Appendix P

Technical Memorandum, Existing Conditions Intersection Level of Service Analysis Results

180 Grand Avenue, Suite 250
Oakland, CA 94612
www.dowlinginc.com

510.839.1742
510.839.0871 fax
traffic@dowlinginc.com

Dowling Associates, Inc.

Date: March 19, 2008

Memorandum

To: Francis Lo, TY Lin International

From: Burhan Kocaman and Marty Beene, P.E.

Reference: Existing Conditions Intersection Level of Service Analysis Results P07084

Subject: I-880-SR238 East-West Connector Study

This memo summarizes the existing conditions level of service analysis results at 31 study intersections under the I-880-SR238 East-West Connector Project in the City of Fremont and City of Union City.

Intersection turning movement traffic volumes were collected in November, 2007, for both the AM and PM peak periods. The resulting existing traffic volumes at study area intersections are provided in Appendix A.

LEVEL OF SERVICE METHODOLOGY

Signalized Intersections Analysis

Signalized intersection analyses were conducted using the operational methodology outlined in the *Highway Capacity Manual* (Transportation Research Board, Washington, D.C., 2000, Chapters 10 and 16).

This procedure calculates an average stopped delay per vehicle at a signalized intersection, and assigns a level of service designation based upon the delay. **Table 1** shows the level of service criteria for signalized intersections.

Table 1
Level of Service Criteria – Signalized Intersections

Level of Service (LOS)	Average Delay (seconds/vehicle)	Description
A	≤ 10	Very Low Delay: This level of service occurs when progression is extremely favorable and most vehicles arrive during a green phase. Most vehicles do not stop at all.
B	> 10 and ≤ 20	Minimal Delays: This level of service generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.

Table 1, continued Level of Service Criteria – Signalized Intersections		
Level of Service (LOS)	**Average Delay (seconds/vehicle)**	**Description**
C	> 20 and ≤ 35	Acceptable Delay: Delay increases due to only fair progression, longer cycle lengths, or both. Individual cycle failures (to service all waiting vehicles) may begin to appear at this level of service. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	> 35 and ≤ 55	Approaching Unstable Operation/Significant Delays: The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume / capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55 and ≤ 80	Unstable Operation/Substantial Delays: These high delay values generally indicate poor progression, long cycle lengths, and high volume / capacity ratios. Individual cycle failures are frequent occurrences.
F	> 80	Excessive Delays: This level, considered unacceptable to most drivers, often occurs with over-saturation (that is, when arrival traffic volumes exceed the capacity of the intersection). It may also occur at nearly saturated conditions with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.
Source: Transportation Research Board, *Highway Capacity Manual,* Washington, D.C., 2000, pages 10-16 and 16-2.		

Unsignalized Intersections Analysis

Two-way stop sign controlled intersections were analyzed utilizing the methodology outlined in the *Highway Capacity Manual* (Transportation Research Board, Washington, D.C., 2000, Chapters 10 and 17). This methodology determines the Level of Service by calculating an average total delay per vehicle for each controlled movement and for the intersection as a whole. An LOS designation is assigned based upon the average control delay of all movements. **Table 2** presents the relationship of total delay to level of service for stop-controlled intersections.

Table 2 Level of Service Criteria at Two- Way Stop-Controlled Intersections	
Level of Service	**Average Control Delay (seconds/vehicle)**
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50
Source: Transportation Research Board, *Highway Capacity Manual,* Washington, D.C., 2000, pages 10-16 and 16-2.	

EXISTING CONDITIONS INTERSECTION LEVEL OF SERVICE

The existing AM and PM peak hour operating conditions at the study area intersections are shown in **Table 3**. Detailed intersection LOS calculations are provided in Appendix B.

Table 3
Intersection Level of Service - Existing Conditions

Intersection	Traffic Control	Peak Hour	Delay Type	Existing Conditions	
				LOS[1]	Delay[2]
1. Decoto Rd/Mission Blvd	Signal	AM	Overall	C	23.4
		PM		C	32.3
2. Decoto Rd/7th St	Signal	AM	Overall	C	33.1
		PM		C	30.9
3. Decoto Rd/11th St	Signal	AM	Overall	D	37.8
		PM		D	49.2
4. Decoto Rd/Union Square	Signal	AM	Overall	D	35.9
		PM		D	44.1
5. Decoto Rd/Alvarado-Niles Rd	Signal	AM	Overall	F	>80.0
		PM		F	>80.0
6. Decoto Rd/Perry Rd	Signal	AM	Overall	C	26.4
		PM		C	32.8
7. Decoto Rd/Paseo Padre Pkwy	Signal	AM	Overall	D	54.5
		PM		E	61.3
8. Decoto Rd/Brookmill Dr	Minor Stop-Controlled	AM	Worst Movement	F (49 vehicles)	>50.0
		PM	Worst Movement	F (24 vehicles)	>50.0
9. Decoto Rd/Fremont Blvd	Signal	AM	Overall	E	79.9
		PM		E	59.0
10. Decoto Rd/Ozark River Wy	Signal	AM	Overall	A	7.1
		PM		A	8.4
11. Decoto Rd/Canal Terrace-Cabrillo Ct	Signal	AM	Overall	C	23.3
		PM		B	19.2
12. Decoto Rd/I-880 NB Ramps	Signal	AM	Overall	D	43.7
		PM		F	>80.0
13. Decoto Rd/I-880 SB Ramps	Signal	AM	Overall	A	5.0
		PM		E	68.2
14. Mission Blvd/Appian Wy-7th St	Signal	AM	Overall	C	25.2
		PM		C	23.0

Source: Dowling Associates, Inc., 2008.

[1] LOS = Level of Service

[2] Weighted average control delay in seconds

Table 3, continued
Intersection Level of Service – Existing Conditions

Intersection	Traffic Control	Peak Hour	Delay Type	Existing Conditions	
				LOS[1]	Delay[2]
15. Alvarado-Niles Rd/Mann Ave-Union Square	Signal	AM	Overall	C	23.0
		PM		C	25.3
16. Paseo Padre Pkwy/Wyndham Dr	Minor Stop-Controlled	AM	Worst Movement	F (91 vehicles)	>50.0
		PM	Worst Movement	F (58 vehicles)	>50.0
17. Paseo Padre Pkwy/Temayo St	Minor Stop-Controlled	AM	Worst Movement	F (152 vehicles)	>50.0
		PM	Worst Movement	F (86 vehicles)	>50.0
18. Paseo Padre Pkwy/Isherwood Wy	Signal	AM	Overall	B	19.3
		PM		B	19.7
19. Paseo Padre Pkwy/Thornton Ave	Signal	AM	Overall	C	25.0
		PM		C	26.1
20. Paseo Padre Pkwy/Peralta Blvd	Signal	AM	Overall	D	40.3
		PM		E	61.2
21. Fremont Blvd/I-880 SB Ramps-Deep Creek Rd	Signal	AM	Overall	C	32.5
		PM		C	25.1
22. Fremont Blvd/I-880 NB Ramps	Signal	AM	Overall	B	13.9
		PM		B	14.5
23. Fremont Blvd/Paseo Padre Pkwy	Signal	AM	Overall	C	31.2
		PM		C	31.3
24. Thornton Ave/I-880 SB Ramps	Signal	AM	Overall	A	8.3
		PM		B	15.2
25. Thornton Ave/I-880 NB Ramps	Signal	AM	Overall	A	5.7
		PM		B	11.5
26. Thornton Ave/I-880 NB On-Ramp-Blacow Rd	Signal	AM	Overall	B	18.0
		PM		C	26.9
27. Thornton Ave/Fremont Blvd	Signal	AM	Overall	C	29.5
		PM		C	32.1
28. Alvarado-Niles Rd/Nursery Ave	Signal	AM	Overall	C	27.0
		PM		B	15.4
29. Alvarado-Niles Rd/Linda Dr	Minor Stop-Controlled	AM	Worst Movement	C (10 vehicles)	19.5
		PM	Worst Movement	C (13 vehicles)	20.6
30. Mission Blvd/Nursery Ave	Signal	AM	Overall	C	29.9
		PM		C	31.8
31. Mission Blvd/Niles Canyon Rd-Niles Blvd	Signal	AM	Overall	D	53.5
		PM		D	48.8

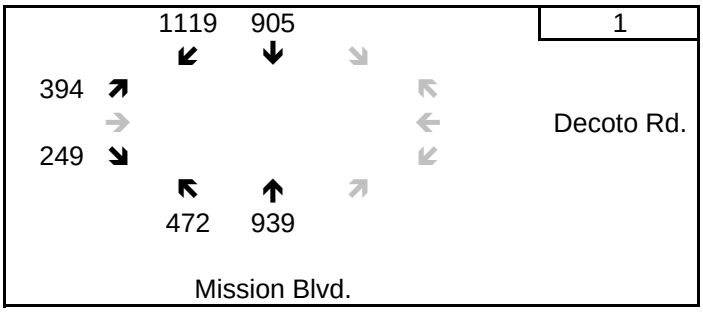
Source: Dowling Associates, Inc., 2008.

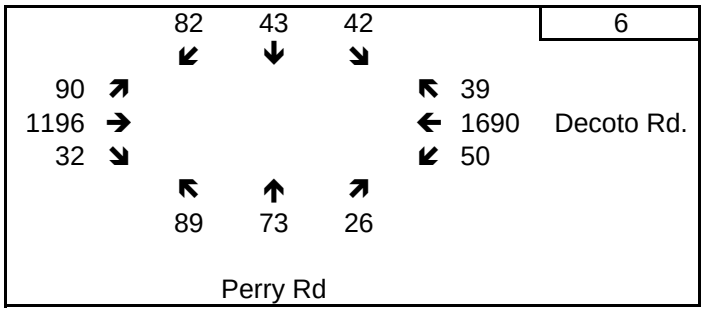
[1] LOS = Level of Service; [2] Weighted average control delay in seconds

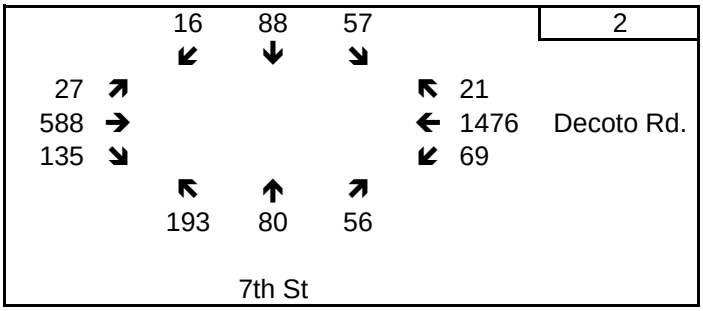
APPENDIX A

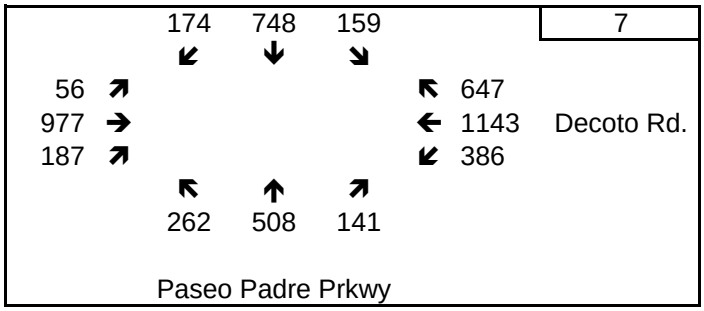
Existing Intersection Volumes

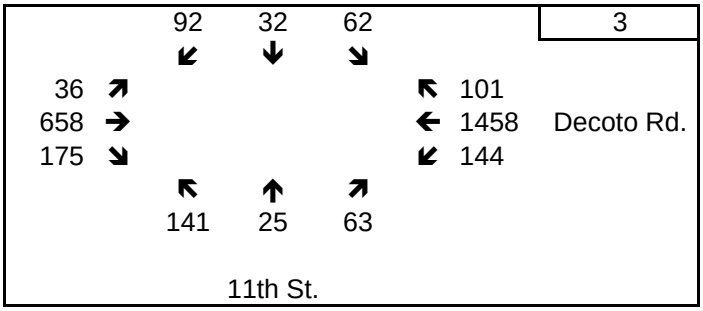
Dowling Associates, Inc.

