	0.07	0.42	0.11	0.11	0.06
Queue Length 95th (ft)	69	337	1	0	0	0	52	0	0	0
Control Delay (s)	174.9	1000.9	8.4	0.0	0.0	0.0	13.3	0.0	0.0	0.0
Lane LOS	F	F	A				B			
Approach Delay (s)	174.9	1000.9	0.1				5.1			
Approach LOS	F	F								

Intersection Summary			
Average Delay	70.9		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
14: SR-60 EB Ramps & Redlands Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	330	200	130	470	430	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1749		1805	5187	5187	1615
Flt Permitted	0.97		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1749		1805	5187	5187	1615
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	384	233	151	547	500	105
RTOR Reduction (vph)	34	0	0	0	0	37
Lane Group Flow (vph)	583	0	151	547	500	68
Confl. Peds. (#/hr)						
Turn Type			Prot			pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases						6
Actuated Green, G (s)	20.8		5.1	19.6	10.5	31.3
Effective Green, g (s)	20.8		5.1	19.6	10.5	31.3
Actuated g/C Ratio	0.43		0.11	0.40	0.22	0.65
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	752		190	2101	1125	1178
v/s Ratio Prot	c0.33		c0.08	0.11	c0.10	0.02
v/s Ratio Perm						0.02
v/c Ratio	0.78		0.79	0.26	0.44	0.06
Uniform Delay, d1	11.8		21.1	9.6	16.4	3.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0		20.1	0.1	0.3	0.0
Delay (s)	16.8		41.2	9.6	16.7	3.2
Level of Service	B		D	A	B	A
Approach Delay (s)	16.8			16.5	14.4	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
15: SR-60 WB Ramps & Theodore St

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	80	50	130	230	80	120
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	111	69	181	319	111	167
Pedestrians			5			5
Lane Width (ft)			12.0			12.0
Walking Speed (ft/s)			4.0			4.0
Percent Blockage			0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	734	345			500	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	734	345			500	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	68	90			90	
cM capacity (veh/h)	348	699			1075	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	181	500	278
Volume Left	111	0	111
Volume Right	69	319	0
cSH	432	1700	1075
Volume to Capacity	0.42	0.29	0.10
Queue Length 95th (ft)	51	0	9
Control Delay (s)	19.2	0.0	4.1
Lane LOS	C		A
Approach Delay (s)	19.2	0.0	4.1
Approach LOS	C		

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
16: SR-60 EB Ramps & Theodore St

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	70	100	170	270	80	110
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	101	145	246	391	116	159
Pedestrians				5	5	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				0	0	
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1085	201	275			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1085	201	275			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	48	83	81			
cM capacity (veh/h)	195	842	1299			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	246	246	391	275
Volume Left	101	246	0	0
Volume Right	145	0	0	159
cSH	474	1299	1700	1700
Volume to Capacity	0.52	0.19	0.23	0.16
Queue Length 95th (ft)	73	17	0	0
Control Delay (s)	23.2	8.4	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	23.2	3.3		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	6.7		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
19: Fir Ave & Theodore St

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	430	20	50	20	20	170
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	662	31	77	31	31	262
Pedestrians				5	5	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				0	0	
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	220	36	292			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	220	36	292			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	8	97	94			
cM capacity (veh/h)	723	1038	1281			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	692	77	31	31	262
Volume Left	662	77	0	0	0
Volume Right	31	0	0	0	262
cSH	745	1281	1700	1700	1700
Volume to Capacity	0.93	0.06	0.02	0.02	0.15
Queue Length 95th (ft)	329	5	0	0	0
Control Delay (s)	41.7	8.0	0.0	0.0	0.0
Lane LOS	E	A			
Approach Delay (s)	41.7	5.7		0.0	
Approach LOS	E				

Intersection Summary			
Average Delay	27.0		
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
20: Alessandro Blvd & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	410	210	10	320	10	250	0	20	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	441	226	11	344	11	269	0	22	0	0	0
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	360			672			757	940	343	601	1048	187
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	360			672			757	940	343	601	1048	187
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			8	100	97	100	100	100
cM capacity (veh/h)	1205			925			293	260	653	367	225	822

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	220	446	183	183	269	22	0
Volume Left	0	0	11	0	269	0	0
Volume Right	0	226	0	11	0	22	0
cSH	1205	1700	925	1700	293	653	1700
Volume to Capacity	0.00	0.26	0.01	0.11	0.92	0.03	0.00
Queue Length 95th (ft)	0	0	1	0	216	3	0
Control Delay (s)	0.0	0.0	0.6	0.0	72.3	10.7	0.0
Lane LOS			A		F	B	A
Approach Delay (s)	0.0		0.3		67.7		0.0
Approach LOS					F		A

Intersection Summary			
Average Delay	15.0		
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
21: Alessandro Blvd & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	200	120	60	100	20	70	630	60	20	800	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.97		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3387		1805	3509		1805	3558		1805	3550	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3387		1805	3509		1805	3558		1805	3550	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	118	215	129	65	108	22	75	677	65	22	860	97
RTOR Reduction (vph)	0	103	0	0	18	0	0	7	0	0	9	0
Lane Group Flow (vph)	118	241	0	65	112	0	75	735	0	22	948	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.7	12.4		3.6	10.3		5.0	28.0		1.2	24.2	
Effective Green, g (s)	5.7	12.4		3.6	10.3		5.0	28.0		1.2	24.2	
Actuated g/C Ratio	0.09	0.20		0.06	0.17		0.08	0.46		0.02	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	168	686		106	591		147	1628		35	1404	
v/s Ratio Prot	c0.07	c0.07		0.04	0.03		c0.04	c0.21		0.01	c0.27	
v/s Ratio Perm												
v/c Ratio	0.70	0.35		0.61	0.19		0.51	0.45		0.63	0.68	
Uniform Delay, d1	26.9	20.9		28.1	21.9		26.9	11.4		29.8	15.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.5	0.3		10.1	0.2		3.0	0.2		30.3	1.3	
Delay (s)	39.4	21.3		38.2	22.0		29.9	11.6		60.1	16.6	
Level of Service	D	C		D	C		C	B		E	B	
Approach Delay (s)		25.9			27.4			13.2			17.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
23: Alessandro Blvd & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	100	130	20	60	70	20	10	280	80	20	360	90
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	105	137	21	63	74	21	11	295	84	21	379	95

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	105	158	158	305	84	211	284
Volume Left (vph)	105	0	63	11	0	21	0
Volume Right (vph)	0	21	21	0	84	0	95
Hadj (s)	0.50	-0.09	0.00	0.02	-0.70	0.05	-0.23
Departure Headway (s)	7.8	7.2	7.4	6.8	6.1	6.7	6.4
Degree Utilization, x	0.23	0.32	0.32	0.58	0.14	0.39	0.51
Capacity (veh/h)	431	455	449	503	558	513	539
Control Delay (s)	11.9	12.3	13.9	17.6	8.9	12.8	14.7
Approach Delay (s)	12.1		13.9	15.8		13.9	
Approach LOS	B		B	C		B	

Intersection Summary			
Delay	14.1		
HCM Level of Service	B		
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
24: Cactus Ave & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	280	160	70	260	20	100	200	40	20	140	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97		1.00	0.98		1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Frt	1.00	0.95		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00		1.00	
Satd. Flow (prot)	1805	3380		1805	1900	1571		1869	1590		1834	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00		1.00	
Satd. Flow (perm)	1805	3380		1805	1900	1571		1869	1590		1834	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	311	178	78	289	22	111	222	44	22	156	44
RTOR Reduction (vph)	0	79	0	0	0	15	0	0	33	0	9	0
Lane Group Flow (vph)	11	410	0	78	289	7	0	333	11	0	213	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8			2			
Actuated Green, G (s)	1.0	18.0		5.2	22.2	22.2		18.2	18.2		14.4	
Effective Green, g (s)	1.0	18.0		5.2	22.2	22.2		18.2	18.2		14.4	
Actuated g/C Ratio	0.01	0.25		0.07	0.31	0.31		0.25	0.25		0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	25	847		131	587	486		474	403		368	
v/s Ratio Prot	0.01	0.12		c0.04	c0.15			c0.18			c0.12	
v/s Ratio Perm						0.00			0.01			
v/c Ratio	0.44	0.48		0.60	0.49	0.01		0.70	0.03		0.58	
Uniform Delay, d1	35.1	22.9		32.3	20.2	17.2		24.3	20.1		26.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	11.9	0.4		7.1	0.7	0.0		4.7	0.0		2.2	
Delay (s)	47.0	23.4		39.4	20.9	17.2		29.0	20.2		28.2	
Level of Service	D	C		D	C	B		C	C		C	
Approach Delay (s)		23.9			24.4			28.0			28.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	71.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Cactus Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	160	120	30	110	30	90	490	30	70	610	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.97		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3358		1805	3484		1805	3610	1595	1805	4985	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3358		1805	3484		1805	3610	1595	1805	4985	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	151	172	129	32	118	32	97	527	32	75	656	204
RTOR Reduction (vph)	0	98	0	0	26	0	0	0	20	0	56	0
Lane Group Flow (vph)	151	203	0	32	124	0	97	527	12	75	804	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.0	13.9		4.0	9.9		7.0	17.6	21.6	5.5	16.1	
Effective Green, g (s)	8.0	13.9		4.0	9.9		7.0	17.6	21.6	5.5	16.1	
Actuated g/C Ratio	0.14	0.24		0.07	0.17		0.12	0.31	0.38	0.10	0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	253	819		127	605		222	1115	716	174	1408	
v/s Ratio Prot	c0.08	c0.06		0.02	0.04		c0.05	0.15	0.00	0.04	c0.16	
v/s Ratio Perm									0.01			
v/c Ratio	0.60	0.25		0.25	0.20		0.44	0.47	0.02	0.43	0.57	
Uniform Delay, d1	23.0	17.3		25.1	20.2		23.2	15.9	11.1	24.3	17.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.8	0.2		1.0	0.2		1.4	0.3	0.0	1.7	0.6	
Delay (s)	26.7	17.5		26.1	20.3		24.6	16.3	11.1	26.0	18.1	
Level of Service	C	B		C	C		C	B	B	C	B	
Approach Delay (s)		20.6			21.4			17.2			18.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
27: Cactus Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	80	10	20	10	10	10	10	280	10	10	340	90
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	85	11	21	11	11	11	11	298	11	11	362	96

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	90	27	32	160	160	191	277
Volume Left (vph)	85	0	11	11	0	11	0
Volume Right (vph)	0	21	11	0	11	0	96
Hadj (s)	0.47	-0.56	-0.13	0.03	-0.05	0.03	-0.24
Departure Headway (s)	6.8	5.8	6.3	5.5	5.4	5.4	5.1
Degree Utilization, x	0.17	0.04	0.06	0.24	0.24	0.29	0.39
Capacity (veh/h)	489	568	518	630	638	648	687
Control Delay (s)	10.0	7.8	9.7	9.1	9.0	9.3	10.1
Approach Delay (s)	9.5		9.7	9.0		9.8	
Approach LOS	A		A	A		A	

Intersection Summary			
Delay	9.5		
HCM Level of Service	A		
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
28: John F Kennedy Dr & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	50	30	260	70	90	20	420	190	120	500	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.92		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3391		1805	3279		1805	5187	1601	1805	5011	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3391		1805	3279		1805	5187	1601	1805	5011	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	97	54	32	280	75	97	22	452	204	129	538	140
RTOR Reduction (vph)	0	28	0	0	81	0	0	0	114	0	38	0
Lane Group Flow (vph)	97	58	0	280	91	0	22	452	90	129	640	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	6.7	6.2		9.3	8.8		1.1	13.8	23.1	7.2	19.9	
Effective Green, g (s)	6.7	6.2		9.3	8.8		1.1	13.8	23.1	7.2	19.9	
Actuated g/C Ratio	0.13	0.12		0.18	0.17		0.02	0.26	0.44	0.14	0.38	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	230	400		320	550		38	1363	826	248	1899	
v/s Ratio Prot	0.05	0.02		c0.16	c0.03		0.01	0.09	0.02	c0.07	c0.13	
v/s Ratio Perm									0.04			
v/c Ratio	0.42	0.14		0.88	0.17		0.58	0.33	0.11	0.52	0.34	
Uniform Delay, d1	21.1	20.8		21.0	18.7		25.5	15.6	8.6	21.0	11.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.2		22.3	0.1		19.6	0.1	0.1	2.0	0.1	
Delay (s)	22.4	20.9		43.4	18.9		45.1	15.8	8.7	23.0	11.7	
Level of Service	C	C		D	B		D	B	A	C	B	
Approach Delay (s)		21.7			34.0			14.6			13.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	52.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
29: Ironwood Ave & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	450	160	150	340	80	210	900	150	60	720	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1601	1805	3496		1805	3610	1592	1805	3610	1594
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1601	1805	3496		1805	3610	1592	1805	3610	1594
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	206	464	165	155	351	82	216	928	155	62	742	206
RTOR Reduction (vph)	0	0	40	0	20	0	0	0	35	0	0	75
Lane Group Flow (vph)	206	464	125	155	413	0	216	928	120	62	742	131
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6
Actuated Green, G (s)	16.2	23.5	43.9	12.6	19.9		20.4	59.6	72.2	8.3	47.5	63.7
Effective Green, g (s)	16.2	23.5	43.9	12.6	19.9		20.4	59.6	72.2	8.3	47.5	63.7
Actuated g/C Ratio	0.13	0.20	0.37	0.10	0.17		0.17	0.50	0.60	0.07	0.40	0.53
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	244	707	639	190	580		307	1793	1011	125	1429	899
v/s Ratio Prot	c0.11	c0.13	0.03	0.09	0.12		c0.12	c0.26	0.01	0.03	0.21	0.02
v/s Ratio Perm			0.04						0.06			0.06
v/c Ratio	0.84	0.66	0.20	0.82	0.71		0.70	0.52	0.12	0.50	0.52	0.15
Uniform Delay, d1	50.7	44.5	26.0	52.6	47.3		46.9	20.5	10.3	53.8	27.6	14.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.10	1.01	1.00	1.00	1.00
Incremental Delay, d2	22.5	2.2	0.2	22.9	4.1		6.0	0.9	0.0	3.1	1.4	0.1
Delay (s)	73.2	46.7	26.1	75.4	51.5		52.9	23.3	10.4	56.9	28.9	14.4
Level of Service	E	D	C	E	D		D	C	B	E	C	B
Approach Delay (s)		49.2			57.8			26.7			27.7	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	36.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
30: SR-60 WB Ramps & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	220	10	160	580	1480	0	0	740	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	
Frpb, ped/bikes					1.00	0.98	1.00	1.00			0.99	
Flpb, ped/bikes					1.00	1.00	1.00	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.95	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1813	1587	1805	3610			3392	
Flt Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1813	1587	1805	3610			3392	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	234	11	170	617	1574	0	0	787	436
RTOR Reduction (vph)	0	0	0	0	0	34	0	0	0	0	63	0
Lane Group Flow (vph)	0	0	0	0	245	136	617	1574	0	0	1160	0
Confl. Peds. (#/hr)						5						5
Turn Type				Split		Perm	Prot					
Protected Phases				8	8		5	2			6	
Permitted Phases						8						
Actuated Green, G (s)					21.9	21.9	49.9	90.1			36.2	
Effective Green, g (s)					21.9	21.9	49.9	90.1			36.2	
Actuated g/C Ratio					0.18	0.18	0.42	0.75			0.30	
Clearance Time (s)					4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					331	290	751	2711			1023	
v/s Ratio Prot					c0.14		c0.34	0.44			c0.34	
v/s Ratio Perm						0.09						
v/c Ratio					0.74	0.47	0.82	0.58			1.13	
Uniform Delay, d1					46.4	43.8	31.1	6.6			41.9	
Progression Factor					1.00	1.00	1.00	1.00			0.73	
Incremental Delay, d2					8.6	1.2	7.2	0.9			71.7	
Delay (s)					55.0	45.0	38.3	7.5			102.5	
Level of Service					D	D	D	A			F	
Approach Delay (s)		0.0			50.9			16.2			102.5	
Approach LOS		A			D			B			F	

Intersection Summary			
HCM Average Control Delay	47.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	118.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
31: SR-60 EB Ramps & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	540	10	470	0	0	0	0	1340	450	180	840	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0		4.0	4.0	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.96		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1715	1722	1590					4953		1805	3610	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1715	1722	1590					4953		1805	3610	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	557	10	485	0	0	0	0	1381	464	186	866	0
RTOR Reduction (vph)	0	0	92	0	0	0	0	63	0	0	0	0
Lane Group Flow (vph)	284	283	393	0	0	0	0	1782	0	186	866	0
Confl. Peds. (#/hr)			5						5			
Turn Type	Split		Perm							Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	26.0	26.0	26.0					34.3		10.8	49.1	
Effective Green, g (s)	26.0	26.0	26.0					34.3		10.8	49.1	
Actuated g/C Ratio	0.31	0.31	0.31					0.41		0.13	0.59	
Clearance Time (s)	4.0	4.0	4.0					4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	537	539	497					2044		235	2133	
v/s Ratio Prot	0.17	0.16						c0.36		c0.10	0.24	
v/s Ratio Perm			c0.25									
v/c Ratio	0.53	0.53	0.79					0.87		0.79	0.41	
Uniform Delay, d1	23.5	23.5	26.1					22.4		35.1	9.2	
Progression Factor	1.00	1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.9	8.4					4.4		16.5	0.1	
Delay (s)	24.5	24.4	34.4					26.8		51.5	9.3	
Level of Service	C	C	C					C		D	A	
Approach Delay (s)		29.0			0.0			26.8			16.7	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	83.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	118.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
32: Sunnymead Blvd & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	660	610	600	70	110	480	170	1150	120	390	800	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.91		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.88		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1596	1805	3169		1805	5105		3502	3610	1598
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1596	1805	3169		1805	5105		3502	3610	1598
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	710	656	645	75	118	516	183	1237	129	419	860	140
RTOR Reduction (vph)	0	0	32	0	207	0	0	10	0	0	0	59
Lane Group Flow (vph)	710	656	613	75	427	0	183	1356	0	419	860	81
Confl. Peds. (#/hr)			5						5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	25.8	36.4	53.4	7.0	17.6		17.0	44.0		16.6	43.6	69.4
Effective Green, g (s)	25.8	36.4	53.4	7.0	17.6		17.0	44.0		16.6	43.6	69.4
Actuated g/C Ratio	0.22	0.30	0.44	0.06	0.15		0.14	0.37		0.14	0.36	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	753	1095	763	105	465		256	1872		484	1312	977
v/s Ratio Prot	c0.20	0.18	c0.11	0.04	0.13		0.10	c0.27		0.12	0.24	0.02
v/s Ratio Perm			0.27									0.03
v/c Ratio	0.94	0.60	0.80	0.71	1.16dr		0.71	0.72		0.87	0.66	0.08
Uniform Delay, d1	46.4	35.6	28.8	55.5	50.5		49.2	32.8		50.6	31.9	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.43	0.29		1.47	0.39	0.03
Incremental Delay, d2	20.0	0.9	6.1	20.5	22.8		5.8	1.5		11.7	1.9	0.0
Delay (s)	66.4	36.5	34.9	76.0	73.3		76.0	10.9		86.0	14.3	0.4
Level of Service	E	D	C	E	E		E	B		F	B	A
Approach Delay (s)		46.6			73.6			18.6			34.1	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM Average Control Delay	39.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
33: SR-60 WB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	140	10	150	610	1650	0	0	1160	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					1.00		0.97	0.95			0.91	
Frpb, ped/bikes					0.99		1.00	1.00			0.99	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.93		1.00	1.00			0.96	
Flt Protected					0.98		0.95	1.00			1.00	
Satd. Flow (prot)					1714		3502	3610			4970	
Flt Permitted					0.98		0.95	1.00			1.00	
Satd. Flow (perm)					1714		3502	3610			4970	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	144	10	155	629	1701	0	0	1196	392
RTOR Reduction (vph)	0	0	0	0	29	0	0	0	0	0	45	0
Lane Group Flow (vph)	0	0	0	0	280	0	629	1701	0	0	1543	0
Confl. Peds. (#/hr)						5						5
Turn Type				Split			Prot					
Protected Phases				8	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					24.2		30.0	87.8			53.8	
Effective Green, g (s)					24.2		30.0	87.8			53.8	
Actuated g/C Ratio					0.20		0.25	0.73			0.45	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					346		876	2641			2228	
v/s Ratio Prot					c0.16		c0.18	0.47			c0.31	
v/s Ratio Perm												
v/c Ratio					0.81		0.72	0.64			0.69	
Uniform Delay, d1					45.7		41.1	8.2			26.5	
Progression Factor					1.00		0.78	0.45			1.00	
Incremental Delay, d2					13.1		1.5	0.7			1.8	
Delay (s)					58.8		33.4	4.4			28.3	
Level of Service					E		C	A			C	
Approach Delay (s)		0.0			58.8			12.2			28.3	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
34: Eucalyptus Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	240	70	80	150	110	70	1270	70	170	1130	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1587	1805	1900	1587	1805	3610	1567	1805	3610	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1587	1805	1900	1587	1805	3610	1567	1805	3610	1566
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	44	264	77	88	165	121	77	1396	77	187	1242	55
RTOR Reduction (vph)	0	0	41	0	0	97	0	0	15	0	0	11
Lane Group Flow (vph)	44	264	36	88	165	24	77	1396	62	187	1242	44
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.6	22.8	22.8	7.0	24.2	24.2	9.1	55.5	55.5	18.7	65.1	65.1
Effective Green, g (s)	5.6	22.8	22.8	7.0	24.2	24.2	9.1	55.5	55.5	18.7	65.1	65.1
Actuated g/C Ratio	0.05	0.19	0.19	0.06	0.20	0.20	0.08	0.46	0.46	0.16	0.54	0.54
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	84	361	302	105	383	320	137	1670	725	281	1958	850
v/s Ratio Prot	0.02	c0.14		c0.05	0.09		0.04	c0.39		c0.10	0.34	
v/s Ratio Perm			0.02			0.02			0.04			0.03
v/c Ratio	0.52	0.73	0.12	0.84	0.43	0.08	0.56	0.84	0.09	0.67	0.63	0.05
Uniform Delay, d1	55.9	45.7	40.3	55.9	41.9	38.8	53.5	28.3	18.1	47.7	19.1	12.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.97	0.73
Incremental Delay, d2	5.8	7.4	0.2	41.2	0.8	0.1	5.2	5.1	0.2	4.0	1.1	0.1
Delay (s)	61.7	53.2	40.4	97.2	42.7	38.9	58.7	33.4	18.3	48.9	19.7	9.5
Level of Service	E	D	D	F	D	D	E	C	B	D	B	A
Approach Delay (s)		51.6			54.3			33.9			23.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	33.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
35: Locust Ave & Moreno Beach Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	10	140	10	10	260
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	10	10	146	10	10	271
Pedestrians	5			5		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			21		323	21
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			21		323	21
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		98	74
cM capacity (veh/h)			1608		611	1058

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	21	156	10	271
Volume Left	0	146	10	0
Volume Right	10	0	0	271
cSH	1700	1608	611	1058
Volume to Capacity	0.01	0.09	0.02	0.26
Queue Length 95th (ft)	0	7	1	26
Control Delay (s)	0.0	7.0	11.0	9.6
Lane LOS		A	B	A
Approach Delay (s)	0.0	7.0	9.6	
Approach LOS			A	

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	26.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
36: Ironwood Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	100	180	130	100	10	130	270	130	0	170	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.90		1.00	0.99			0.97			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1805	1679		1805	1869			1800			1866	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (perm)	1805	1679		1805	1869			1800			1866	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	52	103	186	134	103	10	134	278	134	0	175	21
RTOR Reduction (vph)	0	50	0	0	3	0	0	10	0	0	3	0
Lane Group Flow (vph)	52	239	0	134	110	0	0	536	0	0	193	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	7.1	35.0		12.5	40.4			39.3			17.2	
Effective Green, g (s)	7.1	35.0		12.5	40.4			39.3			17.2	
Actuated g/C Ratio	0.06	0.29		0.10	0.34			0.33			0.14	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	107	490		188	629			590			267	
v/s Ratio Prot	0.03	c0.14		c0.07	0.06			c0.30			c0.10	
v/s Ratio Perm												
v/c Ratio	0.49	0.49		0.71	0.18			0.91			0.72	
Uniform Delay, d1	54.7	35.1		52.0	28.1			38.6			49.1	
Progression Factor	1.00	1.00		1.04	0.68			1.00			1.05	
Incremental Delay, d2	3.4	3.5		12.0	0.6			17.8			9.2	
Delay (s)	58.1	38.6		65.9	19.6			56.4			60.7	
Level of Service	E	D		E	B			E			E	
Approach Delay (s)		41.5			44.7			56.4			60.7	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	51.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
37: SR-60 EB Ramps & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	50	820	40	20	480	100	650	20	230	510	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes		1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1829	2798	1805	1900	1590	1805	3610	1571	1805	4812	
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1829	2798	1805	1900	1590	1805	3610	1571	1805	4812	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	175	52	845	41	21	495	103	670	21	237	526	361
RTOR Reduction (vph)	0	0	636	0	0	299	0	0	16	0	99	0
Lane Group Flow (vph)	0	227	209	41	21	196	103	670	5	237	788	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		21.0	21.0	16.4	16.4	16.4	9.6	21.9	21.9	9.7	22.0	
Effective Green, g (s)		21.0	21.0	16.4	16.4	16.4	9.6	21.9	21.9	9.7	22.0	
Actuated g/C Ratio		0.25	0.25	0.19	0.19	0.19	0.11	0.26	0.26	0.11	0.26	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		452	691	348	367	307	204	930	405	206	1245	
v/s Ratio Prot		c0.12		0.02	0.01		0.06	c0.19		c0.13	0.16	
v/s Ratio Perm			0.07			c0.12			0.00			
v/c Ratio		0.50	0.30	0.12	0.06	0.64	0.50	0.72	0.01	1.15	0.63	
Uniform Delay, d1		27.5	26.0	28.3	28.0	31.6	35.5	28.8	23.5	37.6	27.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.9	0.2	0.2	0.1	4.3	2.0	2.8	0.0	109.2	1.1	
Delay (s)		28.4	26.3	28.5	28.1	35.9	37.4	31.5	23.5	146.8	29.0	
Level of Service		C	C	C	C	D	D	C	C	F	C	
Approach Delay (s)		26.7			35.1			32.1			53.8	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM Average Control Delay	37.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
38: John Kennedy Dr & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	580	270	210	210	80	130	1090	180	180	980	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3419		1805	3444		1805	3610	1587	1805	3610	1586
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3419		1805	3444		1805	3610	1587	1805	3610	1586
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	144	644	300	233	233	89	144	1211	200	200	1089	67
RTOR Reduction (vph)	0	46	0	0	34	0	0	0	103	0	0	36
Lane Group Flow (vph)	144	898	0	233	288	0	144	1211	97	200	1089	31
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	12.4	35.1		15.0	37.7		11.7	40.0	40.0	13.9	42.2	42.2
Effective Green, g (s)	12.4	35.1		15.0	37.7		11.7	40.0	40.0	13.9	42.2	42.2
Actuated g/C Ratio	0.10	0.29		0.12	0.31		0.10	0.33	0.33	0.12	0.35	0.35
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	187	1000		226	1082		176	1203	529	209	1270	558
v/s Ratio Prot	0.08	c0.26		c0.13	c0.08		0.08	c0.34		c0.11	0.30	
v/s Ratio Perm									0.06			0.02
v/c Ratio	0.77	0.90		1.03	0.27		0.82	1.01	0.18	0.96	0.86	0.06
Uniform Delay, d1	52.4	40.7		52.5	30.8		53.1	40.0	28.4	52.8	36.1	25.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.34	0.60	0.15
Incremental Delay, d2	17.6	10.6		68.2	0.1		24.6	27.6	0.8	31.5	3.8	0.1
Delay (s)	70.0	51.3		120.7	30.9		77.7	67.6	29.2	101.9	25.3	4.0
Level of Service	E	D		F	C		E	E	C	F	C	A
Approach Delay (s)		53.8			68.6			63.6			35.5	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM Average Control Delay	53.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
39: Iris Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	440	170	130	310	180	160	900	160	370	800	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3443		1805	3389		1805	5187	1587	1805	5146	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3443		1805	3389		1805	5187	1587	1805	5146	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	175	454	175	134	320	186	165	928	165	381	825	41
RTOR Reduction (vph)	0	38	0	0	78	0	0	0	88	0	4	0
Lane Group Flow (vph)	175	591	0	134	428	0	165	928	77	381	862	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	12.0	26.5		9.0	23.5		16.2	37.3	37.3	31.2	52.3	
Effective Green, g (s)	12.0	26.5		9.0	23.5		16.2	37.3	37.3	31.2	52.3	
Actuated g/C Ratio	0.10	0.22		0.08	0.20		0.13	0.31	0.31	0.26	0.44	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	181	760		135	664		244	1612	493	469	2243	
v/s Ratio Prot	c0.10	c0.17		0.07	0.13		0.09	c0.18		c0.21	0.17	
v/s Ratio Perm									0.05			
v/c Ratio	0.97	0.78		0.99	0.64		0.68	0.58	0.16	0.81	0.38	
Uniform Delay, d1	53.8	44.0		55.5	44.4		49.4	34.7	30.0	41.7	22.9	
Progression Factor	1.00	1.00		1.00	1.00		1.34	0.31	0.01	1.00	1.00	
Incremental Delay, d2	56.6	5.0		74.9	2.2		0.7	0.1	0.1	10.3	0.5	
Delay (s)	110.4	49.0		130.4	46.6		66.7	10.7	0.3	52.0	23.4	
Level of Service	F	D		F	D		E	B	A	D	C	
Approach Delay (s)		62.4			64.1			16.7			32.2	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM Average Control Delay	38.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
40: Iris Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	720	170	210	590	70	90	130	390	60	170	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.89		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3496		1805	3610	1593	1805	3169		1805	3420	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3496		1805	3610	1593	1805	3169		1805	3420	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	758	179	221	621	74	95	137	411	63	179	84
RTOR Reduction (vph)	0	17	0	0	0	36	0	227	0	0	72	0
Lane Group Flow (vph)	63	920	0	221	621	38	95	321	0	63	191	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot		pm+ov	Prot			Prot		
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	6.1	26.9		10.4	31.2	36.4	7.1	12.4		5.2	10.5	
Effective Green, g (s)	6.1	26.9		10.4	31.2	36.4	7.1	12.4		5.2	10.5	
Actuated g/C Ratio	0.09	0.38		0.15	0.44	0.51	0.10	0.17		0.07	0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	155	1326		265	1589	908	181	554		132	506	
v/s Ratio Prot	0.03	c0.26		c0.12	0.17	0.00	c0.05	c0.10		0.03	0.06	
v/s Ratio Perm						0.02						
v/c Ratio	0.41	0.69		0.83	0.39	0.04	0.52	0.58		0.48	0.38	
Uniform Delay, d1	30.7	18.5		29.4	13.4	8.6	30.3	26.9		31.5	27.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	1.6		19.7	0.2	0.0	2.7	1.5		2.7	0.5	
Delay (s)	32.4	20.1		49.1	13.6	8.6	33.0	28.3		34.3	27.7	
Level of Service	C	C		D	B	A	C	C		C	C	
Approach Delay (s)		20.9			21.7			29.0			29.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
41: Iris Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	560	390	770	510	100	270	580	510	300	730	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	4836		3502	5046		3502	3610	1598	3502	3544	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	4836		3502	5046		3502	3610	1598	3502	3544	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	177	583	406	802	531	104	281	604	531	312	760	94
RTOR Reduction (vph)	0	111	0	0	25	0	0	0	33	0	8	0
Lane Group Flow (vph)	177	878	0	802	610	0	281	604	498	312	846	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	9.8	24.7		15.3	30.2		10.2	31.6	46.9	8.2	29.6	
Effective Green, g (s)	9.8	24.7		15.3	30.2		10.2	31.6	46.9	8.2	29.6	
Actuated g/C Ratio	0.10	0.26		0.16	0.32		0.11	0.33	0.49	0.09	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	358	1247		559	1591		373	1191	849	300	1095	
v/s Ratio Prot	0.05	c0.18		c0.23	0.12		0.08	0.17	0.09	c0.09	c0.24	
v/s Ratio Perm									0.22			
v/c Ratio	0.49	0.70		1.43	0.38		0.75	0.51	0.59	1.04	0.77	
Uniform Delay, d1	40.7	32.2		40.2	25.5		41.6	25.8	17.5	43.8	30.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	1.8		205.7	0.2		8.4	0.3	1.0	62.7	3.4	
Delay (s)	41.7	34.1		246.0	25.7		49.9	26.2	18.6	106.5	33.5	
Level of Service	D	C		F	C		D	C	B	F	C	
Approach Delay (s)		35.2			148.6			28.0			53.0	
Approach LOS		D			F			C			D	

Intersection Summary			
HCM Average Control Delay	68.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	95.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
42: Iris Ave & Nason St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	270	720	900	50	60	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00		0.99	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		0.89	0.85
Flt Protected	0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)	1805	5187	5139		1647	1525
Flt Permitted	0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)	1805	5187	5139		1647	1525
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	293	783	978	54	65	446
RTOR Reduction (vph)	0	0	8	0	161	3
Lane Group Flow (vph)	293	783	1024	0	100	247
Confl. Peds. (#/hr)				5	5	5
Turn Type	Prot					pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases						6
Actuated Green, G (s)	12.5	32.5	16.0		8.8	21.3
Effective Green, g (s)	12.5	32.5	16.0		8.8	21.3
Actuated g/C Ratio	0.25	0.66	0.32		0.18	0.43
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	458	3419	1668		294	783
v/s Ratio Prot	c0.16	0.15	c0.20		0.06	c0.08
v/s Ratio Perm						0.08
v/c Ratio	0.64	0.23	0.61		0.34	0.32
Uniform Delay, d1	16.4	3.4	14.0		17.7	9.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.9	0.0	0.7		0.7	0.2
Delay (s)	19.3	3.4	14.7		18.4	9.4
Level of Service	B	A	B		B	A
Approach Delay (s)		7.7	14.7		14.0	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
43: Iris Ave & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	710	40	70	630	10	40	20	30	10	60	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.95			0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1805	5138		1805	5173			1766			1698	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (perm)	1805	5138		1805	5173			1766			1698	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	202	755	43	74	670	11	43	21	32	11	64	181
RTOR Reduction (vph)	0	5	0	0	1	0	0	19	0	0	84	0
Lane Group Flow (vph)	202	793	0	74	680	0	0	77	0	0	172	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	7.5	19.5		5.2	17.2			6.7			12.0	
Effective Green, g (s)	7.5	19.5		5.2	17.2			6.7			12.0	
Actuated g/C Ratio	0.13	0.33		0.09	0.29			0.11			0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	228	1687		158	1498			199			343	
v/s Ratio Prot	c0.11	c0.15		0.04	0.13			c0.04			c0.10	
v/s Ratio Perm												
v/c Ratio	0.89	0.47		0.47	0.45			0.39			0.50	
Uniform Delay, d1	25.5	15.8		25.8	17.3			24.5			21.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	30.9	0.2		2.2	0.2			1.3			1.2	
Delay (s)	56.5	16.1		28.0	17.5			25.7			22.2	
Level of Service	E	B		C	B			C			C	
Approach Delay (s)		24.2			18.5			25.7			22.2	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
44: Iris Ave & Via Del Lago

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	680	40	30	610	0	40	10	40	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5140		1805	5187		1805	1900	1607	1805	1746	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	5140		1805	5187		1805	1900	1607	1805	1746	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	22	731	43	32	656	0	43	11	43	11	11	11
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	37	0	11	0
Lane Group Flow (vph)	22	769	0	32	656	0	43	11	6	11	11	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	0.9	21.5		4.0	24.6		2.2	2.2	6.2	0.9	0.9	
Effective Green, g (s)	0.9	21.5		4.0	24.6		2.2	2.2	6.2	0.9	0.9	
Actuated g/C Ratio	0.02	0.48		0.09	0.55		0.05	0.05	0.14	0.02	0.02	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	36	2478		162	2861		89	94	368	36	35	
v/s Ratio Prot	c0.01	c0.15		0.02	c0.13		c0.02	0.01	0.00	0.01	c0.01	
v/s Ratio Perm									0.00			
v/c Ratio	0.61	0.31		0.20	0.23		0.48	0.12	0.02	0.31	0.32	
Uniform Delay, d1	21.7	7.0		18.8	5.1		20.6	20.3	16.6	21.5	21.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	27.0	0.1		0.6	0.0		4.1	0.6	0.0	4.8	5.2	
Delay (s)	48.6	7.1		19.4	5.2		24.7	20.8	16.6	26.3	26.8	
Level of Service	D	A		B	A		C	C	B	C	C	
Approach Delay (s)		8.3			5.8			20.7			26.6	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	44.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
45: Krameria Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	500	240	160	210	110	110	910	250	180	730	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes		0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.96		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1800		1805	1900	1587	1805	3480		1805	1900	1555
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1800		1805	1900	1587	1805	3480		1805	1900	1555
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	526	253	168	221	116	116	958	263	189	768	74
RTOR Reduction (vph)	0	13	0	0	0	93	0	21	0	0	0	30
Lane Group Flow (vph)	0	840	0	168	221	23	116	1200	0	189	768	44
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)		31.0		20.1	20.1	20.1	14.9	34.0		18.9	38.0	38.0
Effective Green, g (s)		31.0		20.1	20.1	20.1	14.9	34.0		18.9	38.0	38.0
Actuated g/C Ratio		0.26		0.17	0.17	0.17	0.12	0.28		0.16	0.32	0.32
Clearance Time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		465		302	318	266	224	986		284	602	492
v/s Ratio Prot		c0.47		0.09	c0.12		0.06	0.34		c0.10	c0.40	
v/s Ratio Perm						0.01						0.03
v/c Ratio		1.81		0.56	0.69	0.09	0.52	1.22		0.67	1.28	0.09
Uniform Delay, d1		44.5		45.9	47.1	42.2	49.2	43.0		47.6	41.0	28.8
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		0.86	1.20	1.62
Incremental Delay, d2		371.8		2.2	6.5	0.1	2.0	107.1		5.2	135.3	0.3
Delay (s)		416.3		48.1	53.5	42.3	51.2	150.1		46.2	184.7	46.9
Level of Service		F		D	D	D	D	F		D	F	D
Approach Delay (s)		416.3			49.1			141.5			149.4	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	194.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	116.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
46: Krameria Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	480	210	160	70	100	80	100	700	40	160	780	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.93		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3351		1805	3345		1805	3578		1805	3478	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3351		1805	3345		1805	3578		1805	3478	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	516	226	172	75	108	86	108	753	43	172	839	237
RTOR Reduction (vph)	0	114	0	0	78	0	0	3	0	0	20	0
Lane Group Flow (vph)	516	284	0	75	116	0	108	793	0	172	1056	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	32.0	33.9		7.8	9.7		7.0	31.0		11.0	35.0	
Effective Green, g (s)	32.0	33.9		7.8	9.7		7.0	31.0		11.0	35.0	
Actuated g/C Ratio	0.32	0.34		0.08	0.10		0.07	0.31		0.11	0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	579	1139		141	325		127	1113		199	1221	
v/s Ratio Prot	c0.29	0.08		0.04	c0.03		0.06	0.22		c0.10	c0.30	
v/s Ratio Perm												
v/c Ratio	0.89	0.25		0.53	0.36		0.85	0.71		0.86	0.86	
Uniform Delay, d1	32.2	23.7		44.2	42.1		45.8	30.4		43.6	30.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	15.9	0.1		3.8	0.7		38.8	2.2		30.0	6.6	
Delay (s)	48.0	23.8		48.0	42.8		84.7	32.6		73.6	36.7	
Level of Service	D	C		D	D		F	C		E	D	
Approach Delay (s)		37.5			44.2			38.8			41.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	40.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	99.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
47: Krameria Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	70	110	30	40	10	90	530	20	20	650	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	3249		1805	3500		1805	3610	1615	1805	3499	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	3249		1805	3500		1805	3610	1615	1805	3499	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	160	74	117	32	43	11	96	564	21	21	691	160
RTOR Reduction (vph)	0	100	0	0	10	0	0	0	9	0	18	0
Lane Group Flow (vph)	160	91	0	32	44	0	96	564	12	21	833	0
Confl. Peds. (#/hr)			5									5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.2	8.4		3.5	3.7		5.9	27.6	31.1	1.1	22.8	
Effective Green, g (s)	8.2	8.4		3.5	3.7		5.9	27.6	31.1	1.1	22.8	
Actuated g/C Ratio	0.14	0.15		0.06	0.07		0.10	0.49	0.55	0.02	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	507	482		112	229		188	1760	1002	35	1409	
v/s Ratio Prot	c0.05	c0.03		0.02	0.01		c0.05	0.16	0.00	0.01	c0.24	
v/s Ratio Perm									0.01			
v/c Ratio	0.32	0.19		0.29	0.19		0.51	0.32	0.01	0.60	0.59	
Uniform Delay, d1	21.7	21.1		25.4	25.0		24.0	8.8	5.8	27.5	13.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.2		1.4	0.4		2.3	0.1	0.0	24.7	0.7	
Delay (s)	22.0	21.3		26.8	25.4		26.3	8.9	5.8	52.2	13.9	
Level of Service	C	C		C	C		C	A	A	D	B	
Approach Delay (s)		21.6			25.9			11.3			14.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	56.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
48: Alessandro Blvd & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	630	150	20	570	50	120	220	10	50	210	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1588	1805	3610	1589	3502	1887		1805	3381	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1588	1805	3610	1589	3502	1887		1805	3381	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	214	643	153	20	582	51	122	224	10	51	214	133
RTOR Reduction (vph)	0	0	52	0	0	25	0	2	0	0	109	0
Lane Group Flow (vph)	214	643	101	20	582	26	122	232	0	51	238	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot			Prot		
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	20.7	71.5	79.3	3.3	54.1	61.8	7.8	21.5		7.7	21.4	
Effective Green, g (s)	20.7	71.5	79.3	3.3	54.1	61.8	7.8	21.5		7.7	21.4	
Actuated g/C Ratio	0.17	0.60	0.66	0.03	0.45	0.51	0.06	0.18		0.06	0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	311	2151	1102	50	1628	818	228	338		116	603	
v/s Ratio Prot	c0.12	0.18	0.01	0.01	c0.16	0.00	0.03	c0.12		0.03	c0.07	
v/s Ratio Perm			0.06			0.01						
v/c Ratio	0.69	0.30	0.09	0.40	0.36	0.03	0.54	0.69		0.44	0.39	
Uniform Delay, d1	46.6	11.9	7.3	57.4	21.6	14.4	54.3	46.1		54.1	43.6	
Progression Factor	1.11	0.25	0.51	1.00	1.00	1.00	0.73	0.74		1.00	1.00	
Incremental Delay, d2	4.3	0.2	0.0	5.2	0.6	0.0	2.3	5.6		2.7	0.4	
Delay (s)	56.0	3.3	3.8	62.6	22.2	14.4	41.9	39.9		56.7	44.0	
Level of Service	E	A	A	E	C	B	D	D		E	D	
Approach Delay (s)		14.5			22.8			40.6			45.6	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
49: Alessandro Blvd & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	420	260	110	310	10	260	400	90	20	330	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1590	1805	1900	1579	1805	1900	1583	1805	1864	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1590	1805	1900	1579	1805	1900	1583	1805	1864	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	62	438	271	115	323	10	271	417	94	21	344	42
RTOR Reduction (vph)	0	0	97	0	0	3	0	0	56	0	5	0
Lane Group Flow (vph)	62	438	174	115	323	7	271	417	38	21	381	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	5.9	24.8	24.8	7.2	26.1	33.3	10.3	24.8	32.0	7.2	21.7	
Effective Green, g (s)	5.9	24.8	24.8	7.2	26.1	33.3	10.3	24.8	32.0	7.2	21.7	
Actuated g/C Ratio	0.07	0.31	0.31	0.09	0.33	0.42	0.13	0.31	0.40	0.09	0.27	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	133	589	493	162	620	736	232	589	712	162	506	
v/s Ratio Prot	0.03	c0.23		c0.06	0.17	0.00	c0.15	c0.22	0.00	0.01	0.20	
v/s Ratio Perm			0.11			0.00			0.02			
v/c Ratio	0.47	0.74	0.35	0.71	0.52	0.01	1.17	0.71	0.05	0.13	0.75	
Uniform Delay, d1	35.5	24.7	21.4	35.4	21.9	13.7	34.9	24.4	14.7	33.5	26.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	5.1	0.4	13.3	0.8	0.0	112.0	3.9	0.0	0.4	6.3	
Delay (s)	38.1	29.8	21.8	48.7	22.7	13.7	146.9	28.3	14.7	33.9	32.9	
Level of Service	D	C	C	D	C	B	F	C	B	C	C	
Approach Delay (s)		27.7			29.2			67.8			33.0	
Approach LOS		C			C			E			C	

Intersection Summary			
HCM Average Control Delay	41.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	150	420	370	40	90	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1900	3610	1577	1805	1605
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1900	3610	1577	1805	1605
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	442	389	42	95	95
RTOR Reduction (vph)	0	0	0	32	0	53
Lane Group Flow (vph)	158	442	389	11	95	42
Confl. Peds. (#/hr)				5	5	5
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	8.9	22.5	9.6	9.6	7.9	16.8
Effective Green, g (s)	8.9	22.5	9.6	9.6	7.9	16.8
Actuated g/C Ratio	0.23	0.59	0.25	0.25	0.21	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	418	1113	903	394	371	869
v/s Ratio Prot	0.09	c0.23	0.11		c0.05	0.01
v/s Ratio Perm				0.01		0.01
v/c Ratio	0.38	0.40	0.43	0.03	0.26	0.05
Uniform Delay, d1	12.4	4.3	12.1	10.9	12.8	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.3	0.0	0.4	0.0
Delay (s)	13.0	4.5	12.4	10.9	13.2	6.2
Level of Service	B	A	B	B	B	A
Approach Delay (s)		6.8	12.3		9.7	
Approach LOS		A	B		A	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	38.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
51: Alessandro Blvd & Nason St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	320	70	100	210	260	100	620	200	170	530	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1589	1805	1900	1590	1805	3465		1805	3610	1572
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1589	1805	1900	1590	1805	3465		1805	3610	1572
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	348	76	109	228	283	109	674	217	185	576	43
RTOR Reduction (vph)	0	0	57	0	0	200	0	30	0	0	0	25
Lane Group Flow (vph)	76	348	19	109	228	83	109	861	0	185	576	18
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	5.2	21.0	21.0	7.6	23.4	23.4	6.7	27.5		10.5	31.3	31.3
Effective Green, g (s)	5.2	21.0	21.0	7.6	23.4	23.4	6.7	27.5		10.5	31.3	31.3
Actuated g/C Ratio	0.06	0.25	0.25	0.09	0.28	0.28	0.08	0.33		0.13	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	114	483	404	166	538	450	146	1154		229	1368	596
v/s Ratio Prot	0.04	c0.18		c0.06	0.12		0.06	c0.25		c0.10	c0.16	
v/s Ratio Perm			0.01			0.05						0.01
v/c Ratio	0.67	0.72	0.05	0.66	0.42	0.18	0.75	0.75		0.81	0.42	0.03
Uniform Delay, d1	37.9	28.1	23.3	36.2	24.1	22.4	37.1	24.5		35.1	19.0	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	13.8	5.2	0.0	9.0	0.5	0.2	18.6	2.7		18.5	0.2	0.0
Delay (s)	51.6	33.4	23.3	45.3	24.6	22.6	55.7	27.1		53.6	19.2	16.1
Level of Service	D	C	C	D	C	C	E	C		D	B	B
Approach Delay (s)		34.6			27.3			30.2			26.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	82.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
52: Cactus Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	600	170	40	460	50	90	240	10	50	290	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3477		1805	3550		1805	3586		1805	1900	1585
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3477		1805	3550		1805	3586		1805	1900	1585
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	93	619	175	41	474	52	93	247	10	52	299	72
RTOR Reduction (vph)	0	17	0	0	6	0	0	3	0	0	0	57
Lane Group Flow (vph)	93	777	0	41	520	0	93	254	0	52	299	15
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	11.5	60.6		7.1	56.2		11.1	28.8		7.5	25.2	25.2
Effective Green, g (s)	11.5	60.6		7.1	56.2		11.1	28.8		7.5	25.2	25.2
Actuated g/C Ratio	0.10	0.51		0.06	0.47		0.09	0.24		0.06	0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	173	1756		107	1663		167	861		113	399	333
v/s Ratio Prot	c0.05	c0.22		0.02	0.15		c0.05	c0.07		0.03	c0.16	
v/s Ratio Perm												0.01
v/c Ratio	0.54	0.44		0.38	0.31		0.56	0.29		0.46	0.75	0.05
Uniform Delay, d1	51.7	18.9		54.3	19.9		52.1	37.3		54.3	44.4	37.8
Progression Factor	1.33	0.33		0.85	0.91		1.00	1.00		0.86	0.95	0.88
Incremental Delay, d2	1.9	0.5		2.1	0.5		4.0	0.2		2.9	7.5	0.1
Delay (s)	70.9	6.7		48.3	18.6		56.1	37.5		49.7	49.7	33.2
Level of Service	E	A		D	B		E	D		D	D	C
Approach Delay (s)		13.4			20.7			42.4			46.9	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
53: Cactus Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	380	150	530	420	160	110	610	510	160	470	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3439		1805	3444		1805	3610	1586	1805	3585	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3439		1805	3444		1805	3610	1586	1805	3585	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	413	163	576	457	174	120	663	554	174	511	22
RTOR Reduction (vph)	0	35	0	0	31	0	0	0	403	0	2	0
Lane Group Flow (vph)	43	541	0	576	600	0	120	663	151	174	531	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	5.6	29.9		36.0	60.3		10.6	28.1	28.1	10.0	27.5	
Effective Green, g (s)	5.6	29.9		36.0	60.3		10.6	28.1	28.1	10.0	27.5	
Actuated g/C Ratio	0.05	0.25		0.30	0.50		0.09	0.23	0.23	0.08	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	84	857		542	1731		159	845	371	150	822	
v/s Ratio Prot	0.02	c0.16		c0.32	0.17		0.07	c0.18		c0.10	0.15	
v/s Ratio Perm									0.10			
v/c Ratio	0.51	0.63		1.06	0.35		0.75	0.78	0.41	1.16	0.65	
Uniform Delay, d1	55.9	40.1		42.0	18.0		53.4	43.1	38.9	55.0	41.8	
Progression Factor	1.01	0.65		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.8	3.2		56.4	0.6		18.2	4.8	0.7	122.9	1.8	
Delay (s)	61.3	29.4		98.4	18.5		71.7	47.9	39.6	177.9	43.6	
Level of Service	E	C		F	B		E	D	D	F	D	
Approach Delay (s)		31.6			56.6			46.6			76.7	
Approach LOS		C			E			D			E	

Intersection Summary			
HCM Average Control Delay	52.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
55: Cactus Ave & Nason St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	420	260	240	70	260	120	170	100	60	160	160	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.95		1.00	0.94		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3326		1805	3422		1805	3385		1805	3170	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3326		1805	3422		1805	3385		1805	3170	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	488	302	279	81	302	140	198	116	70	186	186	535
RTOR Reduction (vph)	0	148	0	0	55	0	0	59	0	0	436	0
Lane Group Flow (vph)	488	433	0	81	387	0	198	127	0	186	285	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	26.3	34.3		7.3	15.3		10.1	12.8		10.1	12.8	
Effective Green, g (s)	26.3	34.3		7.3	15.3		10.1	12.8		10.1	12.8	
Actuated g/C Ratio	0.33	0.43		0.09	0.19		0.13	0.16		0.13	0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	590	1417		164	650		226	538		226	504	
v/s Ratio Prot	c0.27	0.13		0.04	c0.11		c0.11	0.04		0.10	c0.09	
v/s Ratio Perm												
v/c Ratio	0.83	0.31		0.49	0.60		0.88	0.24		0.82	0.56	
Uniform Delay, d1	25.0	15.2		34.8	29.8		34.6	29.6		34.3	31.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.3	0.1		2.3	1.5		29.3	0.2		20.9	1.5	
Delay (s)	34.3	15.4		37.2	31.2		63.8	29.8		55.2	32.7	
Level of Service	C	B		D	C		E	C		E	C	
Approach Delay (s)		24.0			32.2			47.4			37.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	32.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
56: Alessandro Blvd & Frederick St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	300	1250	150	100	1400	300	250	740	70	280	480	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1586	1805	5034		3502	3558		3502	3610	1589
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1586	1805	5034		3502	3558		3502	3610	1589
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	323	1344	161	108	1505	323	269	796	75	301	516	194
RTOR Reduction (vph)	0	0	74	0	28	0	0	6	0	0	0	136
Lane Group Flow (vph)	323	1344	87	108	1800	0	269	865	0	301	516	58
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	19.9	49.1	49.1	10.8	40.0		8.0	36.1		8.0	36.1	36.1
Effective Green, g (s)	19.9	49.1	49.1	10.8	40.0		8.0	36.1		8.0	36.1	36.1
Actuated g/C Ratio	0.17	0.41	0.41	0.09	0.33		0.07	0.30		0.07	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	299	1477	649	162	1678		233	1070		233	1086	478
v/s Ratio Prot	c0.18	0.37		0.06	c0.36		0.08	c0.24		c0.09	0.14	
v/s Ratio Perm			0.05									0.04
v/c Ratio	1.08	0.91	0.13	0.67	1.07		1.15	0.81		1.29	0.48	0.12
Uniform Delay, d1	50.0	33.4	22.2	52.9	40.0		56.0	38.8		56.0	34.2	30.4
Progression Factor	1.23	0.46	0.07	1.10	0.64		0.96	0.98		1.00	1.00	1.00
Incremental Delay, d2	69.5	8.1	0.3	4.2	38.2		103.0	4.0		159.5	0.3	0.1
Delay (s)	130.8	23.6	2.0	62.1	64.0		156.7	41.7		215.5	34.6	30.6
Level of Service	F	C	A	E	E		F	D		F	C	C
Approach Delay (s)		40.6			63.9			68.9			87.7	
Approach LOS		D			E			E			F	

Intersection Summary			
HCM Average Control Delay	61.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
57: Alessandro Blvd & Graham St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1350	210	240	1420	180	330	530	170	150	200	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1585	1805	5089		1805	3465		1805	3511	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1585	1805	5089		1805	3465		1805	3511	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	1421	221	253	1495	189	347	558	179	158	211	42
RTOR Reduction (vph)	0	0	97	0	12	0	0	29	0	0	16	0
Lane Group Flow (vph)	84	1421	124	253	1672	0	347	708	0	158	237	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	10.8	39.0	39.0	22.2	50.4		14.0	31.8		11.0	28.8	
Effective Green, g (s)	10.8	39.0	39.0	22.2	50.4		14.0	31.8		11.0	28.8	
Actuated g/C Ratio	0.09	0.32	0.32	0.18	0.42		0.12	0.27		0.09	0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	162	1173	515	334	2137		211	918		165	843	
v/s Ratio Prot	0.05	c0.39		c0.14	0.33		c0.19	c0.20		0.09	0.07	
v/s Ratio Perm			0.08									
v/c Ratio	0.52	1.21	0.24	0.76	0.78		1.64	0.77		0.96	0.28	
Uniform Delay, d1	52.1	40.5	29.7	46.3	30.1		53.0	40.7		54.3	37.2	
Progression Factor	1.29	0.50	0.48	0.73	0.69		0.71	0.83		1.00	1.00	
Incremental Delay, d2	0.8	97.7	0.3	4.7	1.4		303.8	2.7		56.9	0.2	
Delay (s)	67.9	118.1	14.5	38.6	22.1		341.4	36.5		111.2	37.3	
Level of Service	E	F	B	D	C		F	D		F	D	
Approach Delay (s)		102.4			24.2			134.1			65.7	
Approach LOS		F			C			F			E	

Intersection Summary			
HCM Average Control Delay	76.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
58: Alessandro Blvd & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	1340	110	50	1130	240	310	700	130	330	380	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1597	1805	5035		1805	3516		1805	3610	1596
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1597	1805	5035		1805	3516		1805	3610	1596
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	138	1426	117	53	1202	255	330	745	138	351	404	245
RTOR Reduction (vph)	0	0	43	0	27	0	0	13	0	0	0	19
Lane Group Flow (vph)	138	1426	74	53	1430	0	330	870	0	351	404	226
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	13.0	39.8	60.8	6.4	33.2		21.0	36.8		21.0	36.8	49.8
Effective Green, g (s)	13.0	39.8	60.8	6.4	33.2		21.0	36.8		21.0	36.8	49.8
Actuated g/C Ratio	0.11	0.33	0.51	0.05	0.28		0.18	0.31		0.18	0.31	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	196	1720	862	96	1393		316	1078		316	1107	716
v/s Ratio Prot	c0.08	0.27	0.02	0.03	c0.28		0.18	c0.25		c0.19	0.11	0.03
v/s Ratio Perm			0.03									0.11
v/c Ratio	0.70	0.83	0.09	0.55	1.03		1.04	0.81		1.11	0.36	0.32
Uniform Delay, d1	51.6	37.0	15.3	55.4	43.4		49.5	38.3		49.5	32.5	23.6
Progression Factor	1.54	0.42	0.05	0.57	0.98		1.01	0.70		1.00	1.00	1.00
Incremental Delay, d2	1.1	0.5	0.0	4.6	27.0		55.5	3.4		83.8	0.2	0.3
Delay (s)	80.6	15.8	0.8	36.5	69.6		105.5	30.1		133.3	32.7	23.9
Level of Service	F	B	A	D	E		F	C		F	C	C
Approach Delay (s)		20.1			68.4			50.6			65.8	
Approach LOS		C			E			D			E	

Intersection Summary			
HCM Average Control Delay	48.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
59: Alessandro Blvd & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	1350	140	100	1040	140	260	380	200	250	350	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5105		1805	5084		1805	3404		1805	3510	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	5105		1805	5084		1805	3404		1805	3510	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	110	1484	154	110	1143	154	286	418	220	275	385	77
RTOR Reduction (vph)	0	10	0	0	13	0	0	69	0	0	18	0
Lane Group Flow (vph)	110	1628	0	110	1284	0	286	569	0	275	444	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	11.6	38.7		12.4	39.5		31.9	26.8		26.1	21.0	
Effective Green, g (s)	11.6	38.7		12.4	39.5		31.9	26.8		26.1	21.0	
Actuated g/C Ratio	0.10	0.32		0.10	0.33		0.27	0.22		0.22	0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	174	1646		187	1673		480	760		393	614	
v/s Ratio Prot	c0.06	c0.32		0.06	0.25		0.16	c0.17		c0.15	0.13	
v/s Ratio Perm												
v/c Ratio	0.63	0.99		0.59	0.77		0.60	0.75		0.70	0.72	
Uniform Delay, d1	52.1	40.4		51.4	36.1		38.4	43.5		43.3	46.8	
Progression Factor	1.50	0.51		1.05	0.57		0.66	0.62		1.00	1.00	
Incremental Delay, d2	3.6	13.0		0.4	0.3		1.9	3.9		5.4	4.2	
Delay (s)	81.8	33.6		54.3	20.8		27.3	31.0		48.7	51.0	
Level of Service	F	C		D	C		C	C		D	D	
Approach Delay (s)		36.6			23.4			29.9			50.1	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	33.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
60: Alessandro Blvd & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	440	850	440	190	650	110	500	780	90	200	740	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1587	1805	5062		1805	3610	1589	1805	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1587	1805	5062		1805	3610	1589	1805	3610	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	454	876	454	196	670	113	515	804	93	206	763	186
RTOR Reduction (vph)	0	0	174	0	20	0	0	0	66	0	0	135
Lane Group Flow (vph)	454	876	280	196	763	0	515	804	27	206	763	51
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	20.4	42.0	42.0	14.4	36.0		15.0	34.6	34.6	13.0	32.6	32.6
Effective Green, g (s)	20.4	42.0	42.0	14.4	36.0		15.0	34.6	34.6	13.0	32.6	32.6
Actuated g/C Ratio	0.17	0.35	0.35	0.12	0.30		0.12	0.29	0.29	0.11	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	307	1264	555	217	1519		226	1041	458	196	981	431
v/s Ratio Prot	c0.25	c0.24		0.11	0.15		c0.29	c0.22		0.11	0.21	
v/s Ratio Perm			0.18						0.02			0.03
v/c Ratio	1.48	0.69	0.51	0.90	0.50		2.28	0.77	0.06	1.05	0.78	0.12
Uniform Delay, d1	49.8	33.5	30.8	52.1	34.6		52.5	39.1	30.9	53.5	40.4	32.9
Progression Factor	1.38	0.46	0.09	0.96	0.72		1.26	0.44	0.20	1.00	1.00	1.00
Incremental Delay, d2	222.9	1.3	1.4	34.9	1.2		585.1	2.5	0.0	78.4	3.9	0.1
Delay (s)	291.7	16.6	4.1	85.0	26.0		651.0	19.7	6.3	131.9	44.3	33.0
Level of Service	F	B	A	F	C		F	B	A	F	D	C
Approach Delay (s)		83.4			37.8			249.1			58.1	
Approach LOS		F			D			F			E	