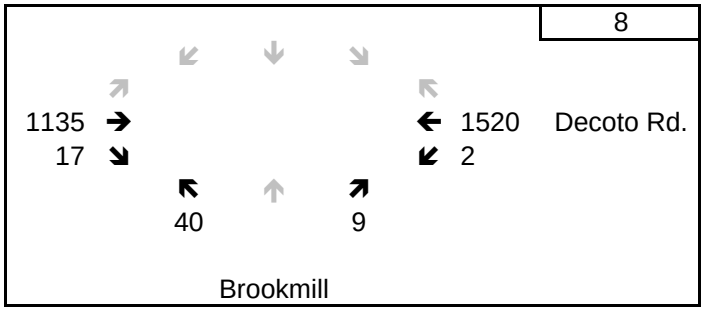


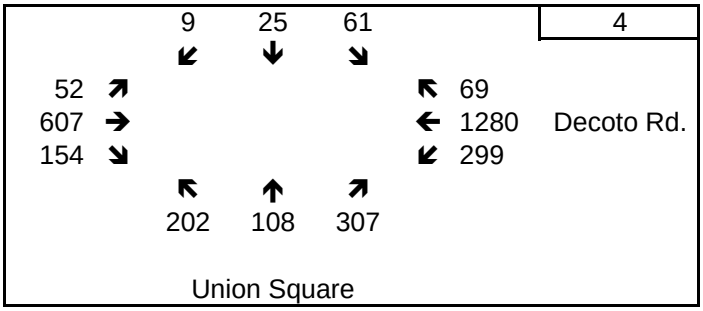


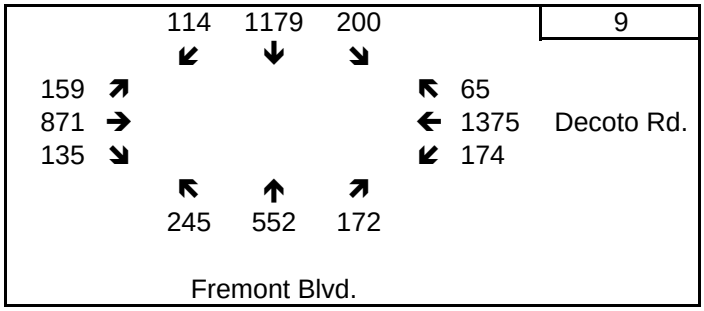


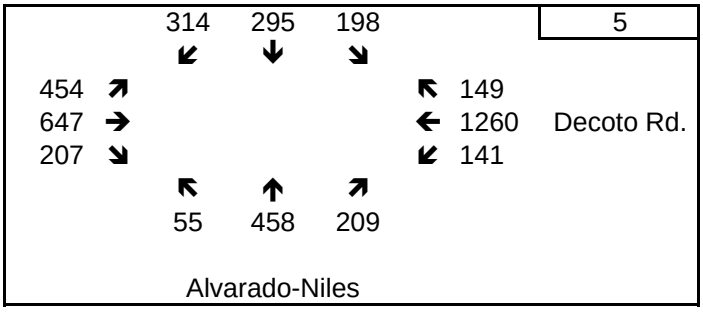


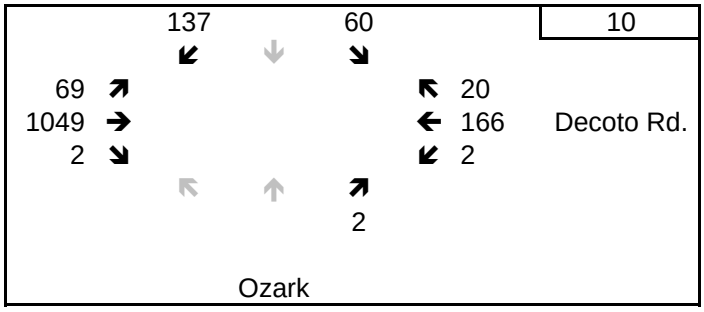




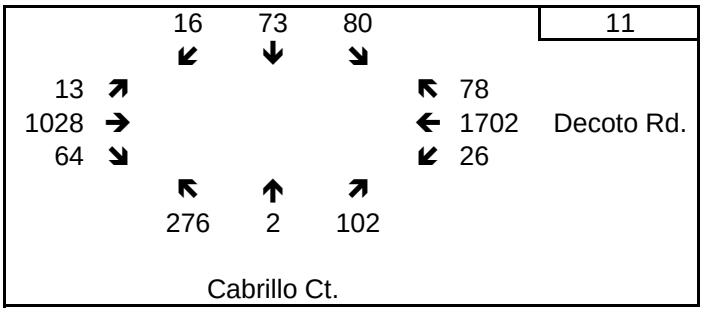


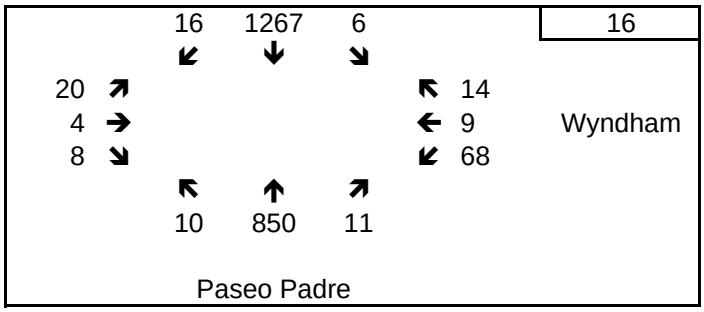


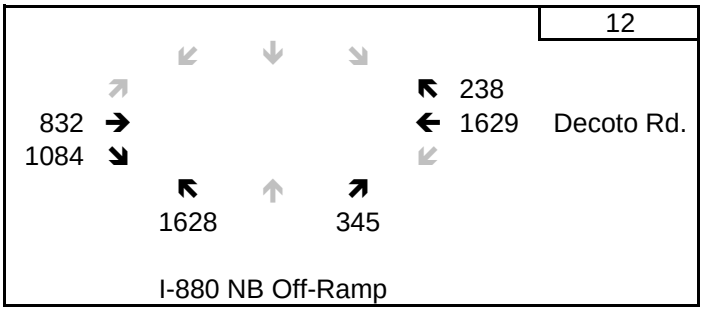


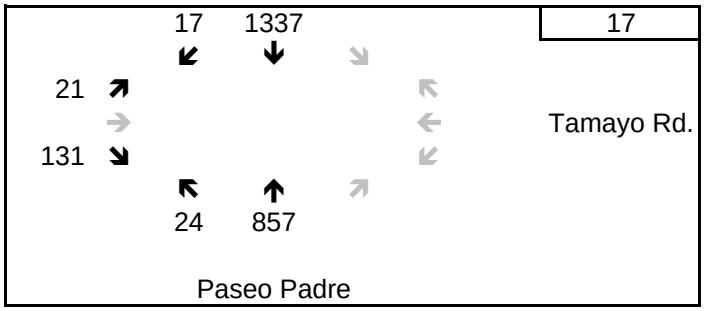


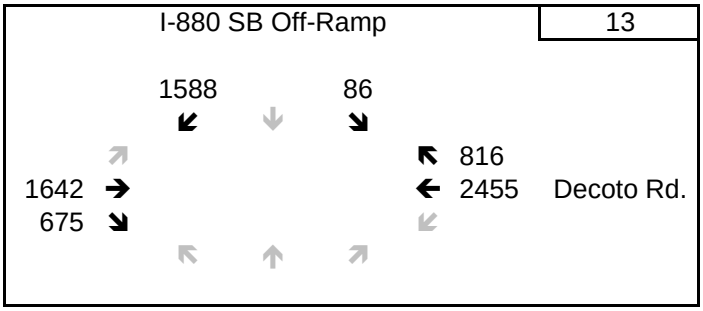
Dowling Associates, Inc.

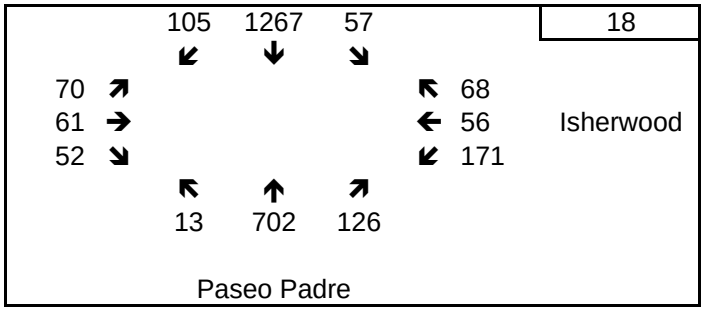


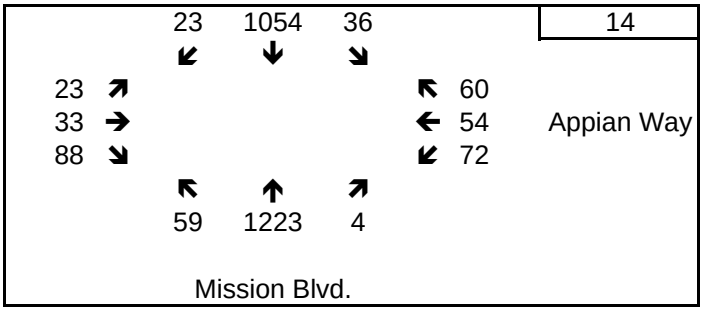


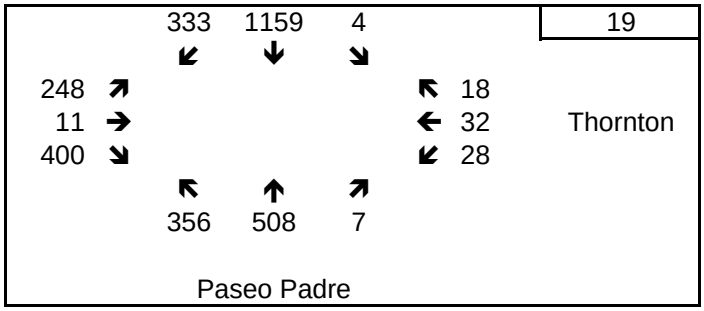


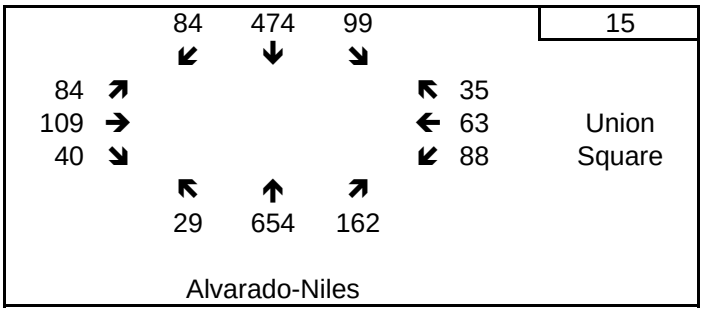


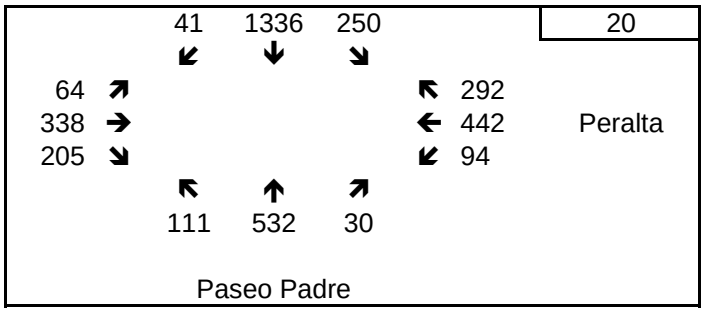




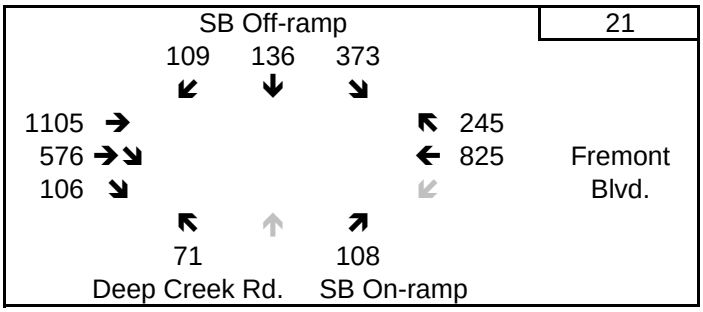


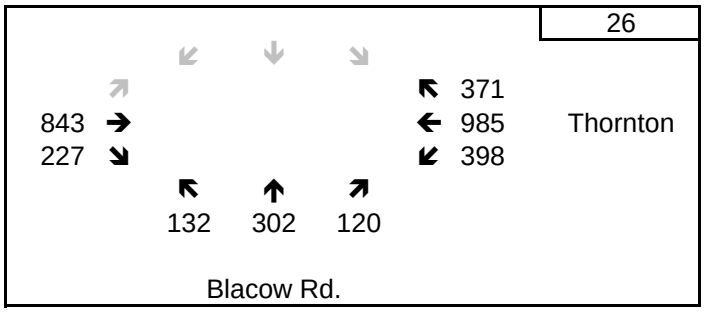


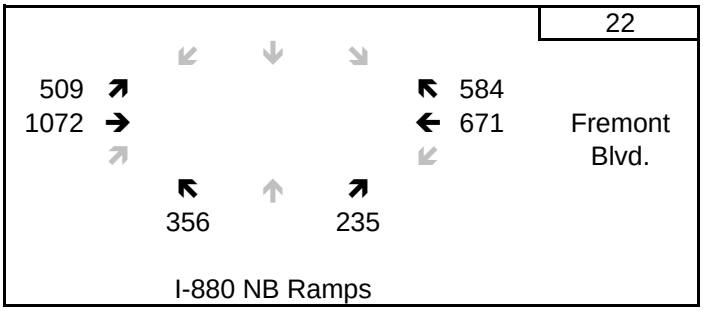


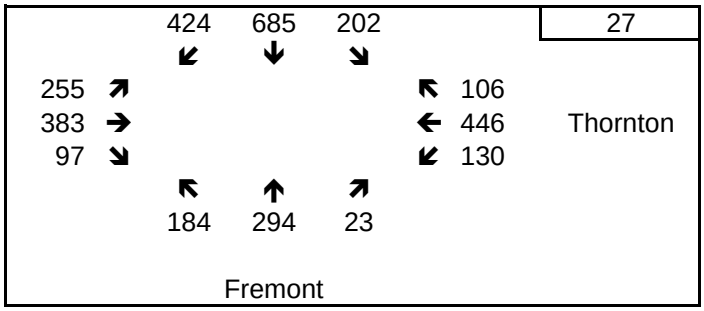


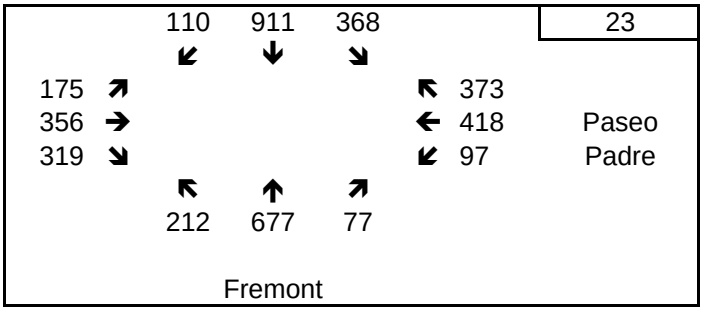
Dowling Associates, Inc.