Intersection Summary			
HCM Average Control Delay	113.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	115.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
61: Cactus Ave & Frederick St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	180	2100	1790	770	470	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.95	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	5187	3610	1594	3502	1598
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	5187	3610	1594	3502	1598
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	184	2143	1827	786	480	112
RTOR Reduction (vph)	0	0	0	24	0	7
Lane Group Flow (vph)	184	2143	1827	762	480	105
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	16.5	87.8	67.3	91.5	24.2	40.7
Effective Green, g (s)	16.5	87.8	67.3	91.5	24.2	40.7
Actuated g/C Ratio	0.14	0.73	0.56	0.76	0.20	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	248	3795	2025	1269	706	595
v/s Ratio Prot	c0.10	0.41	c0.51	0.12	c0.14	0.02
v/s Ratio Perm				0.36		0.04
v/c Ratio	0.74	0.56	0.90	0.60	0.68	0.18
Uniform Delay, d1	49.7	7.4	23.4	6.2	44.3	27.9
Progression Factor	0.95	0.98	0.72	0.41	0.91	1.30
Incremental Delay, d2	3.2	0.2	2.2	0.2	2.4	0.1
Delay (s)	50.3	7.4	19.0	2.8	42.6	36.3
Level of Service	D	A	B	A	D	D
Approach Delay (s)		10.8	14.1		41.4	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
62: Cactus Ave & Graham St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	1790	650	30	900	110	1520	730	120	220	210	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1587	1805	5093		3502	3525		1805	3610	1597
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1587	1805	5093		3502	3525		1805	3610	1597
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	115	1865	677	31	938	115	1583	760	125	229	219	115
RTOR Reduction (vph)	0	0	270	0	13	0	0	11	0	0	0	13
Lane Group Flow (vph)	115	1865	407	31	1040	0	1583	874	0	229	219	102
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	7.0	42.8	42.8	4.2	40.0		44.4	35.3		21.7	12.6	19.6
Effective Green, g (s)	7.0	42.8	42.8	4.2	40.0		44.4	35.3		21.7	12.6	19.6
Actuated g/C Ratio	0.06	0.36	0.36	0.04	0.33		0.37	0.29		0.18	0.10	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	105	1850	566	63	1698		1296	1037		326	379	261
v/s Ratio Prot	c0.06	c0.36		0.02	0.20		c0.45	c0.25		0.13	0.06	0.02
v/s Ratio Perm			0.26									0.04
v/c Ratio	1.10	1.01	0.72	0.49	0.61		1.22	0.84		0.70	0.58	0.39
Uniform Delay, d1	56.5	38.6	33.4	56.9	33.5		37.8	39.7		46.1	51.2	44.9
Progression Factor	1.25	0.57	0.35	0.90	0.86		1.00	1.00		1.21	1.17	1.18
Incremental Delay, d2	108.5	21.2	6.5	4.8	1.3		106.8	6.3		6.1	1.9	0.9
Delay (s)	179.2	43.2	18.2	56.1	30.2		144.6	46.1		62.0	61.9	53.8
Level of Service	F	D	B	E	C		F	D		E	E	D
Approach Delay (s)		42.7			31.0			109.3			60.3	
Approach LOS		D			C			F			E	

Intersection Summary			
HCM Average Control Delay	66.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
63: Cactus Ave & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1380	730	40	540	190	490	810	80	100	400	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5187	1598	1805	3453		3502	3556		1805	3556	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	5187	1598	1805	3453		3502	3556		1805	3556	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	1500	793	43	587	207	533	880	87	109	435	43
RTOR Reduction (vph)	0	0	63	0	27	0	0	7	0	0	7	0
Lane Group Flow (vph)	87	1500	730	43	767	0	533	960	0	109	471	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	9.0	45.4	76.5	5.8	42.2		31.1	41.0		11.8	21.7	
Effective Green, g (s)	9.0	45.4	76.5	5.8	42.2		31.1	41.0		11.8	21.7	
Actuated g/C Ratio	0.08	0.38	0.64	0.05	0.35		0.26	0.34		0.10	0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	135	1962	1019	87	1214		908	1215		177	643	
v/s Ratio Prot	c0.05	c0.29	0.19	0.02	0.22		0.15	c0.27		0.06	c0.13	
v/s Ratio Perm			0.27									
v/c Ratio	0.64	0.76	0.72	0.49	0.63		0.59	0.79		0.62	0.73	
Uniform Delay, d1	53.9	32.6	14.5	55.7	32.4		38.8	35.6		51.9	46.4	
Progression Factor	1.50	0.29	1.42	0.78	1.11		1.00	1.00		1.24	1.45	
Incremental Delay, d2	4.8	1.4	1.1	4.1	2.4		1.0	3.6		6.1	4.2	
Delay (s)	85.8	10.8	21.7	47.5	38.5		39.8	39.2		70.2	71.5	
Level of Service	F	B	C	D	D		D	D		E	E	
Approach Delay (s)		17.2			38.9			39.4			71.3	
Approach LOS		B			D			D			E	

Intersection Summary			
HCM Average Control Delay	32.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
64: Cactus Ave & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	1000	230	30	620	50	130	450	50	60	370	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3497		1805	3564		1805	3549		1805	3565	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3497		1805	3564		1805	3549		1805	3565	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	101	1010	232	30	626	51	131	455	51	61	374	30
RTOR Reduction (vph)	0	13	0	0	4	0	0	8	0	0	5	0
Lane Group Flow (vph)	101	1229	0	30	673	0	131	498	0	61	399	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	12.0	65.9		5.1	59.0		13.3	26.0		7.0	19.7	
Effective Green, g (s)	12.0	65.9		5.1	59.0		13.3	26.0		7.0	19.7	
Actuated g/C Ratio	0.10	0.55		0.04	0.49		0.11	0.22		0.06	0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	181	1920		77	1752		200	769		105	585	
v/s Ratio Prot	c0.06	c0.35		0.02	0.19		c0.07	c0.14		0.03	0.11	
v/s Ratio Perm												
v/c Ratio	0.56	0.64		0.39	0.38		0.66	0.65		0.58	0.68	
Uniform Delay, d1	51.5	18.8		55.9	19.1		51.2	42.8		55.1	47.2	
Progression Factor	1.56	0.17		1.23	0.40		1.00	1.00		1.15	0.64	
Incremental Delay, d2	2.5	1.1		2.8	0.6		7.5	1.9		6.8	2.8	
Delay (s)	82.7	4.3		71.7	8.2		58.6	44.7		70.3	33.1	
Level of Service	F	A		E	A		E	D		E	C	
Approach Delay (s)		10.2			10.9			47.6			38.0	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
65: Cactus Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	720	300	110	420	110	220	1130	120	120	1020	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3433		1805	3485		1805	3610	1585	1805	3610	1585
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3433		1805	3485		1805	3610	1585	1805	3610	1585
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	720	300	110	420	110	220	1130	120	120	1020	60
RTOR Reduction (vph)	0	38	0	0	19	0	0	0	54	0	0	37
Lane Group Flow (vph)	50	982	0	110	511	0	220	1130	66	120	1020	23
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	6.3	38.3		9.7	41.7		17.2	45.4	45.4	10.6	38.8	38.8
Effective Green, g (s)	6.3	38.3		9.7	41.7		17.2	45.4	45.4	10.6	38.8	38.8
Actuated g/C Ratio	0.05	0.32		0.08	0.35		0.14	0.38	0.38	0.09	0.32	0.32
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	95	1096		146	1211		259	1366	600	159	1167	512
v/s Ratio Prot	0.03	c0.29		c0.06	c0.15		c0.12	c0.31		0.07	0.28	
v/s Ratio Perm									0.04			0.01
v/c Ratio	0.53	0.90		0.75	0.42		0.85	0.83	0.11	0.75	0.87	0.05
Uniform Delay, d1	55.4	38.9		54.0	29.9		50.1	33.8	24.2	53.4	38.3	27.9
Progression Factor	0.94	0.77		1.08	0.60		1.23	0.38	0.15	1.23	0.80	0.48
Incremental Delay, d2	4.2	9.4		19.0	1.0		9.7	2.3	0.1	13.7	6.9	0.1
Delay (s)	56.0	39.2		77.2	19.2		71.6	15.1	3.8	79.6	37.6	13.5
Level of Service	E	D		E	B		E	B	A	E	D	B
Approach Delay (s)		40.0			29.1			22.6			40.6	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
66: Alessandro Blvd & Sycamore Canyon Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1810	200	20	2180	140	200	50	20	170	230	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	0.88	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	3502	5187	1588	3502	3610	2799	3502	3610	1589
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	3502	5187	1588	3502	3610	2799	3502	3610	1589
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	144	1866	206	21	2247	144	206	52	21	175	237	402
RTOR Reduction (vph)	0	0	62	0	0	31	0	0	12	0	0	102
Lane Group Flow (vph)	144	1866	144	21	2247	113	206	52	9	175	237	300
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.4	57.4	57.4	4.2	46.2	46.2	14.0	28.7	32.9	13.7	28.4	28.4
Effective Green, g (s)	15.4	57.4	57.4	4.2	46.2	46.2	14.0	28.7	32.9	13.7	28.4	28.4
Actuated g/C Ratio	0.13	0.48	0.48	0.04	0.39	0.39	0.12	0.24	0.27	0.11	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	232	2481	773	123	1997	611	409	863	861	400	854	376
v/s Ratio Prot	c0.08	c0.36		0.01	c0.43		c0.06	0.01	0.00	0.05	0.07	
v/s Ratio Perm			0.09			0.07			0.00			c0.19
v/c Ratio	0.62	0.75	0.19	0.17	1.13	0.19	0.50	0.06	0.01	0.44	0.28	0.80
Uniform Delay, d1	49.5	25.5	17.9	56.2	36.9	24.4	49.7	35.2	31.7	49.6	37.4	43.1
Progression Factor	1.00	1.00	1.00	1.00	0.86	1.10	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	2.2	0.5	0.6	62.6	0.6	1.0	0.0	0.0	0.8	0.2	11.3
Delay (s)	54.6	27.7	18.5	56.8	94.5	27.5	50.7	35.3	31.7	50.3	37.6	54.4
Level of Service	D	C	B	E	F	C	D	D	C	D	D	D
Approach Delay (s)		28.6			90.2			46.4			48.6	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	58.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
67: Alessandro Blvd & SR-215 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1440	610	0	1890	0	0	0	0	260	0	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	4.0
Lane Util. Factor		0.91			0.91					0.95	0.91	0.95
Frpb, ped/bikes		1.00			1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00			1.00					1.00	1.00	1.00
Frt		0.96			1.00					1.00	0.87	0.85
Flt Protected		1.00			1.00					0.95	0.99	1.00
Satd. Flow (prot)		4955			5187					1715	1489	1534
Flt Permitted		1.00			1.00					0.95	0.99	1.00
Satd. Flow (perm)		4955			5187					1715	1489	1534
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1485	629	0	1948	0	0	0	0	268	0	485
RTOR Reduction (vph)	0	47	0	0	0	0	0	0	0	0	10	10
Lane Group Flow (vph)	0	2067	0	0	1948	0	0	0	0	241	250	242
Confl. Peds. (#/hr)						5						
Turn Type										Perm		Perm
Protected Phases		4			8						6	
Permitted Phases										6		6
Actuated Green, G (s)		84.9			84.9					27.1	27.1	27.1
Effective Green, g (s)		84.9			84.9					27.1	27.1	27.1
Actuated g/C Ratio		0.71			0.71					0.23	0.23	0.23
Clearance Time (s)		4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3506			3670					387	336	346
v/s Ratio Prot		c0.42			0.38							
v/s Ratio Perm										0.14	0.17	0.16
v/c Ratio		0.59			0.53					0.62	0.74	0.70
Uniform Delay, d1		8.8			8.2					41.8	43.2	42.7
Progression Factor		0.16			0.08					1.00	1.00	1.00
Incremental Delay, d2		0.5			0.4					3.1	8.6	6.1
Delay (s)		1.9			1.0					45.0	51.8	48.8
Level of Service		A			A					D	D	D
Approach Delay (s)		1.9			1.0			0.0			48.6	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
68: Alessandro Blvd & SR-215 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	370	1350	0	0	1610	260	140	10	240	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.91			0.91		0.95	0.91	0.95			
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.98		1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00		0.95	0.99	1.00			
Satd. Flow (prot)	1805	5187			5065		1715	1507	1534			
Flt Permitted	0.95	1.00			1.00		0.95	0.99	1.00			
Satd. Flow (perm)	1805	5187			5065		1715	1507	1534			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	381	1392	0	0	1660	268	144	10	247	0	0	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	79	79	0	0	0
Lane Group Flow (vph)	381	1392	0	0	1911	0	130	59	54	0	0	0
Confl. Peds. (#/hr)	5					5						
Turn Type	Prot						Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases									2			
Actuated Green, G (s)	37.0	97.1			56.1		14.9	14.9	14.9			
Effective Green, g (s)	37.0	97.1			56.1		14.9	14.9	14.9			
Actuated g/C Ratio	0.31	0.81			0.47		0.12	0.12	0.12			
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	557	4197			2368		213	187	190			
v/s Ratio Prot	c0.21	0.27			c0.38		c0.08	0.04				
v/s Ratio Perm									0.04			
v/c Ratio	0.68	0.33			0.81		0.61	0.32	0.29			
Uniform Delay, d1	36.4	3.0			27.3		49.8	47.9	47.7			
Progression Factor	0.87	0.74			1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.9	0.2			3.1		5.1	1.0	0.8			
Delay (s)	34.7	2.4			30.4		54.9	48.9	48.5			
Level of Service	C	A			C		D	D	D			
Approach Delay (s)		9.3			30.4			50.7			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
69: Alessandro Blvd & Old 215 Frontage Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	1360	40	220	1690	190	30	70	140	260	190	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3593		1805	3610	1615	3502	3250		1805	3610	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3593		1805	3610	1615	3502	3250		1805	3610	1615
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	192	1374	40	222	1707	192	30	71	141	263	192	162
RTOR Reduction (vph)	0	2	0	0	0	70	0	131	0	0	0	122
Lane Group Flow (vph)	192	1412	0	222	1707	122	30	81	0	263	192	40
Confl. Peds. (#/hr)			5									
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	9.6	52.3		17.8	60.5	60.5	4.2	8.8		25.1	29.7	29.7
Effective Green, g (s)	9.6	52.3		17.8	60.5	60.5	4.2	8.8		25.1	29.7	29.7
Actuated g/C Ratio	0.08	0.44		0.15	0.50	0.50	0.04	0.07		0.21	0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	280	1566		268	1820	814	123	238		378	893	400
v/s Ratio Prot	0.05	0.39		c0.12	c0.47		0.01	c0.03		c0.15	0.05	
v/s Ratio Perm						0.08						0.02
v/c Ratio	0.69	0.90		0.83	0.94	0.15	0.24	0.34		0.70	0.22	0.10
Uniform Delay, d1	53.7	31.5		49.6	28.0	16.0	56.4	52.8		43.9	35.9	34.8
Progression Factor	1.00	1.00		1.27	0.63	1.01	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.8	8.8		6.2	3.8	0.1	1.0	0.9		5.5	0.1	0.1
Delay (s)	60.5	40.3		69.3	21.4	16.2	57.4	53.7		49.4	36.0	34.9
Level of Service	E	D		E	C	B	E	D		D	D	C
Approach Delay (s)		42.7			26.0			54.2			41.4	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
70: Alessandro Blvd & Day St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	1400	50	10	1740	60	100	50	20	10	10	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.96		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5155		1805	3610	1564	1800	1810		1798	1600	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.21	1.00		0.70	1.00	
Satd. Flow (perm)	1805	5155		1805	3610	1564	389	1810		1326	1600	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	289	1443	52	10	1794	62	103	52	21	10	10	258
RTOR Reduction (vph)	0	2	0	0	0	6	0	16	0	0	169	0
Lane Group Flow (vph)	289	1493	0	10	1794	56	103	57	0	10	99	0
Confl. Peds. (#/hr)			5			5	5		5	5		5
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	32.6	87.0		1.5	55.9	55.9	19.5	19.5		19.5	19.5	
Effective Green, g (s)	32.6	87.0		1.5	55.9	55.9	19.5	19.5		19.5	19.5	
Actuated g/C Ratio	0.27	0.72		0.01	0.47	0.47	0.16	0.16		0.16	0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	490	3737		23	1682	729	63	294		215	260	
v/s Ratio Prot	c0.16	0.29		0.01	c0.50			0.03			0.06	
v/s Ratio Perm						0.04	c0.26			0.01		
v/c Ratio	0.59	0.40		0.43	1.07	0.08	1.63	0.19		0.05	0.38	
Uniform Delay, d1	37.9	6.4		58.8	32.0	17.8	50.2	43.5		42.4	44.9	
Progression Factor	0.90	1.57		1.00	0.44	0.27	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.2		7.3	37.7	0.1	346.4	0.3		0.1	0.9	
Delay (s)	35.2	10.2		66.3	51.9	4.8	396.6	43.8		42.5	45.8	
Level of Service	D	B		E	D	A	F	D		D	D	
Approach Delay (s)		14.3			50.4			250.3			45.7	
Approach LOS		B			D			F			D	

Intersection Summary			
HCM Average Control Delay	43.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
71: Alessandro Blvd & Elsworth St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1390	90	120	1560	130	170	200	120	90	170	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.94		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5134		1805	5115		1805	1782		1805	1900	1589
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5134		1805	5115		1805	1782		1805	1900	1589
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	1463	95	126	1642	137	179	211	126	95	179	116
RTOR Reduction (vph)	0	5	0	0	7	0	0	21	0	0	0	88
Lane Group Flow (vph)	147	1553	0	126	1772	0	179	316	0	95	179	28
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	16.4	53.1		13.7	50.4		12.0	26.7		10.5	25.2	25.2
Effective Green, g (s)	16.4	53.1		13.7	50.4		12.0	26.7		10.5	25.2	25.2
Actuated g/C Ratio	0.14	0.44		0.11	0.42		0.10	0.22		0.09	0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	247	2272		206	2148		181	396		158	399	334
v/s Ratio Prot	c0.08	c0.30		0.07	c0.35		c0.10	c0.18		0.05	0.09	
v/s Ratio Perm												0.02
v/c Ratio	0.60	0.68		0.61	0.82		0.99	0.80		0.60	0.45	0.08
Uniform Delay, d1	48.7	26.7		50.6	30.9		53.9	44.1		52.7	41.3	38.1
Progression Factor	0.99	1.09		0.99	0.75		1.10	0.92		1.00	1.00	1.00
Incremental Delay, d2	3.7	1.6		0.5	0.4		48.0	6.6		6.3	0.8	0.1
Delay (s)	51.9	30.8		50.6	23.6		107.2	47.4		59.0	42.1	38.2
Level of Service	D	C		D	C		F	D		E	D	D
Approach Delay (s)		32.6			25.4			68.1			45.1	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM Average Control Delay	34.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
72: Cactus Ave & SR-215 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1500	110	1360	680	0	0	0	0	0	0	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0							4.0
Lane Util. Factor		0.91	1.00	1.00	0.91							1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00							1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00							1.00
Frt		1.00	0.85	1.00	1.00							0.86
Flt Protected		1.00	1.00	0.95	1.00							1.00
Satd. Flow (prot)		5187	1569	1805	5187							1644
Flt Permitted		1.00	1.00	0.95	1.00							1.00
Satd. Flow (perm)		5187	1569	1805	5187							1644
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	1613	118	1462	731	0	0	0	0	0	0	97
RTOR Reduction (vph)	0	0	37	0	0	0	0	0	0	0	0	82
Lane Group Flow (vph)	0	1613	81	1462	731	0	0	0	0	0	0	15
Confl. Peds. (#/hr)			5									5
Turn Type			Perm	Prot								custom
Protected Phases		4		3 6	8							6
Permitted Phases			4									
Actuated Green, G (s)		34.0	34.0	78.0	94.0							18.0
Effective Green, g (s)		34.0	34.0	78.0	94.0							18.0
Actuated g/C Ratio		0.28	0.28	0.65	0.78							0.15
Clearance Time (s)		4.0	4.0		4.0							4.0
Vehicle Extension (s)		3.0	3.0		3.0							3.0
Lane Grp Cap (vph)		1470	445	1173	4063							247
v/s Ratio Prot		c0.31		c0.81	0.14							0.01
v/s Ratio Perm			0.05									
v/c Ratio		1.10	0.18	1.25	0.18							0.06
Uniform Delay, d1		43.0	32.5	21.0	3.3							43.7
Progression Factor		1.00	1.00	0.81	0.19							1.00
Incremental Delay, d2		54.8	0.9	115.3	0.1							0.1
Delay (s)		97.8	33.4	132.3	0.7							43.8
Level of Service		F	C	F	A							D
Approach Delay (s)		93.4			88.4			0.0			43.8	
Approach LOS		F			F			A			D	

Intersection Summary			
HCM Average Control Delay	89.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	111.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
73: Cactus Ave & SR-215 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	1040	450	0	2140	150	40	20	10	470	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95			0.99		1.00	0.95		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	4952			5127		1805	1805		1805	1615	
Flt Permitted	0.06	1.00			1.00		0.74	1.00		0.74	1.00	
Satd. Flow (perm)	114	4952			5127		1414	1805		1401	1615	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	20	1051	455	0	2162	152	40	20	10	475	0	20
RTOR Reduction (vph)	0	59	0	0	6	0	0	6	0	0	2	0
Lane Group Flow (vph)	20	1447	0	0	2308	0	40	24	0	475	18	0
Confl. Peds. (#/hr)						5						
Turn Type	Perm						Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)	66.7	66.7			66.7		45.3	45.3		45.3	45.3	
Effective Green, g (s)	66.7	66.7			66.7		45.3	45.3		45.3	45.3	
Actuated g/C Ratio	0.56	0.56			0.56		0.38	0.38		0.38	0.38	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	63	2752			2850		534	681		529	610	
v/s Ratio Prot		0.29			c0.45			0.01			0.01	
v/s Ratio Perm	0.18						0.03			c0.34		
v/c Ratio	0.32	0.53			0.81		0.07	0.03		0.90	0.03	
Uniform Delay, d1	14.4	16.7			21.5		23.9	23.6		35.2	23.5	
Progression Factor	0.21	0.12			0.50		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.1			0.2		0.1	0.0		17.8	0.0	
Delay (s)	4.2	2.0			10.9		24.0	23.6		53.0	23.5	
Level of Service	A	A			B		C	C		D	C	
Approach Delay (s)		2.0			10.9			23.8			51.8	
Approach LOS		A			B			C			D	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
74: Cactus Ave & Elsworth St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	1830	40	40	1770	110	970	190	230	140	50	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98		0.95	0.98	1.00
Satd. Flow (prot)	1805	5187	1585	1805	5187	1564	1715	1672		1715	1763	1587
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98		0.95	0.98	1.00
Satd. Flow (perm)	1805	5187	1585	1805	5187	1564	1715	1672		1715	1763	1587
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	196	1887	41	41	1825	113	1000	196	237	144	52	268
RTOR Reduction (vph)	0	0	16	0	0	49	0	15	0	0	0	98
Lane Group Flow (vph)	196	1887	25	41	1825	64	730	688	0	96	100	170
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	22.8	41.7	41.7	7.1	26.0	26.0	37.0	37.0		18.2	18.2	18.2
Effective Green, g (s)	22.8	41.7	41.7	7.1	26.0	26.0	37.0	37.0		18.2	18.2	18.2
Actuated g/C Ratio	0.19	0.35	0.35	0.06	0.22	0.22	0.31	0.31		0.15	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	343	1802	551	107	1124	339	529	516		260	267	241
v/s Ratio Prot	c0.11	c0.36		0.02	c0.35		c0.43	0.41		0.06	0.06	
v/s Ratio Perm			0.02			0.04						c0.11
v/c Ratio	0.57	1.05	0.04	0.38	1.62	0.19	1.38	1.33		0.37	0.37	0.70
Uniform Delay, d1	44.2	39.1	25.9	54.3	47.0	38.4	41.5	41.5		45.7	45.8	48.3
Progression Factor	0.66	1.05	0.96	1.20	0.68	0.43	1.00	1.00		0.78	0.78	0.74
Incremental Delay, d2	2.1	33.9	0.1	1.2	282.7	0.6	182.6	162.7		0.8	0.8	8.4
Delay (s)	31.4	75.2	25.0	66.2	314.9	17.0	224.1	204.2		36.4	36.5	44.1
Level of Service	C	E	C	E	F	B	F	F		D	D	D
Approach Delay (s)		70.2			292.8			214.3			40.9	
Approach LOS		E			F			F			D	

Intersection Summary			
HCM Average Control Delay	175.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	106.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
75: Central Ave & Lochmoor Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1050	280	100	920	540	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3474		1805	3610	1805	1594
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3474		1805	3610	1805	1594
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1141	304	109	1000	587	348
RTOR Reduction (vph)	26	0	0	0	0	15
Lane Group Flow (vph)	1419	0	109	1000	587	333
Confl. Peds. (#/hr)		5	5			5
Turn Type			Prot			pm+ov
Protected Phases	4		3	8	2	3
Permitted Phases						2
Actuated Green, G (s)	37.6		7.0	48.6	30.9	37.9
Effective Green, g (s)	37.6		7.0	48.6	30.9	37.9
Actuated g/C Ratio	0.43		0.08	0.56	0.35	0.43
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1493		144	2005	637	763
v/s Ratio Prot	c0.41		c0.06	0.28	c0.33	0.03
v/s Ratio Perm						0.17
v/c Ratio	0.95		0.76	0.50	0.92	0.44
Uniform Delay, d1	24.0		39.4	12.0	27.1	17.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	13.3		20.1	0.2	18.9	0.4
Delay (s)	37.3		59.5	12.2	46.0	17.7
Level of Service	D		E	B	D	B
Approach Delay (s)	37.3			16.8	35.5	
Approach LOS	D			B	D	

Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	87.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
76: Central Ave & Sycamore Canyon Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	910	420	210	450	200	390	300	220	200	220	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1588	3502	3443		1805	1900	1615	1805	3610	1590
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1588	3502	3443		1805	1900	1615	1805	3610	1590
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	43	968	447	223	479	213	415	319	234	213	234	32
RTOR Reduction (vph)	0	0	314	0	47	0	0	0	179	0	0	28
Lane Group Flow (vph)	43	968	133	223	645	0	415	319	55	213	234	4
Confl. Peds. (#/hr)			5	5			5					5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	5.4	25.2	25.2	8.9	28.7		23.7	19.9	19.9	14.9	11.1	11.1
Effective Green, g (s)	5.4	25.2	25.2	8.9	28.7		23.7	19.9	19.9	14.9	11.1	11.1
Actuated g/C Ratio	0.06	0.30	0.30	0.10	0.34		0.28	0.23	0.23	0.18	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	115	1540	471	367	1164		504	445	379	317	472	208
v/s Ratio Prot	0.02	c0.19		0.06	c0.19		c0.23	0.17		c0.12	0.06	
v/s Ratio Perm			0.08						0.03			0.00
v/c Ratio	0.37	0.63	0.28	0.61	0.55		0.82	0.72	0.14	0.67	0.50	0.02
Uniform Delay, d1	38.1	25.8	22.9	36.3	22.9		28.6	29.9	25.8	32.7	34.3	32.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.8	0.3	2.8	0.6		10.5	5.4	0.2	5.5	0.8	0.0
Delay (s)	40.2	26.6	23.2	39.2	23.5		39.1	35.3	25.9	38.2	35.1	32.2
Level of Service	D	C	C	D	C		D	D	C	D	D	C
Approach Delay (s)		26.0			27.3			34.7			36.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
77: SR 60 EB Ramps & Central Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	10	100	0	0	0	0	660	630	500	760	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.95					0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Frt	1.00	0.88	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1582	1534					3610	1615	3502	3610	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1582	1534					3610	1615	3502	3610	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	22	11	110	0	0	0	0	725	692	549	835	0
RTOR Reduction (vph)	0	47	54	0	0	0	0	0	218	0	0	0
Lane Group Flow (vph)	22	15	5	0	0	0	0	725	474	549	835	0
Confl. Peds. (#/hr)							5					5
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	6	6						4		3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	4.2	4.2	4.2					21.9	21.9	11.9	37.8	
Effective Green, g (s)	4.2	4.2	4.2					21.9	21.9	11.9	37.8	
Actuated g/C Ratio	0.08	0.08	0.08					0.44	0.44	0.24	0.76	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	152	133	129					1581	707	833	2729	
v/s Ratio Prot	c0.01	0.01						0.20		c0.16	0.23	
v/s Ratio Perm			0.00						c0.29			
v/c Ratio	0.14	0.11	0.04					0.46	0.67	0.66	0.31	
Uniform Delay, d1	21.2	21.2	21.0					9.9	11.2	17.2	1.9	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.02	0.94	
Incremental Delay, d2	0.4	0.4	0.1					1.0	5.0	1.8	0.3	
Delay (s)	21.7	21.6	21.2					10.8	16.2	19.3	2.1	
Level of Service	C	C	C					B	B	B	A	
Approach Delay (s)		21.4			0.0			13.5			8.9	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
78: SR60 WB Ramps & Central Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	330	210	650	0	0	910
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3502	1615	3610			3610
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3502	1615	3610			3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	228	707	0	0	989
RTOR Reduction (vph)	0	161	0	0	0	0
Lane Group Flow (vph)	359	67	707	0	0	989
Confl. Peds. (#/hr)				5		
Turn Type		Perm				
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	10.6	10.6	31.4			31.4
Effective Green, g (s)	10.6	10.6	31.4			31.4
Actuated g/C Ratio	0.21	0.21	0.63			0.63
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	742	342	2267			2267
v/s Ratio Prot	c0.10		0.20			c0.27
v/s Ratio Perm		0.04				
v/c Ratio	0.48	0.20	0.31			0.44
Uniform Delay, d1	17.3	16.2	4.3			4.8
Progression Factor	1.00	1.00	0.39			1.00
Incremental Delay, d2	0.5	0.3	0.3			0.6
Delay (s)	17.8	16.5	2.0			5.4
Level of Service	B	B	A			A
Approach Delay (s)	17.3		2.0			5.4
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2100	60	290	1850	640	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.91		0.97	0.91	0.94	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	5163		3502	5187	5095	
Flt Permitted	1.00		0.95	1.00	0.95	
Satd. Flow (perm)	5163		3502	5187	5095	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	2143	61	296	1888	653	10
RTOR Reduction (vph)	4	0	0	0	2	0
Lane Group Flow (vph)	2200	0	296	1888	661	0
Confl. Peds. (#/hr)		5	5			
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	33.0		8.1	45.1	13.9	
Effective Green, g (s)	33.0		8.1	45.1	13.9	
Actuated g/C Ratio	0.49		0.12	0.67	0.21	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2543		423	3492	1057	
v/s Ratio Prot	c0.43		0.08	c0.36	c0.13	
v/s Ratio Perm						
v/c Ratio	0.87		0.70	0.54	0.62	
Uniform Delay, d1	15.0		28.3	5.6	24.2	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	3.3		5.0	0.2	1.2	
Delay (s)	18.4		33.3	5.8	25.3	
Level of Service	B		C	A	C	
Approach Delay (s)	18.4			9.5	25.3	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
80: Alessandro Blvd & Mission Grove Pkwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	2240	110	640	2030	120	170	220	350	160	140	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91		0.97	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5187	1587	3502	5135		3502	1900	1589	1805	3478	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	5187	1587	3502	5135		3502	1900	1589	1805	3478	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	93	2309	113	660	2093	124	175	227	361	165	144	41
RTOR Reduction (vph)	0	0	63	0	5	0	0	0	268	0	25	0
Lane Group Flow (vph)	93	2309	50	660	2212	0	175	227	93	165	160	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	10.5	52.1	52.1	22.0	63.6		16.6	18.3	18.3	9.0	10.7	
Effective Green, g (s)	10.5	52.1	52.1	22.0	63.6		16.6	18.3	18.3	9.0	10.7	
Actuated g/C Ratio	0.09	0.44	0.44	0.19	0.54		0.14	0.16	0.16	0.08	0.09	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	161	2302	704	656	2782		495	296	248	138	317	
v/s Ratio Prot	0.05	c0.45		c0.19	0.43		0.05	c0.12		c0.09	0.05	
v/s Ratio Perm			0.03						0.06			
v/c Ratio	0.58	1.00	0.07	1.01	0.79		0.35	0.77	0.38	1.20	0.51	
Uniform Delay, d1	51.3	32.7	18.8	47.7	21.7		45.6	47.5	44.4	54.2	50.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.9	19.5	0.0	36.6	1.6		0.4	11.3	1.0	138.7	1.3	
Delay (s)	56.3	52.1	18.8	84.3	23.3		46.0	58.8	45.4	192.9	52.1	
Level of Service	E	D	B	F	C		D	E	D	F	D	
Approach Delay (s)		50.8			37.3			49.5			118.5	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM Average Control Delay	48.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	117.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
81: Martin Luther King Blvd & Chicago Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	1240	470	230	710	190	230	560	70	310	1050	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1593	3502	3610	1594	3502	3610	1593	3502	3610	1596
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1593	3502	3610	1594	3502	3610	1593	3502	3610	1596
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	200	1305	495	242	747	200	242	589	74	326	1105	221
RTOR Reduction (vph)	0	0	7	0	0	66	0	0	5	0	0	18
Lane Group Flow (vph)	200	1305	488	242	747	134	242	589	69	326	1105	203
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.3	44.0	54.0	8.0	36.7	48.7	10.0	38.0	46.0	12.0	40.0	55.3
Effective Green, g (s)	15.3	44.0	54.0	8.0	36.7	48.7	10.0	38.0	46.0	12.0	40.0	55.3
Actuated g/C Ratio	0.13	0.37	0.46	0.07	0.31	0.41	0.08	0.32	0.39	0.10	0.34	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	234	1346	783	237	1123	712	297	1163	675	356	1224	802
v/s Ratio Prot	c0.11	c0.36	0.05	c0.07	0.21	0.02	0.07	0.16	0.01	c0.09	c0.31	0.03
v/s Ratio Perm			0.25			0.06			0.04			0.09
v/c Ratio	0.85	0.97	0.62	1.02	0.67	0.19	0.81	0.51	0.10	0.92	0.90	0.25
Uniform Delay, d1	50.3	36.3	24.3	55.0	35.3	22.1	53.1	32.4	22.9	52.5	37.1	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.9	17.5	1.6	64.0	1.5	0.1	15.6	0.3	0.1	27.3	9.4	0.2
Delay (s)	75.2	53.8	25.8	119.0	36.8	22.2	68.7	32.8	22.9	79.8	46.6	19.1
Level of Service	E	D	C	F	D	C	E	C	C	E	D	B
Approach Delay (s)		49.0			51.1			41.6			49.5	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	48.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	118.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
82: Martin Luther King Blvd & Iowa Ave

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	110	1500	900	410	680	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	3610	3610	1602	3497	1453
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	3610	3610	1602	3497	1453
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	121	1648	989	451	747	242
RTOR Reduction (vph)	0	0	0	51	3	11
Lane Group Flow (vph)	121	1648	989	400	768	207
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	7.1	36.6	25.5	48.0	22.5	29.6
Effective Green, g (s)	7.1	36.6	25.5	48.0	22.5	29.6
Actuated g/C Ratio	0.11	0.55	0.38	0.72	0.34	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	191	1969	1372	1241	1173	728
v/s Ratio Prot	0.07	c0.46	0.27	0.11	c0.22	0.03
v/s Ratio Perm				0.14		0.11
v/c Ratio	0.63	0.84	0.72	0.32	0.65	0.28
Uniform Delay, d1	28.8	12.8	17.8	3.5	19.0	12.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	3.3	1.9	0.2	1.3	0.2
Delay (s)	35.5	16.0	19.7	3.7	20.3	12.2
Level of Service	D	B	B	A	C	B
Approach Delay (s)		17.4	14.7		18.5	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
83: Martin Luther King Blvd & Canyon Crest Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	1430	790	320	590	80	380	190	250	200	380	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1595	3502	3610	1590	3502	3610	1591	3502	3610	1604
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1595	3502	3610	1590	3502	3610	1591	3502	3610	1604
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	213	1607	888	360	663	90	427	213	281	225	427	281
RTOR Reduction (vph)	0	0	111	0	0	55	0	0	230	0	0	51
Lane Group Flow (vph)	213	1607	777	360	663	35	427	213	51	225	427	230
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	17.3	37.7	47.1	15.7	36.1	36.1	9.4	17.2	17.2	7.3	15.1	32.4
Effective Green, g (s)	17.3	37.7	47.1	15.7	36.1	36.1	9.4	17.2	17.2	7.3	15.1	32.4
Actuated g/C Ratio	0.18	0.40	0.50	0.17	0.38	0.38	0.10	0.18	0.18	0.08	0.16	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	333	2083	868	586	1388	611	351	661	291	272	581	622
v/s Ratio Prot	c0.12	0.31	c0.09	0.10	0.18		c0.12	0.06		0.06	c0.12	0.07
v/s Ratio Perm			0.40			0.02			0.03			0.08
v/c Ratio	0.64	0.77	0.89	0.61	0.48	0.06	1.22	0.32	0.18	0.83	0.73	0.37
Uniform Delay, d1	35.4	24.4	21.2	36.3	21.8	18.2	42.2	33.3	32.4	42.7	37.5	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	1.8	11.7	1.9	0.3	0.0	120.7	0.3	0.3	18.3	4.8	0.4
Delay (s)	39.4	26.2	32.8	38.2	22.1	18.2	162.9	33.6	32.7	60.9	42.3	23.5
Level of Service	D	C	C	D	C	B	F	C	C	E	D	C
Approach Delay (s)		29.4			27.0			93.3			41.1	
Approach LOS		C			C			F			D	

Intersection Summary			
HCM Average Control Delay	41.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	93.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
84: Martin Luther King Blvd & SR-60 EB Off Ramp

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	410	1310	10	380	0	0	0	0	10	0	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		0.91	0.91	1.00	0.95					1.00	1.00	
Frt		0.91	0.85	1.00	1.00					1.00	0.85	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3139	1470	1805	3610					1805	1615	
Flt Permitted		1.00	1.00	0.19	1.00					0.95	1.00	
Satd. Flow (perm)		3139	1470	355	3610					1805	1615	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	451	1440	11	418	0	0	0	0	11	0	297
RTOR Reduction (vph)	0	305	305	0	0	0	0	0	0	0	235	0
Lane Group Flow (vph)	0	866	415	11	418	0	0	0	0	11	62	0
Turn Type			Perm	Perm						Perm		
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		21.4	21.4	21.4	21.4					7.7	7.7	
Effective Green, g (s)		21.4	21.4	21.4	21.4					7.7	7.7	
Actuated g/C Ratio		0.58	0.58	0.58	0.58					0.21	0.21	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1811	848	205	2082					375	335	
v/s Ratio Prot		0.28			0.12						c0.04	
v/s Ratio Perm			c0.28	0.03						0.01		
v/c Ratio		0.48	0.49	0.05	0.20					0.03	0.18	
Uniform Delay, d1		4.6	4.6	3.4	3.8					11.7	12.1	
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	
Incremental Delay, d2		0.2	0.4	0.1	0.0					0.0	0.3	
Delay (s)		4.8	5.1	3.5	3.8					11.8	12.4	
Level of Service		A	A	A	A					B	B	
Approach Delay (s)		4.9			3.8			0.0			12.4	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	37.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
85: Martin Luther King Blvd & SR-60 WB On Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	460	0	430	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	535	0	500	0	0	0

Direction, Lane #	EB 1	EB 2	NB 1	NB 2
Volume Total (vph)	267	267	333	167
Volume Left (vph)	267	267	333	167
Volume Right (vph)	0	0	0	0
Hadj (s)	0.50	0.50	0.50	0.50
Departure Headway (s)	6.5	6.5	6.6	6.6
Degree Utilization, x	0.48	0.48	0.61	0.30
Capacity (veh/h)	536	538	529	530
Control Delay (s)	14.3	14.3	18.1	11.2
Approach Delay (s)	14.3		15.8	
Approach LOS	B		C	

Intersection Summary			
Delay	15.0		
HCM Level of Service	C		
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
86: Central Ave & Chicago Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	20	10	830	30	260	70	470	840	570	1130	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1795		3502	1900	1615	1805	3610	1589	3502	3610	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1795		3502	1900	1615	1805	3610	1589	3502	3610	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	22	11	922	33	289	78	522	933	633	1256	11
RTOR Reduction (vph)	0	10	0	0	0	196	0	0	524	0	0	2
Lane Group Flow (vph)	22	23	0	922	33	93	78	522	409	633	1256	9
Confl. Peds. (#/hr)			5	5					5	5		
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	3.0	5.4		32.1	34.5	34.5	7.0	31.1	31.1	22.1	46.2	46.2
Effective Green, g (s)	3.0	5.4		32.1	34.5	34.5	7.0	31.1	31.1	22.1	46.2	46.2
Actuated g/C Ratio	0.03	0.05		0.30	0.32	0.32	0.07	0.29	0.29	0.21	0.43	0.43
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	51	91		1054	614	522	118	1052	463	725	1563	699
v/s Ratio Prot	0.01	0.01		c0.26	0.02		0.04	0.14		c0.18	0.35	
v/s Ratio Perm						c0.06			c0.26			0.01
v/c Ratio	0.43	0.25		0.87	0.05	0.18	0.66	0.50	0.88	0.87	0.80	0.01
Uniform Delay, d1	51.0	48.7		35.4	24.9	25.9	48.7	31.3	36.1	40.9	26.3	17.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	1.4		8.2	0.0	0.2	13.0	0.4	17.7	11.3	3.1	0.0
Delay (s)	56.8	50.1		43.6	24.9	26.1	61.7	31.7	53.8	52.2	29.4	17.3
Level of Service	E	D		D	C	C	E	C	D	D	C	B
Approach Delay (s)		52.8			39.1			46.6			36.9	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	40.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	106.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
87: Central Ave & El Cerrito Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	1070	80	70	870	60	60	60	50	70	50	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99			0.96		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1805	3572		1805	3572			1785		1802	1677	
Flt Permitted	0.95	1.00		0.95	1.00			0.58		0.58	1.00	
Satd. Flow (perm)	1805	3572		1805	3572			1049		1099	1677	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	191	1202	90	79	978	67	67	67	56	79	56	202
RTOR Reduction (vph)	0	5	0	0	5	0	0	23	0	0	162	0
Lane Group Flow (vph)	191	1287	0	79	1040	0	0	167	0	79	96	0
Confl. Peds. (#/hr)	5					5			5	5		
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	8.2	31.1		5.2	28.1			12.0		12.0	12.0	
Effective Green, g (s)	8.2	31.1		5.2	28.1			12.0		12.0	12.0	
Actuated g/C Ratio	0.14	0.52		0.09	0.47			0.20		0.20	0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	245	1842		156	1665			209		219	334	
v/s Ratio Prot	c0.11	c0.36		0.04	0.29						0.06	
v/s Ratio Perm								c0.16		0.07		
v/c Ratio	0.78	0.70		0.51	0.62			0.80		0.36	0.29	
Uniform Delay, d1	25.2	11.1		26.3	12.1			23.0		20.8	20.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	14.5	1.2		2.6	0.7			18.8		1.0	0.5	
Delay (s)	39.6	12.2		28.9	12.9			41.8		21.9	21.0	
Level of Service	D	B		C	B			D		C	C	
Approach Delay (s)		15.8			14.0			41.8			21.2	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	60.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
88: Central Ave & Canyon Crest Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	940	260	210	890	170	150	350	140	330	710	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3480		1805	3610	1594	1805	3610	1596	3502	3535	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3480		1805	3610	1594	1805	3610	1596	3502	3535	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	1011	280	226	957	183	161	376	151	355	763	108
RTOR Reduction (vph)	0	20	0	0	0	51	0	0	12	0	9	0
Lane Group Flow (vph)	43	1271	0	226	957	132	161	376	139	355	862	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	5.5	42.9		14.0	51.4	65.2	11.0	30.4	44.4	13.8	33.2	
Effective Green, g (s)	5.5	42.9		14.0	51.4	65.2	11.0	30.4	44.4	13.8	33.2	
Actuated g/C Ratio	0.05	0.37		0.12	0.44	0.56	0.09	0.26	0.38	0.12	0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	85	1275		216	1585	942	170	937	660	413	1002	
v/s Ratio Prot	0.02	c0.37		c0.13	0.27	0.02	0.09	0.10	0.03	c0.10	c0.24	
v/s Ratio Perm						0.07			0.06			
v/c Ratio	0.51	1.00		1.05	0.60	0.14	0.95	0.40	0.21	0.86	0.86	
Uniform Delay, d1	54.5	37.0		51.5	25.1	12.5	52.8	35.8	24.5	50.7	39.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.7	24.2		73.9	0.7	0.1	53.1	0.3	0.2	16.1	7.5	
Delay (s)	59.1	61.2		125.5	25.7	12.5	105.8	36.1	24.7	66.8	47.2	
Level of Service	E	E		F	C	B	F	D	C	E	D	
Approach Delay (s)		61.2			40.5			49.9			52.9	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM Average Control Delay	51.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	117.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
89: Country Club Dr & Chicago Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	40	50	1230	100	90	1840
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.99	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1800	1591	3610	1575	1805	3610
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1800	1591	3610	1575	1805	3610
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	43	53	1309	106	96	1957
RTOR Reduction (vph)	0	48	0	22	0	0
Lane Group Flow (vph)	43	5	1309	84	96	1957
Confl. Peds. (#/hr)	5	5		5	5	
Turn Type		custom		Perm	Prot	
Protected Phases			2		1	6
Permitted Phases	8	8		2		
Actuated Green, G (s)	5.8	5.8	34.5	34.5	6.8	45.3
Effective Green, g (s)	5.8	5.8	34.5	34.5	6.8	45.3
Actuated g/C Ratio	0.10	0.10	0.58	0.58	0.12	0.77
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	177	156	2107	919	208	2767
v/s Ratio Prot			0.36		0.05	c0.54
v/s Ratio Perm	c0.02	0.00		0.05		
v/c Ratio	0.24	0.03	0.62	0.09	0.46	0.71
Uniform Delay, d1	24.6	24.1	8.0	5.4	24.4	3.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	0.6	0.0	1.6	0.8
Delay (s)	25.3	24.2	8.6	5.5	26.1	4.4
Level of Service	C	C	A	A	C	A
Approach Delay (s)	24.7		8.4			5.4
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
90: Arlington Ave & SR-91 WB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1230	200	510	870	290	0	0	0	780	90	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97				1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	1805	5187	1574	1805	3610	1572				1715	1736	1593
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	1805	5187	1574	1805	3610	1572				1715	1736	1593
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	61	1255	204	520	888	296	0	0	0	796	92	469
RTOR Reduction (vph)	0	0	91	0	0	138	0	0	0	0	0	39
Lane Group Flow (vph)	61	1255	113	520	888	158	0	0	0	446	442	430
Confl. Peds. (#/hr)	5		5	5		5						5
Turn Type	Prot		Perm	Prot		Perm				Split		pm+ov
Protected Phases	7	4		3	8					6	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	9.8	34.7	34.7	39.0	63.9	63.9				34.3	34.3	44.1
Effective Green, g (s)	9.8	34.7	34.7	39.0	63.9	63.9				34.3	34.3	44.1
Actuated g/C Ratio	0.08	0.29	0.29	0.32	0.53	0.53				0.29	0.29	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	147	1500	455	587	1922	837				490	496	639
v/s Ratio Prot	0.03	c0.24		c0.29	0.25					c0.26	0.25	0.06
v/s Ratio Perm			0.07			0.10						0.22
v/c Ratio	0.41	0.84	0.25	0.89	0.46	0.19				0.91	0.89	0.67
Uniform Delay, d1	52.4	40.0	32.7	38.4	17.4	14.6				41.4	41.1	31.9
Progression Factor	1.00	1.00	1.00	0.58	0.34	0.03				1.00	1.00	1.00
Incremental Delay, d2	1.9	5.7	1.3	12.9	0.7	0.4				21.0	17.9	2.8
Delay (s)	54.3	45.7	34.0	35.3	6.6	0.9				62.3	59.0	34.7
Level of Service	D	D	C	D	A	A				E	E	C
Approach Delay (s)		44.5			14.4			0.0			51.7	
Approach LOS		D			B			A			D	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
91: Arlington Ave & SR-91 EB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	400	1160	310	210	1440	270	210	350	510	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.86	1.00	0.91	0.91	0.88			
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1805	3610	1596	1805	6536	1586	1643	3445	2842			
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1805	3610	1596	1805	6536	1586	1643	3445	2842			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	426	1234	330	223	1532	287	223	372	543	0	0	0
RTOR Reduction (vph)	0	0	64	0	0	110	0	0	437	0	0	0
Lane Group Flow (vph)	426	1234	266	223	1532	177	192	403	106	0	0	0
Confl. Peds. (#/hr)	5		5	5		5						
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm			
Protected Phases	7	4	2	3	8		2	2				
Permitted Phases			4			8			2			
Actuated Green, G (s)	33.9	58.5	82.0	26.0	50.6	50.6	23.5	23.5	23.5			
Effective Green, g (s)	33.9	58.5	82.0	26.0	50.6	50.6	23.5	23.5	23.5			
Actuated g/C Ratio	0.28	0.49	0.68	0.22	0.42	0.42	0.20	0.20	0.20			
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	510	1760	1144	391	2756	669	322	675	557			
v/s Ratio Prot	c0.24	c0.34	0.05	0.12	c0.23		0.12	c0.12				
v/s Ratio Perm			0.12			0.11			0.04			
v/c Ratio	0.84	0.70	0.23	0.57	0.56	0.26	0.60	0.60	0.19			
Uniform Delay, d1	40.4	23.9	7.2	42.0	26.2	22.6	43.9	43.9	40.3			
Progression Factor	1.15	0.27	0.40	1.23	1.35	1.87	1.00	1.00	1.00			
Incremental Delay, d2	6.1	1.2	0.1	1.9	0.8	0.9	3.0	1.4	0.2			
Delay (s)	52.4	7.7	2.9	53.6	36.2	43.1	46.9	45.4	40.5			
Level of Service	D	A	A	D	D	D	D	D	D			
Approach Delay (s)		16.5			39.1			43.3			0.0	
Approach LOS		B			D			D			A	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
92: Arlington Ave & Maude St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1600	210	100	1590	10	180	0	60	10	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.98		1.00	1.00		1.00	0.85			0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1805	5078		1805	5181		1805	1588			1725	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00			0.90	
Satd. Flow (perm)	1805	5078		1805	5181		1414	1588			1587	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	1649	216	103	1639	10	186	0	62	10	0	10
RTOR Reduction (vph)	0	10	0	0	0	0	0	51	0	0	8	0
Lane Group Flow (vph)	10	1855	0	103	1649	0	186	11	0	0	12	0
Confl. Peds. (#/hr)	5		5	5		5			5	5		
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	1.4	72.4		14.4	85.4		21.2	21.2			21.2	
Effective Green, g (s)	1.4	72.4		14.4	85.4		21.2	21.2			21.2	
Actuated g/C Ratio	0.01	0.60		0.12	0.71		0.18	0.18			0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	21	3064		217	3687		250	281			280	
v/s Ratio Prot	0.01	c0.37		c0.06	c0.32			0.01				
v/s Ratio Perm							c0.13				0.01	
v/c Ratio	0.48	0.61		0.47	0.45		0.74	0.04			0.04	
Uniform Delay, d1	58.9	14.9		49.3	7.3		46.8	41.0			41.0	
Progression Factor	1.18	0.91		0.64	0.58		1.00	1.00			1.00	
Incremental Delay, d2	12.8	0.7		1.5	0.3		11.4	0.1			0.1	
Delay (s)	82.1	14.2		33.1	4.6		58.2	41.0			41.0	
Level of Service	F	B		C	A		E	D			D	
Approach Delay (s)		14.6			6.3			53.9			41.0	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
93: Arlington Ave & Horace St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1270	150	40	1260	10	180	30	50	10	20	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	1.00
Satd. Flow (prot)	1803	3541		1805	3605			1776			1866	1587
Flt Permitted	0.16	1.00		0.12	1.00			0.77			0.90	1.00
Satd. Flow (perm)	295	3541		232	3605			1421			1714	1587
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	1351	160	43	1340	11	191	32	53	11	21	106
RTOR Reduction (vph)	0	6	0	0	0	0	0	8	0	0	0	47
Lane Group Flow (vph)	74	1505	0	43	1351	0	0	268	0	0	32	59
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	84.2	84.2		84.2	84.2			27.8			27.8	27.8
Effective Green, g (s)	84.2	84.2		84.2	84.2			27.8			27.8	27.8
Actuated g/C Ratio	0.70	0.70		0.70	0.70			0.23			0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	207	2485		163	2530			329			397	368
v/s Ratio Prot		c0.43			0.37							
v/s Ratio Perm	0.25			0.19				c0.19			0.02	0.04
v/c Ratio	0.36	0.61		0.26	0.53			0.82			0.08	0.16
Uniform Delay, d1	7.1	9.3		6.6	8.5			43.7			36.1	36.8
Progression Factor	0.15	0.33		0.45	0.52			1.00			1.00	1.00
Incremental Delay, d2	4.0	0.9		2.1	0.4			14.4			0.1	0.2
Delay (s)	5.1	4.0		5.0	4.9			58.0			36.2	37.0
Level of Service	A	A		A	A			E			D	D
Approach Delay (s)		4.0			4.9			58.0			36.8	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
94: Arlington Ave & Victoria Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	1270	30	460	1260	60	30	180	500	50	320	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3595		1805	3581		1805	1900	1597	1805	1900	1587
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3595		1805	3581		1805	1900	1597	1805	1900	1587
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	106	1351	32	489	1340	64	32	191	532	53	340	85
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	30	0	0	51
Lane Group Flow (vph)	106	1382	0	489	1401	0	32	191	502	53	340	34
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			6
Actuated Green, G (s)	8.9	42.0		20.0	53.1		4.2	36.4	56.4	5.6	37.8	37.8
Effective Green, g (s)	8.9	42.0		20.0	53.1		4.2	36.4	56.4	5.6	37.8	37.8
Actuated g/C Ratio	0.07	0.35		0.17	0.44		0.04	0.30	0.47	0.05	0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	134	1258		301	1585		63	576	751	84	599	500
v/s Ratio Prot	0.06	c0.38		c0.27	0.39		0.02	0.10	c0.11	0.03	c0.18	
v/s Ratio Perm									0.20			0.02
v/c Ratio	0.79	1.10		1.62	0.88		0.51	0.33	0.67	0.63	0.57	0.07
Uniform Delay, d1	54.6	39.0		50.0	30.6		56.9	32.4	24.6	56.2	34.3	28.8
Progression Factor	1.36	0.69		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.5	54.9		295.8	6.2		6.3	1.5	2.3	14.4	3.9	0.3
Delay (s)	97.1	81.6		345.8	36.9		63.2	33.9	26.9	70.6	38.2	29.0
Level of Service	F	F		F	D		E	C	C	E	D	C
Approach Delay (s)		82.7			116.7			30.2			40.1	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM Average Control Delay	83.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	109.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
95: Arlington Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	670	1040	580	870	440	900	1210	260	500	1630	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3610	2814	3502	3610	1593	3502	3610	1593	3502	5171	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3610	2814	3502	3610	1593	3502	3610	1593	3502	5171	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	728	1130	630	946	478	978	1315	283	543	1772	33
RTOR Reduction (vph)	0	0	1	0	0	42	0	0	12	0	1	0
Lane Group Flow (vph)	43	728	1129	630	946	436	978	1315	271	543	1804	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	6.4	31.7	54.7	16.0	41.3	54.3	23.0	48.1	64.1	13.0	38.1	
Effective Green, g (s)	6.4	31.7	54.7	16.0	41.3	54.3	23.0	48.1	64.1	13.0	38.1	
Actuated g/C Ratio	0.05	0.25	0.44	0.13	0.33	0.44	0.18	0.39	0.51	0.10	0.31	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	93	917	1233	449	1195	693	645	1391	869	365	1579	
v/s Ratio Prot	0.02	0.20	c0.17	c0.18	0.26	0.07	c0.28	0.36	0.04	c0.16	c0.35	
v/s Ratio Perm			0.23			0.21			0.13			
v/c Ratio	0.46	0.79	0.92	1.40	0.79	0.63	1.52	0.95	0.31	1.49	1.14	
Uniform Delay, d1	57.5	43.5	32.9	54.4	37.8	27.4	50.9	37.1	17.6	55.9	43.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.6	4.8	10.6	194.4	3.7	1.8	240.3	13.2	0.2	233.6	72.1	
Delay (s)	61.1	48.3	43.5	248.8	41.5	29.2	291.2	50.3	17.8	289.5	115.5	
Level of Service	E	D	D	F	D	C	F	D	B	F	F	
Approach Delay (s)		45.7			102.2			138.1			155.7	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	114.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	124.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	108.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
96: Century Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	10	10	30	10	60	30	2130	30	90	2930	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.92		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1790			1702		1805	5174		1805	5165	
Flt Permitted		0.63			0.90		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1160			1562		1805	5174		1805	5165	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	46	11	11	34	11	69	34	2448	34	103	3368	80
RTOR Reduction (vph)	0	8	0	0	61	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	60	0	0	53	0	34	2481	0	103	3447	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		9.3			9.3		4.0	59.6		8.7	64.3	
Effective Green, g (s)		9.3			9.3		4.0	59.6		8.7	64.3	
Actuated g/C Ratio		0.10			0.10		0.04	0.67		0.10	0.72	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		120			162		81	3442		175	3707	
v/s Ratio Prot							0.02	0.48		c0.06	c0.67	
v/s Ratio Perm		c0.05			0.03							
v/c Ratio		0.50			0.33		0.42	0.72		0.59	0.93	
Uniform Delay, d1		37.9			37.2		41.7	9.6		38.7	10.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.2			1.2		3.5	0.8		5.0	4.9	
Delay (s)		41.2			38.4		45.2	10.4		43.7	15.6	
Level of Service		D			D		D	B		D	B	
Approach Delay (s)		41.2			38.4			10.9			16.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	89.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
97: Via Vista Dr & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	30	50	30	30	50	50	2220	20	100	2780	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1800	1900	1615	1805	1900	1588	1805	5179		1805	5158	
Flt Permitted	0.61	1.00	1.00	0.74	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1162	1900	1615	1398	1900	1588	1805	5179		1805	5158	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	33	54	33	33	54	54	2413	22	109	3022	98
RTOR Reduction (vph)	0	0	49	0	0	50	0	0	0	0	2	0
Lane Group Flow (vph)	65	33	5	33	33	4	54	2435	0	109	3118	0
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	13.0	7.8	7.8	10.4	6.5	6.5	5.2	54.8		8.2	57.8	
Effective Green, g (s)	13.0	7.8	7.8	10.4	6.5	6.5	5.2	54.8		8.2	57.8	
Actuated g/C Ratio	0.14	0.09	0.09	0.11	0.07	0.07	0.06	0.60		0.09	0.64	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	203	163	139	178	136	114	103	3129		163	3287	
v/s Ratio Prot	c0.02	0.02		0.01	0.02		0.03	c0.47		0.06	c0.60	
v/s Ratio Perm	c0.03		0.00	0.01		0.00						
v/c Ratio	0.32	0.20	0.03	0.19	0.24	0.03	0.52	0.78		0.67	0.95	
Uniform Delay, d1	34.5	38.6	38.0	36.2	39.8	39.2	41.5	13.4		39.9	15.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.6	0.1	0.5	0.9	0.1	4.7	1.3		9.9	7.0	
Delay (s)	35.5	39.2	38.1	36.7	40.7	39.3	46.3	14.7		49.9	22.1	
Level of Service	D	D	D	D	D	D	D	B		D	C	
Approach Delay (s)		37.2			39.0			15.4			23.0	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
98: Canyon Crest Dr & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	0	20	640	10	30	30	2190	400	80	2890	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		0.94	1.00		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85		1.00	0.89		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3022		5090	1665		1805	5187	1594	1805	5181	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3022		5090	1665		1805	5187	1594	1805	5181	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	0	21	667	10	31	31	2281	417	83	3010	21
RTOR Reduction (vph)	0	20	0	0	27	0	0	0	117	0	0	0
Lane Group Flow (vph)	10	1	0	667	14	0	31	2281	300	83	3031	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	1.4	3.3		9.0	10.9		2.6	46.8	55.8	7.0	51.2	
Effective Green, g (s)	1.4	3.3		9.0	10.9		2.6	46.8	55.8	7.0	51.2	
Actuated g/C Ratio	0.02	0.04		0.11	0.13		0.03	0.57	0.68	0.09	0.62	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	31	121		558	221		57	2957	1161	154	3231	
v/s Ratio Prot	c0.01	0.00		c0.13	0.01		0.02	c0.44	0.03	0.05	c0.58	
v/s Ratio Perm									0.16			
v/c Ratio	0.32	0.01		1.20	0.06		0.54	0.77	0.26	0.54	0.94	
Uniform Delay, d1	39.9	37.8		36.5	31.1		39.2	13.5	5.1	36.0	14.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.0	0.0		104.5	0.1		10.2	1.3	0.1	3.6	6.1	
Delay (s)	45.8	37.8		141.1	31.3		49.4	14.8	5.2	39.6	20.1	
Level of Service	D	D		F	C		D	B	A	D	C	
Approach Delay (s)		40.4			134.7			13.8			20.7	
Approach LOS		D			F			B			C	

Intersection Summary			
HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	82.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
99: Oleander Ave/Harley Knox Blvd & Perris Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	260	210	40	610	930	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1787	1567	1805	1900	1900	1576
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1787	1567	1805	1900	1900	1576
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	302	244	47	709	1081	140
RTOR Reduction (vph)	0	139	0	0	0	12
Lane Group Flow (vph)	302	105	47	709	1081	128
Confl. Peds. (#/hr)	5	5	5			5
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	23.0	23.0	4.8	79.0	70.2	70.2
Effective Green, g (s)	23.0	23.0	4.8	79.0	70.2	70.2
Actuated g/C Ratio	0.21	0.21	0.04	0.72	0.64	0.64
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	374	328	79	1365	1213	1006
v/s Ratio Prot			0.03	c0.37	c0.57	
v/s Ratio Perm	c0.17	0.07				0.08
v/c Ratio	0.81	0.32	0.59	0.52	0.89	0.13
Uniform Delay, d1	41.4	36.9	51.6	7.0	16.7	7.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.1	0.6	11.5	1.4	10.1	0.3
Delay (s)	53.4	37.4	63.1	8.4	26.8	8.1
Level of Service	D	D	E	A	C	A
Approach Delay (s)	46.3			11.8	24.6	
Approach LOS	D			B	C	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
100: Harley Knox Blvd & Evans Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)												
Lane Util. Factor												
Frt												
Flt Protected												
Satd. Flow (prot)												
Flt Permitted												
Satd. Flow (perm)												
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type							Perm			Perm		
Protected Phases								2			6	
Permitted Phases							2			6		
Actuated Green, G (s)												
Effective Green, g (s)												
Actuated g/C Ratio												
Clearance Time (s)												
Lane Grp Cap (vph)												
v/s Ratio Prot												
v/s Ratio Perm												
v/c Ratio												
Uniform Delay, d1												
Progression Factor												
Incremental Delay, d2												
Delay (s)												
Level of Service												
Approach Delay (s)		0.0			0.0			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	0.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	20.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
101: Ramona Expy & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	1290	110	90	1050	110	160	20	130	370	30	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	4.6		4.0	4.9	4.9
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5117		1805	5187	1582	1805	3096		1805	3610	1588
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5117		1805	5187	1582	1805	3096		1805	3610	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	155	1330	113	93	1082	113	165	21	134	381	31	361
RTOR Reduction (vph)	0	7	0	0	0	70	0	119	0	0	0	213
Lane Group Flow (vph)	155	1436	0	93	1082	43	165	36	0	381	31	148
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Actuated Green, G (s)	16.2	44.6		13.5	41.9	41.9	15.1	12.3		21.0	17.9	17.9
Effective Green, g (s)	16.2	44.6		13.5	41.9	41.9	15.1	12.3		21.0	17.9	17.9
Actuated g/C Ratio	0.15	0.41		0.12	0.38	0.38	0.14	0.11		0.19	0.16	0.16
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	4.6		4.0	4.9	4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	266	2075		222	1976	603	248	346		345	587	258
v/s Ratio Prot	c0.09	c0.28		0.05	0.21		0.09	0.01		c0.21	0.01	
v/s Ratio Perm						0.03						c0.09
v/c Ratio	0.58	0.69		0.42	0.55	0.07	0.67	0.10		1.10	0.05	0.57
Uniform Delay, d1	43.7	27.0		44.6	26.6	21.7	45.1	43.9		44.5	38.9	42.5
Progression Factor	1.06	0.70		0.99	1.01	2.24	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.2	1.9		1.2	1.0	0.2	6.6	0.1		79.6	0.0	3.1
Delay (s)	49.6	20.7		45.5	28.0	48.8	51.6	44.0		124.1	38.9	45.6
Level of Service	D	C		D	C	D	D	D		F	D	D
Approach Delay (s)		23.5			31.1			47.9			84.0	
Approach LOS		C			C			D			F	

Intersection Summary			
HCM Average Control Delay	39.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
102: Ramona Expy & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	1110	270	190	730	80	240	330	220	260	500	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5187	1586	3502	5101		3502	3610	1587	3502	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5187	1586	3502	5101		3502	3610	1587	3502	3610	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	206	1144	278	196	753	82	247	340	227	268	515	144
RTOR Reduction (vph)	0	0	164	0	10	0	0	0	173	0	0	115
Lane Group Flow (vph)	206	1144	114	196	825	0	247	340	54	268	515	29
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	11.7	45.1	45.1	11.4	44.8		12.0	21.4	21.4	12.8	22.2	22.2
Effective Green, g (s)	11.7	45.1	45.1	11.4	44.8		12.0	21.4	21.4	12.8	22.2	22.2
Actuated g/C Ratio	0.11	0.41	0.41	0.10	0.41		0.11	0.19	0.19	0.12	0.20	0.20
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	372	2127	650	363	2077		382	702	309	408	729	320
v/s Ratio Prot	c0.06	c0.22		0.06	0.16		0.07	0.09		c0.08	c0.14	
v/s Ratio Perm			0.07						0.03			0.02
v/c Ratio	0.55	0.54	0.18	0.54	0.40		0.65	0.48	0.17	0.66	0.71	0.09
Uniform Delay, d1	46.7	24.6	20.6	46.8	23.1		47.0	39.4	36.9	46.5	40.9	35.7
Progression Factor	1.34	0.70	0.64	0.86	0.86		0.82	0.73	1.57	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.6	0.4	1.2	0.4		3.6	0.5	0.3	3.8	3.1	0.1
Delay (s)	63.6	17.9	13.7	41.4	20.4		42.2	29.2	58.3	50.3	44.0	35.8
Level of Service	E	B	B	D	C		D	C	E	D	D	D
Approach Delay (s)		23.0			24.4			41.3			44.5	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
103: Ramona Expy & Evans Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	650	990	300	20	450	150	170	350	20	330	400	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	5187	1593	1805	3610	1586	3502	3578		3502	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	5187	1593	1805	3610	1586	3502	3578		3502	3610	1588
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	756	1151	349	23	523	174	198	407	23	384	465	488
RTOR Reduction (vph)	0	0	0	0	0	133	0	4	0	0	0	295
Lane Group Flow (vph)	756	1151	349	23	523	41	198	426	0	384	465	193
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Free	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6						4
Actuated Green, G (s)	23.0	46.6	110.0	2.4	26.0	26.0	8.0	29.0		12.0	33.0	33.0
Effective Green, g (s)	23.0	46.6	110.0	2.4	26.0	26.0	8.0	29.0		12.0	33.0	33.0
Actuated g/C Ratio	0.21	0.42	1.00	0.02	0.24	0.24	0.07	0.26		0.11	0.30	0.30
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	732	2197	1593	39	853	375	255	943		382	1083	476
v/s Ratio Prot	c0.22	0.22		0.01	c0.14		0.06	0.12		c0.11	c0.13	
v/s Ratio Perm			c0.22			0.03						0.12
v/c Ratio	1.03	0.52	0.22	0.59	0.61	0.11	0.78	0.45		1.01	0.43	0.41
Uniform Delay, d1	43.5	23.5	0.0	53.3	37.5	32.9	50.1	33.9		49.0	30.9	30.7
Progression Factor	0.83	0.78	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	41.0	0.8	0.3	20.8	3.3	0.6	13.8	1.6		47.4	1.2	2.6
Delay (s)	77.0	19.3	0.3	74.1	40.8	33.5	63.9	35.4		96.4	32.2	33.2
Level of Service	E	B	A	E	D	C	E	D		F	C	C
Approach Delay (s)		35.7			40.1			44.4			51.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	41.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
104: Morgan St & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	20	110	30	20	20	90	820	30	20	1000	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.2		4.0	4.1	4.1	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3064		1805	1900	1581	1805	3589		1805	3610	1592
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3064		1805	1900	1581	1805	3589		1805	3610	1592
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	22	118	32	22	22	97	882	32	22	1075	32
RTOR Reduction (vph)	0	110	0	0	0	21	0	1	0	0	0	12
Lane Group Flow (vph)	43	30	0	32	22	1	97	913	0	22	1075	20
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	4.2	7.4		3.6	6.9	6.9	11.2	78.2		3.3	70.3	70.3
Effective Green, g (s)	4.2	7.4		3.6	6.9	6.9	11.2	78.2		3.3	70.3	70.3
Actuated g/C Ratio	0.04	0.07		0.03	0.06	0.06	0.10	0.71		0.03	0.64	0.64
Clearance Time (s)	4.0	4.2		4.0	4.1	4.1	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	69	206		59	119	99	184	2551		54	2307	1017
v/s Ratio Prot	c0.02	0.01		0.02	c0.01		c0.05	0.25		0.01	c0.30	
v/s Ratio Perm						0.00						0.01
v/c Ratio	0.62	0.15		0.54	0.18	0.01	0.53	0.36		0.41	0.47	0.02
Uniform Delay, d1	52.1	48.3		52.4	48.9	48.4	46.9	6.2		52.4	10.2	7.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.42	0.14		0.99	0.60	0.67
Incremental Delay, d2	16.2	0.3		9.8	0.8	0.1	2.4	0.3		4.6	0.6	0.0
Delay (s)	68.3	48.6		62.2	49.6	48.4	69.2	1.2		56.5	6.8	4.9
Level of Service	E	D		E	D	D	E	A		E	A	A
Approach Delay (s)		53.3			54.6			7.8			7.7	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
105: Morgan St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	40	40	60	30	110	80	340	80	330	430	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1587	1805	1900	1587	1805	3486		1805	3610	1586
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1587	1805	1900	1587	1805	3486		1805	3610	1586
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	71	47	47	71	35	129	94	400	94	388	506	94
RTOR Reduction (vph)	0	0	43	0	0	119	0	13	0	0	0	34
Lane Group Flow (vph)	71	47	4	71	35	10	94	481	0	388	506	60
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	5.6	8.3	8.3	5.6	8.3	8.3	9.6	51.4		28.7	70.5	70.5
Effective Green, g (s)	5.6	8.3	8.3	5.6	8.3	8.3	9.6	51.4		28.7	70.5	70.5
Actuated g/C Ratio	0.05	0.08	0.08	0.05	0.08	0.08	0.09	0.47		0.26	0.64	0.64
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	92	143	120	92	143	120	158	1629		471	2314	1016
v/s Ratio Prot	c0.04	c0.02		0.04	0.02		0.05	c0.14		c0.21	0.14	
v/s Ratio Perm			0.00			0.01						0.04
v/c Ratio	0.77	0.33	0.03	0.77	0.24	0.08	0.59	0.30		0.82	0.22	0.06
Uniform Delay, d1	51.6	48.2	47.1	51.6	47.9	47.3	48.3	18.1		38.3	8.2	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.56		1.00	1.00	1.00
Incremental Delay, d2	32.1	1.3	0.1	32.1	0.9	0.3	5.3	0.4		11.2	0.2	0.1
Delay (s)	83.7	49.6	47.2	83.7	48.8	47.6	52.2	10.6		49.4	8.5	7.5
Level of Service	F	D	D	F	D	D	D	B		D	A	A
Approach Delay (s)		63.6			58.7			17.3			24.5	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
106: Rider St & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	130	90	150	60	110	20	730	140	160	940	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1791	1770		1798	1900	1583	1805	3505		1805	3596	
Flt Permitted	0.71	1.00		0.41	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1345	1770		769	1900	1583	1805	3505		1805	3596	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	67	146	101	169	67	124	22	820	157	180	1056	22
RTOR Reduction (vph)	0	26	0	0	0	96	0	12	0	0	1	0
Lane Group Flow (vph)	67	222	0	169	67	28	22	965	0	180	1077	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	25.0	25.0		25.0	25.0	25.0	2.5	55.0		15.4	67.9	
Effective Green, g (s)	25.0	25.0		25.0	25.0	25.0	2.5	55.0		15.4	67.9	
Actuated g/C Ratio	0.23	0.23		0.23	0.23	0.23	0.02	0.50		0.14	0.62	
Clearance Time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	306	402		175	432	360	41	1753		253	2220	
v/s Ratio Prot		0.13			0.04		0.01	c0.28		c0.10	0.30	
v/s Ratio Perm	0.05			c0.22		0.02						
v/c Ratio	0.22	0.55		0.97	0.16	0.08	0.54	0.55		0.71	0.49	
Uniform Delay, d1	34.6	37.5		42.1	34.0	33.4	53.2	19.0		45.2	11.5	
Progression Factor	1.00	1.00		0.82	0.80	0.78	0.80	0.77		1.17	0.46	
Incremental Delay, d2	0.4	1.6		56.6	0.2	0.1	11.5	1.1		8.4	0.7	
Delay (s)	34.9	39.2		91.1	27.3	26.1	53.8	15.7		61.4	6.0	
Level of Service	C	D		F	C	C	D	B		E	A	
Approach Delay (s)		38.3			56.8			16.6			14.0	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
107: Rider St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	240	70	10	180	30	50	190	30	60	210	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.98		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3473		1805	3524		1805	3529		1805	3298	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3473		1805	3524		1805	3529		1805	3298	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	302	279	81	12	209	35	58	221	35	70	244	267
RTOR Reduction (vph)	0	30	0	0	15	0	0	9	0	0	146	0
Lane Group Flow (vph)	302	330	0	12	229	0	58	247	0	70	365	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	21.4	35.8		1.2	15.6		7.9	48.6		8.4	49.1	
Effective Green, g (s)	21.4	35.8		1.2	15.6		7.9	48.6		8.4	49.1	
Actuated g/C Ratio	0.19	0.33		0.01	0.14		0.07	0.44		0.08	0.45	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	351	1130		20	500		130	1559		138	1472	
v/s Ratio Prot	c0.17	0.10		0.01	c0.07		0.03	0.07		c0.04	c0.11	
v/s Ratio Perm												
v/c Ratio	0.86	0.29		0.60	0.46		0.45	0.16		0.51	0.25	
Uniform Delay, d1	42.9	27.7		54.2	43.3		49.0	18.4		48.8	19.0	
Progression Factor	0.94	0.78		1.00	1.00		1.00	1.00		1.42	0.48	
Incremental Delay, d2	17.9	0.1		40.2	0.7		2.4	0.2		2.9	0.4	
Delay (s)	58.2	21.6		94.3	44.0		51.4	18.6		72.2	9.6	
Level of Service	E	C		F	D		D	B		E	A	
Approach Delay (s)		38.3			46.4			24.7			17.1	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
108: Mid County Pkwy WB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	180	40	310	130	1030	0	0	1600	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.98	1.00	1.00			1.00	0.97
Flpb, ped/bikes					1.00	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1816	1586	1805	3610			3610	1564
Flt Permitted					0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)					1816	1586	1805	3610			3610	1564
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	196	43	337	141	1120	0	0	1739	391
RTOR Reduction (vph)	0	0	0	0	0	97	0	0	0	0	0	111
Lane Group Flow (vph)	0	0	0	0	239	240	141	1120	0	0	1739	280
Confl. Peds. (#/hr)				5		5	5					5
Turn Type				Perm		Perm	Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Actuated Green, G (s)					21.7	21.7	12.0	80.3			64.3	64.3
Effective Green, g (s)					21.7	21.7	12.0	80.3			64.3	64.3
Actuated g/C Ratio					0.20	0.20	0.11	0.73			0.58	0.58
Clearance Time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					358	313	197	2635			2110	914
v/s Ratio Prot							c0.08	0.31			c0.48	
v/s Ratio Perm					0.13	c0.15						0.18
v/c Ratio					0.67	0.77	0.72	0.43			0.82	0.31
Uniform Delay, d1					40.8	41.8	47.4	5.8			18.3	11.6
Progression Factor					1.00	1.00	0.77	1.03			0.96	0.87
Incremental Delay, d2					4.7	10.7	4.2	0.2			3.7	0.8
Delay (s)					45.5	52.4	40.5	6.2			21.3	10.9
Level of Service					D	D	D	A			C	B
Approach Delay (s)		0.0			49.5			10.0			19.4	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
109: Mid County Pkwy EB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	370	120	280	0	0	0	0	780	250	520	1260	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00						0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99						0.99		1.00	1.00	
Flpb, ped/bikes	0.99	1.00						1.00		1.00	1.00	
Frt	1.00	0.89						0.96		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1794	1679						3452		1805	3610	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1794	1679						3452		1805	3610	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	402	130	304	0	0	0	0	848	272	565	1370	0
RTOR Reduction (vph)	0	54	0	0	0	0	0	28	0	0	0	0
Lane Group Flow (vph)	402	380	0	0	0	0	0	1092	0	565	1370	0
Confl. Peds. (#/hr)	5		5						5	5		
Turn Type	Perm									Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4											
Actuated Green, G (s)	27.1	27.1						35.5		35.4	74.9	
Effective Green, g (s)	27.1	27.1						35.5		35.4	74.9	
Actuated g/C Ratio	0.25	0.25						0.32		0.32	0.68	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	442	414						1114		581	2458	
v/s Ratio Prot		c0.23						c0.32		c0.31	0.38	
v/s Ratio Perm	0.22											
v/c Ratio	0.91	0.92						0.98		0.97	0.56	
Uniform Delay, d1	40.3	40.4						36.9		36.8	9.0	
Progression Factor	1.00	1.00						0.42		0.96	0.13	
Incremental Delay, d2	22.2	24.8						18.5		21.9	0.5	
Delay (s)	62.5	65.1						34.0		57.1	1.7	
Level of Service	E	E						C		E	A	
Approach Delay (s)		63.9			0.0			34.0			17.9	
Approach LOS		E			A			C			B	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
110: Mid County Pkwy WB Ramps & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	140	40	30	200	130	0	0	220	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes					1.00		1.00	1.00			1.00	0.97
Flpb, ped/bikes					0.99		1.00	1.00			1.00	1.00
Frt					0.98		1.00	1.00			1.00	0.85
Flt Protected					0.97		0.95	1.00			1.00	1.00
Satd. Flow (prot)					1783		1805	1900			1900	1564
Flt Permitted					0.97		0.95	1.00			1.00	1.00
Satd. Flow (perm)					1783		1805	1900			1900	1564
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	152	43	33	217	141	0	0	239	65
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	29
Lane Group Flow (vph)	0	0	0	0	221	0	217	141	0	0	239	36
Confl. Peds. (#/hr)				5		5	5					5
Turn Type				Perm			Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8								6
Actuated Green, G (s)					19.0		18.5	83.0			60.5	60.5
Effective Green, g (s)					19.0		18.5	83.0			60.5	60.5
Actuated g/C Ratio					0.17		0.17	0.75			0.55	0.55
Clearance Time (s)					4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					308		304	1434			1045	860
v/s Ratio Prot							c0.12	0.07			c0.13	
v/s Ratio Perm					0.12							0.02
v/c Ratio					0.72		0.71	0.10			0.23	0.04
Uniform Delay, d1					43.0		43.2	3.6			12.7	11.4
Progression Factor					1.00		1.17	0.96			1.00	1.00
Incremental Delay, d2					7.8		7.6	0.1			0.5	0.1
Delay (s)					50.8		58.3	3.6			13.3	11.5
Level of Service					D		E	A			B	B
Approach Delay (s)		0.0			50.8			36.7			12.9	
Approach LOS		A			D			D			B	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
111: Mid County Pkwy EB Ramps & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	40	500	0	0	0	0	260	140	20	330	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00	0.97					1.00	0.97	1.00	1.00	
Flpb, ped/bikes		0.99	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1830	1567					1900	1564	1805	1900	
Flt Permitted		0.97	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1830	1567					1900	1564	1805	1900	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	43	543	0	0	0	0	283	152	22	359	0
RTOR Reduction (vph)	0	0	288	0	0	0	0	0	54	0	0	0
Lane Group Flow (vph)	0	119	255	0	0	0	0	283	98	22	359	0
Confl. Peds. (#/hr)	5		5						5	5		
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		24.0	24.0					70.7	70.7	3.3	78.0	
Effective Green, g (s)		24.0	24.0					70.7	70.7	3.3	78.0	
Actuated g/C Ratio		0.22	0.22					0.64	0.64	0.03	0.71	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		399	342					1221	1005	54	1347	
v/s Ratio Prot								0.15		c0.01	c0.19	
v/s Ratio Perm		0.07	c0.16						0.06			
v/c Ratio		0.30	0.75					0.23	0.10	0.41	0.27	
Uniform Delay, d1		36.0	40.2					8.2	7.5	52.4	5.7	
Progression Factor		1.00	1.00					1.00	1.00	1.07	1.15	
Incremental Delay, d2		0.4	8.6					0.4	0.2	4.8	0.5	
Delay (s)		36.4	48.7					8.7	7.7	61.1	7.1	
Level of Service		D	D					A	A	E	A	
Approach Delay (s)		46.5			0.0			8.3			10.2	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
112: Placentia Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	60	330	70	30	60	290	900	100	100	1130	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.87		1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1632		1805	1900	1586	1805	3549		1805	3598	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1632		1805	1900	1586	1805	3549		1805	3598	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	38	75	412	88	38	75	362	1125	125	125	1412	25
RTOR Reduction (vph)	0	185	0	0	0	57	0	7	0	0	1	0
Lane Group Flow (vph)	38	302	0	88	38	18	362	1243	0	125	1436	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	3.2	23.6		6.0	26.4	26.4	22.2	51.7		10.5	40.0	
Effective Green, g (s)	3.2	23.6		6.0	26.4	26.4	22.2	51.7		10.5	40.0	
Actuated g/C Ratio	0.03	0.21		0.05	0.24	0.24	0.20	0.47		0.10	0.36	
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	53	350		98	456	381	364	1668		172	1308	
v/s Ratio Prot	0.02	c0.19		c0.05	c0.02		c0.20	0.35		0.07	c0.40	
v/s Ratio Perm						0.01						
v/c Ratio	0.72	0.86		0.90	0.08	0.05	0.99	0.74		0.73	1.10	
Uniform Delay, d1	53.0	41.7		51.7	32.4	32.1	43.8	23.8		48.4	35.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.85	0.94		1.21	0.79	
Incremental Delay, d2	36.9	19.3		58.5	0.1	0.1	45.4	3.1		11.3	53.8	
Delay (s)	89.9	60.9		110.2	32.5	32.2	82.6	25.3		69.8	81.5	
Level of Service	F	E		F	C	C	F	C		E	F	
Approach Delay (s)		63.0			66.4			38.2			80.6	
Approach LOS		E			E			D			F	

Intersection Summary			
HCM Average Control Delay	60.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	23.1
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
113: Placentia Ave & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											361	
pX, platoon unblocked												
vC, conflicting volume	0	0	0	0	0	0	0			0		
vC1, stage 1 conf vol	0	0		0	0							
vC2, stage 2 conf vol	0	0		0	0							
vCu, unblocked vol	0	0	0	0	0	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	1029	900	1091	1029	900	1091	1636			1636		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	0	0	0	0	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	0.0	0.0	0.0		0.0	
Approach LOS	A	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
114: Orange Ave & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	90	110	50	20	80	50	40	230	30	20	210	150
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	99	121	55	22	88	55	44	253	33	22	231	165

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	275	165	44	286	22	396
Volume Left (vph)	99	22	44	0	22	0
Volume Right (vph)	55	55	0	33	0	165
Hadj (s)	-0.05	-0.17	0.50	-0.08	0.50	-0.29
Departure Headway (s)	6.5	6.7	7.3	6.7	7.1	6.3
Degree Utilization, x	0.49	0.31	0.09	0.53	0.04	0.70
Capacity (veh/h)	502	460	460	498	477	543
Control Delay (s)	15.6	12.6	9.8	15.8	9.3	21.4
Approach Delay (s)	15.6	12.6	15.0		20.8	
Approach LOS	C	B	C		C	

Intersection Summary			
Delay	16.9		
HCM Level of Service	C		
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
115: Nuevo Rd & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	480	0	0	360	80	0	0	0	80	0	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0				4.0		4.0
Lane Util. Factor	1.00	1.00			1.00	1.00				1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00	0.97				1.00		0.97
Flpb, ped/bikes	1.00	1.00			1.00	1.00				0.99		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1805	1900			1900	1567				1787		1567
Flt Permitted	0.95	1.00			1.00	1.00				0.76		1.00
Satd. Flow (perm)	1805	1900			1900	1567				1425		1567
Peak-hour factor, PHF	0.90	0.90	0.92	0.92	0.90	0.90	0.92	0.92	0.92	0.90	0.92	0.90
Adj. Flow (vph)	244	533	0	0	400	89	0	0	0	89	0	211
RTOR Reduction (vph)	0	0	0	0	0	63	0	0	0	0	0	117
Lane Group Flow (vph)	244	533	0	0	400	26	0	0	0	89	0	94
Confl. Peds. (#/hr)	5					5				5		5
Turn Type	Prot					Perm	Perm			custom		custom
Protected Phases	7	4			8			2				
Permitted Phases						8	2			6		6
Actuated Green, G (s)	20.1	53.2			29.1	29.1				48.8		48.8
Effective Green, g (s)	20.1	53.2			29.1	29.1				48.8		48.8
Actuated g/C Ratio	0.18	0.48			0.26	0.26				0.44		0.44
Clearance Time (s)	4.0	4.0			4.0	4.0				4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	330	919			503	415				632		695
v/s Ratio Prot	c0.14	0.28			c0.21							
v/s Ratio Perm						0.02				c0.06		0.06
v/c Ratio	0.74	0.58			0.80	0.06				0.14		0.13
Uniform Delay, d1	42.5	20.4			37.7	30.3				18.2		18.1
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	8.4	0.9			8.5	0.1				0.5		0.4
Delay (s)	50.9	21.3			46.2	30.3				18.6		18.5
Level of Service	D	C			D	C				B		B
Approach Delay (s)		30.6			43.3			0.0			18.5	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
123: Bridge St & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	40	30	10	360	950	90
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	42	31	10	375	990	94
Pedestrians				5	5	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1203	500	1083			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1203	500	1083			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	94	98			
cM capacity (veh/h)	176	520	651			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	73	10	188	188	495	495	94
Volume Left	42	10	0	0	0	0	0
Volume Right	31	0	0	0	0	0	94
cSH	246	651	1700	1700	1700	1700	1700
Volume to Capacity	0.30	0.02	0.11	0.11	0.29	0.29	0.06
Queue Length 95th (ft)	30	1	0	0	0	0	0
Control Delay (s)	25.7	10.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	D	B					
Approach Delay (s)	25.7	0.3			0.0		
Approach LOS	D						

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
124: Gilman Springs Rd & SR-79 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	700	0	0	210	430	150	30	30	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	52	722	0	0	216	443	155	31	31	0	0	0
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)									10			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	665			727			1051	1495	732	1082	1051	226
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	665			727			1051	1495	732	1082	1051	226
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			21	74	93	100	100	100
cM capacity (veh/h)	934			882			196	117	421	138	215	814

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	52	722	216	443	216
Volume Left	52	0	0	0	155
Volume Right	0	0	0	443	31
cSH	934	1700	1700	1700	213
Volume to Capacity	0.06	0.42	0.13	0.26	1.02
Queue Length 95th (ft)	4	0	0	0	231
Control Delay (s)	9.1	0.0	0.0	0.0	108.0
Lane LOS	A				F
Approach Delay (s)	0.6		0.0		108.0
Approach LOS					F

Intersection Summary			
Average Delay	14.5		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
125: Gilman Springs Rd & SR-79 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	530	450	10	370	0	0	0	0	220	10	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	552	469	10	385	0	0	0	0	229	10	10
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												7
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	390			1026			979	968	562	968	1437	395
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	390			1026			979	968	562	968	1437	395
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	0	92	98
cM capacity (veh/h)	1174			685			210	251	528	230	132	653

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	552	469	10	385	250
Volume Left	0	0	10	0	229
Volume Right	0	469	0	0	10
cSH	1700	1700	685	1700	234
Volume to Capacity	0.32	0.28	0.02	0.23	1.07
Queue Length 95th (ft)	0	0	1	0	269
Control Delay (s)	0.0	0.0	10.3	0.0	123.3
Lane LOS			B		F
Approach Delay (s)	0.0		0.3		123.3
Approach LOS					F

Intersection Summary			
Average Delay	18.6		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
126: Ramona Expy & SR-79(Sanderson Ave)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	350	120	30	260	420	70	630	50	500	880	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1599	3502	3610	1603	3502	3610	1597	3502	3610	1598
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1599	3502	3610	1603	3502	3610	1597	3502	3610	1598
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	330	361	124	31	268	433	72	649	52	515	907	371
RTOR Reduction (vph)	0	0	75	0	0	71	0	0	33	0	0	156
Lane Group Flow (vph)	330	361	49	31	268	362	72	649	19	515	907	215
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.1	15.6	22.7	5.4	11.9	23.0	7.1	19.8	25.2	11.1	23.8	32.9
Effective Green, g (s)	9.1	15.6	22.7	5.4	11.9	23.0	7.1	19.8	25.2	11.1	23.8	32.9
Actuated g/C Ratio	0.13	0.23	0.33	0.08	0.18	0.34	0.10	0.29	0.37	0.16	0.35	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	469	829	629	279	633	637	366	1053	687	572	1265	868
v/s Ratio Prot	c0.09	c0.10	0.01	0.01	0.07	c0.09	0.02	0.18	0.00	c0.15	c0.25	0.03
v/s Ratio Perm			0.02			0.13			0.01			0.10
v/c Ratio	0.70	0.44	0.08	0.11	0.42	0.57	0.20	0.62	0.03	0.90	0.72	0.25
Uniform Delay, d1	28.1	22.4	15.5	29.0	24.9	18.4	27.8	20.8	13.6	27.9	19.1	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.4	0.1	0.2	0.5	1.2	0.3	1.1	0.0	17.2	2.0	0.1
Delay (s)	32.9	22.7	15.5	29.2	25.4	19.5	28.1	21.9	13.6	45.1	21.1	10.4
Level of Service	C	C	B	C	C	B	C	C	B	D	C	B
Approach Delay (s)		25.7			22.1			21.9			25.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
129: 6th St & California Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	290	150	30	360	40	400	190	50	110	50	30
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	32	312	161	32	387	43	430	204	54	118	54	32

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total (vph)	344	161	32	430	430	258	204
Volume Left (vph)	32	0	32	0	430	0	118
Volume Right (vph)	0	161	0	43	0	54	32
Hadj (s)	0.05	-0.70	0.50	-0.07	0.50	-0.15	0.02
Departure Headway (s)	8.8	8.0	9.1	8.6	9.0	8.3	9.5
Degree Utilization, x	0.84	0.36	0.08	1.02	1.07	0.60	0.54
Capacity (veh/h)	399	442	385	420	408	421	364
Control Delay (s)	42.2	14.3	11.8	79.0	94.8	21.8	23.3
Approach Delay (s)	33.3		74.3		67.4		23.3
Approach LOS	D		F		F		C

Intersection Summary			
Delay	55.0		
HCM Level of Service	F		
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
130: 6th St & Beaumont Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	300	80	390	330	190	70	430	310	120	340	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.94		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1801	3484		1800	1634	1369	1805	3360		1805	3514	
Flt Permitted	0.47	1.00		0.49	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	885	3484		936	1634	1369	1805	3360		1805	3514	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	128	319	85	415	351	202	74	457	330	128	362	64
RTOR Reduction (vph)	0	26	0	0	0	64	0	153	0	0	16	0
Lane Group Flow (vph)	128	378	0	415	351	138	74	634	0	128	410	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Parking (#/hr)					8	8						
Turn Type	Perm			Perm		pm+ov	Prot			Prot		
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	40.2	40.2		40.2	40.2	47.3	5.3	22.6		7.1	24.4	
Effective Green, g (s)	40.2	40.2		40.2	40.2	47.3	5.3	22.6		7.1	24.4	
Actuated g/C Ratio	0.49	0.49		0.49	0.49	0.58	0.06	0.28		0.09	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	434	1710		459	802	858	117	927		156	1047	
v/s Ratio Prot		0.11			0.21	0.01	0.04	c0.19		c0.07	0.12	
v/s Ratio Perm	0.14			c0.44		0.09						
v/c Ratio	0.29	0.22		0.90	0.44	0.16	0.63	0.68		0.82	0.39	
Uniform Delay, d1	12.4	11.9		19.1	13.5	8.1	37.4	26.5		36.8	22.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.1		20.9	0.4	0.1	10.6	2.1		27.9	0.2	
Delay (s)	12.8	12.0		40.0	13.9	8.1	48.0	28.6		64.7	23.1	
Level of Service	B	B		D	B	A	D	C		E	C	
Approach Delay (s)		12.2			23.9			30.2			32.7	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
131: Reche Canyon Rd & Reche Vista Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	10	1290	10	10	710	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1800	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1900	1613		1850	1710	1615
Flt Permitted	1.00	1.00		0.86	0.95	1.00
Satd. Flow (perm)	1900	1613		1625	1710	1615
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	11	1387	11	11	763	11
RTOR Reduction (vph)	0	0	0	0	0	1
Lane Group Flow (vph)	11	1387	0	22	763	10
Confl. Peds. (#/hr)		5	5			5
Turn Type		pm+ov	Perm			Prot
Protected Phases	4	2		8	2	2
Permitted Phases		4	8			
Actuated Green, G (s)	3.5	58.1		3.5	54.6	54.6
Effective Green, g (s)	3.5	58.1		3.5	54.6	54.6
Actuated g/C Ratio	0.05	0.85		0.05	0.80	0.80
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	98	1613		84	1371	1295
v/s Ratio Prot	0.01	c0.69			0.45	0.01
v/s Ratio Perm		0.17		0.01		
v/c Ratio	0.11	0.86		0.26	0.56	0.01
Uniform Delay, d1	30.8	2.8		31.1	2.4	1.3
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	4.8		1.7	0.5	0.0
Delay (s)	31.3	7.6		32.7	2.9	1.3
Level of Service	C	A		C	A	A
Approach Delay (s)	7.8			32.7	2.9	
Approach LOS	A			C	A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	0.0
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
132: San Timoteo Canyon Rd & Alessandro Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	620	0	0	260	390	10	30	10	240	10	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	689	0	0	289	433	11	33	11	267	11	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	722	722	56	300
Volume Left (vph)	33	0	11	267
Volume Right (vph)	0	433	11	22
Hadj (s)	0.01	-0.36	-0.08	0.13
Departure Headway (s)	6.5	6.1	8.5	7.5
Degree Utilization, x	1.30	1.22	0.13	0.62
Capacity (veh/h)	548	599	398	473
Control Delay (s)	166.4	135.2	12.8	21.9
Approach Delay (s)	166.4	135.2	12.8	21.9
Approach LOS	F	F	B	C

Intersection Summary			
Delay	125.1		
HCM Level of Service	F		
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
133: San Timoteo Canyon Rd & Live Oak Canyon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	770	20	10	620	260	10	10	10	110	0	20
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	24	917	24	12	738	310	12	12	12	131	0	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	964	1060	36	155
Volume Left (vph)	24	12	12	131
Volume Right (vph)	24	310	12	24
Hadj (s)	-0.01	-0.17	-0.13	0.08
Departure Headway (s)	5.6	5.4	7.7	7.3
Degree Utilization, x	1.49	1.59	0.08	0.31
Capacity (veh/h)	639	671	450	483
Control Delay (s)	246.7	289.4	11.3	13.5
Approach Delay (s)	246.7	289.4	11.3	13.5
Approach LOS	F	F	B	B

Intersection Summary			
Delay	247.0		
HCM Level of Service	F		
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
134: San Timoteo Canyon Rd & Redlands Blvd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	90	750	60	40	900	180
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	100	833	67	44	1000	200

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	933	111	1200
Volume Left (vph)	0	67	1000
Volume Right (vph)	833	0	200
Hadj (s)	-0.54	0.12	0.07
Departure Headway (s)	5.5	7.1	6.1
Degree Utilization, x	1.43	0.22	2.04
Capacity (veh/h)	658	501	599
Control Delay (s)	217.7	12.1	486.7
Approach Delay (s)	217.7	12.1	486.7
Approach LOS	F	B	F

Intersection Summary			
Delay	351.3		
HCM Level of Service	F		
Intersection Capacity Utilization	122.9%	ICU Level of Service	H
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
135: Crescent Ave & Alessandro Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	80	50	230	60	70	290
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	87	54	250	65	76	315
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			141		679	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			141		679	114
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			83		78	67
cM capacity (veh/h)			1454		348	944

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	141	315	391
Volume Left	0	250	76
Volume Right	54	0	315
cSH	1700	1454	708
Volume to Capacity	0.08	0.17	0.55
Queue Length 95th (ft)	0	16	85
Control Delay (s)	0.0	6.6	16.2
Lane LOS		A	C
Approach Delay (s)	0.0	6.6	16.2
Approach LOS			C

Intersection Summary			
Average Delay	9.9		
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
136: Sunset Dr & Alessandro Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	10	10	10	10	10	10	350	40	20	300	20
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	10	10	10	10	10	10	10	357	41	20	306	20

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	31	31	408	347
Volume Left (vph)	10	10	10	20
Volume Right (vph)	10	10	41	20
Hadj (s)	-0.13	-0.13	-0.05	-0.02
Departure Headway (s)	5.5	5.5	4.4	4.5
Degree Utilization, x	0.05	0.05	0.50	0.43
Capacity (veh/h)	566	565	801	779
Control Delay (s)	8.8	8.8	11.7	10.8
Approach Delay (s)	8.8	8.8	11.7	10.8
Approach LOS	A	A	B	B

Intersection Summary			
Delay	11.1		
HCM Level of Service	B		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

Traffic Impact Analysis Report

for the World Logistics Center

Appendix F

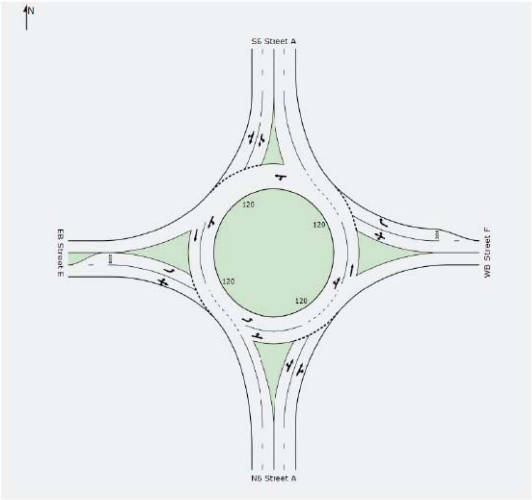
Intersection LOS Worksheets
for 2022 Plus Phase 1 Conditions

This page intentionally left blank

Title: Intersection 1 - 2022 Plus Phase 1 - AM Peak Hour
Intersection Type: Roundabout

Lane Use & Performance

	Demand Flow veh/h	HV %	Capacity veh/h	Deg. Satn. v/c	Lane Util. %	Average Delay sec	Level of Service	Percentile Back of Queue Vehicles veh	Percentile Back of Queue Distance ft	Prob. Blockage %
South: NB Street A										
Lane 1	353	0.0	797	0.444	100	8.1	LOS A	2.3	57.7	0.0
Lane 2	367	0.0	826	0.444	100	7.1	LOS A	2.3	58.3	0.0
Approach	720	0.0		0.444		7.6	LOS A	2.3	58.3	
East: WB Street F										
Lane 1	80	0.0	711	0.113	100	11.2	LOS B	0.4	10.7	0.0
Lane 2	20	0.0	392	0.051	45	11.3	LOS B	0.2	4.1	0.0
Approach	100	0.0		0.113		11.2	LOS B	0.4	10.7	
North: SB Street A										
Lane 1	1009	0.0	1317	0.766	100	6.3	LOS A	9.1	228.7	0.0
Lane 2	1131	0.0	1476	0.766	100	7.0	LOS A	9.2	230.0	0.0
Approach	2140	0.0		0.766		6.7	LOS A	9.2	230.0	
West: EB Street E										
Lane 1	328	0.0	528	0.622	100	22.7	LOS C	4.6	113.8	0.0
Lane 2	362	0.0	582	0.622	100	20.7	LOS C	4.8	119.6	0.0
Approach	690	0.0		0.622		21.7	LOS C	4.8	119.6	
All Vehicles	3650			0.766		9.8	LOS A	9.2	230.0	



HCM Unsignalized Intersection Capacity Analysis
2: Street E & Street D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	50	90	200	130	300	230
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	98	217	141	326	250

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total (vph)	54	98	217	141	326	250
Volume Left (vph)	0	0	217	0	326	0
Volume Right (vph)	0	98	0	0	0	250
Hadj (s)	0.00	-0.70	0.50	0.00	0.50	-0.70
Departure Headway (s)	6.7	6.0	6.8	6.3	6.4	5.3
Degree Utilization, x	0.10	0.16	0.41	0.25	0.58	0.36
Capacity (veh/h)	503	563	505	543	537	661
Control Delay (s)	9.2	8.9	13.4	10.2	16.9	10.0
Approach Delay (s)	9.0		12.1		13.9	
Approach LOS	A		B		B	

Intersection Summary			
Delay	12.7		
HCM Level of Service	B		
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

VOLUMES
UTILITY APPLICATION FOR SIDRA INTERSECTION 5.1 © 2000-2011 Akcelik & Associates Pty Ltd

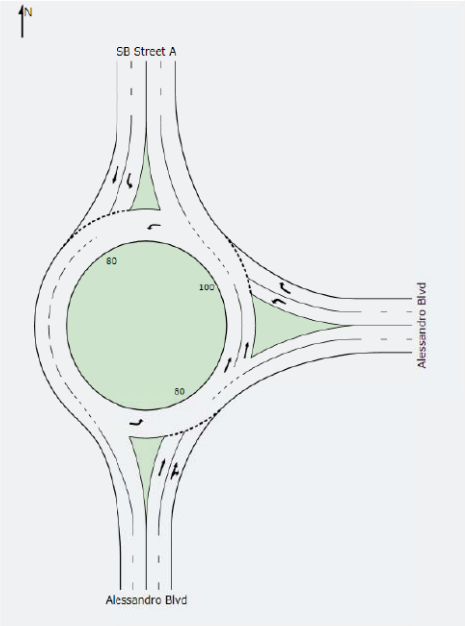
LANE OUTPUT

*Use the **Control** sheet to create output data in this sheet. For detailed information, refer to the **Intro** sheet.*

Title: Intersection 3 - 2022 Plus Phase 1 - AM Peak Hour
Intersection Type: Roundabout

Lane Use & Performance

	Demand Flow veh/h	HV %	Capacity veh/h	Deg. Satn. v/c	Lane Util. %	Average Delay sec	Level of Service	Percentile Back of Queue Vehicles veh	Percentile Back of Queue Distance ft	Prob. Blockage %
South: NB Alessandro Blvd										
Lane 1	155	0.0	1285	0.120	100	5.7	LOS A	0.6	16.1	0.0
Lane 2	155	0.0	1289	0.120	100	6.5	LOS A	0.6	16.1	0.0
Approach	310	0.0		0.120		6.1	LOS A	0.6	16.1	
East: WB Alessandro Blvd										
Lane 1	150	0.0	1055	0.142	100	13.1	LOS B	0.6	14.8	0.0
Lane 2	160	0.0	1055	0.152	100	7.3	LOS A	0.6	15.9	0.0
Approach	310	0.0		0.152		10.1	LOS B	0.6	15.9	
North: SB Street A										
Lane 1	60	0.0	759	0.079	100	13.3	LOS B	0.3	8.5	0.0
Lane 2	230	0.0	1230	0.187	100	6.3	LOS A	0.9	23.4	0.0
Approach	290	0.0		0.187		7.8	LOS A	0.9	23.4	
All Vehicles	910			0.187		8.0	LOS A	0.9	23.4	



HCM Unsignalized Intersection Capacity Analysis
4: Alessandro Blvd & Street F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	90	270	30	30	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	98	293	33	33	11
Pedestrians		5	5		5	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	331				439	320
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	331				439	320
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				94	98
cM capacity (veh/h)	1235				569	720

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	109	326	43
Volume Left	11	0	33
Volume Right	0	33	11
cSH	1235	1700	600
Volume to Capacity	0.01	0.19	0.07
Queue Length 95th (ft)	1	0	6
Control Delay (s)	0.9	0.0	11.5
Lane LOS	A		B
Approach Delay (s)	0.9	0.0	11.5
Approach LOS			B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
6: Street C & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	20	100	290	670	280	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1592	1805	5187	5187	1576
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1592	1805	5187	5187	1576
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	22	112	326	753	315	34
RTOR Reduction (vph)	0	97	0	0	0	26
Lane Group Flow (vph)	22	15	326	753	315	8
Confl. Peds. (#/hr)	5	5				5
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	5.4	5.4	13.2	26.1	8.9	8.9
Effective Green, g (s)	5.4	5.4	13.2	26.1	8.9	8.9
Actuated g/C Ratio	0.14	0.14	0.33	0.66	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	247	218	603	3427	1169	355
v/s Ratio Prot	c0.01		c0.18	c0.15	0.06	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.09	0.07	0.54	0.22	0.27	0.02
Uniform Delay, d1	14.9	14.9	10.7	2.7	12.6	11.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	1.0	0.0	0.1	0.0
Delay (s)	15.1	15.0	11.7	2.7	12.7	11.9
Level of Service	B	B	B	A	B	B
Approach Delay (s)	15.0			5.4	12.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	39.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
10: Locust Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	130	0	70	5	0	5	40	1000	0	0	760	90
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	148	0	80	6	0	6	45	1136	0	0	864	102
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2107	2101	874	2180	2203	1146	971			1141		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2107	2101	874	2180	2203	1146	971			1141		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	77	77	100	98	94			100		
cM capacity (veh/h)	35	49	349	24	42	243	715			617		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	227	11	45	1136	0	0	864	102
Volume Left	148	6	45	0	0	0	0	0
Volume Right	80	6	0	0	0	0	0	102
cSH	51	44	715	1700	1700	1700	1700	1700
Volume to Capacity	4.48	0.26	0.06	0.67	0.00	0.00	0.51	0.06
Queue Length 95th (ft)	Err	21	5	0	0	0	0	0
Control Delay (s)	Err	112.5	10.4	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	F	B					
Approach Delay (s)	Err	112.5	0.4			0.0		
Approach LOS	F	F						

Intersection Summary			
Average Delay	953.0		
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
11: Ironwood Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	30	40	10	10	10	50	580	10	10	610	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.97			0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1773			1766		1805	1894		1805	1900	1561
Flt Permitted		0.97			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1773			1766		1805	1894		1805	1900	1561
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	119	36	48	12	12	12	60	690	12	12	726	95
RTOR Reduction (vph)	0	8	0	0	12	0	0	1	0	0	0	16
Lane Group Flow (vph)	0	195	0	0	25	0	60	701	0	12	726	79
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)		36.2			5.0		8.3	59.8		3.0	54.5	54.5
Effective Green, g (s)		36.2			5.0		8.3	59.8		3.0	54.5	54.5
Actuated g/C Ratio		0.30			0.04		0.07	0.50		0.02	0.45	0.45
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		535			74		125	944		45	863	709
v/s Ratio Prot		c0.11			c0.01		c0.03	c0.37		0.01	c0.38	
v/s Ratio Perm												0.05
v/c Ratio		0.36			0.33		0.48	0.74		0.27	0.84	0.11
Uniform Delay, d1		32.9			55.9		53.8	24.0		57.4	28.9	18.8
Progression Factor		0.73			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2			2.6		2.9	3.2		3.2	7.4	0.1
Delay (s)		24.3			58.5		56.7	27.2		60.6	36.4	18.9
Level of Service		C			E		E	C		E	D	B
Approach Delay (s)		24.3			58.5			29.5			34.7	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM Average Control Delay	31.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
12: Ironwood Ave & Theodore St

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	220	30	10	120	60
Sign Control	Yield			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	12	272	37	12	148	74
Pedestrians	5			5		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	380	5	579	306	5	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	380	5	579	306	5	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	98	75	87	98	91	
cM capacity (veh/h)	500	1080	290	550	1623	

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2
Volume Total	12	272	49	148	74
Volume Left	0	0	37	148	0
Volume Right	0	272	0	0	74
cSH	500	1080	329	1623	1700
Volume to Capacity	0.02	0.25	0.15	0.09	0.04
Queue Length 95th (ft)	2	25	13	8	0
Control Delay (s)	12.4	9.5	17.9	7.4	0.0
Lane LOS	B	A	C	A	
Approach Delay (s)	9.6		17.9	5.0	
Approach LOS	A		C		

Intersection Summary			
Average Delay	8.5		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
13: Spruce Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	10	10	160	10	120	10	500	150	340	320	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	12	12	190	12	143	12	595	179	405	381	12
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1677	2004	143	1583	1831	308	398			779		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1677	2004	143	1583	1831	308	398			779		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	61	99	0	70	79	99			52		
cM capacity (veh/h)	24	31	878	32	39	688	1167			844		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	24	345	12	298	298	179	405	152	152	88
Volume Left	0	190	12	0	0	0	405	0	0	0
Volume Right	12	143	0	0	0	179	0	0	0	12
cSH	59	54	1167	1700	1700	1700	844	1700	1700	1700
Volume to Capacity	0.40	6.39	0.01	0.18	0.18	0.11	0.48	0.09	0.09	0.05
Queue Length 95th (ft)	37	Err	1	0	0	0	66	0	0	0
Control Delay (s)	101.3	Err	8.1	0.0	0.0	0.0	13.1	0.0	0.0	0.0
Lane LOS	F	F	A				B			
Approach Delay (s)	101.3	Err	0.1				6.7			
Approach LOS	F	F								

Intersection Summary			
Average Delay	1772.1		
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
14: SR-60 EB Ramps & Redlands Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	190	280	70	490	500	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.92		1.00	1.00	1.00	0.85
Flt Protected	0.98		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1713		1805	5187	5187	1615
Flt Permitted	0.98		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1713		1805	5187	5187	1615
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	224	329	82	576	588	35
RTOR Reduction (vph)	80	0	0	0	0	13
Lane Group Flow (vph)	473	0	82	576	588	22
Confl. Peds. (#/hr)						
Turn Type			Prot			pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases						6
Actuated Green, G (s)	16.6		3.8	18.9	11.1	27.7
Effective Green, g (s)	16.6		3.8	18.9	11.1	27.7
Actuated g/C Ratio	0.38		0.09	0.43	0.26	0.64
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	654		158	2254	1324	1177
v/s Ratio Prot	c0.28		c0.05	0.11	c0.11	0.01
v/s Ratio Perm						0.01
v/c Ratio	0.72		0.52	0.26	0.44	0.02
Uniform Delay, d1	11.5		19.0	7.8	13.6	2.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0		2.9	0.1	0.2	0.0
Delay (s)	15.5		21.8	7.9	13.8	2.9
Level of Service	B		C	A	B	A
Approach Delay (s)	15.5			9.6	13.2	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	43.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
15: SR 60 WB Ramp & Theodore St

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	20	400	930	160	210	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1592	3502	5187	5187	1591
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1592	3502	5187	5187	1591
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	22	430	1000	172	226	65
RTOR Reduction (vph)	0	352	0	0	0	54
Lane Group Flow (vph)	22	78	1000	172	226	11
Confl. Peds. (#/hr)	5	5				5
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	8.3	8.3	18.1	29.7	7.6	7.6
Effective Green, g (s)	8.3	8.3	18.1	29.7	7.6	7.6
Actuated g/C Ratio	0.18	0.18	0.39	0.65	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	326	287	1378	3349	857	263
v/s Ratio Prot	0.01		c0.29	0.03	c0.04	
v/s Ratio Perm		c0.05				0.01
v/c Ratio	0.07	0.27	0.73	0.05	0.26	0.04
Uniform Delay, d1	15.6	16.2	11.8	3.0	16.8	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.5	1.9	0.0	0.2	0.1
Delay (s)	15.7	16.8	13.8	3.0	16.9	16.2
Level of Service	B	B	B	A	B	B
Approach Delay (s)	16.7			12.2	16.8	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
16: SR-60 EB Ramps & Theodore St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	0	1530	0	0	0	0	1010	270	0	560	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		0.88					0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		0.99					1.00	0.99		1.00	0.98
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		2804					5187	1591		5187	1575
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		2804					5187	1591		5187	1575
Peak-hour factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	107	0	2040	0	0	0	0	1347	360	0	747	53
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	109	0	0	16
Lane Group Flow (vph)	107	0	2040	0	0	0	0	1347	251	0	747	37
Confl. Peds. (#/hr)			5						5			5
Turn Type	custom		Free						Perm			Perm
Protected Phases								2			6	
Permitted Phases	4		Free						2			6
Actuated Green, G (s)	4.8		42.3					29.5	29.5		29.5	29.5
Effective Green, g (s)	4.8		42.3					29.5	29.5		29.5	29.5
Actuated g/C Ratio	0.11		1.00					0.70	0.70		0.70	0.70
Clearance Time (s)	4.0							4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0							3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	205		2804					3617	1110		3617	1098
v/s Ratio Prot								0.26			0.14	
v/s Ratio Perm	0.06		c0.73						0.16			0.02
v/c Ratio	0.52		0.73					0.37	0.23		0.21	0.03
Uniform Delay, d1	17.7		0.0					2.6	2.3		2.3	2.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	2.4		1.7					0.1	0.1		0.0	0.0
Delay (s)	20.1		1.7					2.7	2.4		2.3	2.0
Level of Service	C		A					A	A		A	A
Approach Delay (s)		2.6			0.0			2.6			2.3	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	2.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	42.3	Sum of lost time (s)	0.0
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
18: Eucalyptus Ave & Redlands Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	40	110	310	150	380	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	0.99	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1593	5187	1591	1805	5187
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1593	5187	1591	1805	5187
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	120	337	163	413	337
RTOR Reduction (vph)	0	104	0	128	0	0
Lane Group Flow (vph)	43	16	337	35	413	337
Confl. Peds. (#/hr)	5	5		5		
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	5.5	5.5	8.6	8.6	14.3	26.9
Effective Green, g (s)	5.5	5.5	8.6	8.6	14.3	26.9
Actuated g/C Ratio	0.14	0.14	0.21	0.21	0.35	0.67
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	246	217	1104	339	639	3454
v/s Ratio Prot	c0.02		c0.06		c0.23	0.06
v/s Ratio Perm		0.01		0.02		
v/c Ratio	0.17	0.08	0.31	0.10	0.65	0.10
Uniform Delay, d1	15.4	15.2	13.4	12.8	10.9	2.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.2	0.1	2.3	0.0
Delay (s)	15.8	15.4	13.5	12.9	13.2	2.4
Level of Service	B	B	B	B	B	A
Approach Delay (s)	15.5		13.3			8.4
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	40.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Eucalyptus Ave & Theodore St

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	130	400	290	2060	1970	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1601	3502	5187	5187	1589
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1601	3502	5187	5187	1589
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	149	460	333	2368	2264	115
RTOR Reduction (vph)	0	0	0	0	0	21
Lane Group Flow (vph)	149	460	333	2368	2264	94
Confl. Peds. (#/hr)	5	5				5
Turn Type		pm+ov	Prot			Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	10.6	18.6	8.0	47.1	35.1	35.1
Effective Green, g (s)	10.6	18.6	8.0	47.1	35.1	35.1
Actuated g/C Ratio	0.16	0.28	0.12	0.72	0.53	0.53
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	291	551	426	3719	2771	849
v/s Ratio Prot	0.08	c0.10	0.10	0.46	c0.44	
v/s Ratio Perm		0.19				0.06
v/c Ratio	0.51	0.83	0.78	0.64	0.82	0.11
Uniform Delay, d1	25.2	22.1	28.0	4.8	12.6	7.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	10.5	9.0	0.4	2.0	0.1
Delay (s)	26.7	32.6	37.0	5.2	14.6	7.6
Level of Service	C	C	D	A	B	A
Approach Delay (s)	31.2			9.1	14.3	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	65.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
20: Alessandro Blvd & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	270	150	20	540	0	260	0	30	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	325	181	24	651	0	313	0	36	0	0	0
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	656			511			799	1124	263	871	1215	335
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	656			511			799	1124	263	871	1215	335
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			0	100	95	100	100	100
cM capacity (veh/h)	937			1060			271	201	735	229	177	661

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	163	343	349	325	313	36	0
Volume Left	0	0	24	0	313	0	0
Volume Right	0	181	0	0	0	36	0
cSH	937	1700	1060	1700	271	735	1700
Volume to Capacity	0.00	0.20	0.02	0.19	1.16	0.05	0.00
Queue Length 95th (ft)	0	0	2	0	345	4	0
Control Delay (s)	0.0	0.0	0.8	0.0	143.5	10.1	0.0
Lane LOS			A		F	B	A
Approach Delay (s)	0.0		0.4		129.7		0.0
Approach LOS					F		A

Intersection Summary			
Average Delay	29.8		
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
21: Alessandro Blvd & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	150	70	40	190	20	130	670	40	30	460	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.99		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3421		1805	3553		1805	3576		1805	3418	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3421		1805	3553		1805	3576		1805	3418	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	69	172	80	46	218	23	149	770	46	34	529	253
RTOR Reduction (vph)	0	66	0	0	11	0	0	4	0	0	62	0
Lane Group Flow (vph)	69	186	0	46	230	0	149	812	0	34	720	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	3.5	9.9		3.8	10.2		7.1	25.3		2.2	20.4	
Effective Green, g (s)	3.5	9.9		3.8	10.2		7.1	25.3		2.2	20.4	
Actuated g/C Ratio	0.06	0.17		0.07	0.18		0.12	0.44		0.04	0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	110	592		120	634		224	1582		69	1219	
v/s Ratio Prot	c0.04	0.05		0.03	c0.06		c0.08	0.23		0.02	c0.21	
v/s Ratio Perm												
v/c Ratio	0.63	0.31		0.38	0.36		0.67	0.51		0.49	0.59	
Uniform Delay, d1	26.2	20.7		25.6	20.6		23.9	11.5		27.0	15.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.7	0.3		2.0	0.4		7.3	0.3		5.4	0.8	
Delay (s)	36.9	21.0		27.6	21.0		31.2	11.8		32.4	15.8	
Level of Service	D	C		C	C		C	B		C	B	
Approach Delay (s)		24.4			22.1			14.8			16.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	57.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
23: Alessandro Blvd & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	150	10	50	10	10	10	20	370	10	10	190	60
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	188	12	62	12	12	12	25	462	12	12	238	75

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	188	75	38	488	13	131	194
Volume Left (vph)	188	0	13	25	0	13	0
Volume Right (vph)	0	63	13	0	13	0	75
Hadj (s)	0.50	-0.58	-0.13	0.03	-0.70	0.05	-0.27
Departure Headway (s)	7.3	6.2	7.1	6.0	5.3	6.3	6.0
Degree Utilization, x	0.38	0.13	0.07	0.81	0.02	0.23	0.32
Capacity (veh/h)	464	539	451	588	652	543	575
Control Delay (s)	13.4	8.9	10.7	28.7	7.2	9.9	10.5
Approach Delay (s)	12.1		10.7	28.2		10.3	
Approach LOS	B		B	D		B	

Intersection Summary			
Delay	18.7		
HCM Level of Service	C		
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
24: Cactus Ave & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	280	210	40	350	40	230	200	50	20	140	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97		1.00	0.98		1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Frt	1.00	0.94		1.00	1.00	0.85		1.00	0.85		0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.99	
Satd. Flow (prot)	1805	3338		1805	1900	1568		1851	1588		1872	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.99	
Satd. Flow (perm)	1805	3338		1805	1900	1568		1851	1588		1872	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	13	364	273	52	455	52	299	260	65	26	182	13
RTOR Reduction (vph)	0	133	0	0	0	37	0	0	40	0	2	0
Lane Group Flow (vph)	13	504	0	52	455	15	0	559	25	0	219	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8			2			
Actuated Green, G (s)	1.2	21.6		5.5	25.9	25.9		28.6	28.6		15.3	
Effective Green, g (s)	1.2	21.6		5.5	25.9	25.9		28.6	28.6		15.3	
Actuated g/C Ratio	0.01	0.25		0.06	0.30	0.30		0.33	0.33		0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	25	829		114	566	467		608	522		329	
v/s Ratio Prot	0.01	0.15		c0.03	c0.24			c0.30			c0.12	
v/s Ratio Perm						0.01			0.02			
v/c Ratio	0.52	0.61		0.46	0.80	0.03		0.92	0.05		0.66	
Uniform Delay, d1	42.6	29.0		39.3	28.2	21.7		28.1	19.9		33.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	18.1	1.3		2.9	8.1	0.0		19.0	0.0		5.0	
Delay (s)	60.7	30.2		42.2	36.3	21.7		47.1	19.9		38.4	
Level of Service	E	C		D	D	C		D	B		D	
Approach Delay (s)		30.8			35.5			44.2			38.4	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	37.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Cactus Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	180	60	40	160	50	130	670	90	20	370	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3462		1805	3469		1805	3610	1596	1805	4965	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3462		1805	3469		1805	3610	1596	1805	4965	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	141	212	71	47	188	59	153	788	106	24	435	153
RTOR Reduction (vph)	0	44	0	0	43	0	0	0	54	0	71	0
Lane Group Flow (vph)	141	239	0	47	204	0	153	788	52	24	517	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	9.1	12.5		5.5	8.9		12.2	22.5	28.0	1.1	11.4	
Effective Green, g (s)	9.1	12.5		5.5	8.9		12.2	22.5	28.0	1.1	11.4	
Actuated g/C Ratio	0.16	0.22		0.10	0.15		0.21	0.39	0.49	0.02	0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	285	751		172	536		382	1410	887	34	983	
v/s Ratio Prot	c0.08	c0.07		0.03	c0.06		0.08	c0.22	0.01	0.01	c0.10	
v/s Ratio Perm									0.03			
v/c Ratio	0.49	0.32		0.27	0.38		0.40	0.56	0.06	0.71	0.53	
Uniform Delay, d1	22.2	19.0		24.2	21.9		19.6	13.7	7.8	28.1	20.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	0.2		0.9	0.5		0.7	0.5	0.0	49.8	0.5	
Delay (s)	23.5	19.2		25.1	22.3		20.2	14.2	7.9	77.9	21.2	
Level of Service	C	B		C	C		C	B	A	E	C	
Approach Delay (s)		20.6			22.8			14.4			23.4	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	57.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
27: Cactus Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	150	60	50	180	40	60	60	210	250	90	180	90
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	205	82	68	247	55	82	82	288	342	123	247	123

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	247	110	384	226	486	247	247
Volume Left (vph)	205	0	247	82	0	123	0
Volume Right (vph)	0	68	82	0	342	0	123
Hadj (s)	0.42	-0.44	0.00	0.18	-0.49	0.25	-0.35
Departure Headway (s)	9.6	8.8	8.8	9.1	8.4	9.3	8.7
Degree Utilization, x	0.66	0.27	0.93	0.57	1.13	0.64	0.59
Capacity (veh/h)	360	398	384	385	431	377	401
Control Delay (s)	28.2	13.8	59.3	22.3	112.2	25.9	22.4
Approach Delay (s)	23.8		59.3	83.7		24.1	
Approach LOS	C		F	F		C	

Intersection Summary			
Delay	52.8		
HCM Level of Service	F		
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
28: John F Kennedy Dr & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	70	20	290	130	230	30	500	390	110	410	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.90		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3479		1805	3234		1805	5187	1601	1805	4958	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3479		1805	3234		1805	5187	1601	1805	4958	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	156	91	26	377	169	299	39	649	506	143	532	195
RTOR Reduction (vph)	0	22	0	0	183	0	0	0	275	0	57	0
Lane Group Flow (vph)	156	95	0	377	285	0	39	649	231	143	670	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	10.4	10.3		11.6	11.5		2.5	16.4	28.0	7.1	21.0	
Effective Green, g (s)	10.4	10.3		11.6	11.5		2.5	16.4	28.0	7.1	21.0	
Actuated g/C Ratio	0.17	0.17		0.19	0.19		0.04	0.27	0.46	0.12	0.34	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	306	584		341	606		73	1385	834	209	1696	
v/s Ratio Prot	0.09	0.03		c0.21	c0.09		0.02	c0.13	0.05	c0.08	0.14	
v/s Ratio Perm									0.09			
v/c Ratio	0.51	0.16		1.11	0.47		0.53	0.47	0.28	0.68	0.39	
Uniform Delay, d1	23.2	21.9		24.9	22.2		28.9	18.8	10.4	26.1	15.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.1		80.2	0.6		7.3	0.3	0.2	8.9	0.2	
Delay (s)	24.5	22.0		105.1	22.8		36.2	19.1	10.6	35.0	15.5	
Level of Service	C	C		F	C		D	B	B	C	B	
Approach Delay (s)		23.4			59.5			16.0			18.7	
Approach LOS		C			E			B			B	