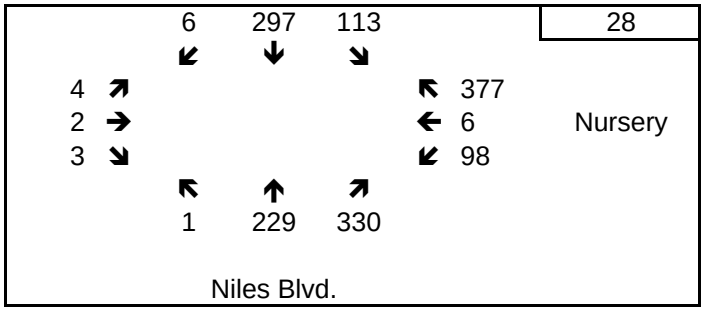


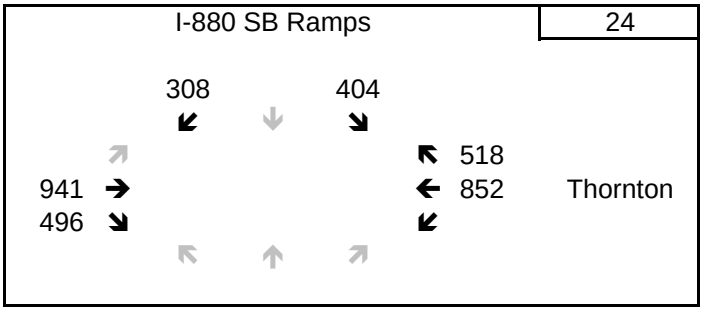


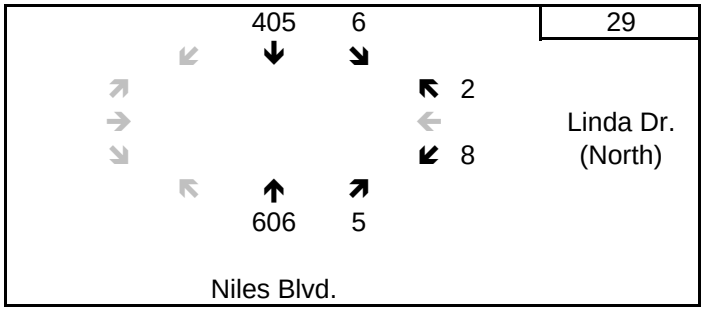


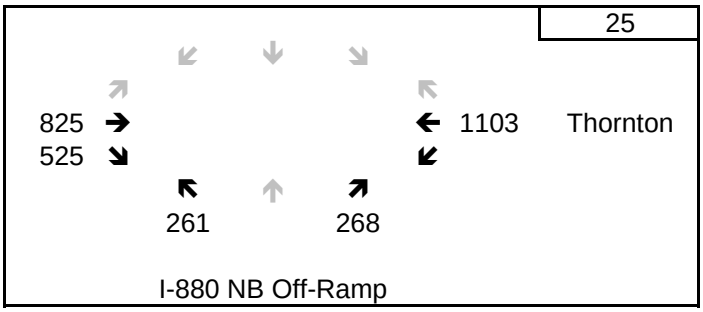


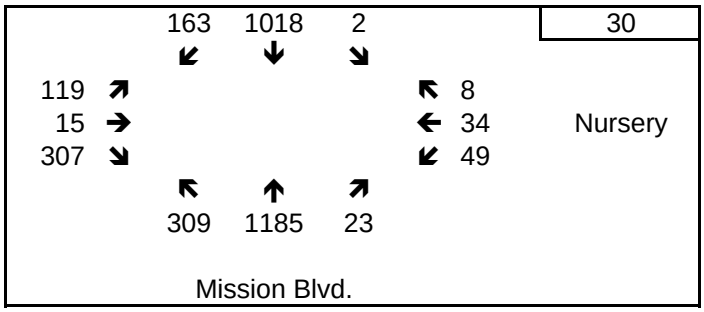




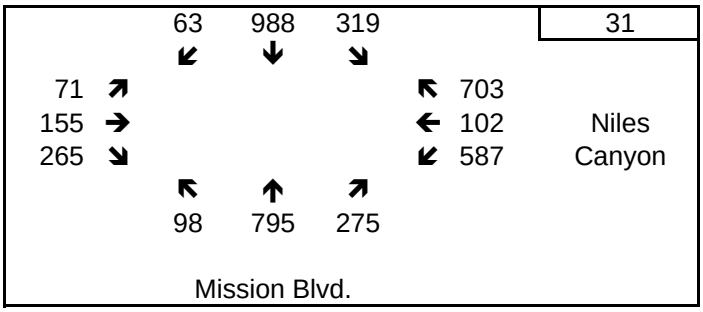


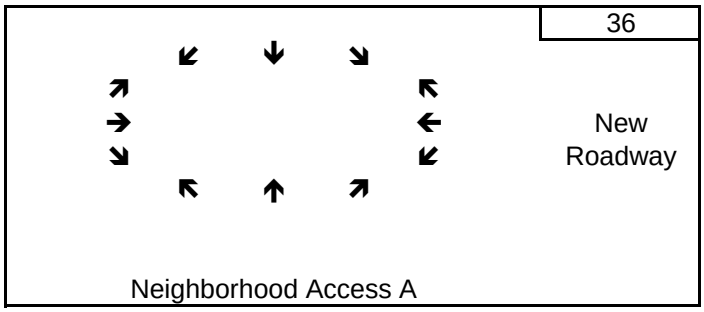


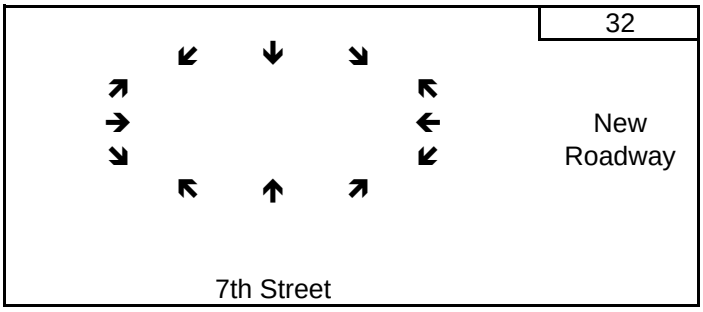


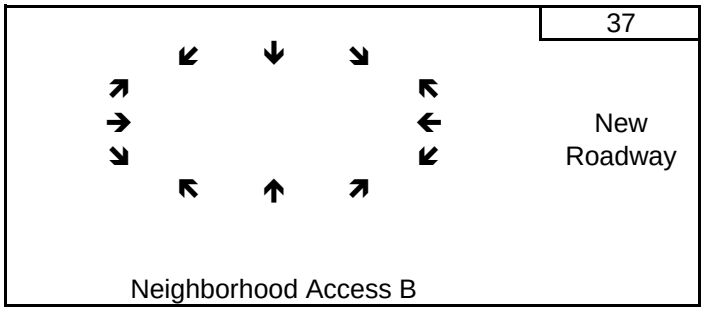


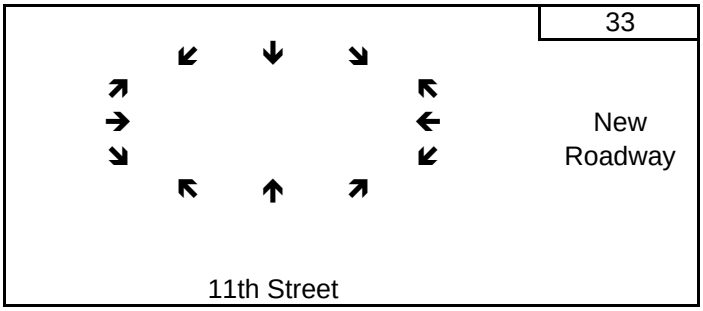
Dowling Associates, Inc.

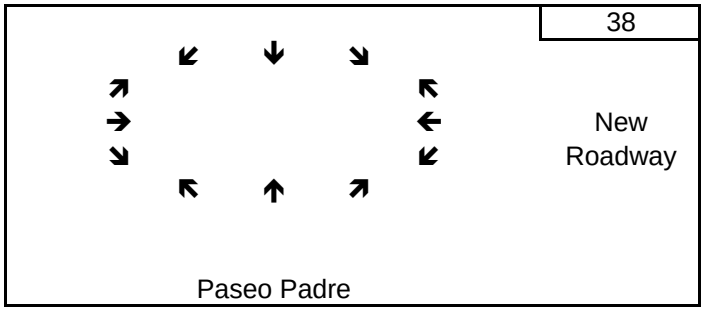


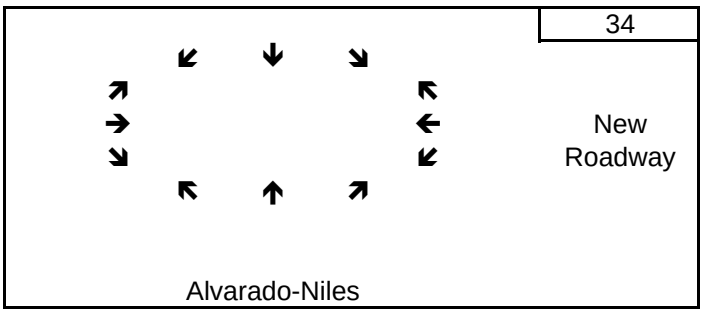


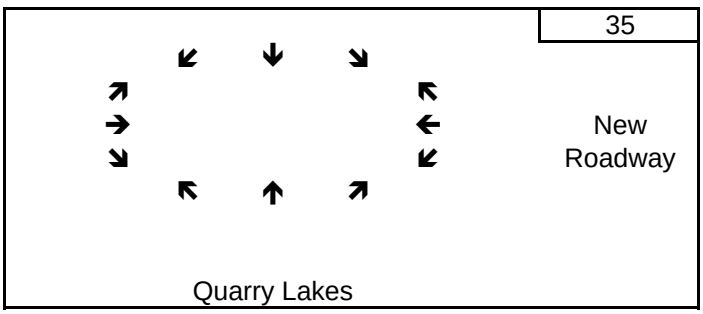




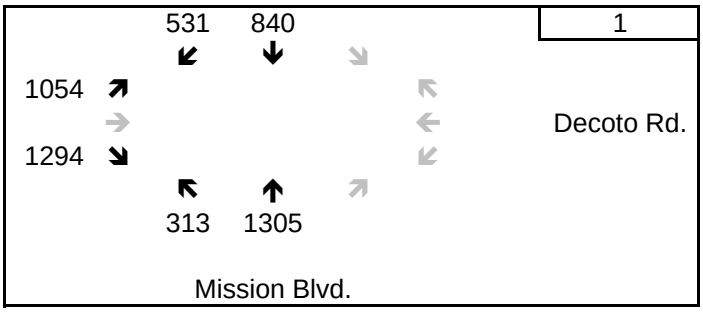


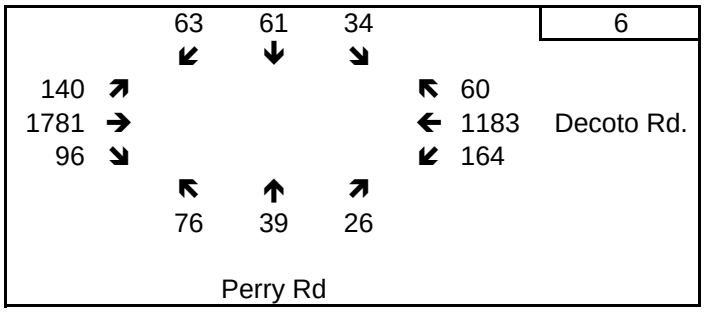


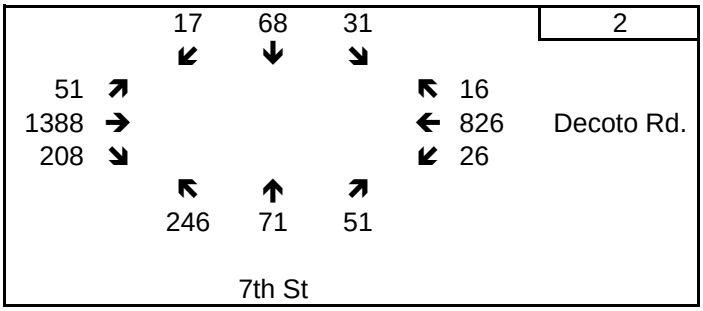


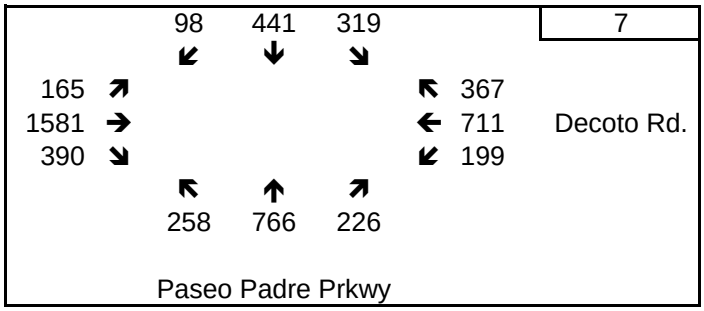


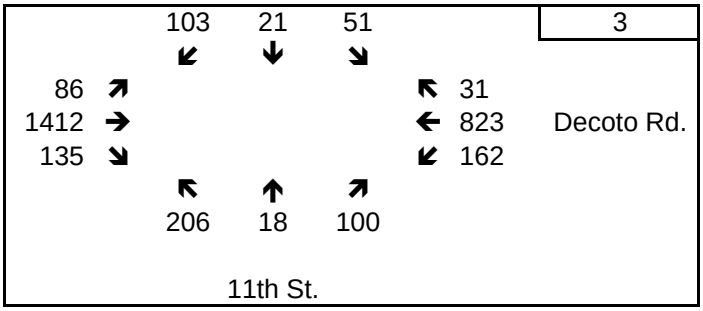
Dowling Associates, Inc.