Intersection Summary			
HCM Average Control Delay	29.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
29: Ironwood Ave & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	220	140	150	460	40	80	430	90	40	690	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1598	1805	3561		1805	3610	1592	1805	3610	1592
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1598	1805	3561		1805	3610	1592	1805	3610	1592
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	104	229	146	156	479	42	83	448	94	42	719	292
RTOR Reduction (vph)	0	0	68	0	7	0	0	0	34	0	0	90
Lane Group Flow (vph)	104	229	78	156	514	0	83	448	60	42	719	202
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6
Actuated Green, G (s)	11.2	20.3	31.2	14.5	23.6		10.9	62.1	76.6	7.1	58.3	69.5
Effective Green, g (s)	11.2	20.3	31.2	14.5	23.6		10.9	62.1	76.6	7.1	58.3	69.5
Actuated g/C Ratio	0.09	0.17	0.26	0.12	0.20		0.09	0.52	0.64	0.06	0.49	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	168	611	469	218	700		164	1868	1069	107	1754	975
v/s Ratio Prot	0.06	0.06	0.02	c0.09	c0.14		c0.05	c0.12	0.01	0.02	c0.20	0.02
v/s Ratio Perm			0.03						0.03			0.11
v/c Ratio	0.62	0.37	0.17	0.72	0.73		0.51	0.24	0.06	0.39	0.41	0.21
Uniform Delay, d1	52.3	44.2	34.3	50.8	45.3		52.0	15.9	8.1	54.4	19.8	12.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.01	0.82	0.48	1.00	1.00	1.00
Incremental Delay, d2	6.6	0.4	0.2	10.6	4.0		2.4	0.3	0.0	2.4	0.7	0.1
Delay (s)	59.0	44.6	34.5	61.4	49.2		54.9	13.3	3.9	56.7	20.5	12.2
Level of Service	E	D	C	E	D		D	B	A	E	C	B
Approach Delay (s)		44.7			52.0			17.4			19.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
30: SR-60 WB Ramps & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	460	10	160	300	620	0	0	850	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	
Frpb, ped/bikes					1.00	0.98	1.00	1.00			0.99	
Flpb, ped/bikes					1.00	1.00	1.00	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.96	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1811	1587	1805	3610			3450	
Flt Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1811	1587	1805	3610			3450	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	479	10	167	312	646	0	0	885	312
RTOR Reduction (vph)	0	0	0	0	0	25	0	0	0	0	28	0
Lane Group Flow (vph)	0	0	0	0	489	142	312	646	0	0	1169	0
Confl. Peds. (#/hr)						5						5
Turn Type				Split		Perm	Prot					
Protected Phases				8	8		5	2			6	
Permitted Phases						8						
Actuated Green, G (s)					35.2	35.2	23.5	76.8			49.3	
Effective Green, g (s)					35.2	35.2	23.5	76.8			49.3	
Actuated g/C Ratio					0.29	0.29	0.20	0.64			0.41	
Clearance Time (s)					4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					531	466	353	2310			1417	
v/s Ratio Prot					c0.27		c0.17	0.18			c0.34	
v/s Ratio Perm						0.09						
v/c Ratio					0.92	0.30	0.88	0.28			0.82	
Uniform Delay, d1					41.1	32.9	46.9	9.5			31.5	
Progression Factor					1.00	1.00	1.00	1.00			0.72	
Incremental Delay, d2					21.5	0.4	22.1	0.3			5.3	
Delay (s)					62.5	33.3	69.0	9.8			28.0	
Level of Service					E	C	E	A			C	
Approach Delay (s)		0.0			55.1			29.1			28.0	
Approach LOS		A			E			C			C	

Intersection Summary			
HCM Average Control Delay	34.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
31: SR-60 EB Ramps & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	0	510	0	0	0	0	640	170	200	1170	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0		4.0	4.0	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1715	1715	1591					4994		1805	3610	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1715	1715	1591					4994		1805	3610	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	297	0	560	0	0	0	0	703	187	220	1286	0
RTOR Reduction (vph)	0	0	14	0	0	0	0	65	0	0	0	0
Lane Group Flow (vph)	148	149	546	0	0	0	0	825	0	220	1286	0
Confl. Peds. (#/hr)			5						5			
Turn Type	Split		Perm							Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	27.6	27.6	27.6					17.4		10.3	31.7	
Effective Green, g (s)	27.6	27.6	27.6					17.4		10.3	31.7	
Actuated g/C Ratio	0.41	0.41	0.41					0.26		0.15	0.47	
Clearance Time (s)	4.0	4.0	4.0					4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	703	703	652					1291		276	1700	
v/s Ratio Prot	0.09	0.09						0.17		0.12	c0.36	
v/s Ratio Perm			c0.34									
v/c Ratio	0.21	0.21	0.84					0.64		0.80	0.76	
Uniform Delay, d1	12.8	12.8	17.8					22.2		27.5	14.6	
Progression Factor	1.00	1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.2	9.2					1.1		14.7	2.0	
Delay (s)	13.0	13.0	27.1					23.2		42.2	16.6	
Level of Service	B	B	C					C		D	B	
Approach Delay (s)		22.2			0.0			23.2			20.3	
Approach LOS		C			A			C			C	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	67.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
32: Sunnymead Blvd & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	210	390	20	70	480	120	840	90	420	950	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.91		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.87		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1596	1805	3137		1805	5103		3502	3610	1594
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1596	1805	3137		1805	5103		3502	3610	1594
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	348	228	424	22	76	522	130	913	98	457	1033	152
RTOR Reduction (vph)	0	0	72	0	256	0	0	10	0	0	0	63
Lane Group Flow (vph)	348	228	352	22	342	0	130	1001	0	457	1033	89
Confl. Peds. (#/hr)			5						5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	16.2	32.0	45.9	4.2	20.0		13.9	48.0		19.8	53.9	70.1
Effective Green, g (s)	16.2	32.0	45.9	4.2	20.0		13.9	48.0		19.8	53.9	70.1
Actuated g/C Ratio	0.13	0.27	0.38	0.04	0.17		0.12	0.40		0.17	0.45	0.58
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	473	963	664	63	523		209	2041		578	1621	984
v/s Ratio Prot	c0.10	0.06	0.06	0.01	c0.11		0.07	0.20		c0.13	c0.29	0.01
v/s Ratio Perm			0.16									0.04
v/c Ratio	0.74	0.24	0.53	0.35	1.03dr		0.62	0.49		0.79	0.64	0.09
Uniform Delay, d1	49.8	34.4	28.7	56.6	46.8		50.5	26.9		48.1	25.5	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.57	0.38		1.43	0.23	0.04
Incremental Delay, d2	5.9	0.1	0.8	3.3	2.9		5.0	0.7		3.6	0.9	0.0
Delay (s)	55.7	34.6	29.5	59.9	49.7		84.6	10.8		72.4	6.8	0.5
Level of Service	E	C	C	E	D		F	B		E	A	A
Approach Delay (s)		39.8			50.1			19.2			24.4	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
33: SR-60 WB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	210	10	240	600	1140	0	0	1350	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					1.00		0.97	0.95			0.91	
Frpb, ped/bikes					0.99		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.93		1.00	1.00			0.97	
Flt Protected					0.98		0.95	1.00			1.00	
Satd. Flow (prot)					1711		3502	3610			4982	
Flt Permitted					0.98		0.95	1.00			1.00	
Satd. Flow (perm)					1711		3502	3610			4982	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	219	10	250	625	1188	0	0	1406	427
RTOR Reduction (vph)	0	0	0	0	33	0	0	0	0	0	45	0
Lane Group Flow (vph)	0	0	0	0	446	0	625	1188	0	0	1788	0
Confl. Peds. (#/hr)						5						5
Turn Type				Split			Prot					
Protected Phases				8	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					33.0		25.0	79.0			50.0	
Effective Green, g (s)					33.0		25.0	79.0			50.0	
Actuated g/C Ratio					0.28		0.21	0.66			0.42	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					471		730	2377			2076	
v/s Ratio Prot					c0.26		c0.18	0.33			c0.36	
v/s Ratio Perm												
v/c Ratio					0.95		0.86	0.50			0.86	
Uniform Delay, d1					42.6		45.8	10.4			31.8	
Progression Factor					1.00		0.84	0.64			1.00	
Incremental Delay, d2					28.1		8.3	0.6			5.0	
Delay (s)					70.7		46.6	7.3			36.8	
Level of Service					E		D	A			D	
Approach Delay (s)		0.0			70.7			20.8			36.8	
Approach LOS		A			E			C			D	

Intersection Summary			
HCM Average Control Delay	33.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
34: Eucalyptus Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	100	60	120	200	160	70	900	70	160	1260	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1587	1805	1900	1587	1805	3610	1567	1805	3610	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1587	1805	1900	1587	1805	3610	1567	1805	3610	1566
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	111	67	133	222	178	78	1000	78	178	1400	22
RTOR Reduction (vph)	0	0	58	0	0	142	0	0	17	0	0	4
Lane Group Flow (vph)	22	111	9	133	222	36	78	1000	61	178	1400	18
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.2	16.5	16.5	10.8	23.1	23.1	9.4	59.5	59.5	17.2	67.3	67.3
Effective Green, g (s)	4.2	16.5	16.5	10.8	23.1	23.1	9.4	59.5	59.5	17.2	67.3	67.3
Actuated g/C Ratio	0.04	0.14	0.14	0.09	0.19	0.19	0.08	0.50	0.50	0.14	0.56	0.56
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	63	261	218	162	366	305	141	1790	777	259	2025	878
v/s Ratio Prot	0.01	0.06		c0.07	c0.12		0.04	0.28		c0.10	c0.39	
v/s Ratio Perm			0.01			0.02			0.04			0.01
v/c Ratio	0.35	0.43	0.04	0.82	0.61	0.12	0.55	0.56	0.08	0.69	0.69	0.02
Uniform Delay, d1	56.6	47.4	44.9	53.7	44.3	40.0	53.3	21.1	15.9	48.8	18.9	11.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	0.81	0.51
Incremental Delay, d2	3.3	1.1	0.1	27.1	2.8	0.2	4.6	1.3	0.2	6.3	1.7	0.0
Delay (s)	59.9	48.5	45.0	80.8	47.1	40.2	57.9	22.4	16.1	57.3	17.0	6.1
Level of Service	E	D	D	F	D	D	E	C	B	E	B	A
Approach Delay (s)		48.6			53.2			24.3			21.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
35: Locust Ave & Moreno Beach Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	10	180	10	10	150
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	12	12	217	12	12	181
Pedestrians	5			5		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			24		469	23
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			24		469	23
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			86		97	83
cM capacity (veh/h)			1604		479	1055

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	24	229	12	181
Volume Left	0	217	12	0
Volume Right	12	0	0	181
cSH	1700	1604	479	1055
Volume to Capacity	0.01	0.14	0.03	0.17
Queue Length 95th (ft)	0	12	2	15
Control Delay (s)	0.0	7.2	12.7	9.1
Lane LOS		A	B	A
Approach Delay (s)	0.0	7.2	9.3	
Approach LOS			A	

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
36: Ironwood Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	150	160	230	120	20	100	130	170	10	200	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.92		1.00	0.98			0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1805	1722		1805	1851			1744			1846	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (perm)	1805	1722		1805	1851			1744			1846	
Peak-hour factor, PHF	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Adj. Flow (vph)	42	211	225	324	169	28	141	183	239	14	282	56
RTOR Reduction (vph)	0	32	0	0	5	0	0	22	0	0	6	0
Lane Group Flow (vph)	42	404	0	324	192	0	0	541	0	0	346	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	5.6	27.2		21.8	43.4			33.0			22.0	
Effective Green, g (s)	5.6	27.2		21.8	43.4			33.0			22.0	
Actuated g/C Ratio	0.05	0.23		0.18	0.36			0.28			0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	84	390		328	669			480			338	
v/s Ratio Prot	0.02	c0.23		c0.18	0.10			c0.31			c0.19	
v/s Ratio Perm												
v/c Ratio	0.50	1.03		0.99	0.29			1.13			1.02	
Uniform Delay, d1	55.8	46.4		49.0	27.3			43.5			49.0	
Progression Factor	1.00	1.00		0.87	0.82			1.00			1.00	
Incremental Delay, d2	4.6	54.8		45.9	1.1			80.4			55.4	
Delay (s)	60.5	101.2		88.6	23.4			123.9			104.5	
Level of Service	E	F		F	C			F			F	
Approach Delay (s)		97.6			64.0			123.9			104.5	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM Average Control Delay	97.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
37: SR-60 EB Ramps & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	60	520	20	10	150	110	850	30	360	510	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes		1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1833	2798	1805	1900	1590	1805	3610	1571	1805	4979	
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1833	2798	1805	1900	1590	1805	3610	1571	1805	4979	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	188	71	612	24	12	176	129	1000	35	424	600	176
RTOR Reduction (vph)	0	0	467	0	0	158	0	0	18	0	37	0
Lane Group Flow (vph)	0	259	145	24	12	18	129	1000	17	424	739	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		19.0	19.0	8.0	8.0	8.0	10.6	29.2	29.2	8.1	26.7	
Effective Green, g (s)		19.0	19.0	8.0	8.0	8.0	10.6	29.2	29.2	8.1	26.7	
Actuated g/C Ratio		0.24	0.24	0.10	0.10	0.10	0.13	0.36	0.36	0.10	0.33	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		434	662	180	189	158	238	1313	571	182	1656	
v/s Ratio Prot		c0.14		c0.01	0.01		0.07	c0.28		c0.23	0.15	
v/s Ratio Perm			0.05			0.01			0.01			
v/c Ratio		0.60	0.22	0.13	0.06	0.11	0.54	0.76	0.03	2.33	0.45	
Uniform Delay, d1		27.2	24.7	33.0	32.8	32.9	32.6	22.5	16.4	36.1	21.0	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.2	0.2	0.3	0.1	0.3	2.5	2.7	0.0	615.2	0.2	
Delay (s)		29.5	24.8	33.3	32.9	33.2	35.1	25.2	16.5	651.3	21.2	
Level of Service		C	C	C	C	C	D	C	B	F	C	
Approach Delay (s)		26.2			33.2			26.0			243.8	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM Average Control Delay	102.3	HCM Level of Service	F
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
38: John Kennedy Dr & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	350	120	200	530	90	300	900	200	290	850	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3457		1805	3523		1805	3610	1587	1805	3610	1586
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3457		1805	3523		1805	3610	1587	1805	3610	1586
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	103	402	138	230	609	103	345	1034	230	333	977	103
RTOR Reduction (vph)	0	32	0	0	13	0	0	0	140	0	0	62
Lane Group Flow (vph)	103	508	0	230	699	0	345	1034	90	333	977	41
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	11.2	27.3		15.0	31.1		28.3	34.0	34.0	27.7	33.4	33.4
Effective Green, g (s)	11.2	27.3		15.0	31.1		28.3	34.0	34.0	27.7	33.4	33.4
Actuated g/C Ratio	0.09	0.23		0.12	0.26		0.24	0.28	0.28	0.23	0.28	0.28
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	168	786		226	913		426	1023	450	417	1005	441
v/s Ratio Prot	0.06	0.15		c0.13	c0.20		c0.19	c0.29		0.18	0.27	
v/s Ratio Perm									0.06			0.03
v/c Ratio	0.61	0.65		1.02	0.77		0.81	1.01	0.20	0.80	0.97	0.09
Uniform Delay, d1	52.3	42.0		52.5	41.1		43.3	43.0	32.7	43.5	42.8	32.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.82	0.89	0.83
Incremental Delay, d2	6.5	1.8		64.5	3.9		10.9	30.8	1.0	4.2	12.3	0.2
Delay (s)	58.8	43.8		117.0	45.0		54.2	73.8	33.7	40.1	50.5	26.8
Level of Service	E	D		F	D		D	E	C	D	D	C
Approach Delay (s)		46.2			62.6			63.9			46.3	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM Average Control Delay	55.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
39: Iris Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	340	110	310	530	180	300	840	210	260	750	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3463		1805	3458		1805	5187	1587	1805	5094	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3463		1805	3458		1805	5187	1587	1805	5094	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	81	395	128	360	616	209	349	977	244	302	872	105
RTOR Reduction (vph)	0	29	0	0	30	0	0	0	132	0	12	0
Lane Group Flow (vph)	81	494	0	360	795	0	349	977	112	302	965	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.3	27.8		17.0	36.5		27.0	35.2	35.2	24.0	32.2	
Effective Green, g (s)	8.3	27.8		17.0	36.5		27.0	35.2	35.2	24.0	32.2	
Actuated g/C Ratio	0.07	0.23		0.14	0.30		0.22	0.29	0.29	0.20	0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	125	802		256	1052		406	1522	466	361	1367	
v/s Ratio Prot	0.04	0.14		c0.20	c0.23		c0.19	c0.19		0.17	c0.19	
v/s Ratio Perm									0.07			
v/c Ratio	0.65	0.62		1.41	0.76		0.86	0.64	0.24	0.84	0.71	
Uniform Delay, d1	54.4	41.3		51.5	37.7		44.7	36.9	32.2	46.1	39.6	
Progression Factor	1.00	1.00		1.00	1.00		0.87	0.64	0.80	1.00	1.00	
Incremental Delay, d2	11.0	1.4		204.6	3.1		1.8	0.2	0.1	15.4	3.1	
Delay (s)	65.4	42.7		256.1	40.9		40.7	23.6	26.0	61.5	42.7	
Level of Service	E	D		F	D		D	C	C	E	D	
Approach Delay (s)		45.8			106.2			27.8			47.1	
Approach LOS		D			F			C			D	

Intersection Summary			
HCM Average Control Delay	55.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
40: Iris Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	630	100	270	650	70	140	180	190	50	180	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3528		1805	3610	1591	1805	3306		1805	3383	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3528		1805	3610	1591	1805	3306		1805	3383	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	93	733	116	314	756	81	163	209	221	58	209	128
RTOR Reduction (vph)	0	10	0	0	0	39	0	171	0	0	93	0
Lane Group Flow (vph)	93	839	0	314	756	42	163	259	0	58	244	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot		pm+ov	Prot			Prot		
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	8.1	29.1		21.2	42.2	47.5	13.4	21.1		5.3	13.0	
Effective Green, g (s)	8.1	29.1		21.2	42.2	47.5	13.4	21.1		5.3	13.0	
Actuated g/C Ratio	0.09	0.31		0.23	0.46	0.51	0.14	0.23		0.06	0.14	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	158	1107		413	1643	884	261	752		103	474	
v/s Ratio Prot	0.05	c0.24		c0.17	0.21	0.00	c0.09	0.08		0.03	c0.07	
v/s Ratio Perm						0.02						
v/c Ratio	0.59	0.76		0.76	0.46	0.05	0.62	0.34		0.56	0.52	
Uniform Delay, d1	40.7	28.6		33.4	17.4	11.3	37.3	30.0		42.6	36.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.5	3.0		8.0	0.2	0.0	4.6	0.3		6.9	0.9	
Delay (s)	46.2	31.7		41.4	17.6	11.3	41.9	30.3		49.4	37.9	
Level of Service	D	C		D	B	B	D	C		D	D	
Approach Delay (s)		33.1			23.7			33.5			39.6	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
41: Iris Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	510	320	640	630	170	390	530	610	170	490	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	4858		3502	5005		3502	3610	1600	3502	3527	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	4858		3502	5005		3502	3610	1600	3502	3527	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	554	348	696	685	185	424	576	663	185	533	87
RTOR Reduction (vph)	0	102	0	0	42	0	0	0	41	0	13	0
Lane Group Flow (vph)	152	800	0	696	828	0	424	576	622	185	607	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.4	20.5		14.2	26.3		10.1	23.3	37.5	7.1	20.3	
Effective Green, g (s)	8.4	20.5		14.2	26.3		10.1	23.3	37.5	7.1	20.3	
Actuated g/C Ratio	0.10	0.25		0.18	0.32		0.12	0.29	0.46	0.09	0.25	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	363	1228		613	1623		436	1037	819	307	883	
v/s Ratio Prot	0.04	c0.16		c0.20	0.17		c0.12	0.16	c0.13	0.05	0.17	
v/s Ratio Perm									0.26			
v/c Ratio	0.42	0.65		1.14	0.51		0.97	0.56	0.76	0.60	0.69	
Uniform Delay, d1	34.1	27.1		33.4	22.2		35.4	24.5	18.1	35.6	27.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	1.3		79.7	0.3		35.7	0.6	4.1	3.3	2.2	
Delay (s)	34.8	28.4		113.2	22.5		71.1	25.2	22.1	39.0	29.8	
Level of Service	C	C		F	C		E	C	C	D	C	
Approach Delay (s)		29.3			62.8			35.7			31.9	
Approach LOS		C			E			D			C	

Intersection Summary			
HCM Average Control Delay	42.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	260	840	570	60	40	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00		0.99	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		0.91	0.85
Flt Protected	0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)	1805	5187	5101		1674	1527
Flt Permitted	0.95	1.00	1.00		0.98	1.00
Satd. Flow (perm)	1805	5187	5101		1674	1527
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	913	620	65	43	185
RTOR Reduction (vph)	0	0	18	0	66	34
Lane Group Flow (vph)	283	913	667	0	51	77
Confl. Peds. (#/hr)				5	5	5
Turn Type	Prot					pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases						6
Actuated Green, G (s)	8.5	23.9	11.4		4.0	12.5
Effective Green, g (s)	8.5	23.9	11.4		4.0	12.5
Actuated g/C Ratio	0.24	0.67	0.32		0.11	0.35
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	427	3453	1620		187	702
v/s Ratio Prot	c0.16	0.18	c0.13		c0.03	0.03
v/s Ratio Perm						0.02
v/c Ratio	0.66	0.26	0.41		0.27	0.11
Uniform Delay, d1	12.4	2.4	9.6		14.6	7.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.8	0.0	0.2		0.8	0.1
Delay (s)	16.2	2.5	9.8		15.4	8.0
Level of Service	B	A	A		B	A
Approach Delay (s)		5.7	9.8		11.8	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	35.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
43: Iris Ave & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	820	20	30	780	10	50	100	50	10	40	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.97			0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1805	5165		1805	5176			1806			1667	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (perm)	1805	5165		1805	5176			1806			1667	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	193	932	23	34	886	11	57	114	57	11	45	250
RTOR Reduction (vph)	0	2	0	0	1	0	0	11	0	0	162	0
Lane Group Flow (vph)	193	953	0	34	896	0	0	217	0	0	144	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	7.3	27.4		2.3	22.4			14.3			11.7	
Effective Green, g (s)	7.3	27.4		2.3	22.4			14.3			11.7	
Actuated g/C Ratio	0.10	0.38		0.03	0.31			0.20			0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	184	1974		58	1617			360			272	
v/s Ratio Prot	c0.11	0.18		0.02	c0.17			c0.12			c0.09	
v/s Ratio Perm												
v/c Ratio	1.05	0.48		0.59	0.55			0.60			0.53	
Uniform Delay, d1	32.2	16.8		34.2	20.5			26.1			27.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	79.8	0.2		14.2	0.4			2.8			1.9	
Delay (s)	112.0	17.0		48.4	20.9			28.9			29.3	
Level of Service	F	B		D	C			C			C	
Approach Delay (s)		33.0			21.9			28.9			29.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
44: Iris Ave & Via Del Lago

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	790	30	50	730	10	30	0	40	20	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00		0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1805	5155		1805	5175		1805		1608	1805	1593	
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)	1805	5155		1805	5175		1805		1608	1805	1593	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	24	963	37	61	890	12	37	0	49	24	0	24
RTOR Reduction (vph)	0	3	0	0	1	0	0	0	41	0	23	0
Lane Group Flow (vph)	24	997	0	61	901	0	37	0	8	24	1	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	1.0	25.3		6.2	30.5		2.0		8.8	2.5	3.1	
Effective Green, g (s)	1.0	25.3		6.2	30.5		2.0		8.8	2.5	3.1	
Actuated g/C Ratio	0.02	0.48		0.12	0.58		0.04		0.17	0.05	0.06	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	34	2479		213	3001		69		391	86	94	
v/s Ratio Prot	0.01	c0.19		c0.03	0.17		c0.02		c0.00	0.01	0.00	
v/s Ratio Perm									0.00			
v/c Ratio	0.71	0.40		0.29	0.30		0.54		0.02	0.28	0.02	
Uniform Delay, d1	25.7	8.8		21.2	5.6		24.8		18.3	24.2	23.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2	49.8	0.1		0.7	0.1		7.8		0.0	1.8	0.1	
Delay (s)	75.5	8.9		21.9	5.7		32.6		18.3	26.0	23.4	
Level of Service	E	A		C	A		C		B	C	C	
Approach Delay (s)		10.5			6.7			24.5			24.7	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
45: Krameria Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	210	100	160	560	140	280	1100	200	120	820	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes		0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.97		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1802		1805	1900	1587	1805	3517		1805	1900	1555
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1802		1805	1900	1587	1805	3517		1805	1900	1555
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	85	223	106	170	596	149	298	1170	213	128	872	191
RTOR Reduction (vph)	0	11	0	0	0	39	0	12	0	0	0	73
Lane Group Flow (vph)	0	403	0	170	596	110	298	1371	0	128	872	118
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)		29.0		34.0	34.0	34.0	9.0	33.0		8.0	32.0	32.0
Effective Green, g (s)		29.0		34.0	34.0	34.0	9.0	33.0		8.0	32.0	32.0
Actuated g/C Ratio		0.24		0.28	0.28	0.28	0.08	0.28		0.07	0.27	0.27
Clearance Time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		435		511	538	450	135	967		120	507	415
v/s Ratio Prot		c0.22		0.09	c0.31		c0.17	0.39		0.07	c0.46	
v/s Ratio Perm						0.07						0.08
v/c Ratio		0.93		0.33	1.11	0.25	2.21	1.42		1.07	1.72	0.29
Uniform Delay, d1		44.5		34.0	43.0	33.1	55.5	43.5		56.0	44.0	34.9
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		0.91	0.53	0.45
Incremental Delay, d2		25.8		0.4	71.8	0.3	566.7	194.0		75.7	328.0	0.8
Delay (s)		70.2		34.4	114.8	33.4	622.2	237.5		126.4	351.3	16.5
Level of Service		E		C	F	C	F	F		F	F	B
Approach Delay (s)		70.2			86.6			305.7			273.5	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	225.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	123.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
46: Krameria Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	360	110	80	480	120	130	150	50	220	170	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.97		1.00	0.96		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3471		1805	3491		1805	3461		1805	3263	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3471		1805	3491		1805	3461		1805	3263	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	244	439	134	98	585	146	159	183	61	268	207	293
RTOR Reduction (vph)	0	29	0	0	23	0	0	43	0	0	209	0
Lane Group Flow (vph)	244	544	0	98	708	0	159	201	0	268	291	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	7.1	22.9		5.4	21.2		10.3	12.0		10.2	11.9	
Effective Green, g (s)	7.1	22.9		5.4	21.2		10.3	12.0		10.2	11.9	
Actuated g/C Ratio	0.11	0.34		0.08	0.32		0.15	0.18		0.15	0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	193	1195		147	1113		280	625		277	584	
v/s Ratio Prot	c0.14	0.16		0.05	c0.20		0.09	0.06		c0.15	c0.09	
v/s Ratio Perm												
v/c Ratio	1.26	0.46		0.67	0.64		0.57	0.32		0.97	0.50	
Uniform Delay, d1	29.7	17.0		29.7	19.4		26.0	23.7		28.0	24.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	153.5	0.3		10.9	1.2		2.6	0.3		44.7	0.7	
Delay (s)	183.2	17.2		40.5	20.6		28.7	24.0		72.7	25.3	
Level of Service	F	B		D	C		C	C		E	C	
Approach Delay (s)		66.8			22.9			25.9			41.8	
Approach LOS		E			C			C			D	

Intersection Summary			
HCM Average Control Delay	41.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
47: Krameria Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	330	260	240	150	150	120	230	1110	210	120	780	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.93		1.00	0.93		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	3324		1805	3369		1805	3610	1615	1805	3524	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	3324		1805	3369		1805	3610	1615	1805	3524	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	375	295	273	170	170	136	261	1261	239	136	886	148
RTOR Reduction (vph)	0	182	0	0	116	0	0	0	88	0	12	0
Lane Group Flow (vph)	375	386	0	170	190	0	261	1261	151	136	1022	0
Confl. Peds. (#/hr)			5									5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	13.5	16.3		10.1	12.9		15.1	38.0	48.1	9.1	32.0	
Effective Green, g (s)	13.5	16.3		10.1	12.9		15.1	38.0	48.1	9.1	32.0	
Actuated g/C Ratio	0.15	0.18		0.11	0.14		0.17	0.42	0.54	0.10	0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	528	605		204	486		305	1533	940	184	1260	
v/s Ratio Prot	0.11	c0.12		c0.09	0.06		c0.14	c0.35	0.02	0.08	0.29	
v/s Ratio Perm									0.08			
v/c Ratio	0.71	0.64		0.83	0.39		0.86	0.82	0.16	0.74	0.81	
Uniform Delay, d1	36.1	33.9		38.9	34.7		36.1	22.8	10.5	39.0	26.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.5	2.2		24.3	0.5		20.3	3.7	0.1	14.4	4.1	
Delay (s)	40.6	36.1		63.1	35.3		56.4	26.5	10.6	53.4	30.1	
Level of Service	D	D		E	D		E	C	B	D	C	
Approach Delay (s)		37.9			45.2			28.8			32.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
48: Alessandro Blvd & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	530	120	30	640	40	260	200	40	90	170	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1591	1805	3610	1591	3502	1847		1805	3304	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1591	1805	3610	1591	3502	1847		1805	3304	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	81	616	140	35	744	47	302	233	47	105	198	209
RTOR Reduction (vph)	0	0	49	0	0	19	0	7	0	0	136	0
Lane Group Flow (vph)	81	616	91	35	744	28	302	273	0	105	271	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot			Prot		
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	9.4	63.1	77.7	5.4	59.1	71.4	14.6	23.2		12.3	20.9	
Effective Green, g (s)	9.4	63.1	77.7	5.4	59.1	71.4	14.6	23.2		12.3	20.9	
Actuated g/C Ratio	0.08	0.53	0.65	0.05	0.49	0.60	0.12	0.19		0.10	0.17	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	141	1898	1083	81	1778	947	426	357		185	575	
v/s Ratio Prot	c0.04	c0.17	0.01	0.02	c0.21	0.00	0.09	c0.15		c0.06	0.08	
v/s Ratio Perm			0.05			0.01						
v/c Ratio	0.57	0.32	0.08	0.43	0.42	0.03	0.71	0.76		0.57	0.47	
Uniform Delay, d1	53.4	16.3	7.9	55.8	19.5	10.0	50.7	45.8		51.3	44.6	
Progression Factor	1.21	0.45	0.72	1.00	1.00	1.00	0.75	0.78		1.00	1.00	
Incremental Delay, d2	5.1	0.4	0.0	3.7	0.7	0.0	5.1	8.9		4.0	0.6	
Delay (s)	69.5	7.8	5.7	59.5	20.2	10.0	43.2	44.6		55.3	45.2	
Level of Service	E	A	A	E	C	B	D	D		E	D	
Approach Delay (s)		13.4			21.3			43.8			47.3	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
49: Alessandro Blvd & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	300	250	110	440	20	230	300	140	30	350	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1589	1805	1900	1576	1805	1900	1580	1805	1858	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1589	1805	1900	1576	1805	1900	1580	1805	1858	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	38	385	321	141	564	26	295	385	179	38	449	64
RTOR Reduction (vph)	0	0	130	0	0	5	0	0	102	0	5	0
Lane Group Flow (vph)	38	385	191	141	564	21	295	385	77	38	508	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	3.7	27.6	27.6	7.2	31.1	38.3	10.3	31.0	38.2	7.2	27.9	
Effective Green, g (s)	3.7	27.6	27.6	7.2	31.1	38.3	10.3	31.0	38.2	7.2	27.9	
Actuated g/C Ratio	0.04	0.31	0.31	0.08	0.35	0.43	0.12	0.35	0.43	0.08	0.31	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	75	589	493	146	664	749	209	662	749	146	582	
v/s Ratio Prot	0.02	0.20		c0.08	c0.30	0.00	c0.16	c0.20	0.01	0.02	c0.27	
v/s Ratio Perm			0.12			0.01			0.04			
v/c Ratio	0.51	0.65	0.39	0.97	0.85	0.03	1.41	0.58	0.10	0.26	0.87	
Uniform Delay, d1	41.8	26.6	24.1	40.8	26.8	14.6	39.4	23.7	15.2	38.4	28.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.3	2.6	0.5	63.5	9.9	0.0	211.1	1.3	0.1	1.0	13.5	
Delay (s)	47.1	29.2	24.6	104.3	36.7	14.6	250.4	25.0	15.2	39.4	42.4	
Level of Service	D	C	C	F	D	B	F	C	B	D	D	
Approach Delay (s)		28.1			49.0			100.4			42.2	
Approach LOS		C			D			F			D	

Intersection Summary			
HCM Average Control Delay	57.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
50: Alessandro Blvd & Morrison St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	140	380	420	90	60	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1900	3610	1577	1805	1605
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1900	3610	1577	1805	1605
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	161	437	483	103	69	149
RTOR Reduction (vph)	0	0	0	74	0	79
Lane Group Flow (vph)	161	437	483	29	69	70
Confl. Peds. (#/hr)				5	5	5
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	9.0	24.1	11.1	11.1	7.6	16.6
Effective Green, g (s)	9.0	24.1	11.1	11.1	7.6	16.6
Actuated g/C Ratio	0.23	0.61	0.28	0.28	0.19	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	409	1153	1009	441	346	833
v/s Ratio Prot	0.09	c0.23	c0.13		c0.04	0.02
v/s Ratio Perm				0.02		0.02
v/c Ratio	0.39	0.38	0.48	0.07	0.20	0.08
Uniform Delay, d1	13.0	4.0	11.9	10.5	13.5	7.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.4	0.1	0.3	0.0
Delay (s)	13.7	4.2	12.3	10.6	13.8	7.0
Level of Service	B	A	B	B	B	A
Approach Delay (s)		6.7	12.0		9.2	
Approach LOS		A	B		A	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	39.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
51: Alessandro Blvd & Nason St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	220	150	250	340	200	80	400	110	140	480	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1590	1805	1900	1591	1805	3482		1805	3610	1574
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1590	1805	1900	1591	1805	3482		1805	3610	1574
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	82	259	176	294	400	235	94	471	129	165	565	118
RTOR Reduction (vph)	0	0	132	0	0	157	0	27	0	0	0	80
Lane Group Flow (vph)	82	259	44	294	400	78	94	573	0	165	565	38
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	5.4	17.7	17.7	11.3	23.6	23.6	5.4	18.5		7.2	20.3	20.3
Effective Green, g (s)	5.4	17.7	17.7	11.3	23.6	23.6	5.4	18.5		7.2	20.3	20.3
Actuated g/C Ratio	0.08	0.25	0.25	0.16	0.33	0.33	0.08	0.26		0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	138	476	398	288	634	531	138	911		184	1037	452
v/s Ratio Prot	0.05	0.14		c0.16	c0.21		0.05	c0.16		c0.09	0.16	
v/s Ratio Perm			0.03			0.05						0.02
v/c Ratio	0.59	0.54	0.11	1.02	0.63	0.15	0.68	0.63		0.90	0.54	0.08
Uniform Delay, d1	31.6	23.0	20.4	29.7	19.9	16.5	31.8	23.1		31.4	21.3	18.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.7	1.3	0.1	58.5	2.1	0.1	13.0	1.4		38.4	0.6	0.1
Delay (s)	38.3	24.3	20.6	88.2	21.9	16.6	44.8	24.4		69.7	21.9	18.5
Level of Service	D	C	C	F	C	B	D	C		E	C	B
Approach Delay (s)		25.2			41.6			27.2			30.7	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
52: Cactus Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	560	150	30	590	30	190	300	40	60	240	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3482		1805	3580		1805	3539		1805	1900	1585
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3482		1805	3580		1805	3539		1805	1900	1585
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	138	700	188	38	738	38	238	375	50	75	300	138
RTOR Reduction (vph)	0	17	0	0	2	0	0	10	0	0	0	110
Lane Group Flow (vph)	138	871	0	38	774	0	238	415	0	75	300	28
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	13.9	54.5		4.8	45.4		20.4	37.6		7.1	24.3	24.3
Effective Green, g (s)	13.9	54.5		4.8	45.4		20.4	37.6		7.1	24.3	24.3
Actuated g/C Ratio	0.12	0.45		0.04	0.38		0.17	0.31		0.06	0.20	0.20
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	209	1581		72	1354		307	1109		107	385	321
v/s Ratio Prot	c0.08	c0.25		0.02	0.22		c0.13	0.12		0.04	c0.16	
v/s Ratio Perm												0.02
v/c Ratio	0.66	0.55		0.53	0.57		0.78	0.37		0.70	0.78	0.09
Uniform Delay, d1	50.8	23.8		56.5	29.6		47.6	32.1		55.4	45.3	38.8
Progression Factor	1.01	0.77		1.25	0.76		1.00	1.00		1.02	0.87	0.74
Incremental Delay, d2	7.1	1.3		5.5	1.4		11.6	0.2		18.6	9.5	0.1
Delay (s)	58.4	19.6		75.8	24.0		59.2	32.3		75.1	49.0	29.0
Level of Service	E	B		E	C		E	C		E	D	C
Approach Delay (s)		24.8			26.4			41.9			47.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	32.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
53: Cactus Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	420	230	480	420	130	180	620	470	190	620	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	0.96		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3397		1805	3467		1805	3610	1586	1805	3565	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3397		1805	3467		1805	3610	1586	1805	3565	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	85	512	280	585	512	159	220	756	573	232	756	61
RTOR Reduction (vph)	0	62	0	0	24	0	0	0	389	0	5	0
Lane Group Flow (vph)	85	730	0	585	647	0	220	756	185	232	812	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.8	29.2		31.8	52.2		15.0	30.0	30.0	13.0	28.0	
Effective Green, g (s)	8.8	29.2		31.8	52.2		15.0	30.0	30.0	13.0	28.0	
Actuated g/C Ratio	0.07	0.24		0.27	0.44		0.12	0.25	0.25	0.11	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	132	827		478	1508		226	903	397	196	832	
v/s Ratio Prot	0.05	c0.21		c0.32	0.19		0.12	c0.21		c0.13	c0.23	
v/s Ratio Perm									0.12			
v/c Ratio	0.64	0.88		1.22	0.43		0.97	0.84	0.46	1.18	0.98	
Uniform Delay, d1	54.1	43.7		44.1	23.6		52.3	42.7	38.2	53.5	45.7	
Progression Factor	0.65	0.68		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.2	11.8		118.3	0.9		52.0	6.8	0.9	122.6	25.2	
Delay (s)	44.3	41.5		162.4	24.4		104.3	49.5	39.0	176.1	70.9	
Level of Service	D	D		F	C		F	D	D	F	E	
Approach Delay (s)		41.8			88.7			53.4			94.2	
Approach LOS		D			F			D			F	

Intersection Summary			
HCM Average Control Delay	69.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
55: Cactus Ave & Nason St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	300	110	50	370	140	180	70	60	130	50	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3450		1805	3447		1805	3335		1805	3084	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3450		1805	3447		1805	3335		1805	3084	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	386	361	133	60	446	169	217	84	72	157	60	470
RTOR Reduction (vph)	0	31	0	0	36	0	0	62	0	0	359	0
Lane Group Flow (vph)	386	463	0	60	579	0	217	94	0	157	171	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	24.2	38.3		6.5	20.6		13.1	11.4		11.9	10.2	
Effective Green, g (s)	24.2	38.3		6.5	20.6		13.1	11.4		11.9	10.2	
Actuated g/C Ratio	0.29	0.46		0.08	0.24		0.16	0.14		0.14	0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	519	1571		140	844		281	452		255	374	
v/s Ratio Prot	c0.21	0.13		0.03	c0.17		c0.12	0.03		0.09	c0.06	
v/s Ratio Perm												
v/c Ratio	0.74	0.29		0.43	0.69		0.77	0.21		0.62	0.46	
Uniform Delay, d1	27.1	14.4		37.0	28.8		34.1	32.3		33.9	34.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.7	0.1		2.1	2.3		12.4	0.2		4.4	0.9	
Delay (s)	32.9	14.5		39.1	31.1		46.4	32.6		38.3	35.3	
Level of Service	C	B		D	C		D	C		D	D	
Approach Delay (s)		22.6			31.8			40.6			36.0	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	84.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
56: Alessandro Blvd & Frederick St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1000	140	110	1150	100	120	330	60	160	550	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1586	1805	5118		3502	3519		3502	3610	1589
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1586	1805	5118		3502	3519		3502	3610	1589
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	146	1042	146	115	1198	104	125	344	62	167	573	198
RTOR Reduction (vph)	0	0	71	0	7	0	0	15	0	0	0	154
Lane Group Flow (vph)	146	1042	75	115	1295	0	125	391	0	167	573	44
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	14.9	56.6	56.6	12.9	54.6		7.8	26.5		8.0	26.7	26.7
Effective Green, g (s)	14.9	56.6	56.6	12.9	54.6		7.8	26.5		8.0	26.7	26.7
Actuated g/C Ratio	0.12	0.47	0.47	0.11	0.46		0.06	0.22		0.07	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	224	1703	748	194	2329		228	777		233	803	354
v/s Ratio Prot	c0.08	c0.29		0.06	0.25		0.04	0.11		c0.05	c0.16	
v/s Ratio Perm			0.05									0.03
v/c Ratio	0.65	0.61	0.10	0.59	0.56		0.55	0.50		0.72	0.71	0.12
Uniform Delay, d1	50.1	23.5	17.6	51.0	23.9		54.4	41.0		54.9	43.1	37.3
Progression Factor	0.85	0.61	0.96	1.09	0.77		1.07	1.13		1.00	1.00	1.00
Incremental Delay, d2	6.0	1.5	0.2	4.4	0.9		2.4	0.5		10.0	3.0	0.2
Delay (s)	48.5	15.9	17.0	60.3	19.4		60.6	46.8		64.9	46.1	37.5
Level of Service	D	B	B	E	B		E	D		E	D	D
Approach Delay (s)		19.6			22.7			50.0			47.7	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
57: Alessandro Blvd & Graham St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	960	220	310	1230	100	70	170	100	100	280	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1585	1805	5122		1805	3389		1805	3505	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1585	1805	5122		1805	3389		1805	3505	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	42	1000	229	323	1281	104	73	177	104	104	292	62
RTOR Reduction (vph)	0	0	117	0	5	0	0	88	0	0	19	0
Lane Group Flow (vph)	42	1000	112	323	1380	0	73	193	0	104	335	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	7.1	49.3	49.3	29.3	71.5		7.1	18.4		7.0	18.3	
Effective Green, g (s)	7.1	49.3	49.3	29.3	71.5		7.1	18.4		7.0	18.3	
Actuated g/C Ratio	0.06	0.41	0.41	0.24	0.60		0.06	0.15		0.06	0.15	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	107	1483	651	441	3052		107	520		105	535	
v/s Ratio Prot	0.02	c0.28		c0.18	0.27		0.04	0.06		c0.06	c0.10	
v/s Ratio Perm			0.07									
v/c Ratio	0.39	0.67	0.17	0.73	0.45		0.68	0.37		0.99	0.63	
Uniform Delay, d1	54.4	28.8	22.4	41.7	13.4		55.3	45.6		56.5	47.7	
Progression Factor	0.68	1.17	2.81	0.61	0.56		1.10	1.10		1.00	1.00	
Incremental Delay, d2	1.9	2.0	0.5	3.5	0.3		16.0	0.4		84.6	2.3	
Delay (s)	38.8	35.6	63.4	28.9	7.7		77.1	50.6		141.1	49.9	
Level of Service	D	D	E	C	A		E	D		F	D	
Approach Delay (s)		40.8			11.7			56.0			70.6	
Approach LOS		D			B			E			E	

Intersection Summary			
HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
58: Alessandro Blvd & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	720	100	80	1330	180	170	290	40	180	550	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1592	1805	5083		1805	3538		1805	3610	1600
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1592	1805	5083		1805	3538		1805	3610	1600
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	783	109	87	1446	196	185	315	43	196	598	239
RTOR Reduction (vph)	0	0	49	0	13	0	0	11	0	0	0	13
Lane Group Flow (vph)	196	783	60	87	1629	0	185	347	0	196	598	226
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	20.8	54.5	66.5	11.1	44.8		12.0	26.4		12.0	26.4	47.2
Effective Green, g (s)	20.8	54.5	66.5	11.1	44.8		12.0	26.4		12.0	26.4	47.2
Actuated g/C Ratio	0.17	0.45	0.55	0.09	0.37		0.10	0.22		0.10	0.22	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	313	2356	935	167	1898		181	778		181	794	683
v/s Ratio Prot	c0.11	0.15	0.01	0.05	c0.32		0.10	0.10		c0.11	c0.17	0.06
v/s Ratio Perm			0.03									0.08
v/c Ratio	0.63	0.33	0.06	0.52	0.86		1.02	0.45		1.08	0.75	0.33
Uniform Delay, d1	46.0	21.1	12.4	51.9	34.7		54.0	40.5		54.0	43.8	25.4
Progression Factor	1.60	0.38	0.01	0.95	0.91		0.92	1.32		1.00	1.00	1.00
Incremental Delay, d2	2.9	0.3	0.0	2.5	4.6		69.9	0.4		90.7	4.1	0.3
Delay (s)	76.5	8.4	0.1	51.9	36.2		119.5	54.0		144.7	47.8	25.7
Level of Service	E	A	A	D	D		F	D		F	D	C
Approach Delay (s)		19.8			37.0			76.3			61.1	
Approach LOS		B			D			E			E	

Intersection Summary			
HCM Average Control Delay	43.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
59: Alessandro Blvd & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	670	110	90	1200	90	170	240	70	80	270	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5064		1805	5126		1805	3475		1805	3427	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	5064		1805	5126		1805	3475		1805	3427	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	744	122	100	1333	100	189	267	78	89	300	133
RTOR Reduction (vph)	0	13	0	0	5	0	0	30	0	0	56	0
Lane Group Flow (vph)	56	853	0	100	1428	0	189	315	0	89	377	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	8.0	57.9		11.9	61.8		15.2	23.9		10.3	19.0	
Effective Green, g (s)	8.0	57.9		11.9	61.8		15.2	23.9		10.3	19.0	
Actuated g/C Ratio	0.07	0.48		0.10	0.51		0.13	0.20		0.09	0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	120	2443		179	2640		229	692		155	543	
v/s Ratio Prot	0.03	0.17		c0.06	c0.28		c0.10	0.09		0.05	c0.11	
v/s Ratio Perm												
v/c Ratio	0.47	0.35		0.56	0.54		0.83	0.45		0.57	0.70	
Uniform Delay, d1	53.9	19.3		51.5	19.6		51.1	42.3		52.7	47.8	
Progression Factor	1.17	0.40		0.90	0.64		0.65	0.96		1.00	1.00	
Incremental Delay, d2	2.6	0.4		2.1	0.4		19.8	0.4		5.1	3.9	
Delay (s)	65.6	8.1		48.4	13.0		52.8	41.1		57.8	51.6	
Level of Service	E	A		D	B		D	D		E	D	
Approach Delay (s)		11.6			15.3			45.2			52.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
60: Alessandro Blvd & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	390	190	140	840	80	350	590	80	170	770	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1587	1805	5112		1805	3610	1589	1805	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1587	1805	5112		1805	3610	1589	1805	3610	1588
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	184	448	218	161	966	92	402	678	92	195	885	276
RTOR Reduction (vph)	0	0	153	0	9	0	0	0	60	0	0	117
Lane Group Flow (vph)	184	448	65	161	1049	0	402	678	32	195	885	159
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	12.9	36.0	36.0	10.9	34.0		21.0	41.7	41.7	15.4	36.1	36.1
Effective Green, g (s)	12.9	36.0	36.0	10.9	34.0		21.0	41.7	41.7	15.4	36.1	36.1
Actuated g/C Ratio	0.11	0.30	0.30	0.09	0.28		0.18	0.35	0.35	0.13	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	194	1083	476	164	1448		316	1254	552	232	1086	478
v/s Ratio Prot	c0.10	0.12		0.09	c0.21		c0.22	0.19		0.11	c0.25	
v/s Ratio Perm			0.04						0.02			0.10
v/c Ratio	0.95	0.41	0.14	0.98	0.72		1.27	0.54	0.06	0.84	0.81	0.33
Uniform Delay, d1	53.2	33.6	30.7	54.5	38.8		49.5	31.5	26.1	51.1	38.9	32.6
Progression Factor	1.10	0.58	0.76	0.96	0.76		0.52	0.82	1.52	1.00	1.00	1.00
Incremental Delay, d2	47.9	1.1	0.6	61.3	2.9		140.6	0.4	0.0	23.0	4.8	0.4
Delay (s)	106.2	20.4	23.9	113.5	32.4		166.3	26.1	39.6	74.1	43.7	33.0
Level of Service	F	C	C	F	C		F	C	D	E	D	C
Approach Delay (s)		39.9			43.1			75.3			45.9	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	51.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
61: Cactus Ave & Frederick St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	180	1780	1820	330	560	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.95	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	5187	3610	1595	3502	1597
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	5187	3610	1595	3502	1597
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	191	1894	1936	351	596	149
RTOR Reduction (vph)	0	0	0	18	0	5
Lane Group Flow (vph)	191	1894	1936	333	596	144
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	16.3	85.8	65.5	91.7	26.2	42.5
Effective Green, g (s)	16.3	85.8	65.5	91.7	26.2	42.5
Actuated g/C Ratio	0.14	0.71	0.55	0.76	0.22	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	245	3709	1970	1272	765	619
v/s Ratio Prot	c0.11	0.37	c0.54	0.06	c0.17	0.03
v/s Ratio Perm				0.15		0.06
v/c Ratio	0.78	0.51	0.98	0.26	0.78	0.23
Uniform Delay, d1	50.1	7.7	26.7	4.2	44.2	27.3
Progression Factor	1.14	0.26	0.89	1.20	0.53	0.46
Incremental Delay, d2	9.4	0.3	9.4	0.0	4.7	0.2
Delay (s)	66.6	2.3	33.3	5.1	28.0	12.7
Level of Service	E	A	C	A	C	B
Approach Delay (s)		8.2	28.9		25.0	
Approach LOS		A	C		C	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
62: Cactus Ave & Graham St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	800	1440	80	1590	70	510	80	30	70	480	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1587	1805	5151		3502	3446		1805	3610	1596
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1587	1805	5151		3502	3446		1805	3610	1596
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	85	851	1532	85	1691	74	543	85	32	74	511	106
RTOR Reduction (vph)	0	0	147	0	3	0	0	25	0	0	0	1
Lane Group Flow (vph)	85	851	1385	85	1762	0	543	92	0	74	511	105
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	11.1	57.9	57.9	11.3	58.1		11.0	27.7		7.1	23.8	34.9
Effective Green, g (s)	11.1	57.9	57.9	11.3	58.1		11.0	27.7		7.1	23.8	34.9
Actuated g/C Ratio	0.09	0.48	0.48	0.09	0.48		0.09	0.23		0.06	0.20	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	167	2503	766	170	2494		321	795		107	716	517
v/s Ratio Prot	c0.05	0.16		0.05	0.34		c0.16	c0.03		0.04	c0.14	0.02
v/s Ratio Perm			c0.87									0.05
v/c Ratio	0.51	0.34	1.81	0.50	0.71		1.69	0.12		0.69	0.71	0.20
Uniform Delay, d1	51.9	19.2	31.1	51.7	24.3		54.5	36.5		55.4	44.9	32.1
Progression Factor	1.23	0.63	0.72	0.95	0.53		1.00	1.00		1.20	0.70	0.44
Incremental Delay, d2	2.1	0.3	367.8	0.9	0.6		324.4	0.1		16.0	3.1	0.2
Delay (s)	66.1	12.4	390.1	49.9	13.4		378.9	36.5		82.6	34.4	14.4
Level of Service	E	B	F	D	B		F	D		F	C	B
Approach Delay (s)		248.7			15.1			318.2			36.5	
Approach LOS		F			B			F			D	