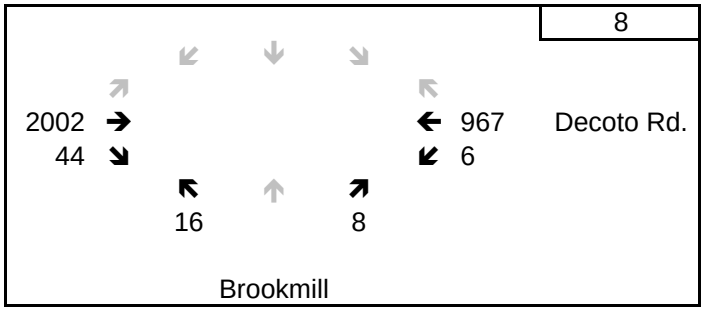


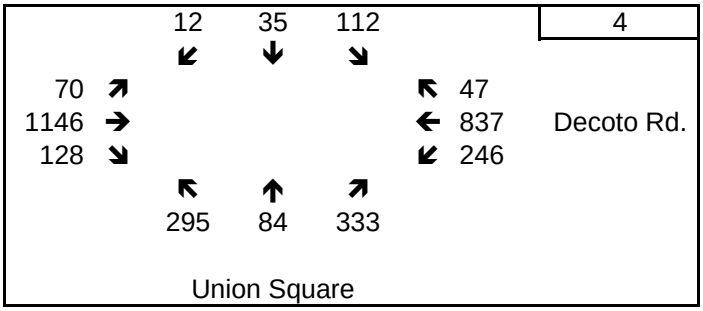


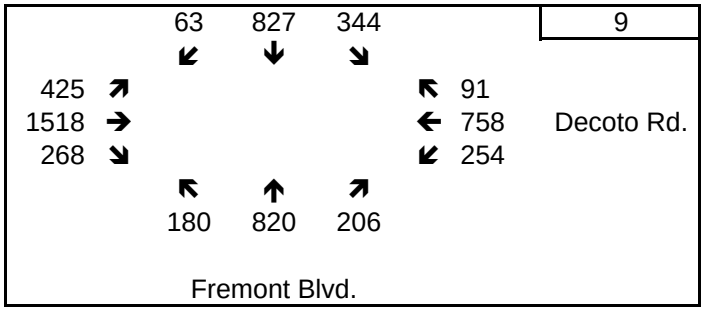


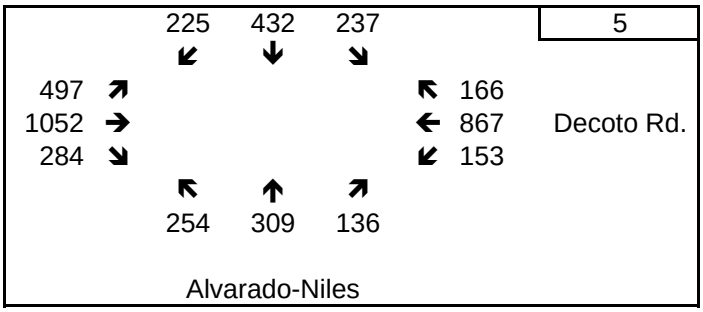


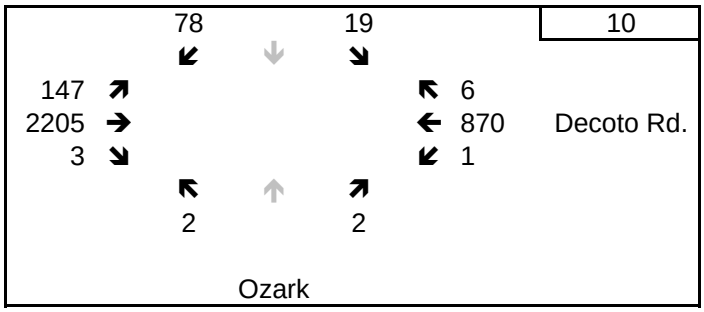




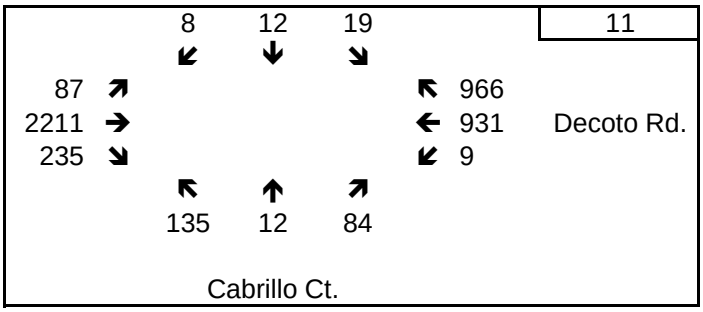


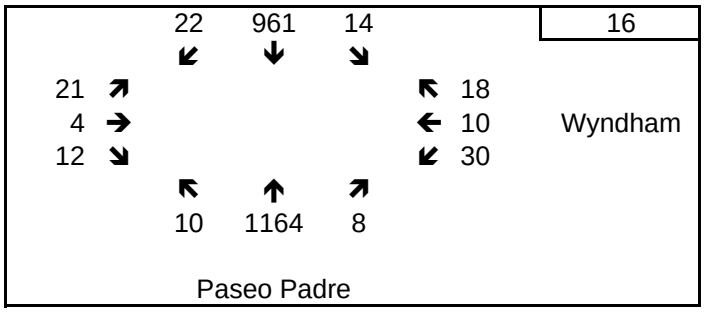


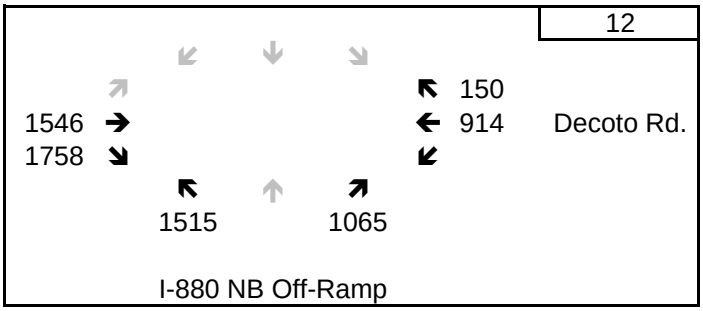


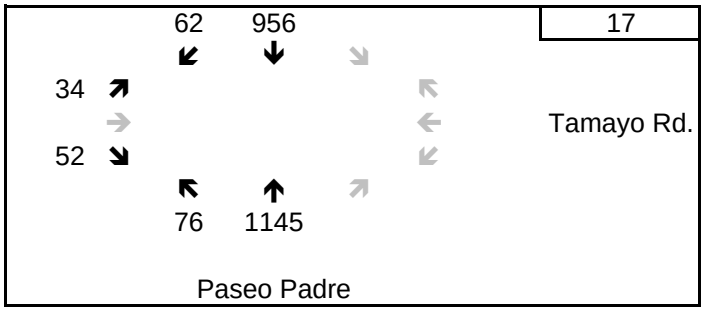


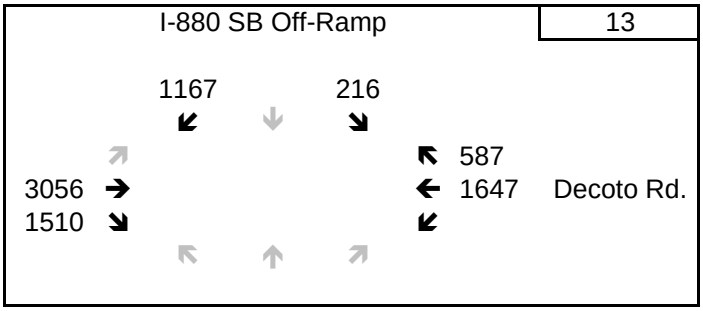
Dowling Associates, Inc.

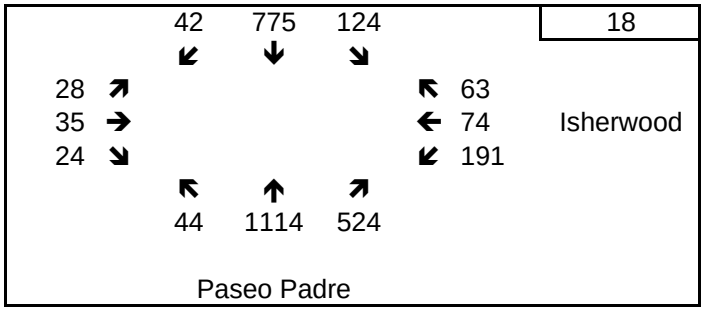


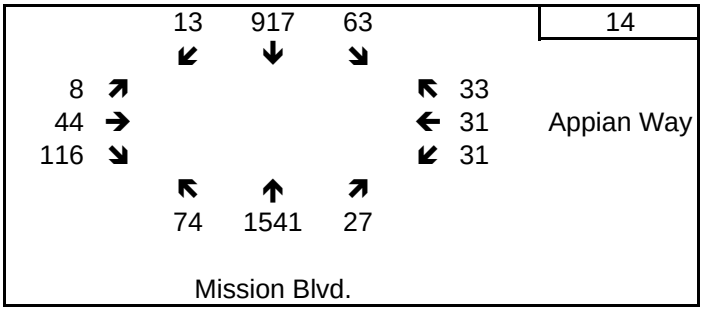


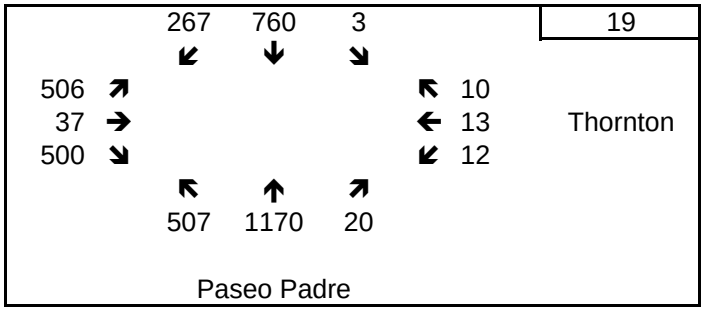


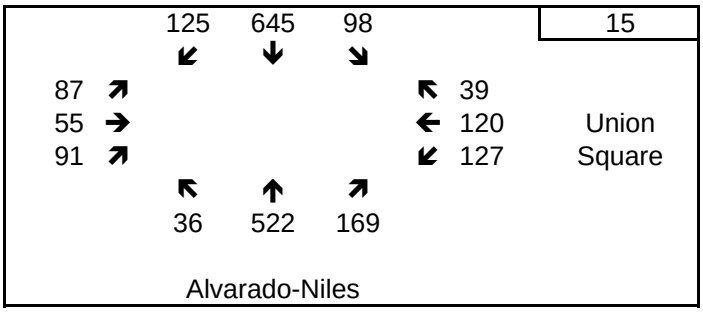


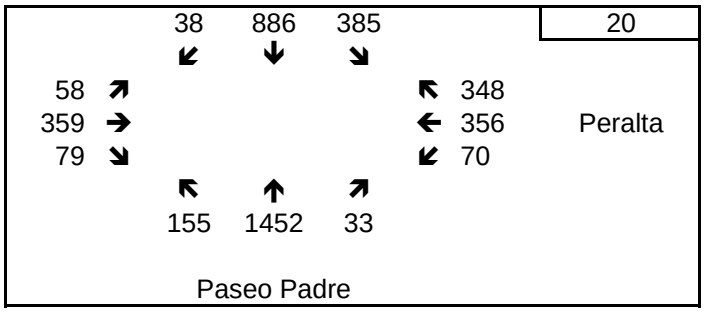




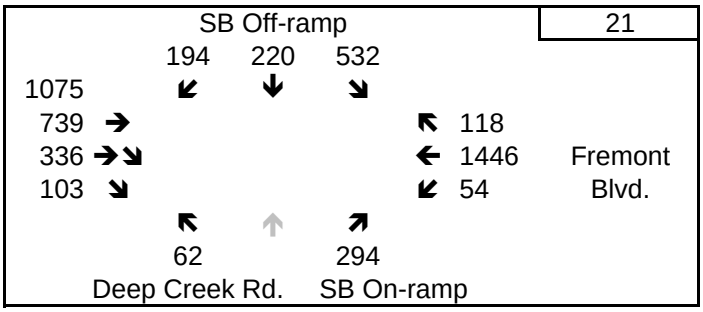


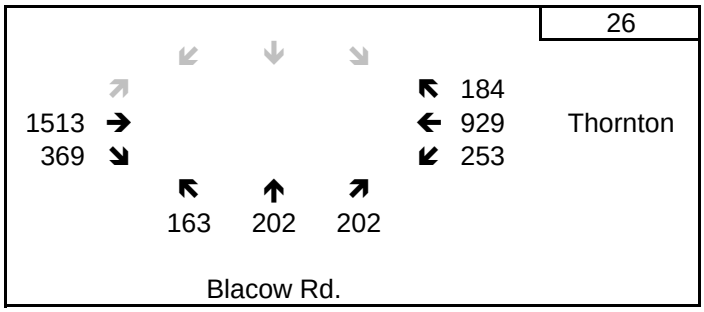


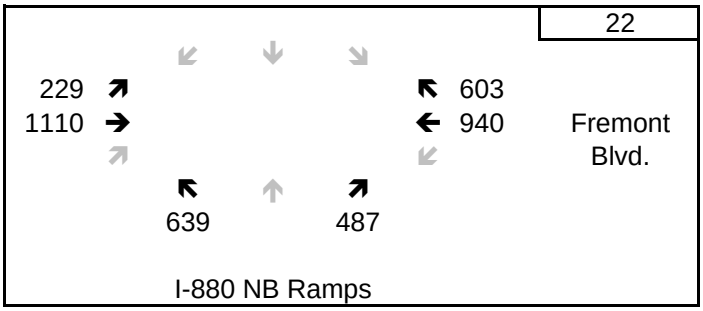


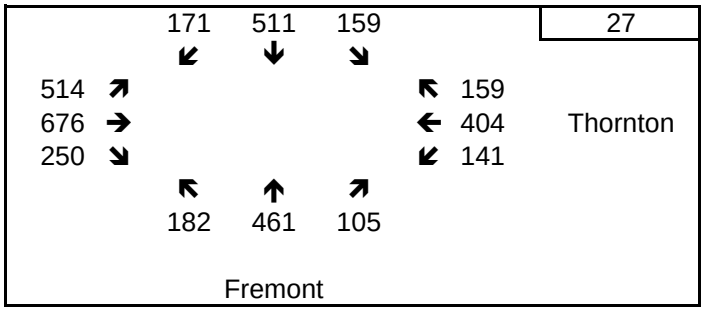


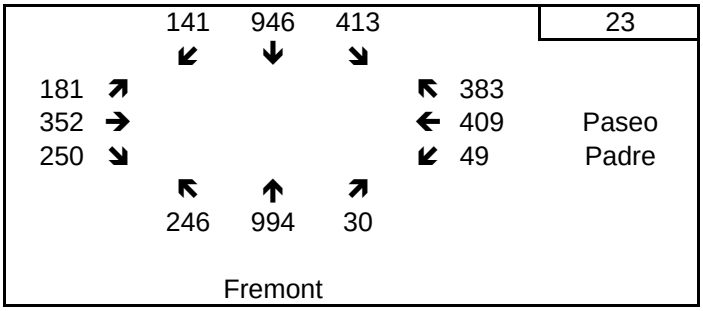
Dowling Associates, Inc.