Intersection Summary			
HCM Average Control Delay	154.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	121.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
63: Cactus Ave & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	570	320	80	1040	80	740	390	20	90	580	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5187	1600	1805	3567		3502	3581		1805	3580	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	5187	1600	1805	3567		3502	3581		1805	3580	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	600	337	84	1095	84	779	411	21	95	611	32
RTOR Reduction (vph)	0	0	44	0	5	0	0	3	0	0	3	0
Lane Group Flow (vph)	63	600	293	84	1174	0	779	429	0	95	640	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	5.6	36.4	67.8	8.4	39.2		31.4	48.7		10.5	27.8	
Effective Green, g (s)	5.6	36.4	67.8	8.4	39.2		31.4	48.7		10.5	27.8	
Actuated g/C Ratio	0.05	0.30	0.56	0.07	0.33		0.26	0.41		0.09	0.23	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	84	1573	904	126	1165		916	1453		158	829	
v/s Ratio Prot	0.03	0.12	0.08	c0.05	c0.33		c0.22	0.12		0.05	c0.18	
v/s Ratio Perm			0.10									
v/c Ratio	0.75	0.38	0.32	0.67	1.01		0.85	0.30		0.60	0.77	
Uniform Delay, d1	56.5	32.9	13.9	54.4	40.4		42.1	24.1		52.7	43.1	
Progression Factor	0.68	1.24	1.22	1.31	0.52		1.00	1.00		0.57	0.77	
Incremental Delay, d2	29.8	0.7	0.2	10.4	25.8		7.6	0.1		5.8	4.2	
Delay (s)	68.4	41.5	17.2	81.7	46.8		49.7	24.2		35.8	37.5	
Level of Service	E	D	B	F	D		D	C		D	D	
Approach Delay (s)		35.0			49.1			40.6			37.3	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	41.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
64: Cactus Ave & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	560	110	60	950	50	140	340	70	50	300	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3510		1805	3580		1805	3506		1805	3554	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3510		1805	3580		1805	3506		1805	3554	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	56	629	124	67	1067	56	157	382	79	56	337	34
RTOR Reduction (vph)	0	11	0	0	2	0	0	16	0	0	7	0
Lane Group Flow (vph)	56	742	0	67	1121	0	157	445	0	56	364	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	8.0	61.9		8.6	62.5		15.0	26.6		6.9	18.5	
Effective Green, g (s)	8.0	61.9		8.6	62.5		15.0	26.6		6.9	18.5	
Actuated g/C Ratio	0.07	0.52		0.07	0.52		0.12	0.22		0.06	0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	120	1811		129	1865		226	777		104	548	
v/s Ratio Prot	0.03	0.21		c0.04	c0.31		c0.09	0.13		0.03	c0.10	
v/s Ratio Perm												
v/c Ratio	0.47	0.41		0.52	0.60		0.69	0.57		0.54	0.66	
Uniform Delay, d1	53.9	17.8		53.7	20.1		50.3	41.6		55.0	47.8	
Progression Factor	0.56	1.54		1.19	0.24		1.00	1.00		0.81	1.20	
Incremental Delay, d2	2.7	0.7		2.4	1.0		8.9	1.0		5.0	2.9	
Delay (s)	33.2	28.1		66.3	5.8		59.2	42.7		49.7	60.1	
Level of Service	C	C		E	A		E	D		D	E	
Approach Delay (s)		28.5			9.2			46.9			58.8	
Approach LOS		C			A			D			E	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
65: Cactus Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	460	190	140	730	70	270	850	110	90	970	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3434		1805	3557		1805	3610	1585	1805	3610	1585
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3434		1805	3557		1805	3610	1585	1805	3610	1585
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	66	505	209	154	802	77	297	934	121	99	1066	44
RTOR Reduction (vph)	0	38	0	0	6	0	0	0	67	0	0	26
Lane Group Flow (vph)	66	676	0	154	873	0	297	934	54	99	1066	18
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	5.6	35.0		11.1	40.5		20.9	46.0	46.0	11.9	37.0	37.0
Effective Green, g (s)	5.6	35.0		11.1	40.5		20.9	46.0	46.0	11.9	37.0	37.0
Actuated g/C Ratio	0.05	0.29		0.09	0.34		0.17	0.38	0.38	0.10	0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	84	1002		167	1200		314	1384	608	179	1113	489
v/s Ratio Prot	0.04	0.20		c0.09	c0.25		c0.16	0.26		0.05	c0.30	
v/s Ratio Perm									0.03			0.01
v/c Ratio	0.79	0.68		0.92	0.73		0.95	0.67	0.09	0.55	0.96	0.04
Uniform Delay, d1	56.6	37.5		54.0	34.9		49.0	30.8	23.6	51.5	40.7	29.0
Progression Factor	0.93	1.39		0.87	0.65		0.77	0.31	0.02	0.68	0.59	0.58
Incremental Delay, d2	35.1	3.4		42.6	3.3		22.6	1.3	0.1	2.5	14.4	0.1
Delay (s)	88.0	55.5		89.4	26.1		60.2	10.9	0.7	37.8	38.3	16.8
Level of Service	F	E		F	C		E	B	A	D	D	B
Approach Delay (s)		58.2			35.5			20.8			37.5	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM Average Control Delay	35.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
66: Alessandro Blvd & Sycamore Canyon Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	360	1880	130	30	1660	530	330	300	10	80	30	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	0.88	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	3502	5187	1588	3502	3610	2799	3502	3610	1589
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	3502	5187	1588	3502	3610	2799	3502	3610	1589
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	391	2043	141	33	1804	576	359	326	11	87	33	98
RTOR Reduction (vph)	0	0	34	0	0	157	0	0	8	0	0	92
Lane Group Flow (vph)	391	2043	107	33	1804	419	359	326	3	87	33	6
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	28.8	65.4	65.4	4.4	41.0	41.0	26.3	27.2	31.6	7.0	7.9	7.9
Effective Green, g (s)	28.8	65.4	65.4	4.4	41.0	41.0	26.3	27.2	31.6	7.0	7.9	7.9
Actuated g/C Ratio	0.24	0.55	0.55	0.04	0.34	0.34	0.22	0.23	0.26	0.06	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	433	2827	880	128	1772	543	768	818	830	204	238	105
v/s Ratio Prot	c0.22	0.39		0.01	c0.35		c0.10	0.09	0.00	c0.02	0.01	
v/s Ratio Perm			0.07			0.26			0.00			0.00
v/c Ratio	0.90	0.72	0.12	0.26	1.02	0.77	0.47	0.40	0.00	0.43	0.14	0.06
Uniform Delay, d1	44.2	20.5	13.3	56.2	39.5	35.3	40.8	39.4	32.6	54.6	52.8	52.6
Progression Factor	1.00	1.00	1.00	1.14	0.62	0.43	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.7	1.6	0.3	0.9	24.5	8.9	0.5	0.3	0.0	1.4	0.3	0.2
Delay (s)	66.0	22.1	13.6	65.1	48.9	24.0	41.2	39.8	32.6	56.0	53.1	52.8
Level of Service	E	C	B	E	D	C	D	D	C	E	D	D
Approach Delay (s)		28.3			43.2			40.4			54.1	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	36.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
67: Alessandro Blvd & SR-215 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1570	450	0	1860	0	0	0	0	330	0	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	4.0
Lane Util. Factor		0.91			0.91					0.95	0.91	0.95
Frpb, ped/bikes		1.00			1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00			1.00					1.00	1.00	1.00
Frt		0.97			1.00					1.00	0.93	0.85
Flt Protected		1.00			1.00					0.95	0.98	1.00
Satd. Flow (prot)		5014			5187					1715	1562	1534
Flt Permitted		1.00			1.00					0.95	0.98	1.00
Satd. Flow (perm)		5014			5187					1715	1562	1534
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	1725	495	0	2044	0	0	0	0	363	0	341
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0	10	10
Lane Group Flow (vph)	0	2188	0	0	2044	0	0	0	0	243	226	215
Confl. Peds. (#/hr)						5						
Turn Type										Perm		Perm
Protected Phases		4			8						6	
Permitted Phases										6		6
Actuated Green, G (s)		87.6			87.6					24.4	24.4	24.4
Effective Green, g (s)		87.6			87.6					24.4	24.4	24.4
Actuated g/C Ratio		0.73			0.73					0.20	0.20	0.20
Clearance Time (s)		4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3660			3787					349	318	312
v/s Ratio Prot		c0.44			0.39							
v/s Ratio Perm										0.14	0.14	0.14
v/c Ratio		0.60			0.54					0.70	0.71	0.69
Uniform Delay, d1		7.8			7.2					44.4	44.5	44.3
Progression Factor		0.08			1.03					1.00	1.00	1.00
Incremental Delay, d2		0.5			0.4					5.9	7.1	6.2
Delay (s)		1.2			7.8					50.3	51.6	50.5
Level of Service		A			A					D	D	D
Approach Delay (s)		1.2			7.8			0.0			50.8	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
68: Alessandro Blvd & SR-215 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	1760	0	0	1180	190	770	10	390	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.91			0.91		0.95	0.91	0.95			
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.98		1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (prot)	1805	5187			5065		1715	1633	1534			
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (perm)	1805	5187			5065		1715	1633	1534			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	1913	0	0	1283	207	837	11	424	0	0	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	3	5	0	0	0
Lane Group Flow (vph)	130	1913	0	0	1473	0	444	443	377	0	0	0
Confl. Peds. (#/hr)	5					5						
Turn Type	Prot						Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases									2			
Actuated Green, G (s)	17.0	69.6			48.6		42.4	42.4	42.4			
Effective Green, g (s)	17.0	69.6			48.6		42.4	42.4	42.4			
Actuated g/C Ratio	0.14	0.58			0.41		0.35	0.35	0.35			
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	256	3008			2051		606	577	542			
v/s Ratio Prot	0.07	c0.37			c0.29		0.26	c0.27				
v/s Ratio Perm									0.25			
v/c Ratio	0.51	0.64			0.72		0.73	0.77	0.70			
Uniform Delay, d1	47.6	16.8			30.0		33.9	34.4	33.3			
Progression Factor	0.79	0.60			1.00		1.00	1.00	1.00			
Incremental Delay, d2	1.3	0.9			2.2		4.6	6.1	3.9			
Delay (s)	38.8	11.0			32.2		38.4	40.5	37.2			
Level of Service	D	B			C		D	D	D			
Approach Delay (s)		12.7			32.2			38.8			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
69: Alessandro Blvd & Old 215 Frontage Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	1480	360	0	1190	290	50	170	40	30	60	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97			1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3493			3610	1615	3502	3506		1805	3610	1615
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3493			3610	1615	3502	3506		1805	3610	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	340	1574	383	0	1266	309	53	181	43	32	64	170
RTOR Reduction (vph)	0	11	0	0	0	130	0	18	0	0	0	152
Lane Group Flow (vph)	340	1946	0	0	1266	179	53	206	0	32	64	18
Confl. Peds. (#/hr)			5									
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	16.6	90.0			69.4	69.4	5.6	13.8		4.2	12.4	12.4
Effective Green, g (s)	16.6	90.0			69.4	69.4	5.6	13.8		4.2	12.4	12.4
Actuated g/C Ratio	0.14	0.75			0.58	0.58	0.05	0.12		0.04	0.10	0.10
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	484	2620			2088	934	163	403		63	373	167
v/s Ratio Prot	0.10	c0.56			0.35		0.02	c0.06		c0.02	0.02	
v/s Ratio Perm						0.11						0.01
v/c Ratio	0.70	0.74			0.61	0.19	0.33	0.51		0.51	0.17	0.11
Uniform Delay, d1	49.3	8.5			16.4	12.0	55.4	49.9		56.9	49.1	48.8
Progression Factor	1.00	1.00			0.36	0.38	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.6	2.0			1.2	0.4	1.2	1.1		6.3	0.2	0.3
Delay (s)	53.9	10.4			7.0	5.0	56.5	51.0		63.2	49.3	49.0
Level of Service	D	B			A	A	E	D		E	D	D
Approach Delay (s)		16.9			6.6			52.1			50.8	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
70: Alessandro Blvd & Day St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	1260	140	20	1330	50	20	10	20	30	20	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.90		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5094		1805	3610	1564	1799	1688		1798	1627	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.43	1.00		0.74	1.00	
Satd. Flow (perm)	1805	5094		1805	3610	1564	814	1688		1395	1627	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	165	1299	144	21	1371	52	21	10	21	31	21	144
RTOR Reduction (vph)	0	4	0	0	0	4	0	19	0	0	133	0
Lane Group Flow (vph)	165	1439	0	21	1371	48	21	12	0	31	32	0
Confl. Peds. (#/hr)			5			5	5		5	5		5
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	16.7	95.4		3.3	82.0	82.0	9.3	9.3		9.3	9.3	
Effective Green, g (s)	16.7	95.4		3.3	82.0	82.0	9.3	9.3		9.3	9.3	
Actuated g/C Ratio	0.14	0.80		0.03	0.68	0.68	0.08	0.08		0.08	0.08	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	251	4050		50	2467	1069	63	131		108	126	
v/s Ratio Prot	c0.09	0.28		0.01	c0.38			0.01			0.02	
v/s Ratio Perm						0.03	c0.03			0.02		
v/c Ratio	0.66	0.36		0.42	0.56	0.04	0.33	0.09		0.29	0.26	
Uniform Delay, d1	48.9	3.5		57.4	9.7	6.2	52.4	51.4		52.2	52.1	
Progression Factor	0.83	1.42		0.90	0.36	0.28	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.2	0.2		5.3	0.9	0.1	3.1	0.3		1.5	1.1	
Delay (s)	45.0	5.2		56.7	4.3	1.8	55.5	51.7		53.7	53.2	
Level of Service	D	A		E	A	A	E	D		D	D	
Approach Delay (s)		9.2			5.0			53.2			53.2	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
71: Alessandro Blvd & Elsworth St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1190	110	140	1200	90	80	100	60	70	170	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.94		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5113		1805	5122		1805	1782		1805	1900	1589
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5113		1805	5122		1805	1782		1805	1900	1589
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	51	1214	112	143	1224	92	82	102	61	71	173	92
RTOR Reduction (vph)	0	6	0	0	4	0	0	23	0	0	0	79
Lane Group Flow (vph)	51	1320	0	143	1312	0	82	140	0	71	173	13
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	7.7	65.1		14.7	72.1		7.8	16.5		7.7	16.4	16.4
Effective Green, g (s)	7.7	65.1		14.7	72.1		7.8	16.5		7.7	16.4	16.4
Actuated g/C Ratio	0.06	0.54		0.12	0.60		0.06	0.14		0.06	0.14	0.14
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	116	2774		221	3077		117	245		116	260	217
v/s Ratio Prot	0.03	c0.26		c0.08	0.26		c0.05	0.08		0.04	c0.09	
v/s Ratio Perm												0.01
v/c Ratio	0.44	0.48		0.65	0.43		0.70	0.57		0.61	0.67	0.06
Uniform Delay, d1	54.1	16.9		50.2	12.9		55.0	48.4		54.7	49.2	45.1
Progression Factor	1.01	0.70		1.19	0.26		1.09	1.60		1.00	1.00	1.00
Incremental Delay, d2	2.5	0.6		5.5	0.4		16.5	3.0		9.2	6.3	0.1
Delay (s)	56.9	12.5		65.4	3.8		76.4	80.5		63.9	55.5	45.2
Level of Service	E	B		E	A		E	F		E	E	D
Approach Delay (s)		14.1			9.8			79.1			54.4	
Approach LOS		B			A			E			D	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
72: Cactus Ave & SR-215 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1620	50	740	680	0	0	0	0	0	0	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0							4.0
Lane Util. Factor		0.91	1.00	1.00	0.91							1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00							1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00							1.00
Frt		1.00	0.85	1.00	1.00							0.86
Flt Protected		1.00	1.00	0.95	1.00							1.00
Satd. Flow (prot)		5187	1573	1805	5187							1644
Flt Permitted		1.00	1.00	0.95	1.00							1.00
Satd. Flow (perm)		5187	1573	1805	5187							1644
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1761	54	804	739	0	0	0	0	0	0	489
RTOR Reduction (vph)	0	0	29	0	0	0	0	0	0	0	0	233
Lane Group Flow (vph)	0	1761	25	804	739	0	0	0	0	0	0	256
Confl. Peds. (#/hr)			5									5
Turn Type			Perm	Prot								custom
Protected Phases		4		3 6	8							6
Permitted Phases			4									
Actuated Green, G (s)		49.9	49.9	62.1	89.9							22.1
Effective Green, g (s)		49.9	49.9	62.1	89.9							22.1
Actuated g/C Ratio		0.42	0.42	0.52	0.75							0.18
Clearance Time (s)		4.0	4.0		4.0							4.0
Vehicle Extension (s)		3.0	3.0		3.0							3.0
Lane Grp Cap (vph)		2157	654	934	3886							303
v/s Ratio Prot		c0.34		c0.45	0.14							0.16
v/s Ratio Perm			0.02									
v/c Ratio		0.82	0.04	0.86	0.19							0.84
Uniform Delay, d1		31.0	20.8	25.2	4.4							47.3
Progression Factor		1.00	1.00	1.07	0.41							1.00
Incremental Delay, d2		3.6	0.1	6.2	0.1							18.8
Delay (s)		34.6	20.9	33.2	1.9							66.1
Level of Service		C	C	C	A							E
Approach Delay (s)		34.2			18.2			0.0			66.1	
Approach LOS		C			B			A			E	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
73: Cactus Ave & SR-215 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	1600	50	0	1800	200	290	140	130	240	0	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00			0.98		1.00	0.93		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5164			5095		1805	1763		1805	1615	
Flt Permitted	0.06	1.00			1.00		0.73	1.00		0.42	1.00	
Satd. Flow (perm)	105	5164			5095		1385	1763		790	1615	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	1702	53	0	1915	213	309	149	138	255	0	43
RTOR Reduction (vph)	0	2	0	0	11	0	0	14	0	0	8	0
Lane Group Flow (vph)	21	1753	0	0	2117	0	309	273	0	255	35	0
Confl. Peds. (#/hr)						5						
Turn Type	Perm						Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)	72.7	72.7			72.7		39.3	39.3		39.3	39.3	
Effective Green, g (s)	72.7	72.7			72.7		39.3	39.3		39.3	39.3	
Actuated g/C Ratio	0.61	0.61			0.61		0.33	0.33		0.33	0.33	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	64	3129			3087		454	577		259	529	
v/s Ratio Prot		0.34			c0.42			0.15			0.02	
v/s Ratio Perm	0.20						0.22			c0.32		
v/c Ratio	0.33	0.56			0.69		0.68	0.47		0.98	0.07	
Uniform Delay, d1	11.6	14.1			15.9		34.9	32.1		40.0	27.7	
Progression Factor	0.31	0.01			0.35		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.5	0.4			0.8		4.2	0.6		51.2	0.1	
Delay (s)	11.1	0.6			6.4		39.1	32.7		91.3	27.8	
Level of Service	B	A			A		D	C		F	C	
Approach Delay (s)		0.7			6.4			36.0			82.1	
Approach LOS		A			A			D			F	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
74: Cactus Ave & Elsworth St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	1780	700	150	1610	60	70	30	30	60	170	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1585	1805	5187	1564	1715	1662		1715	1802	1587
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1585	1805	5187	1564	1715	1662		1715	1802	1587
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	213	1894	745	160	1713	64	74	32	32	64	181	138
RTOR Reduction (vph)	0	0	255	0	0	24	0	29	0	0	0	117
Lane Group Flow (vph)	213	1894	490	160	1713	40	67	42	0	58	187	21
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	31.3	52.4	52.4	23.2	44.3	44.3	10.3	10.3		18.1	18.1	18.1
Effective Green, g (s)	31.3	52.4	52.4	23.2	44.3	44.3	10.3	10.3		18.1	18.1	18.1
Actuated g/C Ratio	0.26	0.44	0.44	0.19	0.37	0.37	0.09	0.09		0.15	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	471	2265	692	349	1915	577	147	143		259	272	239
v/s Ratio Prot	c0.12	c0.37		0.09	c0.33		c0.04	0.03		0.03	c0.10	
v/s Ratio Perm			0.31			0.03						0.01
v/c Ratio	0.45	0.84	0.71	0.46	0.89	0.07	0.46	0.29		0.22	0.69	0.09
Uniform Delay, d1	37.2	30.0	27.6	42.8	35.6	24.5	52.2	51.4		44.8	48.3	43.8
Progression Factor	0.76	0.99	1.31	1.22	0.56	0.43	1.00	1.00		0.58	0.57	0.45
Incremental Delay, d2	0.6	3.5	5.5	0.3	2.7	0.1	2.2	1.1		0.4	6.5	0.1
Delay (s)	28.7	33.2	41.6	52.5	22.6	10.7	54.4	52.6		26.3	34.1	19.9
Level of Service	C	C	D	D	C	B	D	D		C	C	B
Approach Delay (s)		35.0			24.6			53.5			27.8	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
75: Central Ave & Lochmoor Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	690	570	140	630	280	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.93		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3321		1805	3610	1805	1598
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3321		1805	3610	1805	1598
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	821	679	167	750	333	214
RTOR Reduction (vph)	145	0	0	0	0	43
Lane Group Flow (vph)	1355	0	167	750	333	171
Confl. Peds. (#/hr)		5	5			5
Turn Type			Prot			pm+ov
Protected Phases	4		3	8	2	3
Permitted Phases						2
Actuated Green, G (s)	36.2		9.0	49.2	19.0	28.0
Effective Green, g (s)	36.2		9.0	49.2	19.0	28.0
Actuated g/C Ratio	0.48		0.12	0.65	0.25	0.37
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1578		213	2331	450	671
v/s Ratio Prot	c0.41		c0.09	0.21	c0.18	0.03
v/s Ratio Perm						0.08
v/c Ratio	0.86		0.78	0.32	0.74	0.25
Uniform Delay, d1	17.7		32.7	6.0	26.3	16.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.9		17.0	0.1	6.3	0.2
Delay (s)	22.6		49.7	6.1	32.6	17.0
Level of Service	C		D	A	C	B
Approach Delay (s)	22.6			14.1	26.5	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	76.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
76: Central Ave & Sycamore Canyon Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	660	240	140	450	120	440	360	780	180	100	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1586	3502	3496		1805	1900	1615	1805	3610	1590
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1586	3502	3496		1805	1900	1615	1805	3610	1590
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	11	725	264	154	495	132	484	396	857	198	110	11
RTOR Reduction (vph)	0	0	201	0	24	0	0	0	399	0	0	10
Lane Group Flow (vph)	11	725	63	154	603	0	484	396	458	198	110	1
Confl. Peds. (#/hr)			5	5			5					5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	1.3	22.3	22.3	9.4	30.4		37.0	31.4	31.4	13.9	8.3	8.3
Effective Green, g (s)	1.3	22.3	22.3	9.4	30.4		37.0	31.4	31.4	13.9	8.3	8.3
Actuated g/C Ratio	0.01	0.24	0.24	0.10	0.33		0.40	0.34	0.34	0.15	0.09	0.09
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	25	1244	380	354	1143		718	642	545	270	322	142
v/s Ratio Prot	0.01	c0.14		0.04	c0.17		0.27	0.21		c0.11	0.03	
v/s Ratio Perm			0.04						c0.28			0.00
v/c Ratio	0.44	0.58	0.17	0.44	0.53		0.67	0.62	0.84	0.73	0.34	0.01
Uniform Delay, d1	45.5	31.2	28.0	39.3	25.5		23.0	25.8	28.5	37.8	39.8	38.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.9	0.7	0.2	0.9	0.4		2.5	1.8	11.2	9.9	0.6	0.0
Delay (s)	57.4	31.9	28.2	40.2	25.9		25.5	27.5	39.7	47.6	40.4	38.6
Level of Service	E	C	C	D	C		C	C	D	D	D	D
Approach Delay (s)		31.2			28.7			33.0			44.8	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
77: SR 60 EB Ramps & Central Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	10	230	0	0	0	0	1050	600	230	480	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.95					0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1557	1534					3610	1615	3502	3610	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1557	1534					3610	1615	3502	3610	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	55	11	253	0	0	0	0	1154	659	253	527	0
RTOR Reduction (vph)	0	107	117	0	0	0	0	0	267	0	0	0
Lane Group Flow (vph)	55	25	15	0	0	0	0	1154	392	253	527	0
Confl. Peds. (#/hr)							5					5
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	6	6						4		3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	5.6	5.6	5.6					25.4	25.4	7.0	36.4	
Effective Green, g (s)	5.6	5.6	5.6					25.4	25.4	7.0	36.4	
Actuated g/C Ratio	0.11	0.11	0.11					0.51	0.51	0.14	0.73	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	202	174	172					1834	820	490	2628	
v/s Ratio Prot	c0.03	0.02						c0.32		c0.07	0.15	
v/s Ratio Perm			0.01						0.24			
v/c Ratio	0.27	0.14	0.09					0.63	0.48	0.52	0.20	
Uniform Delay, d1	20.3	20.0	19.9					8.9	8.0	19.9	2.2	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.03	0.71	
Incremental Delay, d2	0.7	0.4	0.2					1.6	2.0	0.9	0.2	
Delay (s)	21.1	20.4	20.1					10.5	10.0	21.4	1.7	
Level of Service	C	C	C					B	A	C	A	
Approach Delay (s)		20.4			0.0			10.3			8.1	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
78: SR60 WB Ramps & Central Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	220	280	1090	0	0	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3502	1615	3610			3610
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3502	1615	3610			3610
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	259	329	1282	0	0	576
RTOR Reduction (vph)	0	33	0	0	0	0
Lane Group Flow (vph)	259	296	1282	0	0	576
Confl. Peds. (#/hr)				5		
Turn Type		Perm				
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	12.8	12.8	29.2			29.2
Effective Green, g (s)	12.8	12.8	29.2			29.2
Actuated g/C Ratio	0.26	0.26	0.58			0.58
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	897	413	2108			2108
v/s Ratio Prot	0.07		c0.36			0.16
v/s Ratio Perm		c0.18				
v/c Ratio	0.29	0.72	0.61			0.27
Uniform Delay, d1	14.9	17.0	6.7			5.1
Progression Factor	1.00	1.00	0.16			1.00
Incremental Delay, d2	0.2	5.9	1.1			0.3
Delay (s)	15.1	22.8	2.2			5.5
Level of Service	B	C	A			A
Approach Delay (s)	19.4		2.2			5.5
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
79: Alessandro Blvd & Trautwein Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1410	10	110	1880	1940	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.91		0.97	0.91	0.94	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	5181		3502	5187	5100	
Flt Permitted	1.00		0.95	1.00	0.95	
Satd. Flow (perm)	5181		3502	5187	5100	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1533	11	120	2043	2109	11
RTOR Reduction (vph)	1	0	0	0	1	0
Lane Group Flow (vph)	1543	0	120	2043	2119	0
Confl. Peds. (#/hr)		5	5			
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	34.2		5.5	43.7	38.0	
Effective Green, g (s)	34.2		5.5	43.7	38.0	
Actuated g/C Ratio	0.38		0.06	0.49	0.42	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1975		215	2527	2161	
v/s Ratio Prot	0.30		0.03	c0.39	c0.42	
v/s Ratio Perm						
v/c Ratio	0.78		0.56	0.81	0.98	
Uniform Delay, d1	24.5		40.9	19.5	25.5	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.1		3.1	2.0	15.0	
Delay (s)	26.5		44.0	21.5	40.5	
Level of Service	C		D	C	D	
Approach Delay (s)	26.5			22.7	40.5	
Approach LOS	C			C	D	

Intersection Summary			
HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
80: Alessandro Blvd & Mission Grove Pkwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1570	40	230	1720	20	130	140	440	190	110	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91		0.97	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5187	1588	3502	5177		3502	1900	1590	1805	3450	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	5187	1588	3502	5177		3502	1900	1590	1805	3450	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	53	1670	43	245	1830	21	138	149	468	202	117	43
RTOR Reduction (vph)	0	0	26	0	1	0	0	0	162	0	39	0
Lane Group Flow (vph)	53	1670	17	245	1850	0	138	149	306	202	121	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	5.4	40.2	40.2	10.0	44.8		28.1	25.1	25.1	12.2	9.2	
Effective Green, g (s)	5.4	40.2	40.2	10.0	44.8		28.1	25.1	25.1	12.2	9.2	
Actuated g/C Ratio	0.05	0.39	0.39	0.10	0.43		0.27	0.24	0.24	0.12	0.09	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	94	2015	617	338	2241		951	461	386	213	307	
v/s Ratio Prot	0.03	c0.32		0.07	c0.36		0.04	0.08		c0.11	0.04	
v/s Ratio Perm			0.01						c0.19			
v/c Ratio	0.56	0.83	0.03	0.72	0.83		0.15	0.32	0.79	0.95	0.39	
Uniform Delay, d1	47.9	28.5	19.6	45.4	25.9		28.6	32.2	36.8	45.3	44.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.5	3.0	0.0	7.5	2.6		0.1	0.4	10.6	46.6	0.8	
Delay (s)	55.4	31.5	19.6	52.9	28.5		28.7	32.6	47.4	92.0	45.4	
Level of Service	E	C	B	D	C		C	C	D	F	D	
Approach Delay (s)		31.9			31.4			41.1			71.4	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	36.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	103.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
81: Martin Luther King Blvd & Chicago Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	870	170	60	550	150	420	940	260	130	380	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1598	3502	3610	1594	3502	3610	1593	3502	3610	1596
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1598	3502	3610	1594	3502	3610	1593	3502	3610	1596
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	193	989	193	68	625	170	477	1068	295	148	432	170
RTOR Reduction (vph)	0	0	97	0	0	25	0	0	10	0	0	29
Lane Group Flow (vph)	193	989	97	68	625	145	477	1068	285	148	432	141
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.2	33.4	50.9	7.1	30.3	37.4	17.5	38.2	45.3	7.1	27.8	38.0
Effective Green, g (s)	10.2	33.4	50.9	7.1	30.3	37.4	17.5	38.2	45.3	7.1	27.8	38.0
Actuated g/C Ratio	0.10	0.33	0.50	0.07	0.30	0.37	0.17	0.38	0.44	0.07	0.27	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	181	1184	862	244	1074	648	602	1355	771	244	986	658
v/s Ratio Prot	c0.11	c0.27	0.02	0.02	0.17	0.02	c0.14	c0.30	0.03	0.04	0.12	0.02
v/s Ratio Perm			0.04			0.08			0.15			0.07
v/c Ratio	1.07	0.84	0.11	0.28	0.58	0.22	0.79	0.79	0.37	0.61	0.44	0.21
Uniform Delay, d1	45.8	31.7	13.5	44.9	30.4	22.2	40.4	28.2	18.8	46.0	30.6	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	85.6	5.2	0.1	0.6	0.8	0.2	7.1	3.1	0.3	4.2	0.3	0.2
Delay (s)	131.4	36.9	13.5	45.5	31.2	22.4	47.5	31.3	19.1	50.2	30.9	21.9
Level of Service	F	D	B	D	C	C	D	C	B	D	C	C
Approach Delay (s)		46.9			30.6			33.5			32.7	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	36.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	101.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
82: Martin Luther King Blvd & Iowa Ave

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	180	1110	640	460	190	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	0.99	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	3610	3610	1601	3489	1458
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	3610	3610	1601	3489	1458
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	202	1247	719	517	213	112
RTOR Reduction (vph)	0	0	0	22	6	38
Lane Group Flow (vph)	202	1247	719	495	218	63
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	7.1	25.8	14.7	24.0	9.3	16.4
Effective Green, g (s)	7.1	25.8	14.7	24.0	9.3	16.4
Actuated g/C Ratio	0.16	0.60	0.34	0.56	0.22	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	297	2161	1231	1040	753	690
v/s Ratio Prot	0.11	c0.35	0.20	c0.10	0.06	0.02
v/s Ratio Perm				0.21		0.03
v/c Ratio	0.68	0.58	0.58	0.48	0.29	0.09
Uniform Delay, d1	16.9	5.3	11.7	5.8	14.1	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.3	0.4	0.7	0.3	0.2	0.1
Delay (s)	23.2	5.7	12.4	6.1	14.3	8.6
Level of Service	C	A	B	A	B	A
Approach Delay (s)		8.1	9.8		12.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	43.1	Sum of lost time (s)	4.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
83: Martin Luther King Blvd & Canyon Crest Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	780	160	160	770	140	790	350	830	110	80	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1600	3502	3610	1590	3502	3610	1591	3502	3610	1604
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1600	3502	3610	1590	3502	3610	1591	3502	3610	1604
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	293	951	195	195	939	171	963	427	1012	134	98	110
RTOR Reduction (vph)	0	0	76	0	0	109	0	0	400	0	0	65
Lane Group Flow (vph)	293	951	119	195	939	62	963	427	612	134	98	45
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.1	33.5	55.7	10.5	32.9	32.9	22.2	22.2	22.2	8.9	8.9	20.0
Effective Green, g (s)	11.1	33.5	55.7	10.5	32.9	32.9	22.2	22.2	22.2	8.9	8.9	20.0
Actuated g/C Ratio	0.12	0.37	0.61	0.12	0.36	0.36	0.24	0.24	0.24	0.10	0.10	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	220	1907	1049	404	1304	574	853	880	388	342	353	423
v/s Ratio Prot	c0.16	0.18	0.03	0.06	c0.26		c0.28	0.12		0.04	0.03	0.01
v/s Ratio Perm			0.05			0.04			c0.38			0.02
v/c Ratio	1.33	0.50	0.11	0.48	0.72	0.11	1.13	0.49	1.58	0.39	0.28	0.11
Uniform Delay, d1	40.0	22.3	7.4	37.8	25.1	19.3	34.4	29.5	34.4	38.6	38.1	28.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	177.0	0.2	0.0	0.9	2.0	0.1	72.8	0.4	271.8	0.7	0.4	0.1
Delay (s)	217.0	22.5	7.4	38.7	27.1	19.4	107.2	30.0	306.3	39.3	38.5	28.5
Level of Service	F	C	A	D	C	B	F	C	F	D	D	C
Approach Delay (s)		60.1			27.8			177.3			35.6	
Approach LOS		E			C			F			D	

Intersection Summary			
HCM Average Control Delay	102.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	91.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
84: Martin Luther King Blvd & SR-60 EB Off Ramp

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	800	790	20	510	0	0	0	0	10	0	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		0.91	0.91	1.00	0.95					1.00	1.00	
Frt		0.96	0.85	1.00	1.00					1.00	0.85	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3316	1470	1805	3610					1805	1615	
Flt Permitted		1.00	1.00	0.19	1.00					0.95	1.00	
Satd. Flow (perm)		3316	1470	357	3610					1805	1615	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	909	898	23	580	0	0	0	0	11	0	477
RTOR Reduction (vph)	0	64	280	0	0	0	0	0	0	0	132	0
Lane Group Flow (vph)	0	1186	277	23	580	0	0	0	0	11	345	0
Turn Type			Perm	Perm						Perm		
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		21.3	21.3	21.3	21.3					13.6	13.6	
Effective Green, g (s)		21.3	21.3	21.3	21.3					13.6	13.6	
Actuated g/C Ratio		0.50	0.50	0.50	0.50					0.32	0.32	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1646	730	177	1792					572	512	
v/s Ratio Prot		c0.36			0.16						c0.21	
v/s Ratio Perm			0.19	0.06						0.01		
v/c Ratio		0.72	0.38	0.13	0.32					0.02	0.67	
Uniform Delay, d1		8.5	6.7	5.8	6.5					10.1	12.7	
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	
Incremental Delay, d2		1.6	0.3	0.3	0.1					0.0	3.5	
Delay (s)		10.0	7.0	6.1	6.6					10.1	16.2	
Level of Service		B	A	A	A					B	B	
Approach Delay (s)		9.1			6.6			0.0			16.1	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	42.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
85: Martin Luther King Blvd & SR-60 WB On Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	800	0	520	0	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	851	0	553	0	0	0

Direction, Lane #	EB 1	EB 2	NB 1	NB 2
Volume Total (vph)	426	426	369	184
Volume Left (vph)	426	426	369	184
Volume Right (vph)	0	0	0	0
Hadj (s)	0.50	0.50	0.50	0.50
Departure Headway (s)	6.8	6.8	7.3	7.3
Degree Utilization, x	0.81	0.81	0.75	0.38
Capacity (veh/h)	522	519	480	477
Control Delay (s)	31.1	31.1	28.0	13.5
Approach Delay (s)	31.1		23.2	
Approach LOS	D		C	

Intersection Summary			
Delay	28.0		
HCM Level of Service	D		
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
86: Central Ave & Chicago Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	0	640	10	440	10	1130	910	140	400	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900		3502	1900	1615	1805	3610	1590	3502	3610	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900		3502	1900	1615	1805	3610	1590	3502	3610	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	11	0	711	11	489	11	1256	1011	156	444	11
RTOR Reduction (vph)	0	0	0	0	0	203	0	0	226	0	0	5
Lane Group Flow (vph)	11	11	0	711	11	286	11	1256	785	156	444	6
Confl. Peds. (#/hr)			5	5					5	5		
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	1.1	3.5		19.9	22.3	22.3	1.1	40.9	40.9	7.1	46.9	46.9
Effective Green, g (s)	1.1	3.5		19.9	22.3	22.3	1.1	40.9	40.9	7.1	46.9	46.9
Actuated g/C Ratio	0.01	0.04		0.23	0.26	0.26	0.01	0.47	0.47	0.08	0.54	0.54
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	23	76		797	485	412	23	1689	744	284	1937	867
v/s Ratio Prot	0.01	0.01		c0.20	0.01		0.01	0.35		c0.04	0.12	
v/s Ratio Perm						c0.18			c0.49			0.00
v/c Ratio	0.48	0.14		0.89	0.02	0.70	0.48	0.74	1.06	0.55	0.23	0.01
Uniform Delay, d1	42.9	40.5		32.7	24.4	29.5	42.9	19.0	23.3	38.6	10.7	9.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.8	0.9		12.3	0.0	5.0	14.8	1.8	48.7	2.2	0.1	0.0
Delay (s)	57.7	41.4		45.0	24.4	34.5	57.7	20.8	71.9	40.8	10.8	9.4
Level of Service	E	D		D	C	C	E	C	E	D	B	A
Approach Delay (s)		49.5			40.6			43.7			18.4	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM Average Control Delay	39.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
87: Central Ave & El Cerrito Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	850	50	20	770	40	80	70	40	40	20	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99			0.97		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1805	3580		1805	3580			1802		1802	1650	
Flt Permitted	0.95	1.00		0.95	1.00			0.79		0.60	1.00	
Satd. Flow (perm)	1805	3580		1805	3580			1453		1145	1650	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	138	904	53	21	819	43	85	74	43	43	21	149
RTOR Reduction (vph)	0	4	0	0	4	0	0	15	0	0	116	0
Lane Group Flow (vph)	138	953	0	21	858	0	0	187	0	43	54	0
Confl. Peds. (#/hr)	5					5			5	5		
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	8.2	30.3		1.1	23.2			12.4		12.4	12.4	
Effective Green, g (s)	8.2	30.3		1.1	23.2			12.4		12.4	12.4	
Actuated g/C Ratio	0.15	0.54		0.02	0.42			0.22		0.22	0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	265	1944		36	1488			323		254	367	
v/s Ratio Prot	c0.08	0.27		0.01	c0.24						0.03	
v/s Ratio Perm								c0.13		0.04		
v/c Ratio	0.52	0.49		0.58	0.58			0.58		0.17	0.15	
Uniform Delay, d1	22.0	7.9		27.1	12.5			19.4		17.5	17.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.2		21.8	0.5			2.5		0.3	0.2	
Delay (s)	23.8	8.1		48.9	13.1			21.9		17.9	17.6	
Level of Service	C	A		D	B			C		B	B	
Approach Delay (s)		10.1			13.9			21.9			17.7	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
88: Central Ave & Canyon Crest Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	820	110	100	720	270	160	1000	270	130	210	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3539		1805	3610	1593	1805	3610	1593	3502	3515	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3539		1805	3610	1593	1805	3610	1593	3502	3515	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	911	122	111	800	300	178	1111	300	144	233	44
RTOR Reduction (vph)	0	10	0	0	0	41	0	0	21	0	15	0
Lane Group Flow (vph)	56	1023	0	111	800	259	178	1111	279	144	262	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	5.4	34.6		7.1	36.3	43.4	9.1	35.0	42.1	7.1	33.0	
Effective Green, g (s)	5.4	34.6		7.1	36.3	43.4	9.1	35.0	42.1	7.1	33.0	
Actuated g/C Ratio	0.05	0.35		0.07	0.36	0.43	0.09	0.35	0.42	0.07	0.33	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	98	1227		128	1313	757	165	1266	736	249	1162	
v/s Ratio Prot	0.03	c0.29		c0.06	0.22	0.02	c0.10	c0.31	0.03	0.04	0.07	
v/s Ratio Perm						0.14			0.15			
v/c Ratio	0.57	0.83		0.87	0.61	0.34	1.08	0.88	0.38	0.58	0.23	
Uniform Delay, d1	46.1	30.0		45.9	26.0	18.7	45.4	30.4	19.9	44.9	24.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.8	5.0		41.9	0.8	0.3	92.6	7.1	0.3	3.2	0.1	
Delay (s)	53.9	35.0		87.8	26.8	19.0	138.0	37.5	20.2	48.1	24.3	
Level of Service	D	C		F	C	B	F	D	C	D	C	
Approach Delay (s)		36.0			30.4			45.5			32.4	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	37.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	99.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
89: Country Club Dr & Chicago Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	70	100	1970	60	20	1020
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.98	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1798	1589	3610	1571	1805	3610
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1798	1589	3610	1571	1805	3610
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	79	112	2213	67	22	1146
RTOR Reduction (vph)	0	100	0	5	0	0
Lane Group Flow (vph)	79	12	2213	62	22	1146
Confl. Peds. (#/hr)	5	5		5	5	
Turn Type		custom		Perm	Prot	
Protected Phases			2		1	6
Permitted Phases	8	8		2		
Actuated Green, G (s)	9.3	9.3	63.5	63.5	2.5	70.0
Effective Green, g (s)	9.3	9.3	63.5	63.5	2.5	70.0
Actuated g/C Ratio	0.11	0.11	0.73	0.73	0.03	0.80
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	192	169	2626	1143	52	2895
v/s Ratio Prot			c0.61		0.01	c0.32
v/s Ratio Perm	c0.04	0.01		0.04		
v/c Ratio	0.41	0.07	0.84	0.05	0.42	0.40
Uniform Delay, d1	36.4	35.1	8.4	3.4	41.7	2.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.2	2.6	0.0	5.5	0.1
Delay (s)	37.9	35.3	11.0	3.4	47.2	2.6
Level of Service	D	D	B	A	D	A
Approach Delay (s)	36.4		10.8			3.4
Approach LOS	D		B			A

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
90: Arlington Ave & SR-91 WB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	1100	140	500	1070	320	0	0	0	600	50	570
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97				1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	1805	5187	1572	1805	3610	1571				1715	1732	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	1805	5187	1572	1805	3610	1571				1715	1732	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	1196	152	543	1163	348	0	0	0	652	54	620
RTOR Reduction (vph)	0	0	65	0	0	152	0	0	0	0	0	11
Lane Group Flow (vph)	109	1196	87	543	1163	196	0	0	0	352	354	609
Confl. Peds. (#/hr)	5		5	5		5						5
Turn Type	Prot		Perm	Prot		Perm				Split		pm+ov
Protected Phases	7	4		3	8					6	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	26.2	32.8	32.8	54.1	60.7	60.7				31.1	31.1	57.3
Effective Green, g (s)	26.2	32.8	32.8	54.1	60.7	60.7				31.1	31.1	57.3
Actuated g/C Ratio	0.20	0.25	0.25	0.42	0.47	0.47				0.24	0.24	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	364	1309	397	751	1686	734				410	414	754
v/s Ratio Prot	0.06	c0.23		c0.30	0.32					c0.21	0.20	0.16
v/s Ratio Perm			0.06			0.12						0.22
v/c Ratio	0.30	0.91	0.22	0.72	0.69	0.27				0.86	0.86	0.81
Uniform Delay, d1	44.1	47.2	38.5	31.7	27.2	21.1				47.3	47.3	31.6
Progression Factor	1.00	1.00	1.00	0.55	0.53	0.12				1.00	1.00	1.00
Incremental Delay, d2	0.5	11.3	1.3	3.0	2.0	0.8				16.2	15.7	6.4
Delay (s)	44.6	58.5	39.7	20.5	16.3	3.3				63.5	63.0	37.9
Level of Service	D	E	D	C	B	A				E	E	D
Approach Delay (s)		55.5			15.2			0.0			51.4	
Approach LOS		E			B			A			D	

Intersection Summary			
HCM Average Control Delay	37.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
91: Arlington Ave & SR-91 EB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	1130	250	130	1550	400	280	430	570	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.86	1.00	0.91	0.91	0.88			
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1805	3610	1596	1805	6536	1586	1643	3440	2842			
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	1805	3610	1596	1805	6536	1586	1643	3440	2842			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	330	1202	266	138	1649	426	298	457	606	0	0	0
RTOR Reduction (vph)	0	0	49	0	0	90	0	0	374	0	0	0
Lane Group Flow (vph)	330	1202	217	138	1649	336	244	511	232	0	0	0
Confl. Peds. (#/hr)	5		5	5		5						
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm			
Protected Phases	7	4	2	3	8		2	2				
Permitted Phases			4			8			2			
Actuated Green, G (s)	28.9	70.2	99.0	19.0	60.3	60.3	28.8	28.8	28.8			
Effective Green, g (s)	28.9	70.2	99.0	19.0	60.3	60.3	28.8	28.8	28.8			
Actuated g/C Ratio	0.22	0.54	0.76	0.15	0.46	0.46	0.22	0.22	0.22			
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	401	1949	1265	264	3032	736	364	762	630			
v/s Ratio Prot	c0.18	c0.33	0.04	0.08	c0.25		0.15	c0.15				
v/s Ratio Perm			0.10			0.21			0.08			
v/c Ratio	0.82	0.62	0.17	0.52	0.54	0.46	0.67	0.67	0.37			
Uniform Delay, d1	48.1	20.6	4.3	51.3	25.0	23.7	46.3	46.3	42.9			
Progression Factor	0.71	0.33	0.08	0.70	0.53	0.36	1.00	1.00	1.00			
Incremental Delay, d2	6.7	0.7	0.0	1.6	0.6	1.7	4.8	2.3	0.4			
Delay (s)	40.7	7.5	0.4	37.5	13.9	10.3	51.1	48.6	43.2			
Level of Service	D	A	A	D	B	B	D	D	D			
Approach Delay (s)		12.6			14.7			46.7			0.0	
Approach LOS		B			B			D			A	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
92: Arlington Ave & Maude St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	1420	260	50	1650	10	290	10	160	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.98		1.00	1.00		1.00	0.86			0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1805	5040		1805	5181		1805	1606			1783	
Flt Permitted	0.95	1.00		0.95	1.00		0.78	1.00			0.91	
Satd. Flow (perm)	1805	5040		1805	5181		1485	1606			1648	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	1527	280	54	1774	11	312	11	172	11	11	11
RTOR Reduction (vph)	0	16	0	0	0	0	0	90	0	0	8	0
Lane Group Flow (vph)	43	1791	0	54	1785	0	312	93	0	0	25	0
Confl. Peds. (#/hr)	5		5	5		5			5	5		
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	5.6	74.2		8.8	77.4		35.0	35.0			35.0	
Effective Green, g (s)	5.6	74.2		8.8	77.4		35.0	35.0			35.0	
Actuated g/C Ratio	0.04	0.57		0.07	0.60		0.27	0.27			0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	78	2877		122	3085		400	432			444	
v/s Ratio Prot	0.02	c0.36		c0.03	0.34			0.06				
v/s Ratio Perm							c0.21				0.02	
v/c Ratio	0.55	0.62		0.44	0.58		0.78	0.22			0.06	
Uniform Delay, d1	61.0	18.6		58.2	16.2		43.9	36.8			35.2	
Progression Factor	0.90	0.32		0.66	0.61		1.00	1.00			1.00	
Incremental Delay, d2	6.6	0.8		2.0	0.6		9.5	0.3			0.1	
Delay (s)	61.4	6.7		40.2	10.5		53.4	37.1			35.3	
Level of Service	E	A		D	B		D	D			D	
Approach Delay (s)		8.0			11.3			47.4			35.3	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
93: Arlington Ave & Horace St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	1330	250	90	1340	10	240	90	40	10	40	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00			0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	1.00
Satd. Flow (prot)	1805	3506		1805	3605			1804			1880	1586
Flt Permitted	0.11	1.00		0.06	1.00			0.77			0.92	1.00
Satd. Flow (perm)	206	3506		119	3605			1436			1744	1586
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	1446	272	98	1457	11	261	98	43	11	43	109
RTOR Reduction (vph)	0	11	0	0	0	0	0	3	0	0	0	26
Lane Group Flow (vph)	43	1707	0	98	1468	0	0	399	0	0	54	83
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	81.7	81.7		81.7	81.7			40.3			40.3	40.3
Effective Green, g (s)	81.7	81.7		81.7	81.7			40.3			40.3	40.3
Actuated g/C Ratio	0.63	0.63		0.63	0.63			0.31			0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	129	2203		75	2266			445			541	492
v/s Ratio Prot		0.49			0.41							
v/s Ratio Perm	0.21			c0.82				c0.28			0.03	0.05
v/c Ratio	0.33	0.77		1.31	0.65			0.90			0.10	0.17
Uniform Delay, d1	11.4	17.5		24.1	15.1			42.8			31.9	32.7
Progression Factor	0.87	0.88		0.41	0.16			1.00			1.00	1.00
Incremental Delay, d2	5.7	2.3		171.2	0.6			20.0			0.1	0.2
Delay (s)	15.6	17.8		181.1	3.0			62.9			32.0	32.8
Level of Service	B	B		F	A			E			C	C
Approach Delay (s)		17.7			14.1			62.9			32.6	
Approach LOS		B			B			E			C	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
94: Arlington Ave & Victoria Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	1020	50	520	1270	270	40	400	630	180	320	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3580		1805	3497		1805	1900	1601	1805	1900	1586
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3580		1805	3497		1805	1900	1601	1805	1900	1586
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	168	1074	53	547	1337	284	42	421	663	189	337	116
RTOR Reduction (vph)	0	3	0	0	14	0	0	0	8	0	0	66
Lane Group Flow (vph)	168	1124	0	547	1607	0	42	421	655	189	337	50
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			6
Actuated Green, G (s)	11.0	34.0		35.0	58.0		5.6	34.0	69.0	11.0	39.4	39.4
Effective Green, g (s)	11.0	34.0		35.0	58.0		5.6	34.0	69.0	11.0	39.4	39.4
Actuated g/C Ratio	0.08	0.26		0.27	0.45		0.04	0.26	0.53	0.08	0.30	0.30
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	153	936		486	1560		78	497	850	153	576	481
v/s Ratio Prot	0.09	c0.31		c0.30	0.46		0.02	c0.22	0.21	c0.10	0.18	
v/s Ratio Perm									0.20			0.03
v/c Ratio	1.10	1.20		1.13	1.03		0.54	0.85	0.77	1.24	0.59	0.10
Uniform Delay, d1	59.5	48.0		47.5	36.0		60.9	45.5	24.2	59.5	38.4	32.6
Progression Factor	1.14	0.80		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	85.7	97.0		79.9	30.9		7.0	16.2	4.4	149.6	4.3	0.4
Delay (s)	153.8	135.4		127.4	66.9		67.9	61.8	28.6	209.1	42.7	33.0
Level of Service	F	F		F	E		E	E	C	F	D	C
Approach Delay (s)		137.8			82.2			42.5			89.9	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM Average Control Delay	88.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	110.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
95: Arlington Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	740	940	190	700	280	1180	1610	570	330	790	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3610	2820	3502	3610	1593	3502	3610	1589	3502	5156	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3610	2820	3502	3610	1593	3502	3610	1589	3502	5156	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	822	1044	211	778	311	1311	1789	633	367	878	33
RTOR Reduction (vph)	0	0	7	0	0	23	0	0	8	0	3	0
Lane Group Flow (vph)	56	822	1037	211	778	288	1311	1789	625	367	908	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	6.2	34.4	75.5	7.0	35.2	46.2	41.1	59.1	66.1	11.0	29.0	
Effective Green, g (s)	6.2	34.4	75.5	7.0	35.2	46.2	41.1	59.1	66.1	11.0	29.0	
Actuated g/C Ratio	0.05	0.27	0.59	0.05	0.28	0.36	0.32	0.46	0.52	0.09	0.23	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	88	974	1670	192	997	577	1129	1673	874	302	1173	
v/s Ratio Prot	0.03	c0.23	0.20	c0.06	0.22	0.04	c0.37	c0.50	0.04	c0.10	0.18	
v/s Ratio Perm			0.17			0.14			0.35			
v/c Ratio	0.64	0.84	0.62	1.10	0.78	0.50	1.16	1.07	0.72	1.22	0.77	
Uniform Delay, d1	59.5	44.0	16.8	60.2	42.6	31.6	43.2	34.2	23.5	58.2	46.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.1	6.8	0.7	93.9	4.0	0.7	82.6	43.2	2.8	123.3	3.2	
Delay (s)	73.6	50.8	17.5	154.2	46.6	32.3	125.8	77.4	26.3	181.5	49.4	
Level of Service	E	D	B	F	D	C	F	E	C	F	D	
Approach Delay (s)		33.4			60.6			85.7			87.4	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM Average Control Delay	69.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	127.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
96: Century Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	30	10	40	20	140	10	3140	20	80	1760	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.91		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1814			1683		1805	5181		1805	5177	
Flt Permitted		0.40			0.91		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		743			1554		1805	5181		1805	5177	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	79	34	11	45	22	157	11	3528	22	90	1978	22
RTOR Reduction (vph)	0	3	0	0	89	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	121	0	0	135	0	11	3550	0	90	1999	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		14.3			14.3		1.3	65.4		7.0	71.1	
Effective Green, g (s)		14.3			14.3		1.3	65.4		7.0	71.1	
Actuated g/C Ratio		0.14			0.14		0.01	0.66		0.07	0.72	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		108			225		24	3433		128	3729	
v/s Ratio Prot							0.01	c0.69		c0.05	0.39	
v/s Ratio Perm		c0.16			0.09							
v/c Ratio		1.12			0.60		0.46	1.03		0.70	0.54	
Uniform Delay, d1		42.2			39.5		48.4	16.6		44.8	6.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		121.4			4.5		13.2	25.0		16.1	0.1	
Delay (s)		163.6			44.0		61.6	41.7		60.9	6.4	
Level of Service		F			D		E	D		E	A	
Approach Delay (s)		163.6			44.0			41.7			8.8	
Approach LOS		F			D			D			A	

Intersection Summary			
HCM Average Control Delay	32.9	HCM Level of Service	C
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	98.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
97: Via Vista Dr & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	40	50	20	30	100	60	2920	20	20	1610	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1801	1900	1615	1805	1900	1588	1805	5181		1805	5164	
Flt Permitted	0.53	1.00	1.00	0.73	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1012	1900	1615	1383	1900	1588	1805	5181		1805	5164	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	180	45	56	22	34	112	67	3281	22	22	1809	45
RTOR Reduction (vph)	0	0	47	0	0	100	0	0	0	0	2	0
Lane Group Flow (vph)	180	45	9	22	34	12	67	3303	0	22	1852	0
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	21.6	15.0	15.0	13.2	10.6	10.6	6.8	61.3		2.6	57.1	
Effective Green, g (s)	21.6	15.0	15.0	13.2	10.6	10.6	6.8	61.3		2.6	57.1	
Actuated g/C Ratio	0.22	0.15	0.15	0.14	0.11	0.11	0.07	0.63		0.03	0.59	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	281	292	248	198	207	173	126	3257		48	3024	
v/s Ratio Prot	c0.05	0.02		0.00	0.02		0.04	c0.64		0.01	c0.36	
v/s Ratio Perm	c0.10		0.01	0.01		0.01						
v/c Ratio	0.64	0.15	0.03	0.11	0.16	0.07	0.53	1.01		0.46	0.61	
Uniform Delay, d1	33.6	35.8	35.1	36.9	39.4	39.0	43.8	18.1		46.8	13.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.9	0.2	0.1	0.2	0.4	0.2	4.3	19.3		6.8	0.4	
Delay (s)	38.5	36.0	35.1	37.1	39.8	39.2	48.1	37.4		53.5	13.4	
Level of Service	D	D	D	D	D	D	D	D		D	B	
Approach Delay (s)		37.4			39.1			37.7			13.9	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
98: Canyon Crest Dr & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	20	20	360	10	90	20	2980	840	30	1700	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		0.94	1.00		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.93		1.00	0.87		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3314		5090	1623		1805	5187	1594	1805	5182	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3314		5090	1623		1805	5187	1594	1805	5182	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	21	21	383	11	96	21	3170	894	32	1809	11
RTOR Reduction (vph)	0	20	0	0	82	0	0	0	169	0	0	0
Lane Group Flow (vph)	21	22	0	383	25	0	21	3170	725	32	1820	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	2.7	4.8		9.2	11.3		2.4	44.9	54.1	2.4	44.9	
Effective Green, g (s)	2.7	4.8		9.2	11.3		2.4	44.9	54.1	2.4	44.9	
Actuated g/C Ratio	0.03	0.06		0.12	0.15		0.03	0.58	0.70	0.03	0.58	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	63	206		606	237		56	3013	1198	56	3010	
v/s Ratio Prot	c0.01	0.01		0.08	0.02		0.01	c0.61	c0.07	0.02	c0.35	
v/s Ratio Perm									0.38			
v/c Ratio	0.33	0.11		0.63	0.11		0.38	1.05	0.61	0.57	0.60	
Uniform Delay, d1	36.4	34.2		32.4	28.6		36.7	16.2	6.0	36.9	10.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	0.2		2.2	0.2		4.2	32.2	0.9	13.3	0.3	
Delay (s)	39.5	34.5		34.6	28.8		40.9	48.4	6.9	50.3	10.8	
Level of Service	D	C		C	C		D	D	A	D	B	
Approach Delay (s)		36.2			33.3			39.3			11.5	
Approach LOS		D			C			D			B	

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
99: Oleander Ave/Harley Knox Blvd & Perris Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	200	80	100	1310	620	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1787	1567	1805	1900	1900	1576
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1787	1567	1805	1900	1900	1576
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	233	93	116	1523	721	151
RTOR Reduction (vph)	0	76	0	0	0	18
Lane Group Flow (vph)	233	17	116	1523	721	133
Confl. Peds. (#/hr)	5	5	5			5
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	19.6	19.6	11.0	82.4	67.4	67.4
Effective Green, g (s)	19.6	19.6	11.0	82.4	67.4	67.4
Actuated g/C Ratio	0.18	0.18	0.10	0.75	0.61	0.61
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	318	279	181	1423	1164	966
v/s Ratio Prot			0.06	c0.80	0.38	
v/s Ratio Perm	c0.13	0.01				0.08
v/c Ratio	0.73	0.06	0.64	1.07	0.62	0.14
Uniform Delay, d1	42.7	37.5	47.6	13.8	13.3	9.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.4	0.1	7.5	45.1	2.5	0.3
Delay (s)	51.2	37.6	55.1	58.9	15.8	9.3
Level of Service	D	D	E	E	B	A
Approach Delay (s)	47.3			58.7	14.7	
Approach LOS	D			E	B	

Intersection Summary			
HCM Average Control Delay	43.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
100: Harley Knox Blvd & Evans Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)												
Lane Util. Factor												
Frt												
Flt Protected												
Satd. Flow (prot)												
Flt Permitted												
Satd. Flow (perm)												
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type							Perm			Perm		
Protected Phases								2			6	
Permitted Phases							2			6		
Actuated Green, G (s)												
Effective Green, g (s)												
Actuated g/C Ratio												
Clearance Time (s)												
Lane Grp Cap (vph)												
v/s Ratio Prot												
v/s Ratio Perm												
v/c Ratio												
Uniform Delay, d1												
Progression Factor												
Incremental Delay, d2												
Delay (s)												
Level of Service												
Approach Delay (s)		0.0			0.0			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	0.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	20.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
101: Ramona Expy & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	950	70	80	1710	300	100	20	70	90	10	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	4.6		4.0	4.9	4.9
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5126		1805	5187	1582	1805	3149		1805	3610	1588
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5126		1805	5187	1582	1805	3149		1805	3610	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	258	979	72	82	1763	309	103	21	72	93	10	144
RTOR Reduction (vph)	0	5	0	0	0	152	0	67	0	0	0	133
Lane Group Flow (vph)	258	1046	0	82	1763	157	103	26	0	93	10	11
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Actuated Green, G (s)	28.5	65.8		9.0	46.3	46.3	8.0	8.1		8.5	8.3	8.3
Effective Green, g (s)	28.5	65.8		9.0	46.3	46.3	8.0	8.1		8.5	8.3	8.3
Actuated g/C Ratio	0.26	0.60		0.08	0.42	0.42	0.07	0.07		0.08	0.08	0.08
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	4.6		4.0	4.9	4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	468	3066		148	2183	666	131	232		139	272	120
v/s Ratio Prot	c0.14	0.20		0.05	c0.34		c0.06	c0.01		0.05	0.00	
v/s Ratio Perm						0.10						0.01
v/c Ratio	0.55	0.34		0.55	0.81	0.24	0.79	0.11		0.67	0.04	0.09
Uniform Delay, d1	35.2	11.2		48.6	27.9	20.5	50.2	47.6		49.4	47.1	47.3
Progression Factor	1.03	0.31		1.02	0.66	0.64	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	0.3		2.9	2.2	0.5	26.0	0.2		11.6	0.1	0.3
Delay (s)	37.5	3.7		52.6	20.6	13.7	76.1	47.8		60.9	47.2	47.7
Level of Service	D	A		D	C	B	E	D		E	D	D
Approach Delay (s)		10.4			20.8			62.7			52.6	
Approach LOS		B			C			E			D	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
102: Ramona Expy & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	570	140	240	1330	250	410	540	170	100	320	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5187	1586	3502	5049		3502	3610	1587	3502	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5187	1586	3502	5049		3502	3610	1587	3502	3610	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	289	588	144	247	1371	258	423	557	175	103	330	216
RTOR Reduction (vph)	0	0	83	0	22	0	0	0	136	0	0	179
Lane Group Flow (vph)	289	588	61	247	1607	0	423	557	39	103	330	37
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	15.2	46.5	46.5	13.0	44.3		13.0	24.3	24.3	6.9	18.2	18.2
Effective Green, g (s)	15.2	46.5	46.5	13.0	44.3		13.0	24.3	24.3	6.9	18.2	18.2
Actuated g/C Ratio	0.14	0.42	0.42	0.12	0.40		0.12	0.22	0.22	0.06	0.17	0.17
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	484	2193	670	414	2033		414	797	351	220	597	263
v/s Ratio Prot	c0.08	0.11		0.07	c0.32		c0.12	c0.15		0.03	0.09	
v/s Ratio Perm			0.04						0.02			0.02
v/c Ratio	0.60	0.27	0.09	0.60	0.79		1.02	0.70	0.11	0.47	0.55	0.14
Uniform Delay, d1	44.5	20.7	19.1	46.0	28.8		48.5	39.5	34.2	49.8	42.2	39.2
Progression Factor	1.19	0.91	0.91	1.22	0.77		0.84	0.70	1.04	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.3	0.3	0.2	0.3		48.3	2.5	0.1	1.6	1.1	0.2
Delay (s)	54.9	19.1	17.6	56.4	22.5		89.0	30.2	35.8	51.4	43.3	39.5
Level of Service	D	B	B	E	C		F	C	D	D	D	D
Approach Delay (s)		29.0			27.0			52.6			43.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	36.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
103: Ramona Expy & Evans Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	470	390	150	10	1040	580	370	810	30	290	640	820
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	5187	1593	1805	3610	1586	3502	3588		3502	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	5187	1593	1805	3610	1586	3502	3588		3502	3610	1588
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	547	453	174	12	1209	674	430	942	35	337	744	953
RTOR Reduction (vph)	0	0	0	0	0	162	0	2	0	0	0	92
Lane Group Flow (vph)	547	453	174	12	1209	512	430	975	0	337	744	861
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Free	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6						4
Actuated Green, G (s)	10.0	40.8	110.0	1.2	32.0	32.0	8.0	34.4		13.6	40.0	40.0
Effective Green, g (s)	10.0	40.8	110.0	1.2	32.0	32.0	8.0	34.4		13.6	40.0	40.0
Actuated g/C Ratio	0.09	0.37	1.00	0.01	0.29	0.29	0.07	0.31		0.12	0.36	0.36
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	318	1924	1593	20	1050	461	255	1122		433	1313	577
v/s Ratio Prot	c0.16	0.09		0.01	c0.33		c0.12	0.27		0.10	0.21	
v/s Ratio Perm			0.11			0.32						c0.54
v/c Ratio	1.72	0.24	0.11	0.60	1.15	1.11	1.69	0.87		0.78	0.57	1.49
Uniform Delay, d1	50.0	23.8	0.0	54.2	39.0	39.0	51.0	35.7		46.7	28.1	35.0
Progression Factor	0.89	1.34	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	336.9	0.3	0.1	40.2	79.3	75.3	325.3	9.2		8.6	1.8	230.4
Delay (s)	381.3	32.2	0.1	94.3	118.3	114.3	376.3	44.9		55.3	29.8	265.4
Level of Service	F	C	A	F	F	F	F	D		E	C	F
Approach Delay (s)		190.1			116.8			146.2			144.4	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	145.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
104: Morgan St & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	20	70	30	10	20	220	1000	10	30	540	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.2		4.0	4.1	4.1	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.88		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3103		1805	1900	1581	1805	3604		1805	3610	1591
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3103		1805	1900	1581	1805	3604		1805	3610	1591
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	22	75	32	11	22	237	1075	11	32	581	86
RTOR Reduction (vph)	0	70	0	0	0	21	0	0	0	0	0	38
Lane Group Flow (vph)	43	27	0	32	11	1	237	1086	0	32	581	48
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	5.2	6.8		4.7	6.4	6.4	19.7	75.9		5.1	61.3	61.3
Effective Green, g (s)	5.2	6.8		4.7	6.4	6.4	19.7	75.9		5.1	61.3	61.3
Actuated g/C Ratio	0.05	0.06		0.04	0.06	0.06	0.18	0.69		0.05	0.56	0.56
Clearance Time (s)	4.0	4.2		4.0	4.1	4.1	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	85	192		77	111	92	323	2487		84	2012	887
v/s Ratio Prot	c0.02	c0.01		0.02	0.01		c0.13	c0.30		0.02	0.16	
v/s Ratio Perm						0.00						0.03
v/c Ratio	0.51	0.14		0.42	0.10	0.01	0.73	0.44		0.38	0.29	0.05
Uniform Delay, d1	51.1	48.8		51.3	49.1	48.8	42.7	7.6		50.9	12.8	11.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.91	0.70		1.18	0.28	0.02
Incremental Delay, d2	4.7	0.3		3.6	0.4	0.1	7.5	0.5		2.7	0.3	0.1
Delay (s)	55.8	49.2		54.9	49.5	48.9	46.2	5.8		62.9	4.0	0.4
Level of Service	E	D		D	D	D	D	A		E	A	A
Approach Delay (s)		51.2			52.0			13.0			6.2	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
105: Morgan St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	90	110	70	150	280	100	370	30	30	210	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1587	1805	1900	1587	1805	3561		1805	3610	1586
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1587	1805	1900	1587	1805	3561		1805	3610	1586
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	176	106	129	82	176	329	118	435	35	35	247	106
RTOR Reduction (vph)	0	0	101	0	0	269	0	4	0	0	0	58
Lane Group Flow (vph)	176	106	28	82	176	60	118	466	0	35	247	48
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	15.1	23.7	23.7	8.2	16.8	16.8	12.4	56.9		5.2	49.7	49.7
Effective Green, g (s)	15.1	23.7	23.7	8.2	16.8	16.8	12.4	56.9		5.2	49.7	49.7
Actuated g/C Ratio	0.14	0.22	0.22	0.07	0.15	0.15	0.11	0.52		0.05	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	248	409	342	135	290	242	203	1842		85	1631	717
v/s Ratio Prot	c0.10	0.06		0.05	c0.09		c0.07	c0.13		0.02	0.07	
v/s Ratio Perm			0.02			0.04						0.03
v/c Ratio	0.71	0.26	0.08	0.61	0.61	0.25	0.58	0.25		0.41	0.15	0.07
Uniform Delay, d1	45.4	35.9	34.5	49.3	43.5	41.0	46.3	14.7		50.9	17.7	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.87		1.00	1.00	1.00
Incremental Delay, d2	9.0	0.3	0.1	7.5	3.6	0.5	3.8	0.3		3.2	0.2	0.2
Delay (s)	54.3	36.2	34.6	56.9	47.1	41.6	43.5	13.1		54.1	17.9	17.2
Level of Service	D	D	C	E	D	D	D	B		D	B	B
Approach Delay (s)		43.4			45.4			19.2			21.0	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
106: Rider St & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	110	20	130	160	260	140	910	80	40	450	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1795	1852		1795	1900	1583	1805	3557		1805	3510	
Flt Permitted	0.49	1.00		0.57	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	926	1852		1086	1900	1583	1805	3557		1805	3510	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	22	124	22	146	180	292	157	1022	90	45	506	90
RTOR Reduction (vph)	0	7	0	0	0	183	0	5	0	0	10	0
Lane Group Flow (vph)	22	139	0	146	180	109	157	1107	0	45	586	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	19.8	19.8		19.8	19.8	19.8	14.4	68.6		7.0	61.2	
Effective Green, g (s)	19.8	19.8		19.8	19.8	19.8	14.4	68.6		7.0	61.2	
Actuated g/C Ratio	0.18	0.18		0.18	0.18	0.18	0.13	0.62		0.06	0.56	
Clearance Time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	167	333		195	342	285	236	2218		115	1953	
v/s Ratio Prot		0.08			0.09		c0.09	c0.31		0.02	0.17	
v/s Ratio Perm	0.02			c0.13		0.07						
v/c Ratio	0.13	0.42		0.75	0.53	0.38	0.67	0.50		0.39	0.30	
Uniform Delay, d1	37.9	40.0		42.7	40.9	39.7	45.5	11.3		49.5	13.0	
Progression Factor	1.00	1.00		0.75	0.73	0.57	1.25	0.67		1.22	0.26	
Incremental Delay, d2	0.4	0.9		13.0	1.3	0.8	4.6	0.5		2.1	0.4	
Delay (s)	38.2	40.9		45.0	31.2	23.3	61.4	8.2		62.4	3.8	
Level of Service	D	D		D	C	C	E	A		E	A	
Approach Delay (s)		40.5			30.8			14.8			7.9	
Approach LOS		D			C			B			A	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
107: Rider St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	290	40	20	450	150	110	230	20	160	130	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	0.99		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3535		1805	3460		1805	3562		1805	3263	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3535		1805	3460		1805	3562		1805	3263	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	174	337	47	23	523	174	128	267	23	186	151	209
RTOR Reduction (vph)	0	11	0	0	33	0	0	6	0	0	144	0
Lane Group Flow (vph)	174	373	0	23	664	0	128	284	0	186	216	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	14.3	42.3		2.4	30.4		15.2	30.8		18.5	34.1	
Effective Green, g (s)	14.3	42.3		2.4	30.4		15.2	30.8		18.5	34.1	
Actuated g/C Ratio	0.13	0.38		0.02	0.28		0.14	0.28		0.17	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	235	1359		39	956		249	997		304	1012	
v/s Ratio Prot	c0.10	0.11		0.01	c0.19		0.07	c0.08		c0.10	c0.07	
v/s Ratio Perm												
v/c Ratio	0.74	0.27		0.59	0.70		0.51	0.29		0.61	0.21	
Uniform Delay, d1	46.1	23.3		53.3	35.6		44.0	31.0		42.4	28.0	
Progression Factor	0.91	0.98		1.00	1.00		1.00	1.00		0.93	0.84	
Incremental Delay, d2	11.8	0.1		20.8	2.2		1.8	0.7		3.6	0.5	
Delay (s)	53.7	22.9		74.1	37.9		45.8	31.7		42.9	23.9	
Level of Service	D	C		E	D		D	C		D	C	
Approach Delay (s)		32.5			39.0			36.0			30.4	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	34.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
108: Mid County Pkwy WB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	150	70	500	170	1300	0	0	650	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.98	1.00	1.00			1.00	0.97
Flpb, ped/bikes					1.00	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.97	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1830	1586	1805	3610			3610	1564
Flt Permitted					0.97	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)					1830	1586	1805	3610			3610	1564
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	163	76	543	185	1413	0	0	707	304
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	0	193
Lane Group Flow (vph)	0	0	0	0	239	529	185	1413	0	0	707	111
Confl. Peds. (#/hr)				5		5	5					5
Turn Type				Perm		Perm	Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Actuated Green, G (s)					42.4	42.4	15.4	59.6			40.2	40.2
Effective Green, g (s)					42.4	42.4	15.4	59.6			40.2	40.2
Actuated g/C Ratio					0.39	0.39	0.14	0.54			0.37	0.37
Clearance Time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					705	611	253	1956			1319	572
v/s Ratio Prot							0.10	c0.39			0.20	
v/s Ratio Perm					0.13	c0.33						0.07
v/c Ratio					0.34	0.87	0.73	0.72			0.54	0.19
Uniform Delay, d1					23.9	31.2	45.3	19.0			27.5	23.8
Progression Factor					1.00	1.00	1.08	0.95			0.96	2.07
Incremental Delay, d2					0.3	12.3	6.2	1.4			1.5	0.7
Delay (s)					24.2	43.5	55.0	19.3			28.1	50.1
Level of Service					C	D	E	B			C	D
Approach Delay (s)		0.0			37.6			23.4			34.7	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	113.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
109: Mid County Pkwy EB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	660	50	180	0	0	0	0	780	60	160	650	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00						0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99						1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00						1.00		1.00	1.00	
Frt	1.00	0.88						0.99		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1794	1653						3563		1805	3610	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1794	1653						3563		1805	3610	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	717	54	196	0	0	0	0	848	65	174	707	0
RTOR Reduction (vph)	0	87	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	717	163	0	0	0	0	0	908	0	174	707	0
Confl. Peds. (#/hr)	5		5						5	5		
Turn Type	Perm									Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4											
Actuated Green, G (s)	47.8	47.8						36.9		13.3	54.2	
Effective Green, g (s)	47.8	47.8						36.9		13.3	54.2	
Actuated g/C Ratio	0.43	0.43						0.34		0.12	0.49	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	780	718						1195		218	1779	
v/s Ratio Prot		0.10						c0.25		c0.10	0.20	
v/s Ratio Perm	c0.40											
v/c Ratio	0.92	0.23						0.76		0.80	0.40	
Uniform Delay, d1	29.3	19.5						32.6		47.0	17.6	
Progression Factor	1.00	1.00						0.78		1.58	0.44	
Incremental Delay, d2	15.7	0.2						3.2		16.4	0.6	
Delay (s)	45.0	19.7						28.8		90.7	8.3	
Level of Service	D	B						C		F	A	
Approach Delay (s)		38.4			0.0			28.8			24.6	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	113.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
110: Mid County Pkwy WB Ramps & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	50	60	20	430	120	0	0	90	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes					1.00		1.00	1.00			1.00	0.97
Flpb, ped/bikes					1.00		1.00	1.00			1.00	1.00
Frt					0.98		1.00	1.00			1.00	0.85
Flt Protected					0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)					1810		1805	1900			1900	1564
Flt Permitted					0.98		0.95	1.00			1.00	1.00
Satd. Flow (perm)					1810		1805	1900			1900	1564
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	54	65	22	467	130	0	0	98	109
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	59
Lane Group Flow (vph)	0	0	0	0	134	0	467	130	0	0	98	50
Confl. Peds. (#/hr)				5		5	5					5
Turn Type				Perm			Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8								6
Actuated Green, G (s)					13.4		34.2	88.6			50.4	50.4
Effective Green, g (s)					13.4		34.2	88.6			50.4	50.4
Actuated g/C Ratio					0.12		0.31	0.81			0.46	0.46
Clearance Time (s)					4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					220		561	1530			871	717
v/s Ratio Prot							c0.26	0.07			c0.05	
v/s Ratio Perm					0.07							0.03
v/c Ratio					0.61		0.83	0.08			0.11	0.07
Uniform Delay, d1					45.8		35.2	2.2			17.0	16.7
Progression Factor					1.00		1.23	0.94			1.00	1.00
Incremental Delay, d2					4.7		9.8	0.1			0.3	0.2
Delay (s)					50.5		53.3	2.2			17.3	16.9
Level of Service					D		D	A			B	B
Approach Delay (s)		0.0			50.5			42.2			17.1	
Approach LOS		A			D			D			B	

Intersection Summary			
HCM Average Control Delay	37.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
111: Mid County Pkwy EB Ramps & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	10	240	0	0	0	0	510	190	10	140	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00	0.97					1.00	0.97	1.00	1.00	
Flpb, ped/bikes		0.99	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.96	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1818	1567					1900	1564	1805	1900	
Flt Permitted		0.96	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1818	1567					1900	1564	1805	1900	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	11	261	0	0	0	0	554	207	11	152	0
RTOR Reduction (vph)	0	0	239	0	0	0	0	0	40	0	0	0
Lane Group Flow (vph)	0	44	22	0	0	0	0	554	167	11	152	0
Confl. Peds. (#/hr)	5		5						5	5		
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		9.2	9.2					87.3	87.3	1.5	92.8	
Effective Green, g (s)		9.2	9.2					87.3	87.3	1.5	92.8	
Actuated g/C Ratio		0.08	0.08					0.79	0.79	0.01	0.84	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		152	131					1508	1241	25	1603	
v/s Ratio Prot								c0.29		c0.01	0.08	
v/s Ratio Perm		0.02	0.01						0.11			
v/c Ratio		0.29	0.17					0.37	0.13	0.44	0.09	
Uniform Delay, d1		47.3	46.8					3.3	2.6	53.8	1.5	
Progression Factor		1.00	1.00					1.00	1.00	1.35	0.08	
Incremental Delay, d2		1.1	0.6					0.7	0.2	11.8	0.1	
Delay (s)		48.4	47.4					4.0	2.8	84.6	0.2	
Level of Service		D	D					A	A	F	A	
Approach Delay (s)		47.6			0.0			3.7			5.9	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
112: Placentia Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	80	300	90	120	140	330	1060	40	40	630	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1651		1805	1900	1586	1805	3588		1805	3590	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1651		1805	1900	1586	1805	3588		1805	3590	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	38	100	375	112	150	175	412	1325	50	50	788	25
RTOR Reduction (vph)	0	123	0	0	0	116	0	3	0	0	2	0
Lane Group Flow (vph)	38	352	0	112	150	59	412	1372	0	50	811	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	3.0	26.9		7.0	30.9	30.9	26.7	52.9		5.0	31.2	
Effective Green, g (s)	3.0	26.9		7.0	30.9	30.9	26.7	52.9		5.0	31.2	
Actuated g/C Ratio	0.03	0.24		0.06	0.28	0.28	0.24	0.48		0.05	0.28	
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	49	404		115	534	446	438	1726		82	1018	
v/s Ratio Prot	0.02	c0.21		c0.06	c0.08		c0.23	c0.38		0.03	0.23	
v/s Ratio Perm						0.04						
v/c Ratio	0.78	0.87		0.97	0.28	0.13	0.94	0.80		0.61	0.80	
Uniform Delay, d1	53.2	39.9		51.4	30.9	29.5	40.9	24.0		51.5	36.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.95	1.10		1.36	0.53	
Incremental Delay, d2	53.1	18.1		75.2	0.3	0.1	28.4	3.9		11.5	6.1	
Delay (s)	106.2	58.0		126.6	31.2	29.7	67.4	30.3		81.4	25.6	
Level of Service	F	E		F	C	C	E	C		F	C	
Approach Delay (s)		61.6			55.0			38.9			28.8	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM Average Control Delay	41.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
113: Placentia Ave & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											361	
pX, platoon unblocked												
vC, conflicting volume	0	0	0	0	0	0	0			0		
vC1, stage 1 conf vol	0	0		0	0							
vC2, stage 2 conf vol	0	0		0	0							
vCu, unblocked vol	0	0	0	0	0	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	1029	900	1091	1029	900	1091	1636			1636		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	0	0	0	0	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	0.0	0.0	0.0		0.0	
Approach LOS	A	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
114: Orange Ave & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	110	190	40	60	180	40	60	260	40	20	130	80
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	121	209	44	66	198	44	66	286	44	22	143	88

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	374	308	66	330	22	231
Volume Left (vph)	121	66	66	0	22	0
Volume Right (vph)	44	44	0	44	0	88
Hadj (s)	-0.01	-0.04	0.50	-0.09	0.50	-0.27
Departure Headway (s)	7.0	7.2	8.2	7.6	8.6	7.8
Degree Utilization, x	0.73	0.61	0.15	0.69	0.05	0.50
Capacity (veh/h)	482	461	415	451	378	416
Control Delay (s)	26.6	20.9	11.4	24.8	10.8	17.0
Approach Delay (s)	26.6	20.9	22.5		16.4	
Approach LOS	D	C	C		C	

Intersection Summary			
Delay	22.1		
HCM Level of Service	C		
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
115: Nuevo Rd & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	290	0	0	400	80	0	0	0	30	0	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0				4.0		4.0
Lane Util. Factor	1.00	1.00			1.00	1.00				1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00	0.97				1.00		0.97
Flpb, ped/bikes	1.00	1.00			1.00	1.00				0.99		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1805	1900			1900	1567				1787		1567
Flt Permitted	0.95	1.00			1.00	1.00				0.76		1.00
Satd. Flow (perm)	1805	1900			1900	1567				1425		1567
Peak-hour factor, PHF	0.90	0.90	0.92	0.92	0.90	0.90	0.92	0.92	0.92	0.90	0.92	0.90
Adj. Flow (vph)	189	322	0	0	444	89	0	0	0	33	0	311
RTOR Reduction (vph)	0	0	0	0	0	57	0	0	0	0	0	171
Lane Group Flow (vph)	189	322	0	0	444	32	0	0	0	33	0	140
Confl. Peds. (#/hr)	5					5				5		5
Turn Type	Prot					Perm	Perm			custom		custom
Protected Phases	7	4			8			2				
Permitted Phases						8	2			6		6
Actuated Green, G (s)	16.6	52.5			31.9	31.9				49.5		49.5
Effective Green, g (s)	16.6	52.5			31.9	31.9				49.5		49.5
Actuated g/C Ratio	0.15	0.48			0.29	0.29				0.45		0.45
Clearance Time (s)	4.0	4.0			4.0	4.0				4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	272	907			551	454				641		705
v/s Ratio Prot	c0.10	0.17			c0.23							
v/s Ratio Perm						0.02				0.02		c0.09
v/c Ratio	0.69	0.36			0.81	0.07				0.05		0.20
Uniform Delay, d1	44.3	18.1			36.2	28.3				17.0		18.3
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	7.5	0.2			8.4	0.1				0.2		0.6
Delay (s)	51.8	18.3			44.6	28.4				17.2		18.9
Level of Service	D	B			D	C				B		B
Approach Delay (s)		30.7			41.9			0.0			18.7	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
123: Bridge St & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	120	30	20	740	350	50
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	133	33	22	822	389	56
Pedestrians				5	5	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	849	199	444			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	849	199	444			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	55	96	98			
cM capacity (veh/h)	296	811	1126			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	167	22	411	411	194	194	56
Volume Left	133	22	0	0	0	0	0
Volume Right	33	0	0	0	0	0	56
cSH	340	1126	1700	1700	1700	1700	1700
Volume to Capacity	0.49	0.02	0.24	0.24	0.11	0.11	0.03
Queue Length 95th (ft)	65	2	0	0	0	0	0
Control Delay (s)	25.4	8.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	D	A					
Approach Delay (s)	25.4	0.2			0.0		
Approach LOS	D						

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
124: Gilman Springs Rd & SR-79 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	560	0	0	440	250	290	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	21	583	0	0	458	260	302	0	0	0	0	0
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)									10			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	724			588			1093	1354	593	1093	1093	468
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	724			588			1093	1354	593	1093	1093	468
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			0	100	100	100	100	100
cM capacity (veh/h)	888			993			188	147	505	188	210	596

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	21	583	458	260	302
Volume Left	21	0	0	0	302
Volume Right	0	0	0	260	0
cSH	888	1700	1700	1700	185
Volume to Capacity	0.02	0.34	0.27	0.15	1.63
Queue Length 95th (ft)	2	0	0	0	505
Control Delay (s)	9.2	0.0	0.0	0.0	350.9
Lane LOS	A				F
Approach Delay (s)	0.3		0.0		350.9
Approach LOS					F

Intersection Summary			
Average Delay	65.4		
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
125: Gilman Springs Rd & SR-79 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	210	200	40	710	0	0	0	0	370	0	60
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	223	213	43	755	0	0	0	0	394	0	64
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												7
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	760			441			1106	1074	233	1074	1287	765
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	760			441			1106	1074	233	1074	1287	765
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			100	100	100	0	100	84
cM capacity (veh/h)	857			1130			154	212	807	191	159	403

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	223	213	43	755	457
Volume Left	0	0	43	0	394
Volume Right	0	213	0	0	64
cSH	1700	1700	1130	1700	208
Volume to Capacity	0.13	0.13	0.04	0.44	2.19
Queue Length 95th (ft)	0	0	3	0	898
Control Delay (s)	0.0	0.0	8.3	0.0	590.0
Lane LOS			A		F
Approach Delay (s)	0.0		0.4		590.0
Approach LOS					F

Intersection Summary			
Average Delay	159.8		
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
126: Ramona Expy & SR-79(Sanderson Ave)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	330	250	50	30	350	520	130	840	30	330	660	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1595	3502	3610	1615	3502	3610	1594	3502	3610	1596
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1595	3502	3610	1615	3502	3610	1594	3502	3610	1596
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	363	275	55	33	385	571	143	923	33	363	725	297
RTOR Reduction (vph)	0	0	30	0	0	21	0	0	21	0	0	94
Lane Group Flow (vph)	363	275	25	33	385	550	143	923	12	363	725	203
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		pm+ov	Prot		pt+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	8 1	5	2	3	1	6	7
Permitted Phases			4						2			6
Actuated Green, G (s)	11.2	38.5	47.0	5.3	32.6	46.8	8.5	32.8	38.1	10.2	34.5	45.7
Effective Green, g (s)	11.2	38.5	47.0	5.3	32.6	46.8	8.5	32.8	38.1	10.2	34.5	45.7
Actuated g/C Ratio	0.11	0.37	0.46	0.05	0.32	0.46	0.08	0.32	0.37	0.10	0.34	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	382	1352	791	181	1145	735	290	1152	653	347	1212	772
v/s Ratio Prot	c0.10	0.08	0.00	0.01	0.11	c0.34	0.04	c0.26	0.00	c0.10	0.20	0.03
v/s Ratio Perm			0.01						0.01			0.10
v/c Ratio	0.95	0.20	0.03	0.18	0.34	0.75	0.49	0.80	0.02	1.05	0.60	0.26
Uniform Delay, d1	45.5	21.8	15.4	46.7	26.8	23.1	45.1	32.0	20.5	46.3	28.4	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	33.3	0.1	0.0	0.5	0.2	4.2	1.3	4.1	0.0	60.9	0.8	0.2
Delay (s)	78.8	21.8	15.4	47.2	27.0	27.3	46.4	36.1	20.5	107.2	29.2	18.1
Level of Service	E	C	B	D	C	C	D	D	C	F	C	B
Approach Delay (s)		51.2			27.9			37.0			47.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	40.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	102.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
129: 6th St & California Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	270	350	50	310	10	370	50	50	50	190	10
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
Hourly flow rate (vph)	21	278	361	52	320	10	381	52	52	52	196	10

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total (vph)	299	361	52	330	381	103	258
Volume Left (vph)	21	0	52	0	381	0	52
Volume Right (vph)	0	361	0	10	0	52	10
Hadj (s)	0.03	-0.70	0.50	-0.02	0.50	-0.35	0.02
Departure Headway (s)	8.8	8.1	9.6	9.1	9.3	8.4	9.2
Degree Utilization, x	0.73	0.81	0.14	0.83	0.98	0.24	0.66
Capacity (veh/h)	394	437	375	398	381	420	378
Control Delay (s)	31.5	36.3	12.9	42.3	71.1	12.8	28.5
Approach Delay (s)	34.1		38.3		58.7		28.5
Approach LOS	D		E		F		D

Intersection Summary			
Delay	40.9		
HCM Level of Service	E		
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
130: 6th St & Beaumont Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	240	90	310	290	120	50	180	90	130	440	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1801	3448		1801	1710	1437	1805	3412		1805	3524	
Flt Permitted	0.51	1.00		0.55	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	965	3448		1038	1710	1437	1805	3412		1805	3524	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	72	247	93	320	299	124	52	186	93	134	454	72
RTOR Reduction (vph)	0	50	0	0	0	58	0	69	0	0	18	0
Lane Group Flow (vph)	72	290	0	320	299	66	52	210	0	134	508	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Parking (#/hr)					0	0						
Turn Type	Perm			Perm		pm+ov	Prot			Prot		
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	23.3	23.3		23.3	23.3	30.6	3.6	14.7		7.3	18.4	
Effective Green, g (s)	23.3	23.3		23.3	23.3	30.6	3.6	14.7		7.3	18.4	
Actuated g/C Ratio	0.41	0.41		0.41	0.41	0.53	0.06	0.26		0.13	0.32	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	392	1402		422	695	868	113	875		230	1132	
v/s Ratio Prot		0.08			0.17	0.01	0.03	0.06		c0.07	c0.14	
v/s Ratio Perm	0.07			c0.31		0.04						
v/c Ratio	0.18	0.21		0.76	0.43	0.08	0.46	0.24		0.58	0.45	
Uniform Delay, d1	10.9	11.0		14.6	12.2	6.5	25.9	16.9		23.6	15.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		7.6	0.4	0.0	3.0	0.1		3.7	0.3	
Delay (s)	11.1	11.1		22.2	12.7	6.5	28.9	17.0		27.3	15.7	
Level of Service	B	B		C	B	A	C	B		C	B	
Approach Delay (s)		11.1			15.7			18.9			18.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
131: Reche Canyon Rd & Reche Vista Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	10	450	10	10	1090	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1800	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1900	1613		1848	1710	1615
Flt Permitted	1.00	1.00		0.84	0.95	1.00
Satd. Flow (perm)	1900	1613		1583	1710	1615
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	12	556	12	12	1346	12
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	12	556	0	24	1346	12
Confl. Peds. (#/hr)		5	5		5	5
Turn Type		pm+ov	Perm			Prot
Protected Phases	4	2		8	2	2
Permitted Phases		4	8			
Actuated Green, G (s)	7.4	102.4		7.4	95.0	95.0
Effective Green, g (s)	7.4	102.4		7.4	95.0	95.0
Actuated g/C Ratio	0.07	0.91		0.07	0.85	0.85
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	125	1613		104	1445	1365
v/s Ratio Prot	0.01	c0.29			c0.79	0.01
v/s Ratio Perm		0.05		0.02		
v/c Ratio	0.10	0.34		0.23	0.93	0.01
Uniform Delay, d1	49.4	0.6		49.8	6.3	1.4
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1		1.1	11.1	0.0
Delay (s)	49.7	0.8		50.9	17.4	1.4
Level of Service	D	A		D	B	A
Approach Delay (s)	1.8			50.9	17.3	
Approach LOS	A			D	B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	112.4	Sum of lost time (s)	5.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
132: San Timoteo Canyon Rd & Alessandro Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	290	0	10	620	240	10	20	0	390	10	40
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	38	362	0	12	775	300	12	25	0	488	12	50

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	400	1088	38	550
Volume Left (vph)	38	13	13	488
Volume Right (vph)	0	300	0	50
Hadj (s)	0.02	-0.16	0.07	0.12
Departure Headway (s)	7.2	6.8	9.1	7.1
Degree Utilization, x	0.81	2.05	0.10	1.08
Capacity (veh/h)	490	537	370	504
Control Delay (s)	33.9	497.2	13.1	90.3
Approach Delay (s)	33.9	497.2	13.1	90.3
Approach LOS	D	F	B	F

Intersection Summary			
Delay	291.3		
HCM Level of Service	F		
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
133: San Timoteo Canyon Rd & Live Oak Canyon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	610	20	10	840	80	20	10	10	220	10	40
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	22	656	22	11	903	86	22	11	11	237	11	43

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	699	1000	43	290
Volume Left (vph)	22	11	22	237
Volume Right (vph)	22	86	11	43
Hadj (s)	-0.01	-0.05	-0.05	0.07
Departure Headway (s)	6.3	6.3	8.5	7.3
Degree Utilization, x	1.22	1.74	0.10	0.59
Capacity (veh/h)	568	582	400	482
Control Delay (s)	136.1	355.0	12.4	20.3
Approach Delay (s)	136.1	355.0	12.4	20.3
Approach LOS	F	F	B	C

Intersection Summary			
Delay	224.6		
HCM Level of Service	F		
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
134: San Timoteo Canyon Rd & Redlands Blvd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	30	820	120	110	840	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	891	130	120	913	43

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total (vph)	924	250	957
Volume Left (vph)	0	130	913
Volume Right (vph)	891	0	43
Hadj (s)	-0.58	0.10	0.16
Departure Headway (s)	5.8	7.1	6.5
Degree Utilization, x	1.49	0.49	1.74
Capacity (veh/h)	626	504	558
Control Delay (s)	244.6	16.8	355.8
Approach Delay (s)	244.6	16.8	355.8
Approach LOS	F	C	F

Intersection Summary			
Delay	267.8		
HCM Level of Service	F		
Intersection Capacity Utilization	123.7%	ICU Level of Service	H
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
135: Crescent Ave & Alessandro Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	50	50	290	110	130	270
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	56	56	322	122	144	300
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			111		850	83
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			111		850	83
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			78		45	69
cM capacity (veh/h)			1491		261	982

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	111	444	444
Volume Left	0	322	144
Volume Right	56	0	300
cSH	1700	1491	518
Volume to Capacity	0.07	0.22	0.86
Queue Length 95th (ft)	0	21	228
Control Delay (s)	0.0	6.4	40.9
Lane LOS		A	E
Approach Delay (s)	0.0	6.4	40.9
Approach LOS			E

Intersection Summary			
Average Delay	21.0		
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
136: Sunset Dr & Alessandro Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	10	10	60	10	10	10	280	20	10	350	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	22	11	11	66	11	11	11	308	22	11	385	11

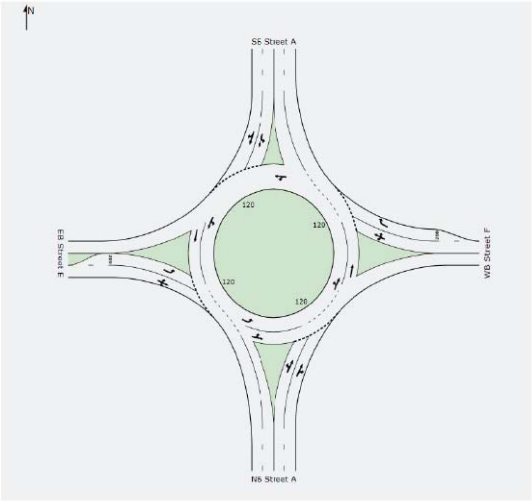
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	44	88	341	407
Volume Left (vph)	22	66	11	11
Volume Right (vph)	11	11	22	11
Hadj (s)	-0.05	0.07	-0.03	-0.01
Departure Headway (s)	5.8	5.8	4.8	4.7
Degree Utilization, x	0.07	0.14	0.45	0.53
Capacity (veh/h)	529	541	730	740
Control Delay (s)	9.2	9.8	11.6	12.9
Approach Delay (s)	9.2	9.8	11.6	12.9
Approach LOS	A	A	B	B

Intersection Summary			
Delay	11.9		
HCM Level of Service	B		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

Title: Intersection 1 - 2022 Plus Phase 1 - PM Peak Hour
Intersection Type: Roundabout

Lane Use & Performance

	Demand Flow veh/h	HV %	Capacity veh/h	Deg. Satn. v/c	Lane Util. %	Average Delay sec	Level of Service	Percentile Back of Queue Vehicles veh	Percentile Back of Queue Distance ft	Prob. Blockage %
South: NB Street A										
Lane 1	571	0.0	645	0.885	100	16.8	LOS B	8.8	219.3	0.0
Lane 2	619	0.0	700	0.885	100	15.3	LOS B	9.1	227.2	0.0
Approach	1190	0.0		0.885		16.0	LOS B	9.1	227.2	
East: WB Street F										
Lane 1	60	0.0	461	0.130	100	14.4	LOS B	0.6	14.7	0.0
Lane 2	30	0.0	333	0.090	69	13.9	LOS B	0.4	9.0	0.0
Approach	90	0.0		0.130		14.2	LOS B	0.6	14.7	
North: SB Street A										
Lane 1	724	0.0	1322	0.548	100	5.7	LOS A	4.4	108.8	0.0
Lane 2	806	0.0	1470	0.548	100	6.6	LOS A	4.4	109.9	0.0
Approach	1530	0.0		0.548		6.2	LOS A	4.4	109.9	
West: EB Street E										
Lane 1	507	0.0	764	0.665	100	19.3	LOS B	5.3	132.9	0.0
Lane 2	533	0.0	801	0.665	100	18.0	LOS B	5.4	135.5	0.0
Approach	1040	0.0		0.665		18.7	LOS B	5.4	135.5	
All Vehicles	3850			0.885		12.8	LOS B	9.1	227.2	



HCM Unsignalized Intersection Capacity Analysis
2: Street E & Street D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	160	380	280	50	90	210
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	174	413	304	54	98	228

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total (vph)	174	413	304	54	98	228
Volume Left (vph)	0	0	304	0	98	0
Volume Right (vph)	0	413	0	0	0	228
Hadj (s)	0.00	-0.70	0.50	0.00	0.50	-0.70
Departure Headway (s)	6.1	5.4	6.8	6.3	7.3	6.1
Degree Utilization, x	0.29	0.62	0.57	0.09	0.20	0.39
Capacity (veh/h)	566	652	515	544	462	552
Control Delay (s)	10.4	15.5	17.4	8.7	10.9	11.7
Approach Delay (s)	14.0		16.1		11.5	
Approach LOS	B		C		B	

Intersection Summary			
Delay	13.9		
HCM Level of Service	B		
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		

 © 2000-2011 Akcelik & Associates Pty Ltd

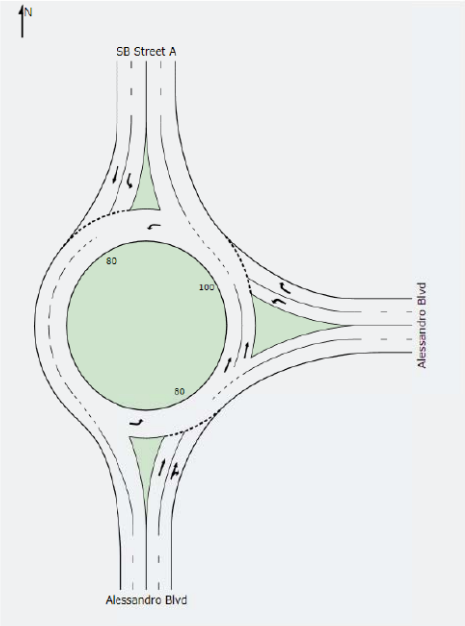
LANE OUTPUT

*Use the **Control** sheet to create output data in this sheet. For detailed information, refer to the **Intro** sheet.*

Title: Intersection 3 - 2022 Plus Phase 1 - PM Peak Hour
Intersection Type: Roundabout

Lane Use & Performance

	Demand Flow veh/h	HV %	Capacity veh/h	Deg. Satn. v/c	Lane Util. %	Average Delay sec	Level of Service	Percentile Back of Queue Vehicles veh	Percentile Back of Queue Distance ft	Prob. Blockage %
South: NB Alessandro Blvd										
Lane 1	228	0.0	1147	0.199	100	6.4	LOS A	1.1	27.3	0.0
Lane 2	232	0.0	1166	0.199	100	7.9	LOS A	1.1	27.3	0.0
Approach	460	0.0		0.199		7.1	LOS A	1.1	27.3	
East: WB Alessandro Blvd										
Lane 1	60	0.0	1017	0.059	100	13.1	LOS B	0.2	6.2	0.0
Lane 2	70	0.0	1026	0.068	100	7.3	LOS A	0.3	7.2	0.0
Approach	130	0.0		0.068		10.0	LOS B	0.3	7.2	
North: SB Street A										
Lane 1	180	0.0	1332	0.135	100	12.3	LOS B	0.6	16.2	0.0
Lane 2	180	0.0	1371	0.131	100	5.9	LOS A	0.6	15.8	0.0
Approach	360	0.0		0.135		9.1	LOS A	0.6	16.2	
All Vehicles	950	0.0		0.199		8.3	LOS A	1.1	27.3	



HCM Unsignalized Intersection Capacity Analysis
4: Alessandro Blvd & Street F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	350	140	20	20	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	380	152	22	22	11
Pedestrians		5	5		5	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	179				575	173
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	179				575	173
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				95	99
cM capacity (veh/h)	1403				475	868

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	391	174	33
Volume Left	11	0	22
Volume Right	0	22	11
cSH	1403	1700	560
Volume to Capacity	0.01	0.10	0.06
Queue Length 95th (ft)	1	0	5
Control Delay (s)	0.3	0.0	11.8
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	11.8
Approach LOS			B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
6: Street C & Gilman Springs Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	20	350	120	310	920	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1615	1805	5187	5187	1615
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1615	1805	5187	5187	1615
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	21	361	124	320	948	41
RTOR Reduction (vph)	0	288	0	0	0	26
Lane Group Flow (vph)	21	73	124	320	948	15
Confl. Peds. (#/hr)						
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	8.7	8.7	6.9	26.2	15.3	15.3
Effective Green, g (s)	8.7	8.7	6.9	26.2	15.3	15.3
Actuated g/C Ratio	0.20	0.20	0.16	0.61	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	366	328	290	3168	1850	576
v/s Ratio Prot	0.01		c0.07	0.06	c0.18	
v/s Ratio Perm		c0.05				0.01
v/c Ratio	0.06	0.22	0.43	0.10	0.51	0.03
Uniform Delay, d1	13.8	14.3	16.2	3.5	10.9	9.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	1.0	0.0	0.2	0.0
Delay (s)	13.9	14.6	17.2	3.5	11.1	9.0
Level of Service	B	B	B	A	B	A
Approach Delay (s)	14.6			7.3	11.0	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	42.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
10: Locust Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	170	0	60	5	5	5	70	910	0	10	1180	170
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	202	0	71	6	6	6	83	1083	0	12	1405	202
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2698	2689	1415	2760	2891	1093	1612			1088		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2698	2689	1415	2760	2891	1093	1612			1088		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	58	2	53	98	80			98		
cM capacity (veh/h)	7	17	169	6	13	261	408			646		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	274	18	83	1083	0	12	1405	202
Volume Left	202	6	83	0	0	12	0	0
Volume Right	71	6	0	0	0	0	0	202
cSH	10	12	408	1700	1700	646	1700	1700
Volume to Capacity	28.11	1.48	0.20	0.64	0.00	0.02	0.83	0.12
Queue Length 95th (ft)	Err	74	19	0	0	1	0	0
Control Delay (s)	Err	867.4	16.1	0.0	0.0	10.7	0.0	0.0
Lane LOS	F	F	C			B		
Approach Delay (s)	Err	867.4	1.1			0.1		
Approach LOS	F	F						

Intersection Summary			
Average Delay	895.2		
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
11: Ironwood Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	10	30	20	20	0	30	780	10	10	650	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.97			1.00		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1766			1854		1805	1895		1805	1900	1561
Flt Permitted		0.97			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1766			1854		1805	1895		1805	1900	1561
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	96	11	32	21	21	0	32	830	11	11	691	160
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	25
Lane Group Flow (vph)	0	131	0	0	42	0	32	841	0	11	691	135
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)		28.7			7.1		5.2	66.7		1.5	63.0	63.0
Effective Green, g (s)		28.7			7.1		5.2	66.7		1.5	63.0	63.0
Actuated g/C Ratio		0.24			0.06		0.04	0.56		0.01	0.52	0.52
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		422			110		78	1053		23	998	820
v/s Ratio Prot		c0.07			c0.02		c0.02	c0.44		0.01	0.36	
v/s Ratio Perm												0.09
v/c Ratio		0.31			0.38		0.41	0.80		0.48	0.69	0.16
Uniform Delay, d1		37.5			54.3		55.9	21.3		58.9	21.3	14.8
Progression Factor		0.89			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		1.3			2.2		3.5	4.3		14.8	2.1	0.1
Delay (s)		34.6			56.5		59.4	25.6		73.7	23.4	14.9
Level of Service		C			E		E	C		E	C	B
Approach Delay (s)		34.6			56.5			26.8			22.4	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
12: Ironwood Ave & Theodore St

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	20	200	40	20	180	30
Sign Control	Yield			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	26	260	52	26	234	39
Pedestrians	5			5		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	516	5	745	478	5	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	516	5	745	478	5	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	93	76	75	94	86	
cM capacity (veh/h)	395	1080	211	416	1623	

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2
Volume Total	26	260	78	234	39
Volume Left	0	0	52	234	0
Volume Right	0	260	0	0	39
cSH	395	1080	253	1623	1700
Volume to Capacity	0.07	0.24	0.31	0.14	0.02
Queue Length 95th (ft)	5	24	32	13	0
Control Delay (s)	14.8	9.4	25.5	7.6	0.0
Lane LOS	B	A	D	A	
Approach Delay (s)	9.9		25.5	6.5	
Approach LOS	A		D		

Intersection Summary			
Average Delay	10.3		
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
13: Spruce Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	10	10	120	10	40	10	770	560	270	450	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	11	11	11	136	11	45	11	875	636	307	511	11
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1652	2675	186	1709	2044	448	528			1516		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1652	2675	186	1709	2044	448	528			1516		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	17	0	99	0	34	92	99			31		
cM capacity (veh/h)	14	7	824	0	17	559	1045			444		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	34	193	11	438	438	636	307	205	205	114
Volume Left	11	136	11	0	0	0	307	0	0	0
Volume Right	11	45	0	0	0	636	0	0	0	11
cSH	14	0	1045	1700	1700	1700	444	1700	1700	1700
Volume to Capacity	2.50	Err	0.01	0.26	0.26	0.37	0.69	0.12	0.12	0.07
Queue Length 95th (ft)	127	Err	1	0	0	0	129	0	0	0
Control Delay (s)	1249.2	Err	8.5	0.0	0.0	0.0	29.3	0.0	0.0	0.0
Lane LOS	F	F	A				D			
Approach Delay (s)	1249.2	Err	0.1				10.8			
Approach LOS	F	F								

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
14: SR-60 EB Ramps & Redlands Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	330	260	170	1010	500	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	0.91	0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.94		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1738		1805	5187	5187	1615
Flt Permitted	0.97		0.95	1.00	1.00	1.00
Satd. Flow (perm)	1738		1805	5187	5187	1615
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	384	302	198	1174	581	105
RTOR Reduction (vph)	44	0	0	0	0	37
Lane Group Flow (vph)	642	0	198	1174	581	68
Confl. Peds. (#/hr)						
Turn Type			Prot			pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases						6
Actuated Green, G (s)	22.5		7.0	22.7	11.7	34.2
Effective Green, g (s)	22.5		7.0	22.7	11.7	34.2
Actuated g/C Ratio	0.42		0.13	0.43	0.22	0.64
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	735		238	2213	1141	1160
v/s Ratio Prot	c0.37		c0.11	c0.23	0.11	0.02
v/s Ratio Perm						0.02
v/c Ratio	0.87		0.83	0.53	0.51	0.06
Uniform Delay, d1	14.0		22.5	11.3	18.2	3.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	11.1		21.3	0.2	0.4	0.0
Delay (s)	25.2		43.8	11.5	18.6	3.5
Level of Service	C		D	B	B	A
Approach Delay (s)	25.2			16.2	16.3	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	53.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
15: SR 60 WB Ramp & Theodore St

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	20	240	1260	210	190	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1588	3502	5187	5187	1586
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1588	3502	5187	5187	1586
Peak-hour factor, PHF	0.72	0.72	0.72	0.72	0.72	0.72
Adj. Flow (vph)	28	333	1750	292	264	69
RTOR Reduction (vph)	0	299	0	0	0	61
Lane Group Flow (vph)	28	34	1750	292	264	8
Confl. Peds. (#/hr)	5	5				5
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	8.9	8.9	57.0	70.9	9.9	9.9
Effective Green, g (s)	8.9	8.9	57.0	70.9	9.9	9.9
Actuated g/C Ratio	0.10	0.10	0.65	0.81	0.11	0.11
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	161	2274	4189	585	179
v/s Ratio Prot	0.02		c0.50	0.06	c0.05	
v/s Ratio Perm		c0.02				0.00
v/c Ratio	0.15	0.21	0.77	0.07	0.45	0.04
Uniform Delay, d1	36.0	36.2	10.8	1.7	36.4	34.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.7	1.6	0.0	0.6	0.1
Delay (s)	36.4	36.9	12.4	1.7	37.0	34.8
Level of Service	D	D	B	A	D	C
Approach Delay (s)	36.8			10.9	36.5	
Approach LOS	D			B	D	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
16: SR-60 EB Ramps & Theodore St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	0	1010	0	0	0	0	1380	500	0	340	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		0.88					0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		0.99					1.00	0.98		1.00	0.97
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		2804					5187	1590		5187	1574
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		2804					5187	1590		5187	1574
Peak-hour factor, PHF	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Adj. Flow (vph)	101	0	1464	0	0	0	0	2000	725	0	493	101
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	198	0	0	28
Lane Group Flow (vph)	101	0	1464	0	0	0	0	2000	527	0	493	73
Confl. Peds. (#/hr)			5						5			5
Turn Type	custom		Free						Perm			Perm
Protected Phases								2			6	
Permitted Phases	4		Free						2			6
Actuated Green, G (s)	5.3		48.6					35.3	35.3		35.3	35.3
Effective Green, g (s)	5.3		48.6					35.3	35.3		35.3	35.3
Actuated g/C Ratio	0.11		1.00					0.73	0.73		0.73	0.73
Clearance Time (s)	4.0							4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0							3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	197		2804					3768	1155		3768	1143
v/s Ratio Prot								0.39			0.10	
v/s Ratio Perm	0.06		c0.52						0.33			0.05
v/c Ratio	0.51		0.52					0.53	0.46		0.13	0.06
Uniform Delay, d1	20.4		0.0					3.0	2.7		2.0	1.9
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	2.2		0.7					0.1	0.3		0.0	0.0
Delay (s)	22.7		0.7					3.1	3.0		2.0	1.9
Level of Service	C		A					A	A		A	A
Approach Delay (s)		2.1			0.0			3.1			2.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	2.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	0.0
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
18: Eucalyptus Ave & Redlands Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	220	640	480	90	250	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	0.99	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1592	5187	1590	1805	5187
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1592	5187	1590	1805	5187
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	696	522	98	272	511
RTOR Reduction (vph)	0	324	0	76	0	0
Lane Group Flow (vph)	239	372	522	22	272	511
Confl. Peds. (#/hr)	5	5		5		
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	17.4	17.4	12.1	12.1	13.3	29.4
Effective Green, g (s)	17.4	17.4	12.1	12.1	13.3	29.4
Actuated g/C Ratio	0.32	0.32	0.22	0.22	0.24	0.54
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	573	505	1145	351	438	2783
v/s Ratio Prot	0.13		c0.10		c0.15	0.10
v/s Ratio Perm		c0.23		0.01		
v/c Ratio	0.42	0.74	0.46	0.06	0.62	0.18
Uniform Delay, d1	14.7	16.7	18.5	16.9	18.5	6.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	5.5	0.3	0.1	2.7	0.0
Delay (s)	15.2	22.2	18.8	16.9	21.2	6.6
Level of Service	B	C	B	B	C	A
Approach Delay (s)	20.4		18.5			11.7
Approach LOS	C		B			B

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Eucalyptus Ave & Theodore St

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	160	420	560	1770	1620	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1603	3502	5187	5187	1585
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1603	3502	5187	5187	1585
Peak-hour factor, PHF	0.65	0.65	0.65	0.65	0.65	0.65
Adj. Flow (vph)	246	646	862	2723	2492	308
RTOR Reduction (vph)	0	0	0	0	0	45
Lane Group Flow (vph)	246	646	862	2723	2492	263
Confl. Peds. (#/hr)	5	5				5
Turn Type		pm+ov	Prot			Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	19.3	42.4	23.1	77.2	50.1	50.1
Effective Green, g (s)	19.3	42.4	23.1	77.2	50.1	50.1
Actuated g/C Ratio	0.18	0.41	0.22	0.74	0.48	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	333	712	774	3832	2487	760
v/s Ratio Prot	0.14	c0.20	c0.25	0.52	c0.48	
v/s Ratio Perm		0.20				0.17
v/c Ratio	0.74	0.91	1.11	0.71	1.00	0.35
Uniform Delay, d1	40.2	29.2	40.7	7.5	27.2	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	15.2	68.2	0.6	18.5	0.3
Delay (s)	48.5	44.4	108.9	8.1	45.7	17.2
Level of Service	D	D	F	A	D	B
Approach Delay (s)	45.6			32.4	42.6	
Approach LOS	D			C	D	

Intersection Summary			
HCM Average Control Delay	37.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	104.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
20: Alessandro Blvd & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	420	220	10	420	10	250	0	20	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	452	237	11	452	11	269	0	22	0	0	0
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	467			693			827	1064	354	714	1177	241
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	467			693			827	1064	354	714	1177	241
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			0	100	97	100	100	100
cM capacity (veh/h)	1100			908			261	220	643	304	189	759

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	226	462	237	237	269	22	0
Volume Left	0	0	11	0	269	0	0
Volume Right	0	237	0	11	0	22	0
cSH	1100	1700	908	1700	261	643	1700
Volume to Capacity	0.00	0.27	0.01	0.14	1.03	0.03	0.00
Queue Length 95th (ft)	0	0	1	0	264	3	0
Control Delay (s)	0.0	0.0	0.5	0.0	105.9	10.8	0.0
Lane LOS			A		F	B	A
Approach Delay (s)	0.0		0.3		98.9		0.0
Approach LOS					F		A

Intersection Summary			
Average Delay	19.9		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
21: Alessandro Blvd & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	210	120	120	210	30	70	630	60	20	810	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3394		1805	3536		1805	3558		1805	3550	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3394		1805	3536		1805	3558		1805	3550	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	118	226	129	129	226	32	75	677	65	22	871	97
RTOR Reduction (vph)	0	106	0	0	15	0	0	7	0	0	9	0
Lane Group Flow (vph)	118	249	0	129	243	0	75	735	0	22	959	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.9	11.7		7.3	13.1		5.2	28.8		1.2	24.8	
Effective Green, g (s)	5.9	11.7		7.3	13.1		5.2	28.8		1.2	24.8	
Actuated g/C Ratio	0.09	0.18		0.11	0.20		0.08	0.44		0.02	0.38	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	164	611		203	713		144	1576		33	1354	
v/s Ratio Prot	0.07	c0.07		c0.07	0.07		c0.04	c0.21		0.01	c0.27	
v/s Ratio Perm												
v/c Ratio	0.72	0.41		0.64	0.34		0.52	0.47		0.67	0.71	
Uniform Delay, d1	28.7	23.6		27.6	22.2		28.7	12.7		31.7	17.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.0	0.4		6.4	0.3		3.4	0.2		40.8	1.7	
Delay (s)	42.8	24.0		33.9	22.5		32.1	12.9		72.5	18.8	
Level of Service	D	C		C	C		C	B		E	B	
Approach Delay (s)		28.7			26.3			14.7			20.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
23: Alessandro Blvd & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	70	10	20	10	10	10	90	370	10	10	190	260
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	74	11	21	11	11	11	95	389	11	11	200	274

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	74	32	32	484	11	111	374
Volume Left (vph)	74	0	11	95	0	11	0
Volume Right (vph)	0	21	11	0	11	0	274
Hadj (s)	0.50	-0.47	-0.13	0.10	-0.70	0.05	-0.51
Departure Headway (s)	7.3	6.4	6.8	5.6	4.8	5.6	5.0
Degree Utilization, x	0.15	0.06	0.06	0.75	0.01	0.17	0.52
Capacity (veh/h)	448	509	466	632	722	623	704
Control Delay (s)	10.4	8.5	10.3	22.1	6.6	8.5	12.0
Approach Delay (s)	9.9		10.3	21.8		11.2	
Approach LOS	A		B	C		B	

Intersection Summary			
Delay	15.8		
HCM Level of Service	C		
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
24: Cactus Ave & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	310	160	80	300	30	100	200	40	30	140	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97		1.00	0.98		1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Frt	1.00	0.95		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00		0.99	
Satd. Flow (prot)	1805	3394		1805	1900	1570		1869	1589		1833	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.98	1.00		0.99	
Satd. Flow (perm)	1805	3394		1805	1900	1570		1869	1589		1833	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	344	178	89	333	33	111	222	44	33	156	44
RTOR Reduction (vph)	0	64	0	0	0	23	0	0	33	0	9	0
Lane Group Flow (vph)	11	458	0	89	333	10	0	333	11	0	224	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot		Perm	Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8			2			
Actuated Green, G (s)	1.0	19.3		5.2	23.5	23.5		18.9	18.9		15.2	
Effective Green, g (s)	1.0	19.3		5.2	23.5	23.5		18.9	18.9		15.2	
Actuated g/C Ratio	0.01	0.26		0.07	0.32	0.32		0.25	0.25		0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	24	878		126	599	495		474	403		373	
v/s Ratio Prot	0.01	0.14		c0.05	c0.18			c0.18			c0.12	
v/s Ratio Perm						0.01			0.01			
v/c Ratio	0.46	0.52		0.71	0.56	0.02		0.70	0.03		0.60	
Uniform Delay, d1	36.5	23.7		34.0	21.2	17.6		25.3	20.9		26.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	13.2	0.6		16.5	1.1	0.0		4.7	0.0		2.7	
Delay (s)	49.8	24.3		50.4	22.3	17.6		30.0	21.0		29.7	
Level of Service	D	C		D	C	B		C	C		C	
Approach Delay (s)		24.8			27.5			28.9			29.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	74.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Cactus Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	190	140	30	140	30	130	520	40	70	660	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3359		1805	3507		1805	3610	1595	1805	4996	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3359		1805	3507		1805	3610	1595	1805	4996	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	151	204	151	32	151	32	140	559	43	75	710	204
RTOR Reduction (vph)	0	114	0	0	26	0	0	0	26	0	51	0
Lane Group Flow (vph)	151	241	0	32	157	0	140	559	17	75	863	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.1	14.5		4.0	10.4		7.1	18.9	22.9	5.5	17.3	
Effective Green, g (s)	8.1	14.5		4.0	10.4		7.1	18.9	22.9	5.5	17.3	
Actuated g/C Ratio	0.14	0.25		0.07	0.18		0.12	0.32	0.39	0.09	0.29	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	248	827		123	619		218	1158	728	169	1467	
v/s Ratio Prot	c0.08	c0.07		0.02	0.04		c0.08	0.15	0.00	0.04	c0.17	
v/s Ratio Perm									0.01			
v/c Ratio	0.61	0.29		0.26	0.25		0.64	0.48	0.02	0.44	0.59	
Uniform Delay, d1	23.9	18.0		26.0	20.9		24.7	16.1	11.1	25.3	17.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.2	0.2		1.1	0.2		6.3	0.3	0.0	1.9	0.6	
Delay (s)	28.1	18.2		27.2	21.1		31.0	16.4	11.1	27.1	18.4	
Level of Service	C	B		C	C		C	B	B	C	B	
Approach Delay (s)		21.2			22.0			18.8			19.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
27: Cactus Ave & Redlands Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	150	30	60	420	80	160	70	210	130	70	180	90
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	160	32	64	447	85	170	74	223	138	74	191	96

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	176	80	702	186	250	170	191
Volume Left (vph)	160	0	447	74	0	74	0
Volume Right (vph)	0	64	170	0	138	0	96
Hadj (s)	0.45	-0.56	-0.02	0.20	-0.39	0.22	-0.35
Departure Headway (s)	8.6	7.6	7.5	8.2	7.6	8.3	7.7
Degree Utilization, x	0.42	0.17	1.46	0.42	0.53	0.39	0.41
Capacity (veh/h)	402	451	482	432	455	421	452
Control Delay (s)	16.6	11.0	238.9	15.8	17.5	15.4	14.9
Approach Delay (s)	14.8		238.9	16.8		15.1	
Approach LOS	B		F	C		C	

Intersection Summary			
Delay	105.0		
HCM Level of Service	F		
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
28: John F Kennedy Dr & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	60	40	390	90	90	20	420	240	140	640	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.93		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3376		1805	3316		1805	5187	1601	1805	5043	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3376		1805	3316		1805	5187	1601	1805	5043	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	97	65	43	419	97	97	22	452	258	151	688	140
RTOR Reduction (vph)	0	38	0	0	81	0	0	0	143	0	25	0
Lane Group Flow (vph)	97	70	0	419	113	0	22	452	115	151	803	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	6.9	6.6		9.4	9.1		1.1	14.5	23.9	7.3	20.7	
Effective Green, g (s)	6.9	6.6		9.4	9.1		1.1	14.5	23.9	7.3	20.7	
Actuated g/C Ratio	0.13	0.12		0.17	0.17		0.02	0.27	0.44	0.14	0.38	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	231	414		315	561		37	1398	830	245	1940	
v/s Ratio Prot	0.05	0.02		c0.23	c0.03		0.01	0.09	0.02	c0.08	c0.16	
v/s Ratio Perm									0.05			
v/c Ratio	0.42	0.17		1.33	0.20		0.59	0.32	0.14	0.62	0.41	
Uniform Delay, d1	21.6	21.1		22.2	19.2		26.1	15.7	8.9	21.9	12.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.2		168.8	0.2		23.1	0.1	0.1	4.6	0.1	
Delay (s)	22.8	21.3		191.0	19.4		49.2	15.9	8.9	26.5	12.3	
Level of Service	C	C		F	B		D	B	A	C	B	
Approach Delay (s)		22.1			136.7			14.4			14.4	
Approach LOS		C			F			B			B	

Intersection Summary			
HCM Average Control Delay	44.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
29: Ironwood Ave & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	450	160	150	360	80	220	900	150	60	720	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1601	1805	3501		1805	3610	1592	1805	3610	1595
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1601	1805	3501		1805	3610	1592	1805	3610	1595
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	216	464	165	155	371	82	227	928	155	62	742	216
RTOR Reduction (vph)	0	0	39	0	19	0	0	0	36	0	0	81
Lane Group Flow (vph)	216	464	126	155	434	0	227	928	119	62	742	135
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6
Actuated Green, G (s)	16.4	24.4	45.9	12.6	20.6		21.5	58.7	71.3	8.3	45.5	61.9
Effective Green, g (s)	16.4	24.4	45.9	12.6	20.6		21.5	58.7	71.3	8.3	45.5	61.9
Actuated g/C Ratio	0.14	0.20	0.38	0.10	0.17		0.18	0.49	0.59	0.07	0.38	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	247	734	666	190	601		323	1766	999	125	1369	876
v/s Ratio Prot	c0.12	c0.13	0.03	0.09	c0.12		c0.13	c0.26	0.01	0.03	0.21	0.02
v/s Ratio Perm			0.04						0.06			0.06
v/c Ratio	0.87	0.63	0.19	0.82	0.72		0.70	0.53	0.12	0.50	0.54	0.15
Uniform Delay, d1	50.8	43.7	24.7	52.6	47.0		46.2	21.1	10.6	53.8	29.1	15.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.99	1.17	1.13	1.00	1.00	1.00
Incremental Delay, d2	27.2	1.8	0.1	22.9	4.3		5.6	0.9	0.0	3.1	1.5	0.1
Delay (s)	77.9	45.5	24.8	75.4	51.3		51.6	25.6	12.0	56.9	30.7	15.4
Level of Service	E	D	C	E	D		D	C	B	E	C	B
Approach Delay (s)		49.7			57.4			28.5			29.0	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	38.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
30: SR-60 WB Ramps & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	250	10	170	590	1480	0	0	740	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	
Frpb, ped/bikes					1.00	0.98	1.00	1.00			0.99	
Flpb, ped/bikes					1.00	1.00	1.00	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.95	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1813	1587	1805	3610			3392	
Flt Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1813	1587	1805	3610			3392	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	266	11	181	628	1574	0	0	787	436
RTOR Reduction (vph)	0	0	0	0	0	34	0	0	0	0	63	0
Lane Group Flow (vph)	0	0	0	0	277	147	628	1574	0	0	1160	0
Confl. Peds. (#/hr)						5						5
Turn Type				Split		Perm	Prot					
Protected Phases				8	8		5	2			6	
Permitted Phases						8						
Actuated Green, G (s)					24.1	24.1	47.9	87.9			36.0	
Effective Green, g (s)					24.1	24.1	47.9	87.9			36.0	
Actuated g/C Ratio					0.20	0.20	0.40	0.73			0.30	
Clearance Time (s)					4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					364	319	720	2644			1018	
v/s Ratio Prot					c0.15		c0.35	0.44			c0.34	
v/s Ratio Perm						0.09						
v/c Ratio					0.76	0.46	0.87	0.60			1.14	
Uniform Delay, d1					45.2	42.2	33.2	7.6			42.0	
Progression Factor					1.00	1.00	1.00	1.00			0.73	
Incremental Delay, d2					9.1	1.1	11.3	1.0			73.8	
Delay (s)					54.3	43.3	44.5	8.6			104.5	
Level of Service					D	D	D	A			F	
Approach Delay (s)		0.0			50.0			18.9			104.5	
Approach LOS		A			D			B			F	

Intersection Summary			
HCM Average Control Delay	49.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	120.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
31: SR-60 EB Ramps & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	540	10	470	0	0	0	0	1340	460	190	870	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0		4.0	4.0	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.96		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1715	1722	1590					4950		1805	3610	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1715	1722	1590					4950		1805	3610	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	557	10	485	0	0	0	0	1381	474	196	897	0
RTOR Reduction (vph)	0	0	85	0	0	0	0	65	0	0	0	0
Lane Group Flow (vph)	284	283	400	0	0	0	0	1790	0	196	897	0
Confl. Peds. (#/hr)			5						5			
Turn Type	Split		Perm							Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	26.4	26.4	26.4					34.3		11.0	49.3	
Effective Green, g (s)	26.4	26.4	26.4					34.3		11.0	49.3	
Actuated g/C Ratio	0.32	0.32	0.32					0.41		0.13	0.59	
Clearance Time (s)	4.0	4.0	4.0					4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	541	543	502					2028		237	2126	
v/s Ratio Prot	0.17	0.16						c0.36		c0.11	0.25	
v/s Ratio Perm			c0.25									
v/c Ratio	0.52	0.52	0.80					0.88		0.83	0.42	
Uniform Delay, d1	23.5	23.5	26.2					22.8		35.4	9.4	
Progression Factor	1.00	1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.9	8.6					4.9		20.5	0.1	
Delay (s)	24.4	24.4	34.8					27.8		55.9	9.5	
Level of Service	C	C	C					C		E	A	
Approach Delay (s)		29.2			0.0			27.8			17.9	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	120.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
32: Sunnymead Blvd & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	660	610	600	70	110	480	180	1170	130	410	830	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.91		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.88		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1597	1805	3169		1805	5100		3502	3610	1598
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1597	1805	3169		1805	5100		3502	3610	1598
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	710	656	645	75	118	516	194	1258	140	441	892	140
RTOR Reduction (vph)	0	0	30	0	206	0	0	11	0	0	0	60
Lane Group Flow (vph)	710	656	615	75	428	0	194	1387	0	441	892	80
Confl. Peds. (#/hr)			5						5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	25.8	36.5	53.9	7.0	17.7		17.4	43.6		16.9	43.1	68.9
Effective Green, g (s)	25.8	36.5	53.9	7.0	17.7		17.4	43.6		16.9	43.1	68.9
Actuated g/C Ratio	0.22	0.30	0.45	0.06	0.15		0.14	0.36		0.14	0.36	0.57
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	753	1098	771	105	467		262	1853		493	1297	971
v/s Ratio Prot	c0.20	0.18	c0.12	0.04	0.13		0.11	c0.27		0.13	0.25	0.02
v/s Ratio Perm			0.27									0.03
v/c Ratio	0.94	0.60	0.80	0.71	1.16dr		0.74	0.75		0.89	0.69	0.08
Uniform Delay, d1	46.4	35.5	28.4	55.5	50.4		49.1	33.4		50.7	32.7	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.41	0.30		1.42	0.38	0.03
Incremental Delay, d2	20.0	0.9	5.8	20.5	22.5		6.9	1.8		13.9	2.1	0.0
Delay (s)	66.4	36.4	34.2	76.0	72.9		76.2	11.8		86.0	14.4	0.3
Level of Service	E	D	C	E	E		E	B		F	B	A
Approach Delay (s)		46.3			73.3			19.6			34.5	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
33: SR-60 WB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	170	10	170	620	1650	0	0	1170	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					1.00		0.97	0.95			0.91	
Frpb, ped/bikes					0.99		1.00	1.00			0.99	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.93		1.00	1.00			0.96	
Flt Protected					0.98		0.95	1.00			1.00	
Satd. Flow (prot)					1718		3502	3610			4971	
Flt Permitted					0.98		0.95	1.00			1.00	
Satd. Flow (perm)					1718		3502	3610			4971	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	175	10	175	639	1701	0	0	1206	392
RTOR Reduction (vph)	0	0	0	0	28	0	0	0	0	0	46	0
Lane Group Flow (vph)	0	0	0	0	332	0	639	1701	0	0	1552	0
Confl. Peds. (#/hr)						5						5
Turn Type				Split			Prot					
Protected Phases				8	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					27.0		30.0	85.0			51.0	
Effective Green, g (s)					27.0		30.0	85.0			51.0	
Actuated g/C Ratio					0.22		0.25	0.71			0.42	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					387		876	2557			2113	
v/s Ratio Prot					c0.19		c0.18	0.47			c0.31	
v/s Ratio Perm												
v/c Ratio					0.86		0.73	0.67			0.73	
Uniform Delay, d1					44.7		41.3	9.7			28.8	
Progression Factor					1.00		0.77	0.44			1.00	
Incremental Delay, d2					16.9		1.6	0.7			2.3	
Delay (s)					61.6		33.5	4.9			31.2	
Level of Service					E		C	A			C	
Approach Delay (s)		0.0			61.6			12.7			31.2	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
34: Eucalyptus Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	240	70	80	160	110	80	1280	70	170	1170	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1587	1805	1900	1587	1805	3610	1567	1805	3610	1566
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1587	1805	1900	1587	1805	3610	1567	1805	3610	1566
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	44	264	77	88	176	121	88	1407	77	187	1286	55
RTOR Reduction (vph)	0	0	41	0	0	97	0	0	15	0	0	10
Lane Group Flow (vph)	44	264	36	88	176	24	88	1407	62	187	1286	45
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.6	22.8	22.8	7.0	24.2	24.2	11.1	55.5	55.5	18.7	63.1	63.1
Effective Green, g (s)	5.6	22.8	22.8	7.0	24.2	24.2	11.1	55.5	55.5	18.7	63.1	63.1
Actuated g/C Ratio	0.05	0.19	0.19	0.06	0.20	0.20	0.09	0.46	0.46	0.16	0.53	0.53
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	84	361	302	105	383	320	167	1670	725	281	1898	823
v/s Ratio Prot	0.02	c0.14		c0.05	0.09		0.05	c0.39		c0.10	0.36	
v/s Ratio Perm			0.02			0.02			0.04			0.03
v/c Ratio	0.52	0.73	0.12	0.84	0.46	0.08	0.53	0.84	0.09	0.67	0.68	0.05
Uniform Delay, d1	55.9	45.7	40.3	55.9	42.1	38.8	51.9	28.4	18.1	47.7	21.0	13.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.71
Incremental Delay, d2	5.8	7.4	0.2	41.2	0.9	0.1	3.0	5.4	0.2	3.8	1.3	0.1
Delay (s)	61.7	53.2	40.4	97.2	43.0	38.9	54.9	33.8	18.3	50.3	21.5	10.0
Level of Service	E	D	D	F	D	D	D	C	B	D	C	A
Approach Delay (s)		51.6			54.1			34.2			24.6	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
35: Locust Ave & Moreno Beach Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	10	180	10	10	280
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	10	10	188	10	10	292
Pedestrians	5			5		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			21		406	21
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			21		406	21
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		98	72
cM capacity (veh/h)			1608		532	1058

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	21	198	10	292
Volume Left	0	188	10	0
Volume Right	10	0	0	292
cSH	1700	1608	532	1058
Volume to Capacity	0.01	0.12	0.02	0.28
Queue Length 95th (ft)	0	10	1	28
Control Delay (s)	0.0	7.2	11.9	9.7
Lane LOS		A	B	A
Approach Delay (s)	0.0	7.2	9.8	
Approach LOS			A	

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	27.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
36: Ironwood Ave & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	100	180	150	100	10	130	280	130	0	200	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.90		1.00	0.99			0.97			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1805	1679		1805	1869			1802			1858	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (perm)	1805	1679		1805	1869			1802			1858	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	52	103	186	155	103	10	134	289	134	0	206	31
RTOR Reduction (vph)	0	51	0	0	3	0	0	10	0	0	5	0
Lane Group Flow (vph)	52	238	0	155	110	0	0	547	0	0	232	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	6.9	32.5		12.9	38.5			39.7			18.9	
Effective Green, g (s)	6.9	32.5		12.9	38.5			39.7			18.9	
Actuated g/C Ratio	0.06	0.27		0.11	0.32			0.33			0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	104	455		194	600			596			293	
v/s Ratio Prot	0.03	c0.14		c0.09	0.06			c0.30			c0.12	
v/s Ratio Perm												
v/c Ratio	0.50	0.52		0.80	0.18			0.92			0.79	
Uniform Delay, d1	54.9	37.2		52.3	29.4			38.6			48.7	
Progression Factor	1.00	1.00		1.14	0.66			1.00			1.05	
Incremental Delay, d2	3.7	4.3		20.0	0.7			19.0			13.5	
Delay (s)	58.6	41.4		79.5	20.1			57.6			64.7	
Level of Service	E	D		E	C			E			E	
Approach Delay (s)		44.0			54.5			57.6			64.7	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	54.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
37: SR-60 EB Ramps & Moreno Beach Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	50	820	40	20	490	100	670	20	250	510	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	
Frpb, ped/bikes		1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93	
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1828	2797	1805	1900	1589	1805	3610	1570	1805	4783	
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1828	2797	1805	1900	1589	1805	3610	1570	1805	4783	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	196	52	845	41	21	505	103	691	21	258	526	412
RTOR Reduction (vph)	0	0	632	0	0	277	0	0	16	0	113	0
Lane Group Flow (vph)	0	248	213	41	21	228	103	691	5	258	825	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		22.6	22.6	18.3	18.3	18.3	9.5	23.1	23.1	9.6	23.2	
Effective Green, g (s)		22.6	22.6	18.3	18.3	18.3	9.5	23.1	23.1	9.6	23.2	
Actuated g/C Ratio		0.25	0.25	0.20	0.20	0.20	0.11	0.26	0.26	0.11	0.26	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		461	705	369	388	325	191	931	405	193	1238	
v/s Ratio Prot		c0.14		0.02	0.01		0.06	c0.19		c0.14	0.17	
v/s Ratio Perm			0.08			c0.14			0.00			
v/c Ratio		0.54	0.30	0.11	0.05	0.70	0.54	0.74	0.01	1.34	0.67	
Uniform Delay, d1		29.0	27.1	29.0	28.7	33.1	38.0	30.5	24.8	40.0	29.7	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.2	0.2	0.1	0.1	6.7	2.9	3.2	0.0	182.3	1.4	
Delay (s)		30.2	27.4	29.2	28.7	39.8	40.9	33.7	24.8	222.3	31.1	
Level of Service		C	C	C	C	D	D	C	C	F	C	
Approach Delay (s)		28.0			38.6			34.4			72.4	
Approach LOS		C			D			C			E	