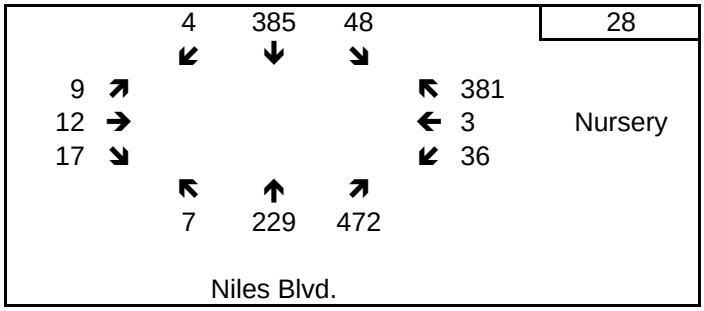


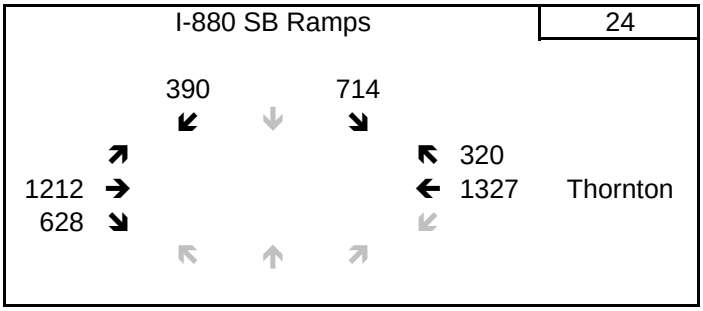


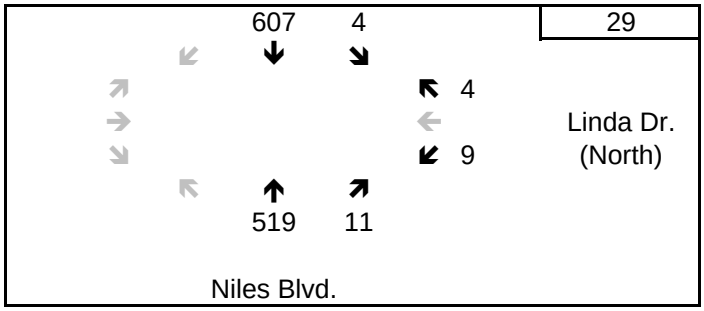


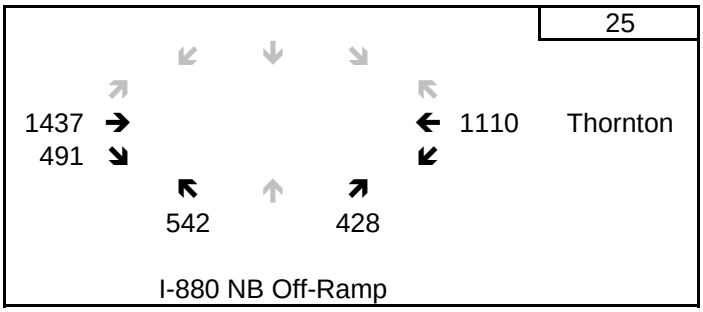


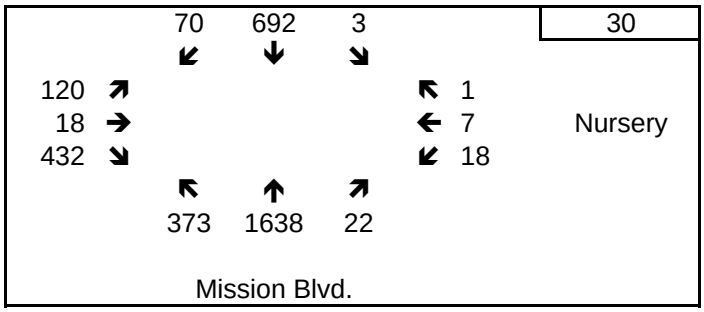




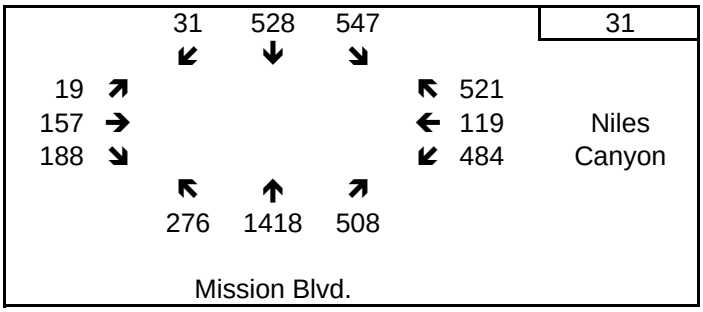


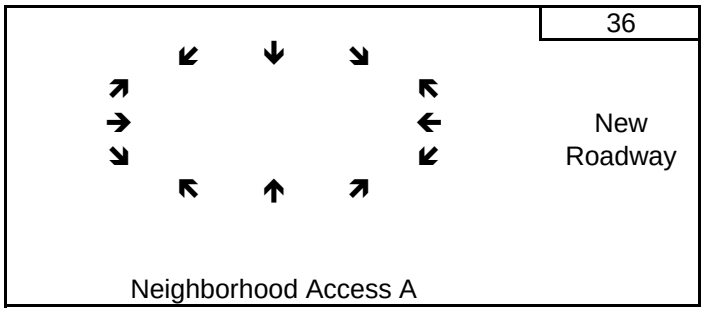


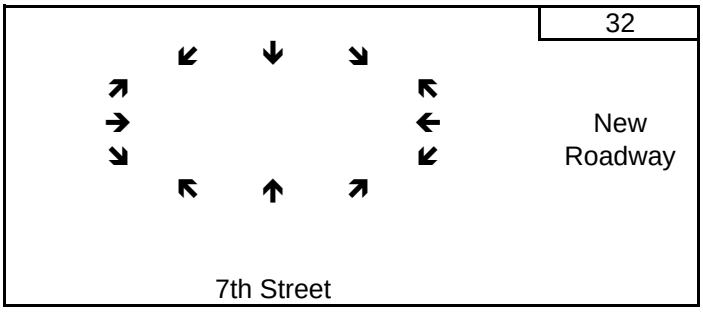


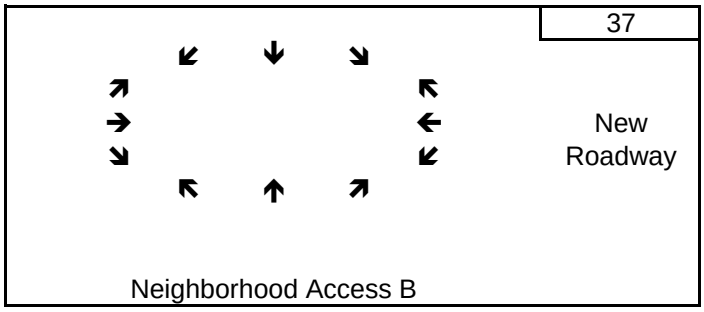


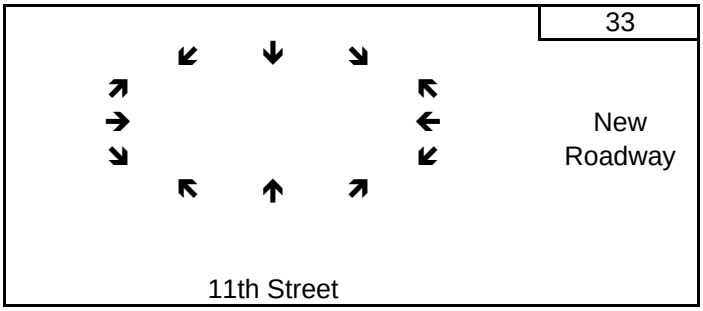
Dowling Associates, Inc.

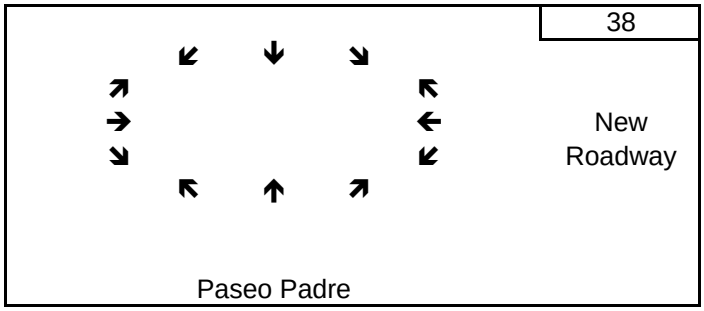


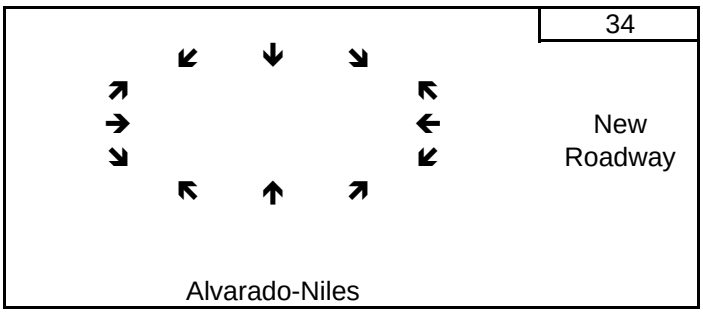


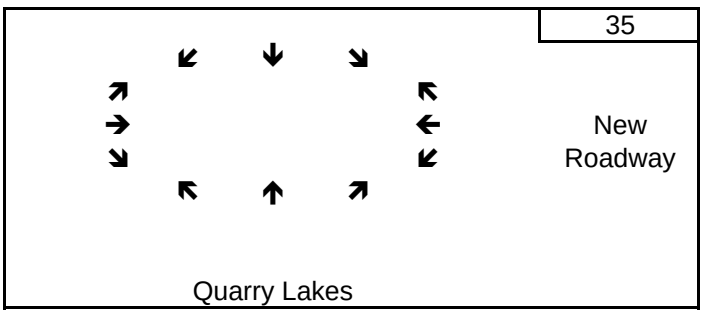












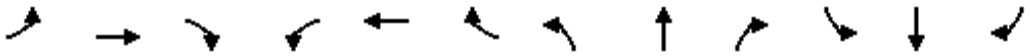
APPENDIX B

Level of Service Calculations (Synchro Output Sheets)

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (vph)	394	249	472	939	0	905	1119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	
Lane Util. Factor	0.97	1.00	0.97	0.91		0.91	
Frt	1.00	0.85	1.00	1.00		0.92	
Flt Protected	0.95	1.00	0.95	1.00		1.00	
Satd. Flow (prot)	3433	1583	3433	5085		4664	
Flt Permitted	0.95	1.00	0.95	1.00		1.00	
Satd. Flow (perm)	3433	1583	3433	5085		4664	
Peak-hour factor, PHF	0.97	0.97	0.96	0.96	0.97	0.97	0.97
Adj. Flow (vph)	406	257	492	978	0	933	1154
RTOR Reduction (vph)	0	123	0	0	0	170	0
Lane Group Flow (vph)	406	134	492	978	0	1917	0
Turn Type		Perm	Prot		Prot		
Protected Phases	4		5	2	1	6	
Permitted Phases		4					
Actuated Green, G (s)	18.1	18.1	19.0	73.2		50.2	
Effective Green, g (s)	18.1	18.1	19.0	73.2		50.2	
Actuated g/C Ratio	0.18	0.18	0.19	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)	626	289	657	3748		2358	
v/s Ratio Prot	c0.12		c0.14	0.19		c0.41	
v/s Ratio Perm		0.08					
v/c Ratio	0.65	0.46	0.75	0.26		1.19dr	
Uniform Delay, d1	37.7	36.3	37.9	4.2		20.6	
Progression Factor	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	2.3	1.2	4.7	0.0		2.2	
Delay (s)	40.0	37.4	42.6	4.3		22.9	
Level of Service	D	D	D	A		C	
Approach Delay (s)	39.0			17.1		22.9	
Approach LOS	D			B		C	

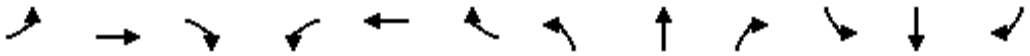
Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	99.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

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



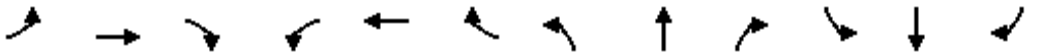
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	588	135	69	1476	21	193	80	56	57	88	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.97		1.00	1.00			0.98			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1770	3440		1770	3532			1768			1806	
Flt Permitted	0.95	1.00		0.95	1.00			0.60			0.77	
Satd. Flow (perm)	1770	3440		1770	3532			1100			1419	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.91	0.91	0.91	0.54	0.54	0.54
Adj. Flow (vph)	28	612	141	72	1538	22	212	88	62	106	163	30
RTOR Reduction (vph)	0	14	0	0	0	0	0	6	0	0	3	0
Lane Group Flow (vph)	28	739	0	72	1560	0	0	356	0	0	296	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	5.2	65.3		7.9	68.0			44.8			44.8	
Effective Green, g (s)	5.2	65.3		7.9	68.0			44.8			44.8	
Actuated g/C Ratio	0.04	0.50		0.06	0.52			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)	71	1728		108	1848			379			489	
v/s Ratio Prot	0.02	0.21		c0.04	c0.44							
v/s Ratio Perm								c0.32			0.21	
v/c Ratio	0.39	0.43		0.67	0.84			0.94			0.60	
Uniform Delay, d1	60.9	20.5		59.8	26.5			41.3			35.3	
Progression Factor	1.20	0.49		1.00	1.00			1.00			1.00	
Incremental Delay, d2	3.1	0.7		14.5	4.9			30.8			2.1	
Delay (s)	75.9	10.7		74.2	31.4			72.1			37.4	
Level of Service	E	B		E	C			E			D	
Approach Delay (s)		13.1			33.3			72.1			37.4	
Approach LOS		B			C			E			D	

Intersection Summary			
HCM Average Control Delay	33.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	658	175	144	1458	101	141	25	63	62	32	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	
Frt	1.00	0.97		1.00	0.99		1.00	0.89			0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1770	3428		1770	3505		1770	1662			1710	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (perm)	1770	3428		1770	3505		1770	1662			1710	
Peak-hour factor, PHF	0.94	0.94	0.94	0.97	0.97	0.97	0.88	0.88	0.88	0.85	0.85	0.85
Adj. Flow (vph)	38	700	186	148	1503	104	160	28	72	73	38	108
RTOR Reduction (vph)	0	14	0	0	3	0	0	63	0	0	29	0
Lane Group Flow (vph)	38	872	0	148	1604	0	160	37	0	0	190	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	7.2	61.6		15.9	70.3		17.0	17.0			19.5	
Effective Green, g (s)	7.2	61.6		15.9	70.3		17.0	17.0			19.5	
Actuated g/C Ratio	0.06	0.47		0.12	0.54		0.13	0.13			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)	98	1624		216	1895		231	217			257	
v/s Ratio Prot	0.02	0.25		c0.08	c0.46		c0.09	0.02			c0.11	
v/s Ratio Perm												
v/c Ratio	0.39	0.54		0.69	0.85		0.69	0.17			0.74	
Uniform Delay, d1	59.3	24.1		54.7	25.3		54.0	50.2			52.8	
Progression Factor	1.04	1.11		0.95	1.24		1.00	1.00			1.00	
Incremental Delay, d2	2.1	1.1		4.8	2.7		8.7	0.4			10.6	
Delay (s)	63.8	27.8		56.9	34.1		62.7	50.6			63.4	
Level of Service	E	C		E	C		E	D			E	
Approach Delay (s)		29.3			36.0			58.0			63.4	
Approach LOS		C			D			E			E	

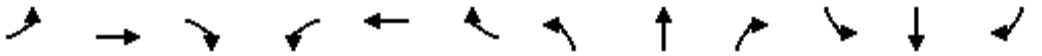
Intersection Summary			
HCM Average Control Delay	37.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	607	154	299	1280	69	202	108	307	61	24	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	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	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.99		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)	1626	3153		1736	3444		1641	1727	1468	1570	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1626	3153		1736	3444		1641	1727	1468	1570	1583	
Peak-hour factor, PHF	0.97	0.97	0.97	0.95	0.95	0.95	0.96	0.96	0.96	0.58	0.58	0.58
Adj. Flow (vph)	54	626	159	315	1347	73	210	112	320	105	41	16
RTOR Reduction (vph)	0	14	0	0	2	0	0	0	281	0	13	0
Lane Group Flow (vph)	54	771	0	315	1418	0	210	112	39	105	44	0
Heavy Vehicles (%)	11%	11%	11%	4%	4%	4%	10%	10%	10%	15%	15%	15%
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	8.7	55.5		29.2	76.0		20.7	15.8	15.8	13.5	8.6	
Effective Green, g (s)	8.7	55.5		29.2	76.0		20.7	15.8	15.8	13.5	8.6	
Actuated g/C Ratio	0.07	0.43		0.22	0.58		0.16	0.12	0.12	0.10	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)	109	1346		390	2013		261	210	178	163	105	
v/s Ratio Prot	0.03	0.24		c0.18	c0.41		c0.13	c0.06		0.07	0.03	
v/s Ratio Perm									0.03			
v/c Ratio	0.50	0.57		0.81	0.70		0.80	0.53	0.22	0.64	0.42	
Uniform Delay, d1	58.5	28.3		47.7	19.1		52.7	53.6	51.5	55.9	58.3	
Progression Factor	1.11	0.89		1.18	1.05		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.2		7.2	1.3		16.3	2.6	0.6	8.4	2.7	
Delay (s)	65.3	25.2		63.5	21.3		69.0	56.2	52.1	64.4	61.0	
Level of Service	E	C		E	C		E	E	D	E	E	
Approach Delay (s)		27.8			29.0			58.4			63.2	
Approach LOS		C			C			E			E	