Intersection Summary			
HCM Average Control Delay	45.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	89.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
38: John Kennedy Dr & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	580	270	230	260	90	130	1100	180	180	1000	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3419		1805	3456		1805	3610	1587	1805	3610	1586
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3419		1805	3456		1805	3610	1587	1805	3610	1586
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	156	644	300	256	289	100	144	1222	200	200	1111	78
RTOR Reduction (vph)	0	46	0	0	29	0	0	0	103	0	0	41
Lane Group Flow (vph)	156	898	0	256	360	0	144	1222	97	200	1111	37
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	12.6	35.1		15.0	37.5		11.7	40.0	40.0	13.9	42.2	42.2
Effective Green, g (s)	12.6	35.1		15.0	37.5		11.7	40.0	40.0	13.9	42.2	42.2
Actuated g/C Ratio	0.10	0.29		0.12	0.31		0.10	0.33	0.33	0.12	0.35	0.35
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	190	1000		226	1080		176	1203	529	209	1270	558
v/s Ratio Prot	0.09	c0.26		c0.14	0.10		0.08	c0.34		c0.11	0.31	
v/s Ratio Perm									0.06			0.02
v/c Ratio	0.82	0.90		1.13	0.33		0.82	1.02	0.18	0.96	0.87	0.07
Uniform Delay, d1	52.6	40.7		52.5	31.7		53.1	40.0	28.4	52.8	36.4	25.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.34	0.58	0.14
Incremental Delay, d2	23.9	10.6		100.2	0.2		24.6	29.9	0.8	29.6	3.9	0.1
Delay (s)	76.5	51.3		152.7	31.8		77.7	69.9	29.2	100.3	25.2	3.6
Level of Service	E	D		F	C		E	E	C	F	C	A
Approach Delay (s)		54.9			79.8			65.5			34.8	
Approach LOS		D			E			E			C	

Intersection Summary			
HCM Average Control Delay	55.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
39: Iris Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	440	170	130	310	180	160	920	160	370	830	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3443		1805	3389		1805	5187	1587	1805	5147	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3443		1805	3389		1805	5187	1587	1805	5147	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	175	454	175	134	320	186	165	948	165	381	856	41
RTOR Reduction (vph)	0	38	0	0	78	0	0	0	85	0	3	0
Lane Group Flow (vph)	175	591	0	134	428	0	165	948	80	381	894	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	12.0	26.5		9.0	23.5		16.2	37.3	37.3	31.2	52.3	
Effective Green, g (s)	12.0	26.5		9.0	23.5		16.2	37.3	37.3	31.2	52.3	
Actuated g/C Ratio	0.10	0.22		0.08	0.20		0.13	0.31	0.31	0.26	0.44	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	181	760		135	664		244	1612	493	469	2243	
v/s Ratio Prot	c0.10	c0.17		0.07	0.13		0.09	c0.18		c0.21	0.17	
v/s Ratio Perm									0.05			
v/c Ratio	0.97	0.78		0.99	0.64		0.68	0.59	0.16	0.81	0.40	
Uniform Delay, d1	53.8	44.0		55.5	44.4		49.4	34.9	30.0	41.7	23.1	
Progression Factor	1.00	1.00		1.00	1.00		1.33	0.31	0.01	1.00	1.00	
Incremental Delay, d2	56.6	5.0		74.9	2.2		0.7	0.1	0.1	10.3	0.5	
Delay (s)	110.4	49.0		130.4	46.6		66.2	11.1	0.4	52.0	23.6	
Level of Service	F	D		F	D		E	B	A	D	C	
Approach Delay (s)		62.4			64.1			16.8			32.1	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM Average Control Delay	38.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
40: Iris Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	730	170	350	590	70	100	130	410	60	170	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.89		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3497		1805	3610	1593	1805	3164		1805	3420	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3497		1805	3610	1593	1805	3164		1805	3420	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	768	179	368	621	74	105	137	432	63	179	84
RTOR Reduction (vph)	0	17	0	0	0	36	0	224	0	0	71	0
Lane Group Flow (vph)	63	930	0	368	621	38	105	345	0	63	192	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot		pm+ov	Prot			Prot		
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	6.1	28.1		10.3	32.3	37.5	7.4	13.2		5.2	11.0	
Effective Green, g (s)	6.1	28.1		10.3	32.3	37.5	7.4	13.2		5.2	11.0	
Actuated g/C Ratio	0.08	0.39		0.14	0.44	0.52	0.10	0.18		0.07	0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	151	1350		255	1602	908	183	574		129	517	
v/s Ratio Prot	0.03	c0.27		c0.20	0.17	0.00	c0.06	c0.11		0.03	0.06	
v/s Ratio Perm						0.02						
v/c Ratio	0.42	0.69		1.44	0.39	0.04	0.57	0.60		0.49	0.37	
Uniform Delay, d1	31.7	18.7		31.2	13.6	8.7	31.2	27.4		32.5	27.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	1.5		220.2	0.2	0.0	4.3	1.8		2.9	0.5	
Delay (s)	33.5	20.2		251.5	13.8	8.8	35.5	29.2		35.4	28.2	
Level of Service	C	C		F	B	A	D	C		D	C	
Approach Delay (s)		21.0			95.7			30.1			29.6	
Approach LOS		C			F			C			C	

Intersection Summary			
HCM Average Control Delay	49.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
41: Iris Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	590	390	880	660	110	270	580	520	300	730	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	4847		3502	5064		3502	3610	1598	3502	3544	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	4847		3502	5064		3502	3610	1598	3502	3544	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	177	615	406	917	688	115	281	604	542	312	760	94
RTOR Reduction (vph)	0	103	0	0	20	0	0	0	28	0	8	0
Lane Group Flow (vph)	177	918	0	917	783	0	281	604	514	312	846	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	9.8	26.1		15.3	31.6		10.2	32.1	47.4	8.2	30.1	
Effective Green, g (s)	9.8	26.1		15.3	31.6		10.2	32.1	47.4	8.2	30.1	
Actuated g/C Ratio	0.10	0.27		0.16	0.32		0.10	0.33	0.49	0.08	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	351	1295		548	1638		366	1186	841	294	1092	
v/s Ratio Prot	0.05	c0.19		c0.26	0.15		0.08	0.17	0.10	c0.09	c0.24	
v/s Ratio Perm									0.23			
v/c Ratio	0.50	0.71		1.67	0.48		0.77	0.51	0.61	1.06	0.77	
Uniform Delay, d1	41.6	32.4		41.2	26.5		42.6	26.4	18.4	44.8	30.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	1.8		311.0	0.2		9.3	0.3	1.3	69.6	3.5	
Delay (s)	42.8	34.2		352.2	26.7		51.9	26.8	19.7	114.3	34.2	
Level of Service	D	C		F	C		D	C	B	F	C	
Approach Delay (s)		35.4			200.2			29.1			55.6	
Approach LOS		D			F			C			E	

Intersection Summary			
HCM Average Control Delay	89.5	HCM Level of Service	F
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	97.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
42: Iris Ave & Nason St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	270	770	1160	60	60	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00		0.99	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		0.89	0.85
Flt Protected	0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)	1805	5187	5142		1646	1525
Flt Permitted	0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)	1805	5187	5142		1646	1525
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	293	837	1261	65	65	457
RTOR Reduction (vph)	0	0	7	0	166	1
Lane Group Flow (vph)	293	837	1319	0	100	255
Confl. Peds. (#/hr)				5	5	5
Turn Type	Prot					pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases						6
Actuated Green, G (s)	12.5	34.6	18.1		8.9	21.4
Effective Green, g (s)	12.5	34.6	18.1		8.9	21.4
Actuated g/C Ratio	0.24	0.67	0.35		0.17	0.42
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	438	3485	1807		284	752
v/s Ratio Prot	c0.16	0.16	c0.26		0.06	c0.08
v/s Ratio Perm						0.09
v/c Ratio	0.67	0.24	0.73		0.35	0.34
Uniform Delay, d1	17.6	3.3	14.6		18.8	10.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.9	0.0	1.5		0.8	0.3
Delay (s)	21.5	3.3	16.1		19.5	10.5
Level of Service	C	A	B		B	B
Approach Delay (s)		8.0	16.1		15.1	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
43: Iris Ave & Oliver St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	760	40	70	910	10	40	20	30	10	60	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.95			0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1805	5141		1805	5177			1766			1697	
Flt Permitted	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (perm)	1805	5141		1805	5177			1766			1697	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	202	809	43	74	968	11	43	21	32	11	64	181
RTOR Reduction (vph)	0	4	0	0	1	0	0	19	0	0	85	0
Lane Group Flow (vph)	202	848	0	74	978	0	0	77	0	0	171	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	7.5	23.3		5.2	21.0			6.8			12.0	
Effective Green, g (s)	7.5	23.3		5.2	21.0			6.8			12.0	
Actuated g/C Ratio	0.12	0.37		0.08	0.33			0.11			0.19	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	214	1892		148	1717			190			322	
v/s Ratio Prot	c0.11	0.16		0.04	c0.19			c0.04			c0.10	
v/s Ratio Perm												
v/c Ratio	0.94	0.45		0.50	0.57			0.41			0.53	
Uniform Delay, d1	27.7	15.1		27.8	17.4			26.4			23.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	45.6	0.2		2.6	0.4			1.4			1.7	
Delay (s)	73.3	15.3		30.5	17.9			27.8			24.8	
Level of Service	E	B		C	B			C			C	
Approach Delay (s)		26.4			18.7			27.8			24.8	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
44: Iris Ave & Via Del Lago

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	730	40	40	880	0	40	10	40	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5143		1805	5187		1805	1900	1607	1805	1746	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	5143		1805	5187		1805	1900	1607	1805	1746	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	22	785	43	43	946	0	43	11	43	11	11	11
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	37	0	11	0
Lane Group Flow (vph)	22	824	0	43	946	0	43	11	6	11	11	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	0.9	22.6		4.0	25.7		2.1	2.2	6.2	0.9	1.0	
Effective Green, g (s)	0.9	22.6		4.0	25.7		2.1	2.2	6.2	0.9	1.0	
Actuated g/C Ratio	0.02	0.49		0.09	0.56		0.05	0.05	0.14	0.02	0.02	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	36	2543		158	2917		83	91	359	36	38	
v/s Ratio Prot	0.01	0.16		c0.02	c0.18		c0.02	0.01	0.00	0.01	c0.01	
v/s Ratio Perm									0.00			
v/c Ratio	0.61	0.32		0.27	0.32		0.52	0.12	0.02	0.31	0.30	
Uniform Delay, d1	22.2	7.0		19.5	5.4		21.3	20.8	17.1	22.1	22.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	27.0	0.1		0.9	0.1		5.4	0.6	0.0	4.8	4.3	
Delay (s)	49.2	7.0		20.4	5.4		26.7	21.4	17.1	26.9	26.3	
Level of Service	D	A		C	A		C	C	B	C	C	
Approach Delay (s)		8.1			6.1			21.8			26.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	45.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
45: Krameria Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	500	240	250	240	130	110	920	270	180	760	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes		0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.96		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1800		1805	1900	1587	1805	3473		1805	1900	1555
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1800		1805	1900	1587	1805	3473		1805	1900	1555
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	526	253	263	253	137	116	968	284	189	800	74
RTOR Reduction (vph)	0	13	0	0	0	92	0	23	0	0	0	30
Lane Group Flow (vph)	0	840	0	263	253	45	116	1229	0	189	800	44
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)		31.0		24.1	24.1	24.1	12.8	34.0		14.9	36.1	36.1
Effective Green, g (s)		31.0		24.1	24.1	24.1	12.8	34.0		14.9	36.1	36.1
Actuated g/C Ratio		0.26		0.20	0.20	0.20	0.11	0.28		0.12	0.30	0.30
Clearance Time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		465		363	382	319	193	984		224	572	468
v/s Ratio Prot		c0.47		c0.15	0.13		0.06	0.35		c0.10	c0.42	
v/s Ratio Perm						0.03						0.03
v/c Ratio		1.81		0.72	0.66	0.14	0.60	1.25		0.84	1.40	0.09
Uniform Delay, d1		44.5		44.8	44.2	39.4	51.2	43.0		51.4	42.0	30.2
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		0.87	1.21	1.61
Incremental Delay, d2		371.8		7.0	4.3	0.2	5.2	120.6		21.8	188.6	0.4
Delay (s)		416.3		51.9	48.5	39.6	56.4	163.6		66.5	239.2	49.0
Level of Service		F		D	D	D	E	F		E	F	D
Approach Delay (s)		416.3			48.0			154.5			195.3	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	204.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	120.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
46: Krameria Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	510	210	160	70	100	80	100	700	40	170	780	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.93		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3351		1805	3345		1805	3578		1805	3424	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3351		1805	3345		1805	3578		1805	3424	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	548	226	172	75	108	86	108	753	43	183	839	376
RTOR Reduction (vph)	0	114	0	0	78	0	0	3	0	0	40	0
Lane Group Flow (vph)	548	284	0	75	116	0	108	793	0	183	1175	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	32.0	33.9		7.8	9.7		7.0	31.0		11.0	35.0	
Effective Green, g (s)	32.0	33.9		7.8	9.7		7.0	31.0		11.0	35.0	
Actuated g/C Ratio	0.32	0.34		0.08	0.10		0.07	0.31		0.11	0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	579	1139		141	325		127	1113		199	1202	
v/s Ratio Prot	c0.30	0.08		0.04	c0.03		0.06	0.22		c0.10	c0.34	
v/s Ratio Perm												
v/c Ratio	0.95	0.25		0.53	0.36		0.85	0.71		0.92	0.98	
Uniform Delay, d1	33.0	23.7		44.2	42.1		45.8	30.4		43.9	32.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	24.6	0.1		3.8	0.7		38.8	2.2		41.3	20.6	
Delay (s)	57.6	23.8		48.0	42.8		84.7	32.6		85.2	52.5	
Level of Service	E	C		D	D		F	C		F	D	
Approach Delay (s)		43.4			44.2			38.8			56.8	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM Average Control Delay	47.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	99.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
47: Krameria Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	70	140	30	40	10	90	530	20	20	650	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.90		1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3502	3217		1805	3500		1805	3610	1615	1805	3499	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3502	3217		1805	3500		1805	3610	1615	1805	3499	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	202	74	149	32	43	11	96	564	21	21	691	160
RTOR Reduction (vph)	0	126	0	0	10	0	0	0	10	0	18	0
Lane Group Flow (vph)	202	97	0	32	44	0	96	564	11	21	833	0
Confl. Peds. (#/hr)			5									5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.5	8.8		3.5	3.8		5.8	26.9	30.4	1.1	22.2	
Effective Green, g (s)	8.5	8.8		3.5	3.8		5.8	26.9	30.4	1.1	22.2	
Actuated g/C Ratio	0.15	0.16		0.06	0.07		0.10	0.48	0.54	0.02	0.39	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	529	503		112	236		186	1725	987	35	1380	
v/s Ratio Prot	c0.06	c0.03		0.02	0.01		c0.05	0.16	0.00	0.01	c0.24	
v/s Ratio Perm									0.01			
v/c Ratio	0.38	0.19		0.29	0.19		0.52	0.33	0.01	0.60	0.60	
Uniform Delay, d1	21.5	20.7		25.2	24.8		23.9	9.1	6.0	27.4	13.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.2		1.4	0.4		2.4	0.1	0.0	24.7	0.8	
Delay (s)	22.0	20.9		26.6	25.2		26.3	9.2	6.0	52.1	14.3	
Level of Service	C	C		C	C		C	A	A	D	B	
Approach Delay (s)		21.4			25.7			11.5			15.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
48: Alessandro Blvd & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	640	150	20	600	50	130	220	10	50	210	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1588	1805	3610	1589	3502	1887		1805	3371	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1588	1805	3610	1589	3502	1887		1805	3371	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	214	653	153	20	612	51	133	224	10	51	214	143
RTOR Reduction (vph)	0	0	52	0	0	25	0	2	0	0	117	0
Lane Group Flow (vph)	214	653	101	20	612	26	133	232	0	51	240	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot			Prot		
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	20.7	71.5	79.3	3.3	54.1	61.8	7.8	21.5		7.7	21.4	
Effective Green, g (s)	20.7	71.5	79.3	3.3	54.1	61.8	7.8	21.5		7.7	21.4	
Actuated g/C Ratio	0.17	0.60	0.66	0.03	0.45	0.51	0.06	0.18		0.06	0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	311	2151	1102	50	1628	818	228	338		116	601	
v/s Ratio Prot	c0.12	0.18	0.01	0.01	c0.17	0.00	0.04	c0.12		0.03	c0.07	
v/s Ratio Perm			0.06			0.01						
v/c Ratio	0.69	0.30	0.09	0.40	0.38	0.03	0.58	0.69		0.44	0.40	
Uniform Delay, d1	46.6	12.0	7.3	57.4	21.8	14.4	54.5	46.1		54.1	43.6	
Progression Factor	1.12	0.25	0.50	1.00	1.00	1.00	0.74	0.76		1.00	1.00	
Incremental Delay, d2	4.3	0.2	0.0	5.2	0.7	0.0	3.7	5.6		2.7	0.4	
Delay (s)	56.3	3.3	3.7	62.6	22.5	14.4	43.7	40.5		56.7	44.0	
Level of Service	E	A	A	E	C	B	D	D		E	D	
Approach Delay (s)		14.5			23.0			41.6			45.6	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
49: Alessandro Blvd & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	440	260	120	350	10	260	400	90	20	330	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1590	1805	1900	1579	1805	1900	1583	1805	1864	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1590	1805	1900	1579	1805	1900	1583	1805	1864	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	62	458	271	125	365	10	271	417	94	21	344	42
RTOR Reduction (vph)	0	0	92	0	0	3	0	0	57	0	5	0
Lane Group Flow (vph)	62	458	179	125	365	7	271	417	37	21	381	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	5.9	25.5	25.5	7.2	26.8	34.0	10.3	25.0	32.2	7.2	21.9	
Effective Green, g (s)	5.9	25.5	25.5	7.2	26.8	34.0	10.3	25.0	32.2	7.2	21.9	
Actuated g/C Ratio	0.07	0.32	0.32	0.09	0.33	0.42	0.13	0.31	0.40	0.09	0.27	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	132	599	501	161	629	742	230	587	708	161	505	
v/s Ratio Prot	0.03	c0.24		c0.07	0.19	0.00	c0.15	c0.22	0.00	0.01	0.20	
v/s Ratio Perm			0.11			0.00			0.02			
v/c Ratio	0.47	0.76	0.36	0.78	0.58	0.01	1.18	0.71	0.05	0.13	0.75	
Uniform Delay, d1	36.0	25.0	21.4	36.1	22.4	13.6	35.3	24.7	15.0	34.0	27.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	5.8	0.4	20.6	1.4	0.0	116.0	4.0	0.0	0.4	6.3	
Delay (s)	38.6	30.8	21.8	56.6	23.8	13.7	151.3	28.8	15.0	34.3	33.3	
Level of Service	D	C	C	E	C	B	F	C	B	C	C	
Approach Delay (s)		28.3			31.8			69.6			33.4	
Approach LOS		C			C			E			C	

Intersection Summary			
HCM Average Control Delay	42.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	80.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
50: Alessandro Blvd & Morrison St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	150	430	410	50	90	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1900	3610	1577	1805	1605
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1900	3610	1577	1805	1605
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	453	432	53	95	95
RTOR Reduction (vph)	0	0	0	39	0	54
Lane Group Flow (vph)	158	453	432	14	95	41
Confl. Peds. (#/hr)				5	5	5
Turn Type	Prot			Perm		pm+ov
Protected Phases	7	4	8		6	7
Permitted Phases				8		6
Actuated Green, G (s)	8.9	23.2	10.3	10.3	8.0	16.9
Effective Green, g (s)	8.9	23.2	10.3	10.3	8.0	16.9
Actuated g/C Ratio	0.23	0.59	0.26	0.26	0.20	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	410	1124	949	414	368	856
v/s Ratio Prot	0.09	c0.24	0.12		c0.05	0.01
v/s Ratio Perm				0.01		0.01
v/c Ratio	0.39	0.40	0.46	0.03	0.26	0.05
Uniform Delay, d1	12.8	4.3	12.1	10.7	13.1	6.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.3	0.0	0.4	0.0
Delay (s)	13.4	4.5	12.4	10.8	13.5	6.5
Level of Service	B	A	B	B	B	A
Approach Delay (s)		6.8	12.3		10.0	
Approach LOS		A	B		A	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	39.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
51: Alessandro Blvd & Nason St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	330	70	130	260	270	100	620	200	170	530	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1589	1805	1900	1590	1805	3465		1805	3610	1572
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1589	1805	1900	1590	1805	3465		1805	3610	1572
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	359	76	141	283	293	109	674	217	185	576	43
RTOR Reduction (vph)	0	0	56	0	0	189	0	31	0	0	0	28
Lane Group Flow (vph)	76	359	20	141	283	104	109	860	0	185	576	15
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	5.3	22.6	22.6	10.3	27.6	27.6	8.7	26.2		10.2	27.7	27.7
Effective Green, g (s)	5.3	22.6	22.6	10.3	27.6	27.6	8.7	26.2		10.2	27.7	27.7
Actuated g/C Ratio	0.06	0.26	0.26	0.12	0.32	0.32	0.10	0.31		0.12	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	112	503	421	218	615	514	184	1064		216	1172	510
v/s Ratio Prot	0.04	c0.19		c0.08	0.15		0.06	c0.25		c0.10	0.16	
v/s Ratio Perm			0.01			0.07						0.01
v/c Ratio	0.68	0.71	0.05	0.65	0.46	0.20	0.59	0.81		0.86	0.49	0.03
Uniform Delay, d1	39.2	28.4	23.3	35.8	22.9	20.9	36.6	27.2		36.8	23.1	19.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.1	4.8	0.0	6.5	0.5	0.2	5.0	4.6		26.7	0.3	0.0
Delay (s)	54.3	33.2	23.4	42.2	23.5	21.1	41.6	31.8		63.6	23.5	19.7
Level of Service	D	C	C	D	C	C	D	C		E	C	B
Approach Delay (s)		34.9			26.2			32.9			32.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	85.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
52: Cactus Ave & Kitching St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	600	170	40	520	60	90	240	10	50	290	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3477		1805	3547		1805	3586		1805	1900	1585
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3477		1805	3547		1805	3586		1805	1900	1585
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	93	619	175	41	536	62	93	247	10	52	299	72
RTOR Reduction (vph)	0	17	0	0	6	0	0	3	0	0	0	57
Lane Group Flow (vph)	93	777	0	41	592	0	93	254	0	52	299	15
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	11.5	60.6		7.1	56.2		11.1	28.8		7.5	25.2	25.2
Effective Green, g (s)	11.5	60.6		7.1	56.2		11.1	28.8		7.5	25.2	25.2
Actuated g/C Ratio	0.10	0.51		0.06	0.47		0.09	0.24		0.06	0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	173	1756		107	1661		167	861		113	399	333
v/s Ratio Prot	c0.05	c0.22		0.02	0.17		c0.05	c0.07		0.03	c0.16	
v/s Ratio Perm												0.01
v/c Ratio	0.54	0.44		0.38	0.36		0.56	0.29		0.46	0.75	0.05
Uniform Delay, d1	51.7	18.9		54.3	20.4		52.1	37.3		54.3	44.4	37.8
Progression Factor	1.33	0.32		0.85	0.98		1.00	1.00		0.86	0.96	0.89
Incremental Delay, d2	1.8	0.5		2.1	0.5		4.0	0.2		2.9	7.5	0.1
Delay (s)	70.8	6.6		48.3	20.5		56.1	37.5		49.8	49.9	33.5
Level of Service	E	A		D	C		E	D		D	D	C
Approach Delay (s)		13.3			22.3			42.4			47.1	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	26.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
53: Cactus Ave & Lasselle St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	380	150	560	470	160	110	620	530	160	470	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3439		1805	3457		1805	3610	1586	1805	3585	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3439		1805	3457		1805	3610	1586	1805	3585	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	413	163	609	511	174	120	674	576	174	511	22
RTOR Reduction (vph)	0	35	0	0	27	0	0	0	402	0	2	0
Lane Group Flow (vph)	43	541	0	609	659	0	120	674	174	174	531	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	5.6	29.9		35.7	60.0		10.6	28.4	28.4	10.0	27.8	
Effective Green, g (s)	5.6	29.9		35.7	60.0		10.6	28.4	28.4	10.0	27.8	
Actuated g/C Ratio	0.05	0.25		0.30	0.50		0.09	0.24	0.24	0.08	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	84	857		537	1729		159	854	375	150	831	
v/s Ratio Prot	0.02	c0.16		c0.34	0.19		0.07	c0.19		c0.10	0.15	
v/s Ratio Perm									0.11			
v/c Ratio	0.51	0.63		1.13	0.38		0.75	0.79	0.47	1.16	0.64	
Uniform Delay, d1	55.9	40.1		42.1	18.5		53.4	43.0	39.3	55.0	41.6	
Progression Factor	1.01	0.65		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.8	3.2		81.4	0.6		18.2	4.9	0.9	122.9	1.6	
Delay (s)	61.5	29.3		123.5	19.2		71.7	47.9	40.2	177.9	43.2	
Level of Service	E	C		F	B		E	D	D	F	D	
Approach Delay (s)		31.6			68.3			46.7			76.4	
Approach LOS		C			E			D			E	

Intersection Summary			
HCM Average Control Delay	56.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
55: Cactus Ave & Nason St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	420	260	240	70	260	130	180	100	60	160	160	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.95		1.00	0.94		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3326		1805	3412		1805	3385		1805	3162	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3326		1805	3412		1805	3385		1805	3162	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	488	302	279	81	302	151	209	116	70	186	186	570
RTOR Reduction (vph)	0	149	0	0	63	0	0	58	0	0	428	0
Lane Group Flow (vph)	488	432	0	81	390	0	209	128	0	186	328	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	26.3	34.7		7.4	15.8		10.1	14.3		10.1	14.3	
Effective Green, g (s)	26.3	34.7		7.4	15.8		10.1	14.3		10.1	14.3	
Actuated g/C Ratio	0.32	0.42		0.09	0.19		0.12	0.17		0.12	0.17	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	575	1399		162	653		221	587		221	548	
v/s Ratio Prot	c0.27	0.13		0.04	c0.11		c0.12	0.04		0.10	c0.10	
v/s Ratio Perm												
v/c Ratio	0.85	0.31		0.50	0.60		0.95	0.22		0.84	0.60	
Uniform Delay, d1	26.2	15.9		35.8	30.4		35.9	29.3		35.4	31.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.2	0.1		2.4	1.5		45.1	0.2		24.1	1.8	
Delay (s)	37.5	16.0		38.2	31.9		81.0	29.5		59.5	33.2	
Level of Service	D	B		D	C		F	C		E	C	
Approach Delay (s)		25.8			32.9			56.7			38.4	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM Average Control Delay	35.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	82.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
56: Alessandro Blvd & Frederick St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	300	1260	150	100	1540	310	250	740	70	280	480	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1586	1805	5042		3502	3558		3502	3610	1589
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1586	1805	5042		3502	3558		3502	3610	1589
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	323	1355	161	108	1656	333	269	796	75	301	516	204
RTOR Reduction (vph)	0	0	73	0	25	0	0	6	0	0	0	143
Lane Group Flow (vph)	323	1355	88	108	1964	0	269	865	0	301	516	61
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	19.9	49.1	49.1	10.8	40.0		8.0	36.1		8.0	36.1	36.1
Effective Green, g (s)	19.9	49.1	49.1	10.8	40.0		8.0	36.1		8.0	36.1	36.1
Actuated g/C Ratio	0.17	0.41	0.41	0.09	0.33		0.07	0.30		0.07	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	299	1477	649	162	1681		233	1070		233	1086	478
v/s Ratio Prot	c0.18	0.38		0.06	c0.39		0.08	c0.24		c0.09	0.14	
v/s Ratio Perm			0.06									0.04
v/c Ratio	1.08	0.92	0.14	0.67	1.17		1.15	0.81		1.29	0.48	0.13
Uniform Delay, d1	50.0	33.5	22.2	52.9	40.0		56.0	38.8		56.0	34.2	30.5
Progression Factor	1.25	0.44	0.07	1.12	0.65		0.96	0.99		1.00	1.00	1.00
Incremental Delay, d2	69.1	8.6	0.3	3.7	78.2		102.6	3.9		159.5	0.3	0.1
Delay (s)	131.8	23.3	1.8	63.0	104.2		156.3	42.3		215.5	34.6	30.6
Level of Service	F	C	A	E	F		F	D		F	C	C
Approach Delay (s)		40.5			102.1			69.2			87.1	
Approach LOS		D			F			E			F	

Intersection Summary			
HCM Average Control Delay	74.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
57: Alessandro Blvd & Graham St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1360	210	240	1540	190	330	530	170	160	200	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1585	1805	5091		1805	3465		1805	3511	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1585	1805	5091		1805	3465		1805	3511	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	1432	221	253	1621	200	347	558	179	168	211	42
RTOR Reduction (vph)	0	0	97	0	12	0	0	29	0	0	16	0
Lane Group Flow (vph)	84	1432	124	253	1809	0	347	708	0	168	237	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	10.8	39.0	39.0	22.2	50.4		14.0	31.8		11.0	28.8	
Effective Green, g (s)	10.8	39.0	39.0	22.2	50.4		14.0	31.8		11.0	28.8	
Actuated g/C Ratio	0.09	0.32	0.32	0.18	0.42		0.12	0.27		0.09	0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	162	1173	515	334	2138		211	918		165	843	
v/s Ratio Prot	0.05	c0.40		c0.14	c0.36		c0.19	c0.20		0.09	0.07	
v/s Ratio Perm			0.08									
v/c Ratio	0.52	1.22	0.24	0.76	0.85		1.64	0.77		1.02	0.28	
Uniform Delay, d1	52.1	40.5	29.7	46.3	31.3		53.0	40.7		54.5	37.2	
Progression Factor	1.29	0.50	0.47	0.73	0.70		0.71	0.83		1.00	1.00	
Incremental Delay, d2	0.8	101.7	0.3	3.9	1.8		303.6	2.7		74.9	0.2	
Delay (s)	67.8	121.9	14.3	37.7	23.8		341.0	36.6		129.4	37.3	
Level of Service	E	F	B	D	C		F	D		F	D	
Approach Delay (s)		105.6			25.5			134.0			74.1	
Approach LOS		F			C			F			E	

Intersection Summary			
HCM Average Control Delay	77.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	95.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
58: Alessandro Blvd & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1340	110	50	1220	260	310	700	130	340	400	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1597	1805	5035		1805	3516		1805	3610	1596
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1597	1805	5035		1805	3516		1805	3610	1596
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	149	1426	117	53	1298	277	330	745	138	362	426	255
RTOR Reduction (vph)	0	0	43	0	28	0	0	13	0	0	0	19
Lane Group Flow (vph)	149	1426	74	53	1547	0	330	870	0	362	426	236
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	13.2	39.8	60.8	6.4	33.0		21.0	36.8		21.0	36.8	50.0
Effective Green, g (s)	13.2	39.8	60.8	6.4	33.0		21.0	36.8		21.0	36.8	50.0
Actuated g/C Ratio	0.11	0.33	0.51	0.05	0.28		0.18	0.31		0.18	0.31	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	199	1720	862	96	1385		316	1078		316	1107	718
v/s Ratio Prot	c0.08	0.27	0.02	0.03	c0.31		0.18	c0.25		c0.20	0.12	0.04
v/s Ratio Perm			0.03									0.11
v/c Ratio	0.75	0.83	0.09	0.55	1.12		1.04	0.81		1.15	0.38	0.33
Uniform Delay, d1	51.8	37.0	15.3	55.4	43.5		49.5	38.3		49.5	32.7	23.7
Progression Factor	1.53	0.42	0.05	0.57	0.99		1.02	0.69		1.00	1.00	1.00
Incremental Delay, d2	1.4	0.5	0.0	4.4	59.8		55.3	3.3		96.1	0.2	0.3
Delay (s)	80.9	16.1	0.8	35.9	102.8		105.9	29.9		145.6	32.9	23.9
Level of Service	F	B	A	D	F		F	C		F	C	C
Approach Delay (s)		20.8			100.6			50.5			69.8	
Approach LOS		C			F			D			E	

Intersection Summary			
HCM Average Control Delay	59.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
59: Alessandro Blvd & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	1350	140	110	1100	150	270	380	210	250	360	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5105		1805	5083		1805	3398		1805	3513	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	5105		1805	5083		1805	3398		1805	3513	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	110	1484	154	121	1209	165	297	418	231	275	396	77
RTOR Reduction (vph)	0	10	0	0	14	0	0	75	0	0	17	0
Lane Group Flow (vph)	110	1628	0	121	1360	0	297	574	0	275	456	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	11.6	36.6		13.6	38.6		32.2	27.1		26.7	21.6	
Effective Green, g (s)	11.6	36.6		13.6	38.6		32.2	27.1		26.7	21.6	
Actuated g/C Ratio	0.10	0.31		0.11	0.32		0.27	0.23		0.22	0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	174	1557		205	1635		484	767		402	632	
v/s Ratio Prot	0.06	c0.32		c0.07	0.27		0.16	c0.17		c0.15	0.13	
v/s Ratio Perm												
v/c Ratio	0.63	1.05		0.59	0.83		0.61	0.75		0.68	0.72	
Uniform Delay, d1	52.1	41.7		50.6	37.7		38.5	43.3		42.8	46.4	
Progression Factor	1.49	0.53		1.05	0.58		0.68	0.63		1.00	1.00	
Incremental Delay, d2	3.5	29.2		0.4	0.5		2.2	3.9		4.8	4.1	
Delay (s)	81.2	51.2		53.3	22.3		28.4	31.1		47.5	50.4	
Level of Service	F	D		D	C		C	C		D	D	
Approach Delay (s)		53.1			24.8			30.2			49.4	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	39.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
60: Alessandro Blvd & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	440	860	440	190	690	120	520	790	90	200	770	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1587	1805	5058		1805	3610	1589	1805	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1587	1805	5058		1805	3610	1589	1805	3610	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	454	887	454	196	711	124	536	814	93	206	794	196
RTOR Reduction (vph)	0	0	172	0	20	0	0	0	66	0	0	141
Lane Group Flow (vph)	454	887	282	196	815	0	536	814	27	206	794	55
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	19.6	42.0	42.0	13.6	36.0		15.0	35.4	35.4	13.0	33.4	33.4
Effective Green, g (s)	19.6	42.0	42.0	13.6	36.0		15.0	35.4	35.4	13.0	33.4	33.4
Actuated g/C Ratio	0.16	0.35	0.35	0.11	0.30		0.12	0.29	0.29	0.11	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	295	1264	555	205	1517		226	1065	469	196	1005	442
v/s Ratio Prot	c0.25	c0.25		0.11	0.16		c0.30	c0.23		0.11	0.22	
v/s Ratio Perm			0.18						0.02			0.03
v/c Ratio	1.54	0.70	0.51	0.96	0.54		2.37	0.76	0.06	1.05	0.79	0.12
Uniform Delay, d1	50.2	33.6	30.8	52.9	35.0		52.5	38.5	30.3	53.5	40.1	32.4
Progression Factor	1.47	0.44	0.07	0.97	0.72		1.27	0.42	0.20	1.00	1.00	1.00
Incremental Delay, d2	248.6	1.2	1.2	48.8	1.3		626.1	2.2	0.0	78.4	4.3	0.1
Delay (s)	322.6	16.0	3.2	100.1	26.4		692.6	18.5	6.1	131.9	44.4	32.5
Level of Service	F	B	A	F	C		F	B	A	F	D	C
Approach Delay (s)		90.3			40.4			268.1			57.5	
Approach LOS		F			D			F			E	

Intersection Summary			
HCM Average Control Delay	120.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	117.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
61: Cactus Ave & Frederick St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	180	2100	1840	790	470	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.95	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	5187	3610	1594	3502	1598
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	5187	3610	1594	3502	1598
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	184	2143	1878	806	480	112
RTOR Reduction (vph)	0	0	0	24	0	5
Lane Group Flow (vph)	184	2143	1878	782	480	107
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	16.5	87.8	67.3	91.5	24.2	40.7
Effective Green, g (s)	16.5	87.8	67.3	91.5	24.2	40.7
Actuated g/C Ratio	0.14	0.73	0.56	0.76	0.20	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	248	3795	2025	1269	706	595
v/s Ratio Prot	c0.10	0.41	c0.52	c0.12	0.14	0.02
v/s Ratio Perm				0.37		0.04
v/c Ratio	0.74	0.56	0.93	0.62	0.68	0.18
Uniform Delay, d1	49.7	7.4	24.1	6.4	44.3	27.9
Progression Factor	0.95	0.96	0.76	0.40	0.91	1.29
Incremental Delay, d2	3.0	0.2	2.8	0.2	2.4	0.1
Delay (s)	50.1	7.2	21.1	2.8	42.8	36.1
Level of Service	D	A	C	A	D	D
Approach Delay (s)		10.6	15.6		41.5	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
62: Cactus Ave & Graham St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	1790	650	40	960	120	1520	730	120	220	210	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1587	1805	5091		3502	3525		1805	3610	1597
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1587	1805	5091		3502	3525		1805	3610	1597
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	115	1865	677	42	1000	125	1583	760	125	229	219	115
RTOR Reduction (vph)	0	0	274	0	13	0	0	11	0	0	0	10
Lane Group Flow (vph)	115	1865	403	42	1112	0	1583	874	0	229	219	105
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot			Prot			Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4									6
Actuated Green, G (s)	7.0	41.4	41.4	5.6	40.0		44.4	35.3		21.7	12.6	19.6
Effective Green, g (s)	7.0	41.4	41.4	5.6	40.0		44.4	35.3		21.7	12.6	19.6
Actuated g/C Ratio	0.06	0.34	0.34	0.05	0.33		0.37	0.29		0.18	0.10	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	105	1790	548	84	1697		1296	1037		326	379	261
v/s Ratio Prot	c0.06	c0.36		0.02	0.22		c0.45	c0.25		0.13	0.06	0.02
v/s Ratio Perm			0.25									0.04
v/c Ratio	1.10	1.04	0.73	0.50	0.66		1.22	0.84		0.70	0.58	0.40
Uniform Delay, d1	56.5	39.3	34.5	55.8	34.1		37.8	39.7		46.1	51.2	45.0
Progression Factor	1.25	0.60	0.37	0.89	0.91		1.00	1.00		1.22	1.17	1.17
Incremental Delay, d2	108.5	31.5	7.2	3.6	1.5		106.8	6.3		6.1	1.9	0.9
Delay (s)	179.0	55.0	19.8	53.1	32.6		144.6	46.1		62.2	61.8	53.3
Level of Service	F	E	B	D	C		F	D		E	E	D
Approach Delay (s)		51.4			33.3			109.3			60.2	
Approach LOS		D			C			F			E	

Intersection Summary			
HCM Average Control Delay	69.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
63: Cactus Ave & Heacock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1380	730	40	560	190	510	810	80	110	430	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5187	1598	1805	3457		3502	3556		1805	3559	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	5187	1598	1805	3457		3502	3556		1805	3559	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	1500	793	43	609	207	554	880	87	120	467	43
RTOR Reduction (vph)	0	0	59	0	26	0	0	7	0	0	6	0
Lane Group Flow (vph)	87	1500	734	43	790	0	554	960	0	120	504	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	8.6	44.7	75.3	5.8	41.9		30.6	41.4		12.1	22.9	
Effective Green, g (s)	8.6	44.7	75.3	5.8	41.9		30.6	41.4		12.1	22.9	
Actuated g/C Ratio	0.07	0.37	0.63	0.05	0.35		0.26	0.34		0.10	0.19	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	129	1932	1003	87	1207		893	1227		182	679	
v/s Ratio Prot	c0.05	c0.29	0.19	0.02	0.23		0.16	c0.27		0.07	c0.14	
v/s Ratio Perm			0.27									
v/c Ratio	0.67	0.78	0.73	0.49	0.65		0.62	0.78		0.66	0.74	
Uniform Delay, d1	54.3	33.2	15.4	55.7	32.9		39.6	35.3		52.0	45.8	
Progression Factor	1.49	0.29	1.39	0.78	1.11		1.00	1.00		1.24	1.48	
Incremental Delay, d2	5.4	1.3	1.1	4.1	2.6		1.3	3.3		8.1	4.2	
Delay (s)	86.1	10.8	22.5	47.6	39.3		40.9	38.6		72.4	71.8	
Level of Service	F	B	C	D	D		D	D		E	E	
Approach Delay (s)		17.4			39.7			39.4			71.9	
Approach LOS		B			D			D			E	

Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
64: Cactus Ave & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	1010	230	30	640	50	140	450	50	60	370	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3498		1805	3566		1805	3549		1805	3565	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3498		1805	3566		1805	3549		1805	3565	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	101	1020	232	30	646	51	141	455	51	61	374	30
RTOR Reduction (vph)	0	13	0	0	4	0	0	8	0	0	5	0
Lane Group Flow (vph)	101	1239	0	30	693	0	141	498	0	61	399	0
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	12.0	65.6		5.1	58.7		13.6	26.3		7.0	19.7	
Effective Green, g (s)	12.0	65.6		5.1	58.7		13.6	26.3		7.0	19.7	
Actuated g/C Ratio	0.10	0.55		0.04	0.49		0.11	0.22		0.06	0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	181	1912		77	1744		205	778		105	585	
v/s Ratio Prot	c0.06	c0.35		0.02	0.19		c0.08	c0.14		0.03	0.11	
v/s Ratio Perm												
v/c Ratio	0.56	0.65		0.39	0.40		0.69	0.64		0.58	0.68	
Uniform Delay, d1	51.5	19.1		55.9	19.4		51.2	42.6		55.1	47.2	
Progression Factor	1.54	0.18		1.27	0.41		1.00	1.00		1.16	0.64	
Incremental Delay, d2	2.4	1.1		2.8	0.6		9.2	1.8		6.7	2.7	
Delay (s)	81.4	4.5		73.6	8.5		60.4	44.4		70.3	33.2	
Level of Service	F	A		E	A		E	D		E	C	
Approach Delay (s)		10.3			11.2			47.9			38.0	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
65: Cactus Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	730	300	120	460	110	220	1170	120	120	1050	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3435		1805	3494		1805	3610	1585	1805	3610	1585
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3435		1805	3494		1805	3610	1585	1805	3610	1585
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	730	300	120	460	110	220	1170	120	120	1050	60
RTOR Reduction (vph)	0	37	0	0	17	0	0	0	52	0	0	35
Lane Group Flow (vph)	50	993	0	120	553	0	220	1170	68	120	1050	25
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	6.3	38.1		9.9	41.7		17.2	45.4	45.4	10.6	38.8	38.8
Effective Green, g (s)	6.3	38.1		9.9	41.7		17.2	45.4	45.4	10.6	38.8	38.8
Actuated g/C Ratio	0.05	0.32		0.08	0.35		0.14	0.38	0.38	0.09	0.32	0.32
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	95	1091		149	1214		259	1366	600	159	1167	512
v/s Ratio Prot	0.03	c0.29		c0.07	c0.16		c0.12	c0.32		0.07	0.29	
v/s Ratio Perm									0.04			0.02
v/c Ratio	0.53	0.91		0.81	0.46		0.85	0.86	0.11	0.75	0.90	0.05
Uniform Delay, d1	55.4	39.3		54.1	30.3		50.1	34.3	24.2	53.4	38.7	27.9
Progression Factor	0.99	0.73		1.05	0.61		1.23	0.40	0.14	1.24	0.80	0.45
Incremental Delay, d2	4.1	10.5		25.2	1.2		9.4	2.8	0.1	13.3	8.2	0.1
Delay (s)	58.7	39.4		82.1	19.6		71.1	16.3	3.5	79.5	39.1	12.6
Level of Service	E	D		F	B		E	B	A	E	D	B
Approach Delay (s)		40.2			30.5			23.3			41.7	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	33.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
66: Alessandro Blvd & Sycamore Canyon Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1820	200	20	2290	140	220	50	20	170	230	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	0.88	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1615	3502	5187	1588	3502	3610	2800	3502	3610	1589
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1615	3502	5187	1588	3502	3610	2800	3502	3610	1589
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	144	1876	206	21	2361	144	227	52	21	175	237	402
RTOR Reduction (vph)	0	0	63	0	0	29	0	0	12	0	0	101
Lane Group Flow (vph)	144	1876	143	21	2361	115	227	52	9	175	237	301
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.0	55.8	55.8	4.2	45.0	45.0	15.5	29.5	33.7	14.5	28.5	28.5
Effective Green, g (s)	15.0	55.8	55.8	4.2	45.0	45.0	15.5	29.5	33.7	14.5	28.5	28.5
Actuated g/C Ratio	0.12	0.46	0.46	0.04	0.38	0.38	0.13	0.25	0.28	0.12	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	226	2412	751	123	1945	596	452	887	880	423	857	377
v/s Ratio Prot	c0.08	c0.36		0.01	c0.46		c0.06	0.01	0.00	0.05	0.07	
v/s Ratio Perm			0.09			0.07			0.00			c0.19
v/c Ratio	0.64	0.78	0.19	0.17	1.21	0.19	0.50	0.06	0.01	0.41	0.28	0.80
Uniform Delay, d1	49.9	26.9	18.8	56.2	37.5	25.3	48.7	34.6	31.1	48.8	37.3	43.1
Progression Factor	1.00	1.00	1.00	1.01	0.98	1.18	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	2.5	0.6	0.6	100.5	0.6	0.9	0.0	0.0	0.7	0.2	11.3
Delay (s)	55.7	29.5	19.4	57.1	137.2	30.4	49.5	34.7	31.1	49.5	37.5	54.3
Level of Service	E	C	B	E	F	C	D	C	C	D	D	D
Approach Delay (s)		30.2			130.4			45.7			48.4	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	76.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
67: Alessandro Blvd & SR-215 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1460	610	0	1970	0	0	0	0	260	0	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	4.0
Lane Util. Factor		0.91			0.91					0.95	0.91	0.95
Frpb, ped/bikes		1.00			1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00			1.00					1.00	1.00	1.00
Frt		0.96			1.00					1.00	0.87	0.85
Flt Protected		1.00			1.00					0.95	1.00	1.00
Satd. Flow (prot)		4958			5187					1715	1488	1534
Flt Permitted		1.00			1.00					0.95	1.00	1.00
Satd. Flow (perm)		4958			5187					1715	1488	1534
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1505	629	0	2031	0	0	0	0	268	0	505
RTOR Reduction (vph)	0	48	0	0	0	0	0	0	0	0	8	8
Lane Group Flow (vph)	0	2086	0	0	2031	0	0	0	0	241	261	255
Confl. Peds. (#/hr)						5						
Turn Type										Perm		Perm
Protected Phases		4			8						6	
Permitted Phases										6		6
Actuated Green, G (s)		83.7			83.7					28.3	28.3	28.3
Effective Green, g (s)		83.7			83.7					28.3	28.3	28.3
Actuated g/C Ratio		0.70			0.70					0.24	0.24	0.24
Clearance Time (s)		4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3458			3618					404	351	362
v/s Ratio Prot		c0.42			0.39							
v/s Ratio Perm										0.14	0.18	0.17
v/c Ratio		0.60			0.56					0.60	0.74	0.70
Uniform Delay, d1		9.5			9.0					40.8	42.5	42.0
Progression Factor		0.16			0.06					1.00	1.00	1.00
Incremental Delay, d2		0.6			0.2					2.4	8.2	6.1
Delay (s)		2.0			0.8					43.1	50.7	48.1
Level of Service		A			A					D	D	D
Approach Delay (s)		2.0			0.8			0.0			47.5	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
68: Alessandro Blvd & SR-215 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	370	1360	0	0	1670	320	410	10	240	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.91			0.91		0.95	0.91	0.95			
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.98		1.00	0.98	0.85			
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (prot)	1805	5187			5046		1715	1623	1534			
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (perm)	1805	5187			5046		1715	1623	1534			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	381	1402	0	0	1722	330	423	10	247	0	0	0
RTOR Reduction (vph)	0	0	0	0	23	0	0	6	74	0	0	0
Lane Group Flow (vph)	381	1402	0	0	2029	0	237	227	136	0	0	0
Confl. Peds. (#/hr)	5					5						
Turn Type	Prot						Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases									2			
Actuated Green, G (s)	37.0	91.3			50.3		20.7	20.7	20.7			
Effective Green, g (s)	37.0	91.3			50.3		20.7	20.7	20.7			
Actuated g/C Ratio	0.31	0.76			0.42		0.17	0.17	0.17			
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	557	3946			2115		296	280	265			
v/s Ratio Prot	c0.21	0.27			c0.40		0.14	c0.14				
v/s Ratio Perm									0.09			
v/c Ratio	0.68	0.36			0.96		0.80	0.81	0.51			
Uniform Delay, d1	36.4	4.7			33.9		47.7	47.8	45.1			
Progression Factor	0.85	0.67			1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.9	0.2			12.1		14.3	16.2	1.7			
Delay (s)	33.8	3.4			46.0		62.0	63.9	46.8			
Level of Service	C	A			D		E	E	D			
Approach Delay (s)		9.9			46.0			58.0			0.0	
Approach LOS		A			D			E			A	

Intersection Summary			
HCM Average Control Delay	33.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
69: Alessandro Blvd & Old 215 Frontage Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	1360	40	270	1830	240	30	70	140	260	190	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3593		1805	3610	1615	3502	3250		1805	3610	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3593		1805	3610	1615	3502	3250		1805	3610	1615
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	192	1374	40	273	1848	242	30	71	141	263	192	162
RTOR Reduction (vph)	0	2	0	0	0	81	0	131	0	0	0	120
Lane Group Flow (vph)	192	1412	0	273	1848	161	30	81	0	263	192	42
Confl. Peds. (#/hr)			5									
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	9.6	48.6		21.5	60.5	60.5	4.2	8.8		25.1	29.7	29.7
Effective Green, g (s)	9.6	48.6		21.5	60.5	60.5	4.2	8.8		25.1	29.7	29.7
Actuated g/C Ratio	0.08	0.41		0.18	0.50	0.50	0.04	0.07		0.21	0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	280	1455		323	1820	814	123	238		378	893	400
v/s Ratio Prot	0.05	0.39		c0.15	c0.51		0.01	c0.03		c0.15	0.05	
v/s Ratio Perm						0.10						0.03
v/c Ratio	0.69	0.97		0.85	1.02	0.20	0.24	0.34		0.70	0.22	0.11
Uniform Delay, d1	53.7	35.0		47.6	29.8	16.4	56.4	52.8		43.9	35.9	34.9
Progression Factor	1.00	1.00		1.30	0.68	1.04	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.8	17.6		2.0	10.7	0.0	1.0	0.9		5.5	0.1	0.1
Delay (s)	60.5	52.6		63.8	30.9	17.0	57.4	53.7		49.4	36.0	35.0
Level of Service	E	D		E	C	B	E	D		D	D	D
Approach Delay (s)		53.5			33.3			54.2			41.5	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	42.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
70: Alessandro Blvd & Day St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	1410	50	10	1950	60	110	50	20	10	10	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.96		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5155		1805	3610	1564	1800	1810		1798	1599	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.19	1.00		0.70	1.00	
Satd. Flow (perm)	1805	5155		1805	3610	1564	355	1810		1333	1599	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	289	1454	52	10	2010	62	113	52	21	10	10	278
RTOR Reduction (vph)	0	2	0	0	0	5	0	16	0	0	165	0
Lane Group Flow (vph)	289	1504	0	10	2010	57	113	57	0	10	123	0
Confl. Peds. (#/hr)			5			5	5		5	5		5
Turn Type	Prot			Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		
Actuated Green, G (s)	31.9	84.8		1.5	54.4	54.4	21.7	21.7		21.7	21.7	
Effective Green, g (s)	31.9	84.8		1.5	54.4	54.4	21.7	21.7		21.7	21.7	
Actuated g/C Ratio	0.27	0.71		0.01	0.45	0.45	0.18	0.18		0.18	0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	480	3643		23	1637	709	64	327		241	289	
v/s Ratio Prot	c0.16	0.29		0.01	c0.56			0.03			0.08	
v/s Ratio Perm						0.04	c0.32			0.01		
v/c Ratio	0.60	0.41		0.43	1.23	0.08	1.77	0.18		0.04	0.43	
Uniform Delay, d1	38.5	7.3		58.8	32.8	18.6	49.1	41.6		40.6	43.6	
Progression Factor	0.89	1.60		1.05	0.40	0.25	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.2		5.6	105.0	0.1	400.3	0.3		0.1	1.0	
Delay (s)	35.2	11.9		67.4	118.2	4.7	449.5	41.8		40.6	44.6	
Level of Service	D	B		E	F	A	F	D		D	D	
Approach Delay (s)		15.6			114.6			289.5			44.5	
Approach LOS		B			F			F			D	

Intersection Summary			
HCM Average Control Delay	76.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	108.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
71: Alessandro Blvd & Elsworth St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1410	90	120	1750	130	180	200	120	90	170	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.94		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5134		1805	5122		1805	1782		1805	1900	1589
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5134		1805	5122		1805	1782		1805	1900	1589
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	1484	95	126	1842	137	189	211	126	95	179	116
RTOR Reduction (vph)	0	5	0	0	6	0	0	21	0	0	0	88
Lane Group Flow (vph)	147	1574	0	126	1973	0	189	316	0	95	179	28
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	16.4	53.1		13.7	50.4		12.0	26.7		10.5	25.2	25.2
Effective Green, g (s)	16.4	53.1		13.7	50.4		12.0	26.7		10.5	25.2	25.2
Actuated g/C Ratio	0.14	0.44		0.11	0.42		0.10	0.22		0.09	0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	247	2272		206	2151		181	396		158	399	334
v/s Ratio Prot	c0.08	c0.31		0.07	c0.39		c0.10	c0.18		0.05	0.09	
v/s Ratio Perm												0.02
v/c Ratio	0.60	0.69		0.61	0.92		1.04	0.80		0.60	0.45	0.08
Uniform Delay, d1	48.7	26.9		50.6	32.8		54.0	44.1		52.7	41.3	38.1
Progression Factor	1.00	1.12		0.98	0.77		1.09	0.93		1.00	1.00	1.00
Incremental Delay, d2	3.7	1.7		0.5	0.8		63.9	6.7		6.3	0.8	0.1
Delay (s)	52.2	31.8		50.0	26.0		122.9	47.5		59.0	42.1	38.2
Level of Service	D	C		D	C		F	D		E	D	D
Approach Delay (s)		33.6			27.4			74.6			45.1	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM Average Control Delay	36.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
72: Cactus Ave & SR-215 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1500	110	1380	750	0	0	0	0	0	0	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0							4.0
Lane Util. Factor		0.91	1.00	1.00	0.91							1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00							1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00							1.00
Frt		1.00	0.85	1.00	1.00							0.86
Flt Protected		1.00	1.00	0.95	1.00							1.00
Satd. Flow (prot)		5187	1569	1805	5187							1644
Flt Permitted		1.00	1.00	0.95	1.00							1.00
Satd. Flow (perm)		5187	1569	1805	5187							1644
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	1613	118	1484	806	0	0	0	0	0	0	108
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	0	0	0	92
Lane Group Flow (vph)	0	1613	82	1484	806	0	0	0	0	0	0	16
Confl. Peds. (#/hr)			5									5
Turn Type			Perm	Prot								custom
Protected Phases		4		3 6	8							6
Permitted Phases			4									
Actuated Green, G (s)		34.0	34.0	78.0	94.0							18.0
Effective Green, g (s)		34.0	34.0	78.0	94.0							18.0
Actuated g/C Ratio		0.28	0.28	0.65	0.78							0.15
Clearance Time (s)		4.0	4.0		4.0							4.0
Vehicle Extension (s)		3.0	3.0		3.0							3.0
Lane Grp Cap (vph)		1470	445	1173	4063							247
v/s Ratio Prot		c0.31		c0.82	0.16							0.01
v/s Ratio Perm			0.05									
v/c Ratio		1.10	0.18	1.27	0.20							0.07
Uniform Delay, d1		43.0	32.5	21.0	3.3							43.8
Progression Factor		1.00	1.00	0.65	0.20							1.00
Incremental Delay, d2		54.8	0.9	122.8	0.1							0.1
Delay (s)		97.8	33.4	136.4	0.7							43.9
Level of Service		F	C	F	A							D
Approach Delay (s)		93.4			88.7			0.0			43.9	
Approach LOS		F			F			A			D	

Intersection Summary			
HCM Average Control Delay	89.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	112.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
73: Cactus Ave & SR-215 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	1040	450	0	2160	150	40	20	310	520	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95			0.99		1.00	0.86		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	4952			5127		1805	1632		1805	1615	
Flt Permitted	0.07	1.00			1.00		0.74	1.00		0.43	1.00	
Satd. Flow (perm)	125	4952			5127		1414	1632		820	1615	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	20	1051	455	0	2182	152	40	20	313	525	0	20
RTOR Reduction (vph)	0	65	0	0	6	0	0	40	0	0	2	0
Lane Group Flow (vph)	20	1441	0	0	2328	0	40	293	0	525	18	0
Confl. Peds. (#/hr)						5						
Turn Type	Perm						Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)	61.0	61.0			61.0		51.0	51.0		51.0	51.0	
Effective Green, g (s)	61.0	61.0			61.0		51.0	51.0		51.0	51.0	
Actuated g/C Ratio	0.51	0.51			0.51		0.42	0.42		0.42	0.42	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	64	2517			2606		601	694		349	686	
v/s Ratio Prot		0.29			c0.45			0.18			0.01	
v/s Ratio Perm	0.16						0.03			c0.64		
v/c Ratio	0.31	0.57			0.89		0.07	0.42		1.50	0.03	
Uniform Delay, d1	17.2	20.5			26.6		20.4	24.2		34.5	20.1	
Progression Factor	0.16	0.10			0.55		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.1			0.5		0.0	0.4		241.4	0.0	
Delay (s)	3.9	2.1			15.2		20.5	24.6		275.9	20.1	
Level of Service	A	A			B		C	C		F	C	
Approach Delay (s)		2.2			15.2			24.2			266.5	
Approach LOS		A			B			C			F	

Intersection Summary			
HCM Average Control Delay	40.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
74: Cactus Ave & Elsworth St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	1830	40	40	1810	110	980	190	240	140	50	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98		0.95	0.98	1.00
Satd. Flow (prot)	1805	5187	1585	1805	5187	1564	1715	1670		1715	1763	1587
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98		0.95	0.98	1.00
Satd. Flow (perm)	1805	5187	1585	1805	5187	1564	1715	1670		1715	1763	1587
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	196	1887	41	41	1866	113	1010	196	247	144	52	268
RTOR Reduction (vph)	0	0	16	0	0	49	0	16	0	0	0	97
Lane Group Flow (vph)	196	1887	25	41	1866	64	737	700	0	96	100	171
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	22.7	41.6	41.6	7.1	26.0	26.0	37.0	37.0		18.3	18.3	18.3
Effective Green, g (s)	22.7	41.6	41.6	7.1	26.0	26.0	37.0	37.0		18.3	18.3	18.3
Actuated g/C Ratio	0.19	0.35	0.35	0.06	0.22	0.22	0.31	0.31		0.15	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	341	1798	549	107	1124	339	529	515		262	269	242
v/s Ratio Prot	c0.11	c0.36		0.02	c0.36		c0.43	0.42		0.06	0.06	
v/s Ratio Perm			0.02			0.04						c0.11
v/c Ratio	0.57	1.05	0.04	0.38	1.66	0.19	1.39	1.36		0.37	0.37	0.70
Uniform Delay, d1	44.3	39.2	26.0	54.3	47.0	38.4	41.5	41.5		45.6	45.7	48.3
Progression Factor	0.69	1.14	1.17	1.20	0.68	0.42	1.00	1.00		0.78	0.78	0.74
Incremental Delay, d2	1.6	32.1	0.1	1.1	298.9	0.6	188.3	174.0		0.8	0.8	8.4
Delay (s)	32.2	76.6	30.4	66.2	330.8	16.7	229.8	215.5		36.4	36.5	44.2
Level of Service	C	E	C	E	F	B	F	F		D	D	D
Approach Delay (s)		71.6			307.8			222.7			40.9	
Approach LOS		E			F			F			D	

Intersection Summary			
HCM Average Control Delay	184.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
75: Central Ave & Lochmoor Dr

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1090	280	200	700	570	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3478		1805	3610	1805	1594
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3478		1805	3610	1805	1594
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1185	304	217	761	620	380
RTOR Reduction (vph)	25	0	0	0	0	13
Lane Group Flow (vph)	1464	0	217	761	620	367
Confl. Peds. (#/hr)		5	5			5
Turn Type			Prot			pm+ov
Protected Phases	4		3	8	2	3
Permitted Phases						2
Actuated Green, G (s)	38.0		7.0	49.0	32.1	39.1
Effective Green, g (s)	38.0		7.0	49.0	32.1	39.1
Actuated g/C Ratio	0.43		0.08	0.55	0.36	0.44
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1483		142	1985	650	771
v/s Ratio Prot	c0.42		c0.12	0.21	c0.34	0.04
v/s Ratio Perm						0.19
v/c Ratio	0.99		1.53	0.38	0.95	0.48
Uniform Delay, d1	25.3		41.0	11.4	27.8	17.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	20.1		270.0	0.1	24.3	0.5
Delay (s)	45.4		311.0	11.6	52.1	18.2
Level of Service	D		F	B	D	B
Approach Delay (s)	45.4			78.0	39.2	
Approach LOS	D			E	D	