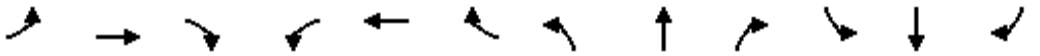
Intersection Summary			
HCM Average Control Delay	35.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



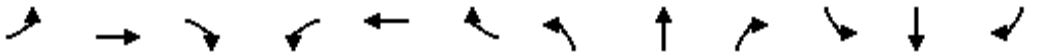
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	454	647	207	141	1260	149	209	458	55	198	295	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.91	0.91		0.91	0.91		0.91	0.91		0.91	0.91	1.00
Frt	1.00	0.97		1.00	0.98		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	0.99	1.00
Satd. Flow (prot)	1610	3265		1610	3335		1610	3331		1610	3371	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.99	1.00
Satd. Flow (perm)	1610	3265		1610	3335		1610	3331		1610	3371	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.99	0.99	0.99	0.86	0.86	0.86	0.96	0.96	0.96
Adj. Flow (vph)	478	681	218	142	1273	151	243	533	64	206	307	327
RTOR Reduction (vph)	0	20	0	0	6	0	0	6	0	0	0	200
Lane Group Flow (vph)	430	928	0	128	1432	0	219	615	0	167	346	127
Turn Type	Split			Split			Split			Split		Perm
Protected Phases	2	2		6	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	28.6	28.6		38.0	38.0		27.4	27.4		20.0	20.0	20.0
Effective Green, g (s)	28.6	28.6		38.0	38.0		27.4	27.4		20.0	20.0	20.0
Actuated g/C Ratio	0.22	0.22		0.29	0.29		0.21	0.21		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
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)	354	718		471	975		339	702		248	519	244
v/s Ratio Prot	0.27	c0.28		0.08	c0.43		0.14	c0.18		c0.10	0.10	
v/s Ratio Perm												0.08
v/c Ratio	1.21	1.29		0.27	1.47		0.65	0.88		0.67	0.67	0.52
Uniform Delay, d1	50.7	50.7		35.4	46.0		46.9	49.7		51.9	51.9	50.6
Progression Factor	1.17	1.16		0.68	0.79		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	117.2	140.3		0.2	214.7		4.2	11.8		7.0	3.2	2.0
Delay (s)	176.3	199.3		24.4	251.1		51.1	61.5		58.9	55.1	52.6
Level of Service	F	F		C	F		D	E		E	E	D
Approach Delay (s)		192.1			232.6			58.7			54.9	
Approach LOS		F			F			E			D	

Intersection Summary			
HCM Average Control Delay	156.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



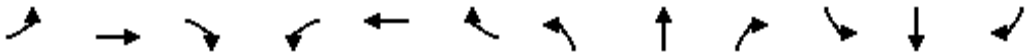
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	1196	32	50	1690	39	89	73	26	42	43	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3526		1770	3527		1770	1863	1583	1770	1680	
Flt Permitted	0.95	1.00		0.95	1.00		0.46	1.00	1.00	0.61	1.00	
Satd. Flow (perm)	1770	3526		1770	3527		848	1863	1583	1144	1680	
Peak-hour factor, PHF	0.93	0.93	0.93	0.98	0.98	0.98	0.74	0.74	0.74	0.80	0.80	0.80
Adj. Flow (vph)	97	1286	34	51	1724	40	120	99	35	52	54	102
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	29	0	57	0
Lane Group Flow (vph)	97	1319	0	51	1763	0	120	99	6	52	99	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	11.4	89.4		7.9	85.9		20.7	20.7	20.7	20.7	20.7	
Effective Green, g (s)	11.4	89.4		7.9	85.9		20.7	20.7	20.7	20.7	20.7	
Actuated g/C Ratio	0.09	0.69		0.06	0.66		0.16	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)	155	2425		108	2331		135	297	252	182	268	
v/s Ratio Prot	c0.05	c0.37		0.03	c0.50			0.05			0.06	
v/s Ratio Perm							c0.14		0.00	0.05		
v/c Ratio	0.63	0.54		0.47	0.76		0.89	0.33	0.02	0.29	0.37	
Uniform Delay, d1	57.2	10.1		59.0	15.0		53.5	48.5	46.1	48.1	48.8	
Progression Factor	1.00	1.00		0.84	1.71		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.7	0.9		0.3	0.2		45.2	0.7	0.0	0.9	0.9	
Delay (s)	64.9	11.0		49.7	25.7		98.8	49.2	46.1	49.0	49.7	
Level of Service	E	B		D	C		F	D	D	D	D	
Approach Delay (s)		14.7			26.4			72.2			49.5	
Approach LOS		B			C			E			D	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	977	187	386	1143	347	262	508	141	159	748	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	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	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
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)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3439	
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)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3439	
Peak-hour factor, PHF	0.96	0.96	0.96	0.95	0.95	0.95	0.93	0.93	0.93	0.97	0.97	0.97
Adj. Flow (vph)	58	1018	195	406	1203	365	282	546	152	164	771	179
RTOR Reduction (vph)	0	0	106	0	0	198	0	0	105	0	16	0
Lane Group Flow (vph)	58	1018	89	406	1203	167	282	546	47	164	934	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	6.4	41.3	41.3	19.7	54.6	54.6	12.0	39.5	39.5	11.5	39.0	
Effective Green, g (s)	6.4	42.3	42.3	19.7	55.6	55.6	12.0	40.5	40.5	11.5	40.0	
Actuated g/C Ratio	0.05	0.33	0.33	0.15	0.43	0.43	0.09	0.31	0.31	0.09	0.31	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
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	1152	515	520	1514	677	317	1103	493	304	1058	
v/s Ratio Prot	0.03	c0.29		c0.12	0.34		c0.08	0.15		0.05	c0.27	
v/s Ratio Perm			0.06			0.11			0.03			
v/c Ratio	0.67	0.88	0.17	0.78	0.79	0.25	0.89	0.50	0.10	0.54	0.88	
Uniform Delay, d1	60.8	41.5	31.3	53.1	32.2	23.8	58.3	36.4	31.8	56.7	42.8	
Progression Factor	0.73	1.66	3.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.5	8.8	0.6	7.5	4.4	0.9	24.7	0.4	0.1	1.8	8.9	
Delay (s)	59.6	77.8	121.5	60.5	36.6	24.7	83.0	36.8	31.8	58.6	51.6	
Level of Service	E	E	F	E	D	C	F	D	C	E	D	
Approach Delay (s)		83.7			39.3			49.3			52.7	
Approach LOS		F			D			D			D	

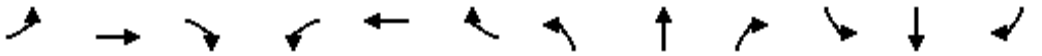
Intersection Summary			
HCM Average Control Delay	54.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1135	17	2	1520	0	40	0	9	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.97	0.97	0.97	0.80	0.80	0.80	1.00	1.00	1.00
Hourly flow rate (vph)	0	1207	18	2	1567	0	50	0	11	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					1035							
pX, platoon unblocked	0.70						0.70	0.70		0.70	0.70	0.70
vC, conflicting volume	1567			1226			2004	2788	412	1985	2797	784
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	967			1226			1587	2699	412	1560	2711	0
tC, single (s)	4.2			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			2	100	98	100	100	100
cM capacity (veh/h)	482			565			51	15	589	52	15	764

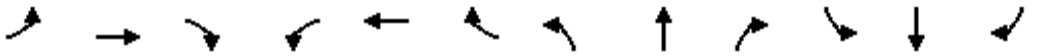
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	483	483	260	2	1045	522	61	0
Volume Left	0	0	0	0	2	0	0	50	0
Volume Right	0	0	0	18	0	0	0	11	0
cSH	1700	1700	1700	1700	565	1700	1700	61	1700
Volume to Capacity	0.00	0.28	0.28	0.15	0.00	0.61	0.31	1.00	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	120	0
Control Delay (s)	0.0	0.0	0.0	0.0	11.4	0.0	0.0	226.4	0.0
Lane LOS					B			F	A
Approach Delay (s)	0.0				0.0			226.4	0.0
Approach LOS								F	A

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	52.0%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	159	871	135	174	1375	65	245	552	172	200	1179	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	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)	3433	5085	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
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)	3433	5085	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.96	0.96	0.96	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	177	968	150	181	1432	68	266	600	187	215	1268	123
RTOR Reduction (vph)	0	0	58	0	0	25	0	0	133	0	0	56
Lane Group Flow (vph)	177	968	92	181	1432	43	266	600	54	215	1268	67
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	6.0	42.9	42.9	11.1	48.0	48.0	17.0	37.7	37.7	20.3	41.0	41.0
Effective Green, g (s)	6.0	43.9	42.9	11.1	49.0	48.0	17.0	38.7	37.7	20.3	42.0	41.0
Actuated g/C Ratio	0.05	0.34	0.33	0.09	0.38	0.37	0.13	0.30	0.29	0.16	0.32	0.32
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
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)	158	1717	522	293	1334	584	231	1054	459	276	1143	499
v/s Ratio Prot	c0.05	0.19		0.05	c0.40		c0.15	0.17		0.12	c0.36	
v/s Ratio Perm			0.06			0.03			0.03			0.04
v/c Ratio	1.12	0.56	0.18	0.62	1.07	0.07	1.15	0.57	0.12	0.78	1.11	0.13
Uniform Delay, d1	62.0	35.2	31.0	57.4	40.5	26.6	56.5	38.6	33.9	52.7	44.0	31.8
Progression Factor	1.00	1.13	1.60	0.98	1.24	2.07	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	105.6	1.3	0.7	2.5	42.8	0.2	106.2	0.7	0.1	13.0	61.9	0.1
Delay (s)	167.5	41.2	50.2	58.5	93.0	55.1	162.7	39.3	34.0	65.7	105.9	31.9
Level of Service	F	D	D	E	F	E	F	D	C	E	F	C
Approach Delay (s)		59.5			87.7			69.5			94.9	
Approach LOS		E			F			E			F	

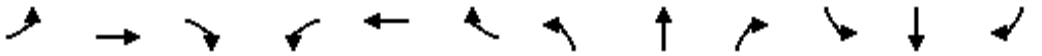
Intersection Summary			
HCM Average Control Delay	79.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	1049	2	2	1666	20	0	0	2	60	0	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	0.91			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (prot)	1719	3437		1770	5076			1611			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00			0.76	1.00
Satd. Flow (perm)	1719	3437		1770	5076			1611			1407	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.50	0.50	0.50	0.78	0.78	0.78
Adj. Flow (vph)	75	1140	2	2	1831	22	0	0	4	77	0	176
RTOR Reduction (vph)	0	0	0	0	1	0	0	4	0	0	0	159
Lane Group Flow (vph)	75	1142	0	2	1852	0	0	0	0	0	77	17
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Actuated Green, G (s)	9.7	104.2		1.3	95.8			12.5			12.5	12.5
Effective Green, g (s)	9.7	104.2		1.3	95.8			12.5			12.5	12.5
Actuated g/C Ratio	0.07	0.80		0.01	0.74			0.10			0.10	0.10
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)	128	2755		18	3741			155			135	152
v/s Ratio Prot	c0.04	0.33		0.00	c0.36			0.00				
v/s Ratio Perm											c0.05	0.01
v/c Ratio	0.59	0.41		0.11	0.50			0.00			0.57	0.11
Uniform Delay, d1	58.2	3.8		63.8	7.1			53.1			56.2	53.7
Progression Factor	1.12	0.29		1.00	0.14			1.00			1.00	1.00
Incremental Delay, d2	5.9	0.4		0.2	0.0			0.0			5.7	0.3
Delay (s)	71.1	1.5		63.8	1.1			53.1			61.9	54.0
Level of Service	E	A		E	A			D			E	D
Approach Delay (s)		5.8			1.1			53.1			56.4	
Approach LOS		A			A			D			E	

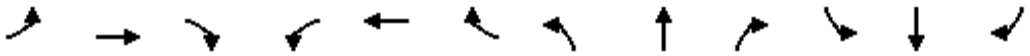
Intersection Summary			
HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



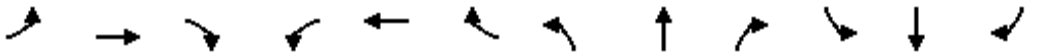
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1028	64	26	1702	78	276	2	102	80	73	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85	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)	1770	3539	1583	1770	5052			1775	1583	1770	1812	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.63	1.00	0.34	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5052			1175	1583	641	1812	
Peak-hour factor, PHF	0.96	0.96	0.96	0.94	0.94	0.94	0.83	0.83	0.83	0.86	0.86	0.86
Adj. Flow (vph)	14	1071	67	28	1811	83	333	2	123	93	85	19
RTOR Reduction (vph)	0	0	19	0	3	0	0	0	58	0	7	0
Lane Group Flow (vph)	14	1071	48	28	1891	0	0	335	65	93	97	0
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8		8	4		
Actuated Green, G (s)	3.1	69.2	69.2	6.8	72.9			42.0	42.0	42.0	42.0	
Effective Green, g (s)	3.1	69.2	69.2	6.8	72.9			42.0	42.0	42.0	42.0	
Actuated g/C Ratio	0.02	0.53	0.53	0.05	0.56			0.32	0.32	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)	42	1884	843	93	2833			380	511	207	585	
v/s Ratio Prot	0.01	c0.30		0.02	c0.37						0.05	
v/s Ratio Perm			0.03					c0.29	0.04	0.15		
v/c Ratio	0.33	0.57	0.06	0.30	0.67			0.88	0.13	0.45	0.17	
Uniform Delay, d1	62.4	20.4	14.7	59.3	20.0			41.6	31.1	34.8	31.5	
Progression Factor	1.00	1.00	1.00	0.78	0.71			1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.6	1.3	0.1	1.6	1.1			20.6	0.1	1.6	0.1	
Delay (s)	67.1	21.6	14.8	47.6	15.5			62.2	31.2	36.4	31.6	
Level of Service	E	C	B	D	B			E	C	D	C	
Approach Delay (s)		21.8			15.9			53.9			33.9	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