Intersection Summary			
HCM Average Control Delay	52.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	89.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
76: Central Ave & Sycamore Canyon Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	950	440	210	460	240	390	350	400	200	230	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1587	3502	3424		1805	1900	1615	1805	3610	1590
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1587	3502	3424		1805	1900	1615	1805	3610	1590
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	53	1011	468	223	489	255	415	372	426	213	245	32
RTOR Reduction (vph)	0	0	332	0	61	0	0	0	219	0	0	28
Lane Group Flow (vph)	53	1011	137	223	683	0	415	372	207	213	245	4
Confl. Peds. (#/hr)			5	5			5					5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	4.6	25.9	25.9	8.9	30.2		26.4	23.0	23.0	15.0	11.6	11.6
Effective Green, g (s)	4.6	25.9	25.9	8.9	30.2		26.4	23.0	23.0	15.0	11.6	11.6
Actuated g/C Ratio	0.05	0.29	0.29	0.10	0.34		0.30	0.26	0.26	0.17	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	94	1513	463	351	1164		537	492	418	305	472	208
v/s Ratio Prot	0.03	c0.19		0.06	c0.20		c0.23	0.20		c0.12	0.07	
v/s Ratio Perm			0.09						0.13			0.00
v/c Ratio	0.56	0.67	0.29	0.64	0.59		0.77	0.76	0.50	0.70	0.52	0.02
Uniform Delay, d1	41.1	27.7	24.4	38.4	24.2		28.5	30.3	28.0	34.8	36.0	33.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.5	1.1	0.4	3.7	0.8		6.8	6.5	0.9	6.8	1.0	0.0
Delay (s)	48.7	28.8	24.7	42.1	24.9		35.3	36.8	28.9	41.6	37.0	33.7
Level of Service	D	C	C	D	C		D	D	C	D	D	C
Approach Delay (s)		28.2			28.9			33.5			38.8	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	88.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
77: SR 60 EB Ramps & Central Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	10	100	0	0	0	0	680	650	500	810	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.95					0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Frt	1.00	0.88	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1582	1534					3610	1615	3502	3610	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1582	1534					3610	1615	3502	3610	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	22	11	110	0	0	0	0	747	714	549	890	0
RTOR Reduction (vph)	0	47	54	0	0	0	0	0	218	0	0	0
Lane Group Flow (vph)	22	15	5	0	0	0	0	747	496	549	890	0
Confl. Peds. (#/hr)							5					5
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	6	6						4		3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	4.2	4.2	4.2					21.9	21.9	11.9	37.8	
Effective Green, g (s)	4.2	4.2	4.2					21.9	21.9	11.9	37.8	
Actuated g/C Ratio	0.08	0.08	0.08					0.44	0.44	0.24	0.76	
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	152	133	129					1581	707	833	2729	
v/s Ratio Prot	c0.01	0.01						0.21		c0.16	0.25	
v/s Ratio Perm			0.00						c0.31			
v/c Ratio	0.14	0.11	0.04					0.47	0.70	0.66	0.33	
Uniform Delay, d1	21.2	21.2	21.0					10.0	11.4	17.2	2.0	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.05	0.94	
Incremental Delay, d2	0.4	0.4	0.1					1.0	5.7	1.7	0.3	
Delay (s)	21.7	21.6	21.2					11.0	17.1	19.8	2.2	
Level of Service	C	C	C					B	B	B	A	
Approach Delay (s)		21.4			0.0			14.0			8.9	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
78: SR60 WB Ramps & Central Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	380	210	670	0	0	910
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3502	1615	3610			3610
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3502	1615	3610			3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	228	728	0	0	989
RTOR Reduction (vph)	0	151	0	0	0	0
Lane Group Flow (vph)	413	77	728	0	0	989
Confl. Peds. (#/hr)				5		
Turn Type		Perm				
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	11.2	11.2	30.8			30.8
Effective Green, g (s)	11.2	11.2	30.8			30.8
Actuated g/C Ratio	0.22	0.22	0.62			0.62
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	784	362	2224			2224
v/s Ratio Prot	c0.12		0.20			c0.27
v/s Ratio Perm		0.05				
v/c Ratio	0.53	0.21	0.33			0.44
Uniform Delay, d1	17.1	15.8	4.6			5.1
Progression Factor	1.00	1.00	0.42			1.00
Incremental Delay, d2	0.6	0.3	0.4			0.6
Delay (s)	17.7	16.1	2.3			5.7
Level of Service	B	B	A			A
Approach Delay (s)	17.1		2.3			5.7
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2100	70	300	1960	640	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.91		0.97	0.91	0.94	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	5160		3502	5187	5095	
Flt Permitted	1.00		0.95	1.00	0.95	
Satd. Flow (perm)	5160		3502	5187	5095	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	2143	71	306	2000	653	10
RTOR Reduction (vph)	5	0	0	0	2	0
Lane Group Flow (vph)	2209	0	306	2000	661	0
Confl. Peds. (#/hr)		5	5			
Turn Type			Prot			
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	33.0		8.1	45.1	13.9	
Effective Green, g (s)	33.0		8.1	45.1	13.9	
Actuated g/C Ratio	0.49		0.12	0.67	0.21	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2541		423	3492	1057	
v/s Ratio Prot	c0.43		0.09	c0.39	c0.13	
v/s Ratio Perm						
v/c Ratio	0.87		0.72	0.57	0.62	
Uniform Delay, d1	15.1		28.4	5.8	24.2	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	3.5		6.0	0.2	1.2	
Delay (s)	18.5		34.4	6.1	25.3	
Level of Service	B		C	A	C	
Approach Delay (s)	18.5			9.8	25.3	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
80: Alessandro Blvd & Mission Grove Pkwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	2240	110	660	2150	120	170	220	360	170	140	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91		0.97	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5187	1587	3502	5138		3502	1900	1589	1805	3478	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	5187	1587	3502	5138		3502	1900	1589	1805	3478	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	93	2309	113	680	2216	124	175	227	371	175	144	41
RTOR Reduction (vph)	0	0	63	0	5	0	0	0	267	0	25	0
Lane Group Flow (vph)	93	2309	50	680	2335	0	175	227	104	175	160	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	9.6	52.1	52.1	22.0	64.5		16.6	18.3	18.3	9.0	10.7	
Effective Green, g (s)	9.6	52.1	52.1	22.0	64.5		16.6	18.3	18.3	9.0	10.7	
Actuated g/C Ratio	0.08	0.44	0.44	0.19	0.55		0.14	0.16	0.16	0.08	0.09	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	148	2302	704	656	2823		495	296	248	138	317	
v/s Ratio Prot	0.05	c0.45		c0.19	0.45		0.05	c0.12		c0.10	0.05	
v/s Ratio Perm			0.03						0.07			
v/c Ratio	0.63	1.00	0.07	1.04	0.83		0.35	0.77	0.42	1.27	0.51	
Uniform Delay, d1	52.2	32.7	18.8	47.7	21.8		45.6	47.5	44.8	54.2	50.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.1	19.5	0.0	44.9	2.1		0.4	11.3	1.2	165.6	1.3	
Delay (s)	60.3	52.1	18.8	92.6	24.0		46.0	58.8	45.9	219.8	52.1	
Level of Service	E	D	B	F	C		D	E	D	F	D	
Approach Delay (s)		50.9			39.4			49.7			133.6	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM Average Control Delay	50.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	117.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
81: Martin Luther King Blvd & Chicago Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	1280	470	240	780	200	250	560	70	310	1050	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1593	3502	3610	1594	3502	3610	1593	3502	3610	1596
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1593	3502	3610	1594	3502	3610	1593	3502	3610	1596
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	211	1347	495	253	821	211	263	589	74	326	1105	221
RTOR Reduction (vph)	0	0	7	0	0	64	0	0	5	0	0	12
Lane Group Flow (vph)	211	1347	488	253	821	147	263	589	69	326	1105	209
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.6	44.1	54.1	8.0	36.5	48.5	10.0	38.0	46.0	12.0	40.0	55.6
Effective Green, g (s)	15.6	44.1	54.1	8.0	36.5	48.5	10.0	38.0	46.0	12.0	40.0	55.6
Actuated g/C Ratio	0.13	0.37	0.46	0.07	0.31	0.41	0.08	0.32	0.39	0.10	0.34	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	238	1348	784	237	1116	709	297	1162	674	356	1223	805
v/s Ratio Prot	c0.12	c0.37	0.05	c0.07	0.23	0.02	0.08	0.16	0.01	c0.09	c0.31	0.03
v/s Ratio Perm			0.25			0.07			0.04			0.10
v/c Ratio	0.89	1.00	0.62	1.07	0.74	0.21	0.89	0.51	0.10	0.92	0.90	0.26
Uniform Delay, d1	50.4	37.0	24.3	55.0	36.5	22.4	53.5	32.5	22.9	52.5	37.2	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	30.1	24.1	1.5	77.5	2.6	0.1	25.4	0.3	0.1	27.3	9.5	0.2
Delay (s)	80.4	61.1	25.8	132.5	39.0	22.6	78.9	32.8	23.0	79.9	46.7	19.0
Level of Service	F	E	C	F	D	C	E	C	C	E	D	B
Approach Delay (s)		54.6			54.7			45.1			49.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	51.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	118.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
82: Martin Luther King Blvd & Iowa Ave

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	110	1550	990	430	680	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	3610	3610	1602	3497	1453
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	3610	3610	1602	3497	1453
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	121	1703	1088	473	747	242
RTOR Reduction (vph)	0	0	0	49	3	7
Lane Group Flow (vph)	121	1703	1088	424	768	211
Confl. Peds. (#/hr)				5		5
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	7.1	38.2	27.1	49.8	22.7	29.8
Effective Green, g (s)	7.1	38.2	27.1	49.8	22.7	29.8
Actuated g/C Ratio	0.10	0.55	0.39	0.72	0.33	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	186	2001	1420	1251	1152	713
v/s Ratio Prot	0.07	c0.47	0.30	0.11	c0.22	0.03
v/s Ratio Perm				0.15		0.11
v/c Ratio	0.65	0.85	0.77	0.34	0.67	0.30
Uniform Delay, d1	29.7	13.0	18.1	3.5	19.8	12.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.9	3.7	2.5	0.2	1.5	0.2
Delay (s)	37.6	16.7	20.7	3.7	21.3	13.0
Level of Service	D	B	C	A	C	B
Approach Delay (s)		18.0	15.5		19.5	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
83: Martin Luther King Blvd & Canyon Crest Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	1470	790	340	690	100	380	200	250	200	380	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	5187	1595	3502	3610	1590	3502	3610	1591	3502	3610	1604
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	5187	1595	3502	3610	1590	3502	3610	1591	3502	3610	1604
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	236	1652	888	382	775	112	427	225	281	225	427	292
RTOR Reduction (vph)	0	0	100	0	0	68	0	0	231	0	0	33
Lane Group Flow (vph)	236	1652	788	382	775	44	427	225	50	225	427	259
Confl. Peds. (#/hr)			5			5			5			5
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.8	40.3	49.8	16.5	38.0	38.0	9.5	17.2	17.2	7.4	15.1	33.9
Effective Green, g (s)	18.8	40.3	49.8	16.5	38.0	38.0	9.5	17.2	17.2	7.4	15.1	33.9
Actuated g/C Ratio	0.19	0.41	0.51	0.17	0.39	0.39	0.10	0.18	0.18	0.08	0.16	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	348	2146	881	593	1408	620	342	637	281	266	560	624
v/s Ratio Prot	c0.13	0.32	c0.09	0.11	0.21		c0.12	0.06		0.06	c0.12	0.08
v/s Ratio Perm			0.41			0.03			0.03			0.08
v/c Ratio	0.68	0.77	0.89	0.64	0.55	0.07	1.25	0.35	0.18	0.85	0.76	0.42
Uniform Delay, d1	36.5	24.6	21.4	37.7	23.1	18.6	44.0	35.2	34.1	44.4	39.4	24.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	1.7	11.5	2.4	0.5	0.0	133.9	0.3	0.3	21.2	6.1	0.5
Delay (s)	41.7	26.3	32.9	40.1	23.5	18.7	177.9	35.6	34.4	65.6	45.5	24.7
Level of Service	D	C	C	D	C	B	F	D	C	E	D	C
Approach Delay (s)		29.7			28.1			100.3			43.9	
Approach LOS		C			C			F			D	

Intersection Summary			
HCM Average Control Delay	42.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	97.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
84: Martin Luther King Blvd & SR-60 EB Off Ramp

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	410	1360	20	390	0	0	0	0	10	0	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Lane Util. Factor		0.91	0.91	1.00	0.95					1.00	1.00	
Frt		0.91	0.85	1.00	1.00					1.00	0.85	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3134	1470	1805	3610					1805	1615	
Flt Permitted		1.00	1.00	0.18	1.00					0.95	1.00	
Satd. Flow (perm)		3134	1470	349	3610					1805	1615	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	451	1495	22	429	0	0	0	0	11	0	308
RTOR Reduction (vph)	0	315	315	0	0	0	0	0	0	0	243	0
Lane Group Flow (vph)	0	884	432	22	429	0	0	0	0	11	65	0
Turn Type			Perm	Perm						Perm		
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Actuated Green, G (s)		21.8	21.8	21.8	21.8					7.9	7.9	
Effective Green, g (s)		21.8	21.8	21.8	21.8					7.9	7.9	
Actuated g/C Ratio		0.58	0.58	0.58	0.58					0.21	0.21	
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1812	850	202	2087					378	338	
v/s Ratio Prot		0.28			0.12						c0.04	
v/s Ratio Perm			c0.29	0.06						0.01		
v/c Ratio		0.49	0.51	0.11	0.21					0.03	0.19	
Uniform Delay, d1		4.7	4.7	3.6	3.8					11.8	12.3	
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	
Incremental Delay, d2		0.2	0.5	0.2	0.0					0.0	0.3	
Delay (s)		4.9	5.2	3.8	3.9					11.9	12.5	
Level of Service		A	A	A	A					B	B	
Approach Delay (s)		5.0			3.9			0.0			12.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	37.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
85: Martin Luther King Blvd & SR-60 WB On Ramp

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	460	0	450	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	535	0	523	0	0	0

Direction, Lane #	EB 1	EB 2	NB 1	NB 2
Volume Total (vph)	267	267	349	174
Volume Left (vph)	267	267	349	174
Volume Right (vph)	0	0	0	0
Hadj (s)	0.50	0.50	0.50	0.50
Departure Headway (s)	6.6	6.6	6.6	6.6
Degree Utilization, x	0.49	0.49	0.64	0.32
Capacity (veh/h)	531	532	529	530
Control Delay (s)	14.5	14.5	19.3	11.4
Approach Delay (s)	14.5		16.7	
Approach LOS	B		C	

Intersection Summary			
Delay	15.6		
HCM Level of Service	C		
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
86: Central Ave & Chicago Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	20	10	840	30	260	70	480	870	580	1130	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1795		3502	1900	1615	1805	3610	1589	3502	3610	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1795		3502	1900	1615	1805	3610	1589	3502	3610	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	22	11	933	33	289	78	533	967	644	1256	11
RTOR Reduction (vph)	0	10	0	0	0	196	0	0	532	0	0	2
Lane Group Flow (vph)	22	23	0	933	33	93	78	533	435	644	1256	9
Confl. Peds. (#/hr)			5	5					5	5		
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	3.0	5.4		32.1	34.5	34.5	7.0	31.1	31.1	22.1	46.2	46.2
Effective Green, g (s)	3.0	5.4		32.1	34.5	34.5	7.0	31.1	31.1	22.1	46.2	46.2
Actuated g/C Ratio	0.03	0.05		0.30	0.32	0.32	0.07	0.29	0.29	0.21	0.43	0.43
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	51	91		1054	614	522	118	1052	463	725	1563	699
v/s Ratio Prot	0.01	0.01		c0.27	0.02		0.04	0.15		c0.18	0.35	
v/s Ratio Perm						c0.06			c0.27			0.01
v/c Ratio	0.43	0.25		0.89	0.05	0.18	0.66	0.51	0.94	0.89	0.80	0.01
Uniform Delay, d1	51.0	48.7		35.5	24.9	25.9	48.7	31.4	36.9	41.1	26.3	17.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	1.4		9.1	0.0	0.2	13.0	0.4	26.9	12.7	3.1	0.0
Delay (s)	56.8	50.1		44.6	24.9	26.1	61.7	31.8	63.8	53.8	29.4	17.3
Level of Service	E	D		D	C	C	E	C	E	D	C	B
Approach Delay (s)		52.8			39.8			52.9			37.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	43.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	106.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
87: Central Ave & El Cerrito Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	1100	80	70	890	60	60	60	50	70	50	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99			0.96		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1805	3573		1805	3573			1785		1802	1677	
Flt Permitted	0.95	1.00		0.95	1.00			0.57		0.58	1.00	
Satd. Flow (perm)	1805	3573		1805	3573			1031		1092	1677	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	191	1236	90	79	1000	67	67	67	56	79	56	202
RTOR Reduction (vph)	0	5	0	0	5	0	0	23	0	0	162	0
Lane Group Flow (vph)	191	1321	0	79	1062	0	0	167	0	79	96	0
Confl. Peds. (#/hr)	5					5			5	5		
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	8.2	31.8		5.2	28.8			12.0		12.0	12.0	
Effective Green, g (s)	8.2	31.8		5.2	28.8			12.0		12.0	12.0	
Actuated g/C Ratio	0.13	0.52		0.09	0.47			0.20		0.20	0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	243	1863		154	1687			203		215	330	
v/s Ratio Prot	c0.11	c0.37		0.04	0.30						0.06	
v/s Ratio Perm								c0.16		0.07		
v/c Ratio	0.79	0.71		0.51	0.63			0.82		0.37	0.29	
Uniform Delay, d1	25.6	11.1		26.7	12.1			23.5		21.2	20.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	15.3	1.3		2.9	0.7			22.6		1.1	0.5	
Delay (s)	40.9	12.3		29.6	12.8			46.1		22.3	21.4	
Level of Service	D	B		C	B			D		C	C	
Approach Delay (s)		15.9			14.0			46.1			21.6	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
88: Central Ave & Canyon Crest Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	970	260	210	920	170	150	350	150	330	710	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3483		1805	3610	1594	1805	3610	1596	3502	3535	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3483		1805	3610	1594	1805	3610	1596	3502	3535	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	1043	280	226	989	183	161	376	161	355	763	108
RTOR Reduction (vph)	0	20	0	0	0	49	0	0	11	0	9	0
Lane Group Flow (vph)	43	1303	0	226	989	134	161	376	150	355	862	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	5.5	42.9		14.0	51.4	65.2	11.0	30.4	44.4	13.8	33.2	
Effective Green, g (s)	5.5	42.9		14.0	51.4	65.2	11.0	30.4	44.4	13.8	33.2	
Actuated g/C Ratio	0.05	0.37		0.12	0.44	0.56	0.09	0.26	0.38	0.12	0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	85	1276		216	1585	942	170	937	660	413	1002	
v/s Ratio Prot	0.02	c0.37		c0.13	0.27	0.02	0.09	0.10	0.03	c0.10	c0.24	
v/s Ratio Perm						0.07			0.07			
v/c Ratio	0.51	1.02		1.05	0.62	0.14	0.95	0.40	0.23	0.86	0.86	
Uniform Delay, d1	54.5	37.1		51.5	25.4	12.5	52.8	35.8	24.7	50.7	39.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.7	30.7		73.9	0.8	0.1	53.1	0.3	0.2	16.1	7.5	
Delay (s)	59.1	67.8		125.5	26.2	12.6	105.8	36.1	24.9	66.8	47.2	
Level of Service	E	E		F	C	B	F	D	C	E	D	
Approach Delay (s)		67.6			40.4			49.6			52.9	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM Average Control Delay	53.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	117.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
89: Country Club Dr & Chicago Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	40	50	1270	100	90	1840
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	0.99	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1800	1591	3610	1575	1805	3610
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1800	1591	3610	1575	1805	3610
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	43	53	1351	106	96	1957
RTOR Reduction (vph)	0	48	0	21	0	0
Lane Group Flow (vph)	43	5	1351	85	96	1957
Confl. Peds. (#/hr)	5	5		5	5	
Turn Type		custom		Perm	Prot	
Protected Phases			2		1	6
Permitted Phases	8	8		2		
Actuated Green, G (s)	5.8	5.8	35.3	35.3	5.9	45.2
Effective Green, g (s)	5.8	5.8	35.3	35.3	5.9	45.2
Actuated g/C Ratio	0.10	0.10	0.60	0.60	0.10	0.77
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	177	156	2160	942	181	2766
v/s Ratio Prot			0.37		0.05	c0.54
v/s Ratio Perm	c0.02	0.00		0.05		
v/c Ratio	0.24	0.03	0.63	0.09	0.53	0.71
Uniform Delay, d1	24.6	24.1	7.6	5.0	25.2	3.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	0.6	0.0	3.0	0.8
Delay (s)	25.3	24.2	8.2	5.1	28.2	4.4
Level of Service	C	C	A	A	C	A
Approach Delay (s)	24.7		8.0			5.5
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
90: Arlington Ave & SR-91 WB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1230	200	530	870	290	0	0	0	790	100	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97				1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85				1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (prot)	1805	5187	1574	1805	3610	1572				1715	1738	1593
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00				0.95	0.96	1.00
Satd. Flow (perm)	1805	5187	1574	1805	3610	1572				1715	1738	1593
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	61	1255	204	541	888	296	0	0	0	806	102	480
RTOR Reduction (vph)	0	0	91	0	0	139	0	0	0	0	0	38
Lane Group Flow (vph)	61	1255	113	541	888	157	0	0	0	451	457	442
Confl. Peds. (#/hr)	5		5	5		5						5
Turn Type	Prot		Perm	Prot		Perm				Split		pm+ov
Protected Phases	7	4		3	8					6	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	9.9	34.4	34.4	39.0	63.5	63.5				34.6	34.6	44.5
Effective Green, g (s)	9.9	34.4	34.4	39.0	63.5	63.5				34.6	34.6	44.5
Actuated g/C Ratio	0.08	0.29	0.29	0.32	0.53	0.53				0.29	0.29	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	149	1487	451	587	1910	832				494	501	644
v/s Ratio Prot	0.03	c0.24		c0.30	0.25					c0.26	0.26	0.06
v/s Ratio Perm			0.07			0.10						0.22
v/c Ratio	0.41	0.84	0.25	0.92	0.46	0.19				0.91	0.91	0.69
Uniform Delay, d1	52.3	40.3	32.9	39.0	17.6	14.8				41.2	41.2	31.9
Progression Factor	1.00	1.00	1.00	0.59	0.34	0.03				1.00	1.00	1.00
Incremental Delay, d2	1.8	6.0	1.3	17.6	0.7	0.4				21.2	20.9	3.0
Delay (s)	54.1	46.3	34.2	40.5	6.6	0.8				62.5	62.1	34.9
Level of Service	D	D	C	D	A	A				E	E	C
Approach Delay (s)		45.0			16.2			0.0			52.8	
Approach LOS		D			B			A			D	

Intersection Summary			
HCM Average Control Delay	36.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
91: Arlington Ave & SR-91 EB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	400	1160	310	220	1450	280	210	350	530	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.86	1.00	0.91	0.91	0.88			
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1805	3610	1596	1805	6536	1586	1643	3445	2842			
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1805	3610	1596	1805	6536	1586	1643	3445	2842			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	426	1234	330	234	1543	298	223	372	564	0	0	0
RTOR Reduction (vph)	0	0	64	0	0	110	0	0	454	0	0	0
Lane Group Flow (vph)	426	1234	266	234	1543	188	192	403	110	0	0	0
Confl. Peds. (#/hr)	5		5	5		5						
Turn Type	Prot		pm+ov	Prot		Perm	Split		Perm			
Protected Phases	7	4	2	3	8		2	2				
Permitted Phases			4			8			2			
Actuated Green, G (s)	33.9	58.5	82.0	26.0	50.6	50.6	23.5	23.5	23.5			
Effective Green, g (s)	33.9	58.5	82.0	26.0	50.6	50.6	23.5	23.5	23.5			
Actuated g/C Ratio	0.28	0.49	0.68	0.22	0.42	0.42	0.20	0.20	0.20			
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	510	1760	1144	391	2756	669	322	675	557			
v/s Ratio Prot	c0.24	c0.34	0.05	0.13	c0.24		0.12	c0.12				
v/s Ratio Perm			0.12			0.12			0.04			
v/c Ratio	0.84	0.70	0.23	0.60	0.56	0.28	0.60	0.60	0.20			
Uniform Delay, d1	40.4	23.9	7.2	42.3	26.3	22.8	43.9	43.9	40.4			
Progression Factor	1.14	0.27	0.39	1.23	1.35	1.82	1.00	1.00	1.00			
Incremental Delay, d2	5.9	1.2	0.1	2.3	0.8	1.0	3.0	1.4	0.2			
Delay (s)	51.8	7.6	2.9	54.1	36.2	42.5	46.9	45.4	40.5			
Level of Service	D	A	A	D	D	D	D	D	D			
Approach Delay (s)		16.3			39.1			43.3			0.0	
Approach LOS		B			D			D			A	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
92: Arlington Ave & Maude St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1630	210	100	1630	10	180	0	60	10	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.98		1.00	1.00		1.00	0.85			0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1805	5080		1805	5181		1805	1588			1725	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00			0.90	
Satd. Flow (perm)	1805	5080		1805	5181		1414	1588			1587	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	1680	216	103	1680	10	186	0	62	10	0	10
RTOR Reduction (vph)	0	10	0	0	0	0	0	51	0	0	8	0
Lane Group Flow (vph)	10	1886	0	103	1690	0	186	11	0	0	12	0
Confl. Peds. (#/hr)	5		5	5		5			5	5		
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	1.4	72.4		14.4	85.4		21.2	21.2			21.2	
Effective Green, g (s)	1.4	72.4		14.4	85.4		21.2	21.2			21.2	
Actuated g/C Ratio	0.01	0.60		0.12	0.71		0.18	0.18			0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	21	3065		217	3687		250	281			280	
v/s Ratio Prot	0.01	c0.37		c0.06	c0.33			0.01				
v/s Ratio Perm							c0.13				0.01	
v/c Ratio	0.48	0.62		0.47	0.46		0.74	0.04			0.04	
Uniform Delay, d1	58.9	15.0		49.3	7.4		46.8	41.0			41.0	
Progression Factor	1.18	0.92		0.64	0.60		1.00	1.00			1.00	
Incremental Delay, d2	12.8	0.7		1.4	0.4		11.4	0.1			0.1	
Delay (s)	82.3	14.5		33.0	4.8		58.2	41.0			41.0	
Level of Service	F	B		C	A		E	D			D	
Approach Delay (s)		14.9			6.4			53.9			41.0	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
93: Arlington Ave & Horace St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1300	150	40	1300	10	180	30	50	10	20	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	1.00
Satd. Flow (prot)	1803	3542		1805	3605			1776			1866	1587
Flt Permitted	0.15	1.00		0.12	1.00			0.77			0.90	1.00
Satd. Flow (perm)	277	3542		220	3605			1421			1714	1587
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	1383	160	43	1383	11	191	32	53	11	21	106
RTOR Reduction (vph)	0	6	0	0	0	0	0	8	0	0	0	42
Lane Group Flow (vph)	74	1537	0	43	1394	0	0	268	0	0	32	64
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	84.2	84.2		84.2	84.2			27.8			27.8	27.8
Effective Green, g (s)	84.2	84.2		84.2	84.2			27.8			27.8	27.8
Actuated g/C Ratio	0.70	0.70		0.70	0.70			0.23			0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	194	2485		154	2530			329			397	368
v/s Ratio Prot		c0.43			0.39							
v/s Ratio Perm	0.27			0.20				c0.19			0.02	0.04
v/c Ratio	0.38	0.62		0.28	0.55			0.82			0.08	0.17
Uniform Delay, d1	7.3	9.4		6.6	8.7			43.7			36.1	36.9
Progression Factor	0.19	0.36		0.48	0.53			1.00			1.00	1.00
Incremental Delay, d2	4.7	1.0		2.2	0.4			14.4			0.1	0.2
Delay (s)	6.0	4.3		5.4	5.1			58.0			36.2	37.1
Level of Service	A	A		A	A			E			D	D
Approach Delay (s)		4.4			5.1			58.0			36.9	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
94: Arlington Ave & Victoria Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	1300	40	480	1290	60	30	180	500	50	320	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3591		1805	3581		1805	1900	1597	1805	1900	1587
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3591		1805	3581		1805	1900	1597	1805	1900	1587
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	106	1383	43	511	1372	64	32	191	532	53	340	85
RTOR Reduction (vph)	0	2	0	0	3	0	0	0	30	0	0	51
Lane Group Flow (vph)	106	1424	0	511	1433	0	32	191	502	53	340	34
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			6
Actuated Green, G (s)	8.9	42.0		20.0	53.1		4.2	36.4	56.4	5.6	37.8	37.8
Effective Green, g (s)	8.9	42.0		20.0	53.1		4.2	36.4	56.4	5.6	37.8	37.8
Actuated g/C Ratio	0.07	0.35		0.17	0.44		0.04	0.30	0.47	0.05	0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	134	1257		301	1585		63	576	751	84	599	500
v/s Ratio Prot	0.06	c0.40		c0.28	0.40		0.02	0.10	c0.11	0.03	c0.18	
v/s Ratio Perm									0.20			0.02
v/c Ratio	0.79	1.13		1.70	0.90		0.51	0.33	0.67	0.63	0.57	0.07
Uniform Delay, d1	54.6	39.0		50.0	31.1		56.9	32.4	24.6	56.2	34.3	28.8
Progression Factor	1.36	0.70		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.4	68.5		327.9	7.6		6.3	1.5	2.3	14.4	3.9	0.3
Delay (s)	96.6	95.9		377.9	38.7		63.2	33.9	26.9	70.6	38.2	29.0
Level of Service	F	F		F	D		E	C	C	E	D	C
Approach Delay (s)		95.9			127.7			30.2			40.1	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM Average Control Delay	92.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	111.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
95: Arlington Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	690	1060	580	880	450	940	1270	280	500	1630	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3610	2814	3502	3610	1593	3502	3610	1593	3502	5171	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3610	2814	3502	3610	1593	3502	3610	1593	3502	5171	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	750	1152	630	957	489	1022	1380	304	543	1772	33
RTOR Reduction (vph)	0	0	1	0	0	41	0	0	10	0	1	0
Lane Group Flow (vph)	43	750	1151	630	957	448	1022	1380	294	543	1804	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	6.5	32.3	55.3	16.0	41.8	54.8	23.0	48.1	64.1	13.0	38.1	
Effective Green, g (s)	6.5	32.3	55.3	16.0	41.8	54.8	23.0	48.1	64.1	13.0	38.1	
Actuated g/C Ratio	0.05	0.26	0.44	0.13	0.33	0.44	0.18	0.38	0.51	0.10	0.30	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	94	930	1241	447	1203	696	642	1385	865	363	1571	
v/s Ratio Prot	0.02	0.21	c0.17	c0.18	0.27	0.07	c0.29	0.38	0.04	c0.16	c0.35	
v/s Ratio Perm			0.24			0.21			0.14			
v/c Ratio	0.46	0.81	0.93	1.41	0.80	0.64	1.59	1.00	0.34	1.50	1.15	
Uniform Delay, d1	57.7	43.6	33.2	54.7	37.9	27.6	51.2	38.6	18.1	56.2	43.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.5	5.2	11.9	197.2	3.7	2.0	273.7	23.1	0.2	237.2	74.6	
Delay (s)	61.2	48.8	45.1	251.9	41.6	29.7	324.9	61.7	18.4	293.4	118.2	
Level of Service	E	D	D	F	D	C	F	E	B	F	F	
Approach Delay (s)		46.9			102.6			156.2			158.7	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	121.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	125.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	109.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
96: Century Ave & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	10	10	30	10	60	40	2250	30	90	2940	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.92		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1790			1701		1805	5175		1805	5165	
Flt Permitted		0.62			0.90		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1143			1559		1805	5175		1805	5165	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	46	11	11	34	11	69	46	2586	34	103	3379	80
RTOR Reduction (vph)	0	8	0	0	61	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	60	0	0	53	0	46	2619	0	103	3458	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		9.3			9.3		4.1	61.7		8.7	66.3	
Effective Green, g (s)		9.3			9.3		4.1	61.7		8.7	66.3	
Actuated g/C Ratio		0.10			0.10		0.04	0.67		0.09	0.72	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		116			158		81	3482		171	3734	
v/s Ratio Prot							0.03	0.51		c0.06	c0.67	
v/s Ratio Perm		c0.05			0.03							
v/c Ratio		0.52			0.33		0.57	0.75		0.60	0.93	
Uniform Delay, d1		39.1			38.3		42.9	9.9		39.8	10.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.8			1.3		8.8	0.9		5.9	4.6	
Delay (s)		42.9			39.6		51.8	10.9		45.7	15.3	
Level of Service		D			D		D	B		D	B	
Approach Delay (s)		42.9			39.6			11.6			16.1	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	91.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
97: Via Vista Dr & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	30	50	30	30	50	50	2340	20	100	2780	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1800	1900	1615	1805	1900	1588	1805	5179		1805	5158	
Flt Permitted	0.61	1.00	1.00	0.74	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1162	1900	1615	1398	1900	1588	1805	5179		1805	5158	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	33	54	33	33	54	54	2543	22	109	3022	98
RTOR Reduction (vph)	0	0	49	0	0	50	0	0	0	0	2	0
Lane Group Flow (vph)	65	33	5	33	33	4	54	2565	0	109	3118	0
Confl. Peds. (#/hr)	5					5	5		5	5		5
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	13.0	7.8	7.8	10.4	6.5	6.5	5.2	54.8		8.2	57.8	
Effective Green, g (s)	13.0	7.8	7.8	10.4	6.5	6.5	5.2	54.8		8.2	57.8	
Actuated g/C Ratio	0.14	0.09	0.09	0.11	0.07	0.07	0.06	0.60		0.09	0.64	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	203	163	139	178	136	114	103	3129		163	3287	
v/s Ratio Prot	c0.02	0.02		0.01	0.02		0.03	c0.50		0.06	c0.60	
v/s Ratio Perm	c0.03		0.00	0.01		0.00						
v/c Ratio	0.32	0.20	0.03	0.19	0.24	0.03	0.52	0.82		0.67	0.95	
Uniform Delay, d1	34.5	38.6	38.0	36.2	39.8	39.2	41.5	14.1		39.9	15.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.6	0.1	0.5	0.9	0.1	4.7	1.8		9.9	7.0	
Delay (s)	35.5	39.2	38.1	36.7	40.7	39.3	46.3	15.9		49.9	22.1	
Level of Service	D	D	D	D	D	D	D	B		D	C	
Approach Delay (s)		37.2			39.0			16.5			23.0	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
98: Canyon Crest Dr & Alessandro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	0	20	640	10	30	30	2300	410	80	2890	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		0.94	1.00		1.00	0.91	1.00	1.00	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85		1.00	0.89		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3022		5090	1665		1805	5187	1594	1805	5181	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3022		5090	1665		1805	5187	1594	1805	5181	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	0	21	667	10	31	31	2396	427	83	3010	21
RTOR Reduction (vph)	0	20	0	0	27	0	0	0	114	0	0	0
Lane Group Flow (vph)	10	1	0	667	14	0	31	2396	313	83	3031	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	1.4	3.3		9.0	10.9		2.6	46.8	55.8	7.0	51.2	
Effective Green, g (s)	1.4	3.3		9.0	10.9		2.6	46.8	55.8	7.0	51.2	
Actuated g/C Ratio	0.02	0.04		0.11	0.13		0.03	0.57	0.68	0.09	0.62	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	31	121		558	221		57	2957	1161	154	3231	
v/s Ratio Prot	c0.01	0.00		c0.13	0.01		0.02	c0.46	0.03	0.05	c0.58	
v/s Ratio Perm									0.17			
v/c Ratio	0.32	0.01		1.20	0.06		0.54	0.81	0.27	0.54	0.94	
Uniform Delay, d1	39.9	37.8		36.5	31.1		39.2	14.1	5.2	36.0	14.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.0	0.0		104.5	0.1		10.2	1.8	0.1	3.6	6.1	
Delay (s)	45.8	37.8		141.1	31.3		49.4	15.9	5.3	39.6	20.1	
Level of Service	D	D		F	C		D	B	A	D	C	
Approach Delay (s)		40.4			134.7			14.7			20.7	
Approach LOS		D			F			B			C	

Intersection Summary			
HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	82.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
99: Oleander Ave/Harley Knox Blvd & Perris Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	270	210	40	630	970	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1787	1567	1805	1900	1900	1576
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1787	1567	1805	1900	1900	1576
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	314	244	47	733	1128	140
RTOR Reduction (vph)	0	131	0	0	0	11
Lane Group Flow (vph)	314	113	47	733	1128	129
Confl. Peds. (#/hr)	5	5	5			5
Turn Type		custom	Prot			Perm
Protected Phases			5	2	6	
Permitted Phases	4	4				6
Actuated Green, G (s)	23.6	23.6	4.8	78.4	69.6	69.6
Effective Green, g (s)	23.6	23.6	4.8	78.4	69.6	69.6
Actuated g/C Ratio	0.21	0.21	0.04	0.71	0.63	0.63
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	383	336	79	1354	1202	997
v/s Ratio Prot			0.03	c0.39	c0.59	
v/s Ratio Perm	c0.18	0.07				0.08
v/c Ratio	0.82	0.34	0.59	0.54	0.94	0.13
Uniform Delay, d1	41.2	36.6	51.6	7.4	18.3	8.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.8	0.6	11.5	1.6	14.9	0.3
Delay (s)	54.0	37.2	63.1	8.9	33.1	8.3
Level of Service	D	D	E	A	C	A
Approach Delay (s)	46.6			12.2	30.4	
Approach LOS	D			B	C	

Intersection Summary			
HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
100: Harley Knox Blvd & Evans Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)												
Lane Util. Factor												
Frt												
Flt Protected												
Satd. Flow (prot)												
Flt Permitted												
Satd. Flow (perm)												
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type							Perm			Perm		
Protected Phases								2			6	
Permitted Phases							2			6		
Actuated Green, G (s)												
Effective Green, g (s)												
Actuated g/C Ratio												
Clearance Time (s)												
Lane Grp Cap (vph)												
v/s Ratio Prot												
v/s Ratio Perm												
v/c Ratio												
Uniform Delay, d1												
Progression Factor												
Incremental Delay, d2												
Delay (s)												
Level of Service												
Approach Delay (s)		0.0			0.0			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	0.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	20.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
101: Ramona Expy & Indian St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	1290	120	90	1050	110	160	20	130	380	40	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0	6.0	4.0	4.6		4.0	4.9	4.9
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	5111		1805	5187	1582	1805	3096		1805	3610	1588
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	5111		1805	5187	1582	1805	3096		1805	3610	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	155	1330	124	93	1082	113	165	21	134	392	41	381
RTOR Reduction (vph)	0	8	0	0	0	71	0	116	0	0	0	210
Lane Group Flow (vph)	155	1446	0	93	1082	42	165	39	0	392	41	171
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Actuated Green, G (s)	15.9	43.9		13.2	41.2	41.2	15.1	13.3		21.0	18.9	18.9
Effective Green, g (s)	15.9	43.9		13.2	41.2	41.2	15.1	13.3		21.0	18.9	18.9
Actuated g/C Ratio	0.14	0.40		0.12	0.37	0.37	0.14	0.12		0.19	0.17	0.17
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	4.6		4.0	4.9	4.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	261	2040		217	1943	593	248	374		345	620	273
v/s Ratio Prot	c0.09	c0.28		0.05	0.21		0.09	0.01		c0.22	0.01	
v/s Ratio Perm						0.03						c0.11
v/c Ratio	0.59	0.71		0.43	0.56	0.07	0.67	0.10		1.14	0.07	0.63
Uniform Delay, d1	44.0	27.7		44.9	27.2	22.1	45.1	43.0		44.5	38.2	42.3
Progression Factor	1.02	0.70		0.99	1.05	2.38	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.5	2.1		1.3	1.1	0.2	6.6	0.1		90.7	0.0	4.4
Delay (s)	48.6	21.5		45.7	29.6	52.8	51.6	43.2		135.2	38.2	46.7
Level of Service	D	C		D	C	D	D	D		F	D	D
Approach Delay (s)		24.2			32.8			47.5			88.9	
Approach LOS		C			C			D			F	

Intersection Summary			
HCM Average Control Delay	41.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
102: Ramona Expy & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	1110	270	200	730	90	250	350	220	260	520	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5187	1586	3502	5091		3502	3610	1587	3502	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5187	1586	3502	5091		3502	3610	1587	3502	3610	1588
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	206	1144	278	206	753	93	258	361	227	268	536	144
RTOR Reduction (vph)	0	0	166	0	12	0	0	0	172	0	0	114
Lane Group Flow (vph)	206	1144	112	206	834	0	258	361	55	268	536	30
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	11.7	44.3	44.3	11.5	44.1		12.1	22.1	22.1	12.8	22.8	22.8
Effective Green, g (s)	11.7	44.3	44.3	11.5	44.1		12.1	22.1	22.1	12.8	22.8	22.8
Actuated g/C Ratio	0.11	0.40	0.40	0.10	0.40		0.11	0.20	0.20	0.12	0.21	0.21
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	372	2089	639	366	2041		385	725	319	408	748	329
v/s Ratio Prot	c0.06	c0.22		0.06	0.16		0.07	0.10		c0.08	c0.15	
v/s Ratio Perm			0.07						0.03			0.02
v/c Ratio	0.55	0.55	0.18	0.56	0.41		0.67	0.50	0.17	0.66	0.72	0.09
Uniform Delay, d1	46.7	25.2	21.1	46.9	23.6		47.0	39.0	36.4	46.5	40.6	35.2
Progression Factor	1.34	0.70	0.66	0.88	0.86		0.84	0.72	1.54	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.7	0.4	1.5	0.5		4.3	0.5	0.2	3.8	3.3	0.1
Delay (s)	63.5	18.4	14.3	42.8	20.7		43.6	28.6	56.4	50.3	43.9	35.3
Level of Service	E	B	B	D	C		D	C	E	D	D	D
Approach Delay (s)		23.4			25.0			40.6			44.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	31.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
103: Ramona Expy & Evans Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	660	990	300	20	450	150	170	350	20	330	400	430
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	5187	1593	1805	3610	1586	3502	3578		3502	3610	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	5187	1593	1805	3610	1586	3502	3578		3502	3610	1588
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	767	1151	349	23	523	174	198	407	23	384	465	500
RTOR Reduction (vph)	0	0	0	0	0	131	0	4	0	0	0	297
Lane Group Flow (vph)	767	1151	349	23	523	43	198	426	0	384	465	203
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Free	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6						4
Actuated Green, G (s)	23.0	47.6	110.0	2.4	27.0	27.0	7.0	29.0		11.0	33.0	33.0
Effective Green, g (s)	23.0	47.6	110.0	2.4	27.0	27.0	7.0	29.0		11.0	33.0	33.0
Actuated g/C Ratio	0.21	0.43	1.00	0.02	0.25	0.25	0.06	0.26		0.10	0.30	0.30
Clearance Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0		4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	732	2245	1593	39	886	389	223	943		350	1083	476
v/s Ratio Prot	c0.22	0.22		0.01	c0.14		0.06	0.12		c0.11	c0.13	
v/s Ratio Perm			c0.22			0.03						0.13
v/c Ratio	1.05	0.51	0.22	0.59	0.59	0.11	0.89	0.45		1.10	0.43	0.43
Uniform Delay, d1	43.5	22.7	0.0	53.3	36.6	32.2	51.1	33.9		49.5	30.9	30.9
Progression Factor	0.82	0.78	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	45.5	0.8	0.3	20.8	2.9	0.6	31.7	1.6		76.8	1.2	2.8
Delay (s)	81.2	18.5	0.3	74.1	39.5	32.8	82.8	35.4		126.3	32.2	33.7
Level of Service	F	B	A	E	D	C	F	D		F	C	C
Approach Delay (s)		36.9			39.0			50.4			59.5	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM Average Control Delay	45.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
104: Morgan St & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	20	110	30	20	20	90	850	30	20	1030	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.2		4.0	4.1	4.1	4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	3064		1805	1900	1581	1805	3589		1805	3610	1592
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	3064		1805	1900	1581	1805	3589		1805	3610	1592
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	22	118	32	22	22	97	914	32	22	1108	43
RTOR Reduction (vph)	0	110	0	0	0	21	0	1	0	0	0	16
Lane Group Flow (vph)	43	30	0	32	22	1	97	945	0	22	1108	27
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	4.2	7.4		3.6	6.9	6.9	11.2	78.2		3.3	70.3	70.3
Effective Green, g (s)	4.2	7.4		3.6	6.9	6.9	11.2	78.2		3.3	70.3	70.3
Actuated g/C Ratio	0.04	0.07		0.03	0.06	0.06	0.10	0.71		0.03	0.64	0.64
Clearance Time (s)	4.0	4.2		4.0	4.1	4.1	4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	69	206		59	119	99	184	2551		54	2307	1017
v/s Ratio Prot	c0.02	0.01		0.02	c0.01		c0.05	0.26		0.01	c0.31	
v/s Ratio Perm						0.00						0.02
v/c Ratio	0.62	0.15		0.54	0.18	0.01	0.53	0.37		0.41	0.48	0.03
Uniform Delay, d1	52.1	48.3		52.4	48.9	48.4	46.9	6.2		52.4	10.3	7.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.41	0.15		0.98	0.62	0.75
Incremental Delay, d2	16.2	0.3		9.8	0.8	0.1	2.4	0.4		4.6	0.7	0.0
Delay (s)	68.3	48.6		62.2	49.6	48.4	68.7	1.3		56.1	7.1	5.5
Level of Service	E	D		E	D	D	E	A		E	A	A
Approach Delay (s)		53.3			54.6			7.5			8.0	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
105: Morgan St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	40	40	60	30	110	80	340	80	330	490	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1587	1805	1900	1587	1805	3486		1805	3610	1586
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1587	1805	1900	1587	1805	3486		1805	3610	1586
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	71	47	47	71	35	129	94	400	94	388	576	94
RTOR Reduction (vph)	0	0	43	0	0	119	0	13	0	0	0	34
Lane Group Flow (vph)	71	47	4	71	35	10	94	481	0	388	576	60
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	5.6	8.3	8.3	5.6	8.3	8.3	9.6	51.4		28.7	70.5	70.5
Effective Green, g (s)	5.6	8.3	8.3	5.6	8.3	8.3	9.6	51.4		28.7	70.5	70.5
Actuated g/C Ratio	0.05	0.08	0.08	0.05	0.08	0.08	0.09	0.47		0.26	0.64	0.64
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	92	143	120	92	143	120	158	1629		471	2314	1016
v/s Ratio Prot	c0.04	c0.02		0.04	0.02		0.05	c0.14		c0.21	0.16	
v/s Ratio Perm			0.00			0.01						0.04
v/c Ratio	0.77	0.33	0.03	0.77	0.24	0.08	0.59	0.30		0.82	0.25	0.06
Uniform Delay, d1	51.6	48.2	47.1	51.6	47.9	47.3	48.3	18.1		38.3	8.4	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.57		1.00	1.00	1.00
Incremental Delay, d2	32.1	1.3	0.1	32.1	0.9	0.3	5.3	0.4		11.2	0.3	0.1
Delay (s)	83.7	49.6	47.2	83.7	48.8	47.6	52.2	10.7		49.4	8.7	7.5
Level of Service	F	D	D	F	D	D	D	B		D	A	A
Approach Delay (s)		63.6			58.7			17.3			23.5	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM Average Control Delay	29.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
106: Rider St & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	130	100	150	60	110	20	750	140	160	960	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1791	1762		1798	1900	1583	1805	3508		1805	3597	
Flt Permitted	0.71	1.00		0.39	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1345	1762		739	1900	1583	1805	3508		1805	3597	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	79	146	112	169	67	124	22	843	157	180	1079	22
RTOR Reduction (vph)	0	28	0	0	0	95	0	12	0	0	1	0
Lane Group Flow (vph)	79	230	0	169	67	29	22	988	0	180	1100	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	25.4	25.4		25.4	25.4	25.4	2.5	54.6		15.4	67.5	
Effective Green, g (s)	25.4	25.4		25.4	25.4	25.4	2.5	54.6		15.4	67.5	
Actuated g/C Ratio	0.23	0.23		0.23	0.23	0.23	0.02	0.50		0.14	0.61	
Clearance Time (s)	5.3	5.3		5.3	5.3	5.3	4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	311	407		171	439	366	41	1741		253	2207	
v/s Ratio Prot		0.13			0.04		0.01	c0.28		c0.10	0.31	
v/s Ratio Perm	0.06			c0.23		0.02						
v/c Ratio	0.25	0.57		0.99	0.15	0.08	0.54	0.57		0.71	0.50	
Uniform Delay, d1	34.6	37.4		42.2	33.7	33.1	53.2	19.4		45.2	11.8	
Progression Factor	1.00	1.00		0.84	0.83	0.92	0.81	0.77		1.17	0.45	
Incremental Delay, d2	0.4	1.8		63.6	0.2	0.1	11.4	1.2		8.4	0.7	
Delay (s)	35.0	39.2		98.9	28.3	30.6	54.2	16.1		61.2	6.1	
Level of Service	C	D		F	C	C	D	B		E	A	
Approach Delay (s)		38.2			62.2			16.9			13.8	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
107: Rider St & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	240	70	10	180	30	50	190	30	60	260	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3473		1805	3524		1805	3529		1805	3323	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3473		1805	3524		1805	3529		1805	3323	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	302	279	81	12	209	35	58	221	35	70	302	279
RTOR Reduction (vph)	0	30	0	0	15	0	0	9	0	0	122	0
Lane Group Flow (vph)	302	330	0	12	229	0	58	247	0	70	459	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	21.4	35.8		1.2	15.6		7.9	48.6		8.4	49.1	
Effective Green, g (s)	21.4	35.8		1.2	15.6		7.9	48.6		8.4	49.1	
Actuated g/C Ratio	0.19	0.33		0.01	0.14		0.07	0.44		0.08	0.45	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	351	1130		20	500		130	1559		138	1483	
v/s Ratio Prot	c0.17	0.10		0.01	c0.07		0.03	0.07		c0.04	c0.14	
v/s Ratio Perm												
v/c Ratio	0.86	0.29		0.60	0.46		0.45	0.16		0.51	0.31	
Uniform Delay, d1	42.9	27.7		54.2	43.3		49.0	18.4		48.8	19.6	
Progression Factor	0.95	0.78		1.00	1.00		1.00	1.00		1.43	0.53	
Incremental Delay, d2	17.8	0.1		40.2	0.7		2.4	0.2		2.8	0.5	
Delay (s)	58.5	21.7		94.3	44.0		51.4	18.6		72.7	11.0	
Level of Service	E	C		F	D		D	B		E	B	
Approach Delay (s)		38.5			46.4			24.7			17.6	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
108: Mid County Pkwy WB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	180	40	320	130	1040	0	0	1620	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.98	1.00	1.00			1.00	0.97
Flpb, ped/bikes					1.00	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1816	1586	1805	3610			3610	1564
Flt Permitted					0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)					1816	1586	1805	3610			3610	1564
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	196	43	348	141	1130	0	0	1761	391
RTOR Reduction (vph)	0	0	0	0	0	95	0	0	0	0	0	110
Lane Group Flow (vph)	0	0	0	0	239	253	141	1130	0	0	1761	281
Confl. Peds. (#/hr)				5		5	5					5
Turn Type				Perm		Perm	Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Actuated Green, G (s)					22.2	22.2	11.0	79.8			64.8	64.8
Effective Green, g (s)					22.2	22.2	11.0	79.8			64.8	64.8
Actuated g/C Ratio					0.20	0.20	0.10	0.73			0.59	0.59
Clearance Time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					367	320	181	2619			2127	921
v/s Ratio Prot							c0.08	0.31			c0.49	
v/s Ratio Perm					0.13	c0.16						0.18
v/c Ratio					0.65	0.79	0.78	0.43			0.83	0.30
Uniform Delay, d1					40.3	41.7	48.3	6.0			18.1	11.3
Progression Factor					1.00	1.00	0.76	1.00			0.98	0.92
Incremental Delay, d2					4.1	12.5	6.1	0.2			3.7	0.8
Delay (s)					44.4	54.2	42.6	6.2			21.6	11.2
Level of Service					D	D	D	A			C	B
Approach Delay (s)		0.0			50.2			10.2			19.7	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
109: Mid County Pkwy EB Ramps & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	370	120	290	0	0	0	0	800	250	520	1280	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00						0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99						0.99		1.00	1.00	
Flpb, ped/bikes	0.99	1.00						1.00		1.00	1.00	
Frt	1.00	0.89						0.96		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1794	1677						3455		1805	3610	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1794	1677						3455		1805	3610	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	402	130	315	0	0	0	0	870	272	565	1391	0
RTOR Reduction (vph)	0	52	0	0	0	0	0	27	0	0	0	0
Lane Group Flow (vph)	402	393	0	0	0	0	0	1115	0	565	1391	0
Confl. Peds. (#/hr)	5		5						5	5		
Turn Type	Perm									Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4											
Actuated Green, G (s)	27.4	27.4						35.2		35.4	74.6	
Effective Green, g (s)	27.4	27.4						35.2		35.4	74.6	
Actuated g/C Ratio	0.25	0.25						0.32		0.32	0.68	
Clearance Time (s)	4.0	4.0						4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	447	418						1106		581	2448	
v/s Ratio Prot		c0.23						c0.32		c0.31	0.39	
v/s Ratio Perm	0.22											
v/c Ratio	0.90	0.94						1.01		0.97	0.57	
Uniform Delay, d1	40.0	40.5						37.4		36.8	9.3	
Progression Factor	1.00	1.00						0.42		0.98	0.13	
Incremental Delay, d2	20.4	29.4						24.4		21.8	0.6	
Delay (s)	60.4	69.9						40.1		57.9	1.8	
Level of Service	E	E						D		E	A	
Approach Delay (s)		65.4			0.0			40.1			18.0	
Approach LOS		E			A			D			B	

Intersection Summary			
HCM Average Control Delay	34.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
110: Mid County Pkwy WB Ramps & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	140	40	30	200	130	0	0	240	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes					1.00		1.00	1.00			1.00	0.97
Flpb, ped/bikes					0.99		1.00	1.00			1.00	1.00
Frt					0.98		1.00	1.00			1.00	0.85
Flt Protected					0.97		0.95	1.00			1.00	1.00
Satd. Flow (prot)					1783		1805	1900			1900	1564
Flt Permitted					0.97		0.95	1.00			1.00	1.00
Satd. Flow (perm)					1783		1805	1900			1900	1564
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	152	43	33	217	141	0	0	261	98
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	44
Lane Group Flow (vph)	0	0	0	0	221	0	217	141	0	0	261	54
Confl. Peds. (#/hr)				5		5	5					5
Turn Type				Perm			Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8								6
Actuated Green, G (s)					19.0		18.5	83.0			60.5	60.5
Effective Green, g (s)					19.0		18.5	83.0			60.5	60.5
Actuated g/C Ratio					0.17		0.17	0.75			0.55	0.55
Clearance Time (s)					4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					308		304	1434			1045	860
v/s Ratio Prot							c0.12	0.07			c0.14	
v/s Ratio Perm					0.12							0.03
v/c Ratio					0.72		0.71	0.10			0.25	0.06
Uniform Delay, d1					43.0		43.2	3.6			12.9	11.5
Progression Factor					1.00		1.27	0.95			1.00	1.00
Incremental Delay, d2					7.8		7.6	0.1			0.6	0.1
Delay (s)					50.8		62.7	3.5			13.5	11.7
Level of Service					D		E	A			B	B
Approach Delay (s)		0.0			50.8			39.4			13.0	
Approach LOS		A			D			D			B	

Intersection Summary			
HCM Average Control Delay	32.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
111: Mid County Pkwy EB Ramps & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	40	500	0	0	0	0	260	140	30	340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00	0.97					1.00	0.97	1.00	1.00	
Flpb, ped/bikes		0.99	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1830	1567					1900	1564	1805	1900	
Flt Permitted		0.97	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1830	1567					1900	1564	1805	1900	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	43	543	0	0	0	0	283	152	33	370	0
RTOR Reduction (vph)	0	0	284	0	0	0	0	0	57	0	0	0
Lane Group Flow (vph)	0	119	259	0	0	0	0	283	95	33	370	0
Confl. Peds. (#/hr)	5		5						5	5		
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		24.2	24.2					68.7	68.7	5.1	77.8	
Effective Green, g (s)		24.2	24.2					68.7	68.7	5.1	77.8	
Actuated g/C Ratio		0.22	0.22					0.62	0.62	0.05	0.71	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		403	345					1187	977	84	1344	
v/s Ratio Prot								0.15		c0.02	c0.19	
v/s Ratio Perm		0.07	c0.17						0.06			
v/c Ratio		0.30	0.75					0.24	0.10	0.39	0.28	
Uniform Delay, d1		35.8	40.1					9.1	8.3	50.9	5.9	
Progression Factor		1.00	1.00					1.00	1.00	1.13	1.11	
Incremental Delay, d2		0.4	8.9					0.5	0.2	2.9	0.5	
Delay (s)		36.2	49.0					9.6	8.5	60.3	7.0	
Level of Service		D	D					A	A	E	A	
Approach Delay (s)		46.7			0.0			9.2			11.4	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
112: Placentia Ave & Perris Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	60	330	70	30	60	290	920	100	100	1140	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9	4.9	4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.87		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1632		1805	1900	1586	1805	3550		1805	3599	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1632		1805	1900	1586	1805	3550		1805	3599	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	38	75	412	88	38	75	362	1150	125	125	1425	25
RTOR Reduction (vph)	0	185	0	0	0	57	0	7	0	0	1	0
Lane Group Flow (vph)	38	302	0	88	38	18	362	1268	0	125	1449	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	3.2	23.6		6.0	26.4	26.4	22.2	51.7		10.5	40.0	
Effective Green, g (s)	3.2	23.6		6.0	26.4	26.4	22.2	51.7		10.5	40.0	
Actuated g/C Ratio	0.03	0.21		0.05	0.24	0.24	0.20	0.47		0.10	0.36	
Clearance Time (s)	4.0	4.9		4.0	4.9	4.9	4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	53	350		98	456	381	364	1669		172	1309	
v/s Ratio Prot	0.02	c0.19		c0.05	c0.02		c0.20	0.36		0.07	c0.40	
v/s Ratio Perm						0.01						
v/c Ratio	0.72	0.86		0.90	0.08	0.05	0.99	0.76		0.73	1.11	
Uniform Delay, d1	53.0	41.7		51.7	32.4	32.1	43.8	24.0		48.4	35.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.85	0.94		1.19	0.81	
Incremental Delay, d2	36.9	19.3		58.5	0.1	0.1	45.4	3.3		11.2	57.2	
Delay (s)	89.9	60.9		110.2	32.5	32.2	82.7	25.9		68.6	85.5	
Level of Service	F	E		F	C	C	F	C		E	F	
Approach Delay (s)		63.0			66.4			38.4			84.2	
Approach LOS		E			E			D			F	

Intersection Summary			
HCM Average Control Delay	61.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	23.1
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
113: Placentia Ave & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											361	
pX, platoon unblocked												
vC, conflicting volume	0	0	0	0	0	0	0			0		
vC1, stage 1 conf vol	0	0		0	0							
vC2, stage 2 conf vol	0	0		0	0							
vCu, unblocked vol	0	0	0	0	0	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	1029	900	1091	1029	900	1091	1636			1636		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	0	0	0	0	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	0.0	0.0	0.0		0.0	
Approach LOS	A	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
114: Orange Ave & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	90	110	50	20	80	60	40	230	30	20	220	150
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	99	121	55	22	88	66	44	253	33	22	242	165

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	275	176	44	286	22	407
Volume Left (vph)	99	22	44	0	22	0
Volume Right (vph)	55	66	0	33	0	165
Hadj (s)	-0.05	-0.20	0.50	-0.08	0.50	-0.28
Departure Headway (s)	6.6	6.7	7.4	6.8	7.2	6.4
Degree Utilization, x	0.50	0.33	0.09	0.54	0.04	0.72
Capacity (veh/h)	495	455	453	490	473	538
Control Delay (s)	16.0	13.0	9.9	16.3	9.4	23.3
Approach Delay (s)	16.0	13.0	15.4		22.6	
Approach LOS	C	B	C		C	

Intersection Summary			
Delay	17.7		
HCM Level of Service	C		
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
115: Nuevo Rd & Evans Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	480	0	0	360	80	0	0	0	90	0	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0				4.0		4.0
Lane Util. Factor	1.00	1.00			1.00	1.00				1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00	0.97				1.00		0.97
Flpb, ped/bikes	1.00	1.00			1.00	1.00				0.99		1.00
Frt	1.00	1.00			1.00	0.85				1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)	1805	1900			1900	1567				1787		1567
Flt Permitted	0.95	1.00			1.00	1.00				0.76		1.00
Satd. Flow (perm)	1805	1900			1900	1567				1425		1567
Peak-hour factor, PHF	0.90	0.90	0.92	0.92	0.90	0.90	0.92	0.92	0.92	0.90	0.92	0.90
Adj. Flow (vph)	244	533	0	0	400	89	0	0	0	100	0	211
RTOR Reduction (vph)	0	0	0	0	0	63	0	0	0	0	0	117
Lane Group Flow (vph)	244	533	0	0	400	26	0	0	0	100	0	94
Confl. Peds. (#/hr)	5					5				5		5
Turn Type	Prot					Perm	Perm			custom		custom
Protected Phases	7	4			8			2				
Permitted Phases						8	2			6		6
Actuated Green, G (s)	20.1	53.2			29.1	29.1				48.8		48.8
Effective Green, g (s)	20.1	53.2			29.1	29.1				48.8		48.8
Actuated g/C Ratio	0.18	0.48			0.26	0.26				0.44		0.44
Clearance Time (s)	4.0	4.0			4.0	4.0				4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)	330	919			503	415				632		695
v/s Ratio Prot	c0.14	0.28			c0.21							
v/s Ratio Perm						0.02				c0.07		0.06
v/c Ratio	0.74	0.58			0.80	0.06				0.16		0.13
Uniform Delay, d1	42.5	20.4			37.7	30.3				18.3		18.1
Progression Factor	1.00	1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2	8.4	0.9			8.5	0.1				0.5		0.4
Delay (s)	50.9	21.3			46.2	30.3				18.8		18.5
Level of Service	D	C			D	C				B		B
Approach Delay (s)		30.6			43.3			0.0			18.6	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group