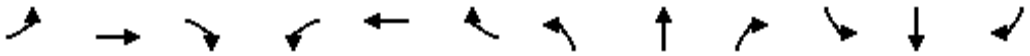
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	832	1084	0	1629	238	1628	0	345	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	2000	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	0.99	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		3539	1583		3725	1583	1770	1608	1504			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		3539	1583		3725	1583	1770	1608	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.96	0.96	0.96	1.00	1.00	1.00
Adj. Flow (vph)	0	858	1118	0	1679	245	1696	0	359	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	41	0	0	0
Lane Group Flow (vph)	0	858	1118	0	1679	245	865	865	282	0	0	0
Turn Type			Free			Free	Split		custom			
Protected Phases		2			6		3	3	3			
Permitted Phases			Free			Free			3			
Actuated Green, G (s)		39.0	90.0		39.0	90.0	43.0	43.0	43.0			
Effective Green, g (s)		39.0	90.0		39.0	90.0	43.0	43.0	43.0			
Actuated g/C Ratio		0.43	1.00		0.43	1.00	0.48	0.48	0.48			
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)		1534	1583		1614	1583	846	768	719			
v/s Ratio Prot		0.24			c0.45		0.49	c0.54	0.19			
v/s Ratio Perm			0.71			0.15						
v/c Ratio		0.56	0.71		1.04	0.15	1.02	1.13	0.39			
Uniform Delay, d1		19.1	0.0		25.5	0.0	23.5	23.5	15.1			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.4	2.7		33.6	0.2	36.7	73.3	0.4			
Delay (s)		19.5	2.7		59.1	0.2	60.2	96.8	15.5			
Level of Service		B	A		E	A	E	F	B			
Approach Delay (s)		10.0			51.6			68.6			0.0	
Approach LOS		A			D			E			A	

Intersection Summary			
HCM Average Control Delay	43.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1642	675	0	2455	816	0	0	0	86	0	1588
Ideal Flow (vphpl)	1900	1900	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			0.95	1.00				0.97		1.00
Frt		0.96			1.00	0.85				1.00		1.00
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		4873			3539	1583				3433		1863
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		4873			3539	1583				3433		1863
Peak-hour factor, PHF	0.94	0.94	1.00	1.00	0.98	0.98	1.00	1.00	1.00	0.97	1.00	0.97
Adj. Flow (vph)	0	1747	675	0	2505	833	0	0	0	89	0	1637
RTOR Reduction (vph)	0	31	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2391	0	0	2505	833	0	0	0	89	0	1637
Turn Type						Free				Prot		Free
Protected Phases		2			6					7		
Permitted Phases						Free						Free
Actuated Green, G (s)		79.4			79.4	94.4				7.0		94.4
Effective Green, g (s)		79.4			79.4	94.4				7.0		94.4
Actuated g/C Ratio		0.84			0.84	1.00				0.07		1.00
Clearance Time (s)		4.0			4.0					4.0		
Vehicle Extension (s)		3.0			3.0					3.0		
Lane Grp Cap (vph)		4099			2977	1583				255		1863
v/s Ratio Prot		0.49			0.71					0.03		
v/s Ratio Perm						0.53						c0.88
v/c Ratio		0.58			0.84	0.53				0.35		0.88
Uniform Delay, d1		2.3			4.1	0.0				41.5		0.0
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		0.2			2.3	1.3				0.8		6.3
Delay (s)		2.6			6.4	1.3				42.4		6.3
Level of Service		A			A	A				D		A
Approach Delay (s)		2.6			5.1			0.0			8.1	
Approach LOS		A			A			A			A	

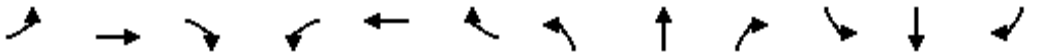
Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	0.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	33	88	72	54	60	59	1223	4	36	1054	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	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	0.95		1.00	0.95	
Frt		0.92		1.00	1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1602		1570	1652	1404	1736	3470		1626	3242	
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1602		1570	1652	1404	1736	3470		1626	3242	
Peak-hour factor, PHF	0.75	0.75	0.75	0.71	0.71	0.71	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	31	44	117	101	76	85	62	1287	4	39	1146	25
RTOR Reduction (vph)	0	46	0	0	0	74	0	0	0	0	1	0
Lane Group Flow (vph)	0	146	0	101	76	11	62	1291	0	39	1170	0
Heavy Vehicles (%)	8%	8%	8%	15%	15%	15%	4%	4%	4%	11%	11%	11%
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)		14.5		11.9	11.9	11.9	6.6	44.5		3.5	41.4	
Effective Green, g (s)		14.5		11.9	11.9	11.9	6.6	44.5		3.5	41.4	
Actuated g/C Ratio		0.16		0.13	0.13	0.13	0.07	0.49		0.04	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)		257		207	217	185	127	1708		63	1485	
v/s Ratio Prot		c0.09		c0.06	0.05		c0.04	c0.37		0.02	0.36	
v/s Ratio Perm						0.01						
v/c Ratio		0.57		0.49	0.35	0.06	0.49	0.76		0.62	0.79	
Uniform Delay, d1		35.1		36.4	35.7	34.4	40.3	18.6		42.8	20.8	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.9		1.8	1.0	0.1	2.9	2.0		16.7	2.8	
Delay (s)		37.9		38.2	36.7	34.5	43.2	20.5		59.5	23.6	
Level of Service		D		D	D	C	D	C		E	C	
Approach Delay (s)		37.9			36.6			21.6			24.8	
Approach LOS		D			D			C			C	

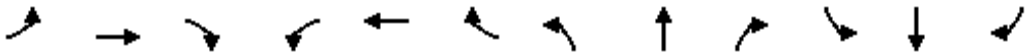
Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	109	40	88	63	35	29	654	162	99	474	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	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	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.95		1.00	0.97		1.00	0.98	
Flt Protected		0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1823	1583	1770	1764		1770	3434		1770	3459	
Flt Permitted		0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1823	1583	1770	1764		1770	3434		1770	3459	
Peak-hour factor, PHF	0.93	0.93	0.93	0.91	0.91	0.91	0.89	0.89	0.89	0.97	0.97	0.97
Adj. Flow (vph)	90	117	43	97	69	38	33	735	182	102	489	87
RTOR Reduction (vph)	0	0	34	0	20	0	0	15	0	0	9	0
Lane Group Flow (vph)	0	207	9	97	87	0	33	902	0	102	567	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3									
Actuated Green, G (s)		14.3	14.3	9.9	9.9		3.3	31.2		8.1	36.0	
Effective Green, g (s)		14.3	14.3	9.9	9.9		3.3	31.2		8.1	36.0	
Actuated g/C Ratio		0.18	0.18	0.12	0.12		0.04	0.39		0.10	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)		328	285	220	220		73	1348		180	1566	
v/s Ratio Prot		c0.11		c0.05	0.05		0.02	c0.26		c0.06	0.16	
v/s Ratio Perm			0.01									
v/c Ratio		0.63	0.03	0.44	0.39		0.45	0.67		0.57	0.36	
Uniform Delay, d1		30.2	26.9	32.2	32.0		37.2	19.9		34.0	14.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.9	0.0	1.4	1.2		4.4	1.3		4.0	0.1	
Delay (s)		34.1	26.9	33.6	33.2		41.6	21.2		38.1	14.4	
Level of Service		C	C	C	C		D	C		D	B	
Approach Delay (s)		32.9			33.4			21.9			17.9	
Approach LOS		C			C			C			B	

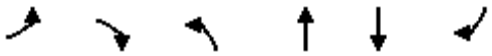
Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	4	8	68	9	14	10	850	11	6	1267	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.88	0.88	0.88	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	24	5	10	77	10	16	11	895	12	6	1334	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											759	
pX, platoon unblocked												
vC, conflicting volume	1844	2282	453	1391	2285	453	1351			906		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1844	2282	453	1391	2285	453	1351			906		
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 %	30	87	98	12	73	97	98			99		
cM capacity (veh/h)	35	38	554	88	38	554	506			746		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	39	103	11	596	310	6	533	533	284
Volume Left	24	77	11	0	0	6	0	0	0
Volume Right	10	16	0	0	12	0	0	0	17
cSH	46	88	506	1700	1700	746	1700	1700	1700
Volume to Capacity	0.84	1.18	0.02	0.35	0.18	0.01	0.31	0.31	0.17
Queue Length 95th (ft)	85	182	2	0	0	1	0	0	0
Control Delay (s)	223.4	238.1	12.3	0.0	0.0	9.9	0.0	0.0	0.0
Lane LOS	F	F	B			A			
Approach Delay (s)	223.4	238.1	0.1			0.0			
Approach LOS	F	F							

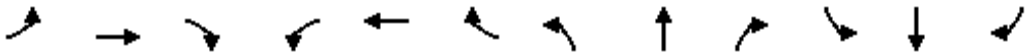
Intersection Summary				
Average Delay	13.9			
Intersection Capacity Utilization	38.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	21	131	24	857	1337	17
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.97	0.97	0.98	0.98
Hourly flow rate (vph)	26	162	25	884	1364	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				795		
pX, platoon unblocked	0.87					
vC, conflicting volume	1864	691	1382			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1695	691	1382			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	63	58	95			
cM capacity (veh/h)	69	387	492			

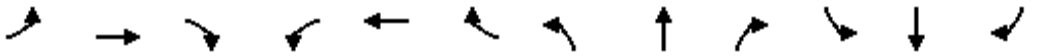
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	188	25	442	442	910	472
Volume Left	26	25	0	0	0	0
Volume Right	162	0	0	0	0	17
cSH	237	492	1700	1700	1700	1700
Volume to Capacity	0.79	0.05	0.26	0.26	0.54	0.28
Queue Length 95th (ft)	147	4	0	0	0	0
Control Delay (s)	60.8	12.7	0.0	0.0	0.0	0.0
Lane LOS	F	B				
Approach Delay (s)	60.8	0.3			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		



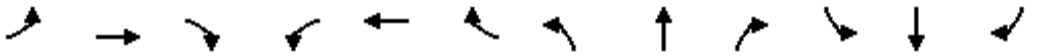
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	61	52	171	56	68	13	702	126	57	1267	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.96			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1757			1795	1583	1770	3539	1583	1770	3499	
Flt Permitted		0.75			0.61	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1338			1132	1583	1770	3539	1583	1770	3499	
Peak-hour factor, PHF	0.79	0.79	0.79	0.92	0.92	0.92	0.95	0.95	0.95	0.99	0.99	0.99
Adj. Flow (vph)	89	77	66	186	61	74	14	739	133	58	1280	106
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	73	0	5	0
Lane Group Flow (vph)	0	220	0	0	247	74	14	739	60	58	1381	0
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8			2			
Actuated Green, G (s)		25.5			25.5	25.5	2.1	35.3	35.3	6.1	39.3	
Effective Green, g (s)		25.5			25.5	25.5	2.1	35.3	35.3	6.1	39.3	
Actuated g/C Ratio		0.32			0.32	0.32	0.03	0.45	0.45	0.08	0.50	
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)		432			366	512	47	1583	708	137	1743	
v/s Ratio Prot							0.01	0.21		c0.03	c0.39	
v/s Ratio Perm		0.16			c0.22	0.05			0.04			
v/c Ratio		0.51			0.67	0.14	0.30	0.47	0.08	0.42	0.79	
Uniform Delay, d1		21.6			23.1	19.0	37.7	15.2	12.5	34.7	16.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.9			4.9	0.1	3.5	0.2	0.1	2.1	2.6	
Delay (s)		22.6			28.0	19.1	41.2	15.4	12.6	36.8	19.0	
Level of Service		C			C	B	D	B	B	D	B	
Approach Delay (s)		22.6			25.9			15.4			19.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	78.9	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			



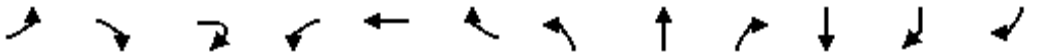
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	248	11	400	28	32	18	356	508	7	4	1159	333
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1610	3241	1583	1770	1863	1583	3433	3532		1770	5085	1583
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1610	3241	1583	1770	1863	1583	3433	3532		1770	5085	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.78	0.78	0.78	0.94	0.94	0.94	0.97	0.97	0.97
Adj. Flow (vph)	292	13	471	36	41	23	379	540	7	4	1195	343
RTOR Reduction (vph)	0	0	276	0	0	22	0	0	0	0	0	184
Lane Group Flow (vph)	146	159	195	36	41	1	379	547	0	4	1195	159
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8						6
Actuated Green, G (s)	17.4	17.4	17.4	5.1	5.1	5.1	16.1	49.9		0.5	34.3	34.3
Effective Green, g (s)	17.4	17.4	17.4	5.1	5.1	5.1	16.1	49.9		0.5	34.3	34.3
Actuated g/C Ratio	0.20	0.20	0.20	0.06	0.06	0.06	0.18	0.56		0.01	0.39	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	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)	315	634	310	102	107	91	622	1983		10	1962	611
v/s Ratio Prot	0.09	0.05		0.02	c0.02		c0.11	0.15		0.00	c0.23	
v/s Ratio Perm			c0.12			0.00						0.10
v/c Ratio	0.46	0.25	0.63	0.35	0.38	0.01	0.61	0.28		0.40	0.61	0.26
Uniform Delay, d1	31.6	30.2	32.8	40.3	40.4	39.5	33.5	10.1		44.1	21.9	18.6
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	1.1	0.2	4.0	2.1	2.3	0.1	1.7	0.1		24.2	0.5	0.2
Delay (s)	32.7	30.4	36.8	42.4	42.7	39.6	35.2	10.2		68.3	22.5	18.9
Level of Service	C	C	D	D	D	D	D	B		E	C	B
Approach Delay (s)		34.7			41.9			20.4			21.8	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



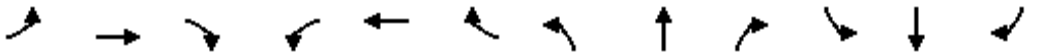
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	338	205	94	442	292	111	532	30	250	1336	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.94		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)	1770	3339		1770	3539	1583	1770	3511		1770	3539	1583
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)	1770	3339		1770	3539	1583	1770	3511		1770	3539	1583
Peak-hour factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91	0.87	0.87	0.87	0.97	0.97	0.97
Adj. Flow (vph)	73	384	233	103	486	321	128	611	34	258	1377	42
RTOR Reduction (vph)	0	65	0	0	0	219	0	3	0	0	0	20
Lane Group Flow (vph)	73	552	0	103	486	102	128	642	0	258	1377	22
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)	8.0	25.8		11.4	29.2	29.2	13.0	43.6		22.8	53.4	53.4
Effective Green, g (s)	8.0	25.8		11.4	29.2	29.2	13.0	43.6		22.8	53.4	53.4
Actuated g/C Ratio	0.07	0.22		0.10	0.24	0.24	0.11	0.36		0.19	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)	118	720		169	864	386	192	1280		337	1580	707
v/s Ratio Prot	0.04	c0.17		c0.06	c0.14		0.07	0.18		c0.15	c0.39	
v/s Ratio Perm						0.06						0.01
v/c Ratio	0.62	0.77		0.61	0.56	0.26	0.67	0.50		0.77	0.87	0.03
Uniform Delay, d1	54.3	44.1		52.0	39.6	36.5	51.2	29.6		45.9	30.0	18.6
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	9.3	4.9		6.1	0.8	0.4	8.4	0.3		9.9	5.6	0.0
Delay (s)	63.6	49.0		58.1	40.4	36.9	59.7	29.9		55.8	35.6	18.6
Level of Service	E	D		E	D	D	E	C		E	D	B
Approach Delay (s)		50.5			41.2			34.8			38.3	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	40.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	119.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



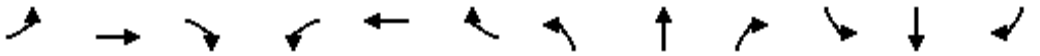
Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations												
Volume (vph)	71	400	146	373	136	109	108	825	245	1251	430	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	0.88	1.00	0.97	1.00	1.00	1.00	0.91	1.00	0.91		
Frt	1.00	0.85	0.85	1.00	1.00	0.85	1.00	1.00	0.85	0.96		
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1770	2787	1583	3433	1863	1583	1770	5085	1583	4857		
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1770	2787	1583	3433	1863	1583	1770	5085	1583	4857		
Peak-hour factor, PHF	0.92	0.92	0.92	0.97	0.97	0.97	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	77	435	159	385	140	112	114	868	258	1345	462	114
RTOR Reduction (vph)	0	0	131	0	0	98	0	0	0	6	0	0
Lane Group Flow (vph)	77	435	28	385	140	14	114	868	258	1915	0	0
Turn Type	Prot	custom	custom	Split		Perm	Prot		Free			
Protected Phases	7	7		8	8		5	2		6		
Permitted Phases			7			8			Free			
Actuated Green, G (s)	19.6	19.6	19.6	14.1	14.1	14.1	8.0	64.0	109.7	52.0		
Effective Green, g (s)	19.6	19.6	19.6	14.1	14.1	14.1	8.0	64.0	109.7	52.0		
Actuated g/C Ratio	0.18	0.18	0.18	0.13	0.13	0.13	0.07	0.58	1.00	0.47		
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)	316	498	283	441	239	203	129	2967	1583	2302		
v/s Ratio Prot	0.04	c0.16		c0.11	0.08		c0.06	0.17		c0.39		
v/s Ratio Perm			0.02			0.01			0.16			
v/c Ratio	0.24	0.87	0.10	0.87	0.59	0.07	0.88	0.29	0.16	0.83		
Uniform Delay, d1	38.7	43.8	37.7	46.9	45.0	42.0	50.4	11.5	0.0	25.1		
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	0.4	15.5	0.2	17.1	3.6	0.1	45.7	0.1	0.2	2.7		
Delay (s)	39.1	59.4	37.8	64.0	48.7	42.2	96.1	11.5	0.2	27.8		
Level of Service	D	E	D	E	D	D	F	B	A	C		
Approach Delay (s)					56.8			17.0		27.8		
Approach LOS					E			B		C		

Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	109.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



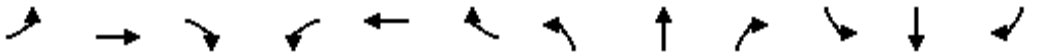
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	356	0	235	0	0	0	0	671	584	509	1072	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97		0.88					0.91	1.00	0.97	0.91	
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)	3433		2787					5085	1583	3433	5085	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433		2787					5085	1583	3433	5085	
Peak-hour factor, PHF	0.90	0.90	0.90	1.00	1.00	1.00	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	396	0	261	0	0	0	0	706	615	530	1117	0
RTOR Reduction (vph)	0	0	202	0	0	0	0	0	341	0	0	0
Lane Group Flow (vph)	396	0	59	0	0	0	0	706	274	530	1117	0
Turn Type	Prot		custom						Perm	Prot		
Protected Phases	7		7					2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	12.6		12.6					18.4	18.4	14.5	36.9	
Effective Green, g (s)	12.6		12.6					18.4	18.4	14.5	36.9	
Actuated g/C Ratio	0.22		0.22					0.32	0.32	0.25	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)	752		611					1627	507	866	3263	
v/s Ratio Prot	c0.12		0.02					0.14		c0.15	0.22	
v/s Ratio Perm									c0.17			
v/c Ratio	0.53		0.10					0.43	0.54	0.61	0.34	
Uniform Delay, d1	19.8		17.9					15.4	16.1	19.0	4.7	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7		0.1					0.2	1.2	1.3	0.1	
Delay (s)	20.5		18.0					15.6	17.3	20.3	4.8	
Level of Service	C		B					B	B	C	A	
Approach Delay (s)		19.5			0.0			16.4			9.8	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	175	356	319	97	418	373	212	677	77	368	911	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	0.95	1.00	0.97	0.91	1.00	0.97	0.91	
Frt	1.00	0.93		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)	3433	3289		1770	3539	1583	3433	5085	1583	3433	5003	
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)	3433	3289		1770	3539	1583	3433	5085	1583	3433	5003	
Peak-hour factor, PHF	0.94	0.94	0.94	0.96	0.96	0.96	0.94	0.94	0.94	0.96	0.96	0.96
Adj. Flow (vph)	186	379	339	101	435	389	226	720	82	383	949	115
RTOR Reduction (vph)	0	123	0	0	0	270	0	0	61	0	11	0
Lane Group Flow (vph)	186	595	0	101	435	119	226	720	21	383	1053	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	11.1	23.7		11.4	24.0	24.0	12.2	23.4	23.4	16.7	27.9	
Effective Green, g (s)	11.1	23.7		11.4	24.0	24.0	12.2	23.4	23.4	16.7	27.9	
Actuated g/C Ratio	0.12	0.26		0.12	0.26	0.26	0.13	0.26	0.26	0.18	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)	418	855		221	931	417	459	1305	406	629	1531	
v/s Ratio Prot	0.05	c0.18		c0.06	0.12		0.07	0.14		c0.11	c0.21	
v/s Ratio Perm						0.07			0.01			
v/c Ratio	0.44	0.70		0.46	0.47	0.28	0.49	0.55	0.05	0.61	0.69	
Uniform Delay, d1	37.2	30.5		37.0	28.2	26.8	36.6	29.4	25.5	34.2	27.8	
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	0.8	2.5		1.5	0.4	0.4	0.8	0.5	0.1	1.7	1.3	
Delay (s)	37.9	33.0		38.5	28.6	27.1	37.5	29.9	25.6	35.9	29.1	
Level of Service	D	C		D	C	C	D	C	C	D	C	
Approach Delay (s)		34.0			29.1			31.2			30.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	91.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

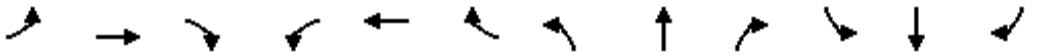


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	941	496	0	852	518	0	0	0	404	0	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.95	1.00				0.97		1.00
Frt		0.95			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		4822			3539	1583				3433		1583
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		4822			3539	1583				3433		1583
Peak-hour factor, PHF	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.89	1.00	0.89
Adj. Flow (vph)	0	991	522	0	897	545	0	0	0	454	0	346
RTOR Reduction (vph)	0	105	0	0	0	0	0	0	0	0	0	64
Lane Group Flow (vph)	0	1408	0	0	897	545	0	0	0	454	0	282
Turn Type						Free				Prot		custom
Protected Phases		2			6					7		7
Permitted Phases						Free						
Actuated Green, G (s)		22.7			22.7	46.3				15.6		15.6
Effective Green, g (s)		22.7			22.7	46.3				15.6		15.6
Actuated g/C Ratio		0.49			0.49	1.00				0.34		0.34
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)		2364			1735	1583				1157		533
v/s Ratio Prot		c0.29			0.25					0.13		c0.18
v/s Ratio Perm						0.34						
v/c Ratio		0.60			0.52	0.34				0.39		0.53
Uniform Delay, d1		8.5			8.1	0.0				11.7		12.4
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		0.4			0.3	0.6				0.2		1.0
Delay (s)		8.9			8.3	0.6				11.9		13.3
Level of Service		A			A	A				B		B
Approach Delay (s)		8.9			5.4			0.0			12.6	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	46.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

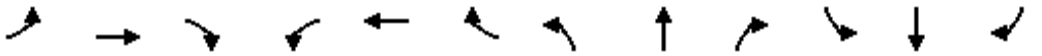
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	825	525	0	1103	261	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	1.00		0.91	0.97	0.91
Frt	1.00	0.85		1.00	0.96	0.85
Flt Protected	1.00	1.00		1.00	0.97	1.00
Satd. Flow (prot)	3539	1583		5085	3341	1441
Flt Permitted	1.00	1.00		1.00	0.97	1.00
Satd. Flow (perm)	3539	1583		5085	3341	1441
Peak-hour factor, PHF	0.96	0.96	0.95	0.95	0.96	0.96
Adj. Flow (vph)	859	547	0	1161	272	279
RTOR Reduction (vph)	0	0	0	0	49	124
Lane Group Flow (vph)	859	547	0	1161	329	49
Turn Type		Free				Prot
Protected Phases	2			6	3	3
Permitted Phases		Free				
Actuated Green, G (s)	15.2	32.3		15.2	9.1	9.1
Effective Green, g (s)	15.2	32.3		15.2	9.1	9.1
Actuated g/C Ratio	0.47	1.00		0.47	0.28	0.28
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)	1665	1583		2393	941	406
v/s Ratio Prot	c0.24			0.23	0.10	0.03
v/s Ratio Perm		c0.35				
v/c Ratio	0.52	0.35		0.49	0.35	0.12
Uniform Delay, d1	6.0	0.0		5.9	9.2	8.6
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.6		0.2	0.2	0.1
Delay (s)	6.2	0.6		6.0	9.5	8.8
Level of Service	A	A		A	A	A
Approach Delay (s)	4.1			6.0	9.2	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	32.3	Sum of lost time (s)	4.0
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	843	227	398	985	371	132	302	120	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			
Lane Util. Factor		0.95	1.00	1.00	0.95	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			
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3539	1583	1770	3539	1583	1770	1863	1583			
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3539	1583	1770	3539	1583	1770	1863	1583			
Peak-hour factor, PHF	0.97	0.97	0.97	0.96	0.96	0.96	0.95	0.95	0.95	1.00	1.00	1.00
Adj. Flow (vph)	0	869	234	415	1026	386	139	318	126	0	0	0
RTOR Reduction (vph)	0	0	157	0	0	0	0	0	16	0	0	0
Lane Group Flow (vph)	0	869	77	415	1026	386	139	318	110	0	0	0
Turn Type			Perm	Prot		Free	Split		custom			
Protected Phases		2		1	6		8	8	1 8			
Permitted Phases			2			Free			8			
Actuated Green, G (s)		25.5	25.5	22.5	52.0	77.4	17.4	17.4	43.9			
Effective Green, g (s)		25.5	25.5	22.5	52.0	77.4	17.4	17.4	43.9			
Actuated g/C Ratio		0.33	0.33	0.29	0.67	1.00	0.22	0.22	0.57			
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)		1166	522	515	2378	1583	398	419	898			
v/s Ratio Prot		c0.25		c0.23	0.29		0.08	c0.17	0.07			
v/s Ratio Perm			0.05			0.24						
v/c Ratio		0.75	0.15	0.81	0.43	0.24	0.35	0.76	0.12			
Uniform Delay, d1		23.1	18.3	25.4	5.9	0.0	25.2	28.0	7.8			
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		2.6	0.1	8.9	0.1	0.4	0.5	7.7	0.1			
Delay (s)		25.7	18.4	34.4	6.0	0.4	25.8	35.7	7.9			
Level of Service		C	B	C	A	A	C	D	A			
Approach Delay (s)		24.2			11.3			27.3			0.0	
Approach LOS		C			B			C			A	

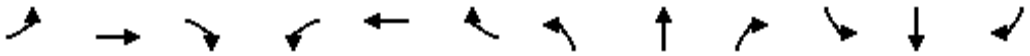
Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	255	383	97	130	446	106	184	294	23	202	685	424
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	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	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	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)	3367	3471	1553	1752	3505	1568	3400	3467		3400	3505	1568
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)	3367	3471	1553	1752	3505	1568	3400	3467		3400	3505	1568
Peak-hour factor, PHF	0.87	0.87	0.87	0.95	0.95	0.95	0.88	0.88	0.88	0.95	0.95	0.95
Adj. Flow (vph)	293	440	111	137	469	112	209	334	26	213	721	446
RTOR Reduction (vph)	0	0	86	0	0	88	0	6	0	0	0	269
Lane Group Flow (vph)	293	440	25	137	469	24	209	354	0	213	721	177
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
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)	13.6	18.9	18.9	12.8	18.1	18.1	11.2	15.3		21.9	26.0	26.0
Effective Green, g (s)	13.6	18.9	18.9	12.8	18.1	18.1	11.2	15.3		21.9	26.0	26.0
Actuated g/C Ratio	0.16	0.22	0.22	0.15	0.21	0.21	0.13	0.18		0.26	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	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)	539	773	346	264	747	334	449	625		877	1073	480
v/s Ratio Prot	c0.09	0.13		0.08	c0.13		0.06	c0.10		0.06	c0.21	
v/s Ratio Perm			0.02			0.02						0.11
v/c Ratio	0.54	0.57	0.07	0.52	0.63	0.07	0.47	0.57		0.24	0.67	0.37
Uniform Delay, d1	32.8	29.4	26.1	33.2	30.3	26.7	34.1	31.8		24.9	25.7	23.0
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	1.1	1.0	0.1	1.7	1.7	0.1	0.8	1.2		0.1	1.7	0.5
Delay (s)	33.9	30.3	26.2	34.9	32.0	26.8	34.8	33.0		25.1	27.4	23.5
Level of Service	C	C	C	C	C	C	C	C		C	C	C
Approach Delay (s)		31.0			31.7			33.7			25.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



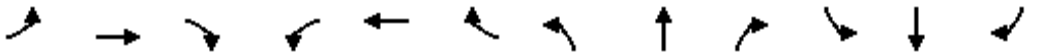
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	2	3	98	6	377	1	229	330	113	297	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.89		1.00	0.91		1.00	1.00	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1743			1649		1770	1698		1770	1857	
Flt Permitted		0.86			0.93		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1538			1547		1770	1698		1770	1857	
Peak-hour factor, PHF	0.41	0.41	0.41	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	10	5	7	103	6	397	1	249	359	119	313	6
RTOR Reduction (vph)	0	5	0	0	113	0	0	43	0	0	0	0
Lane Group Flow (vph)	0	17	0	0	393	0	1	565	0	119	319	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		28.0			28.0		0.8	37.6		8.7	45.5	
Effective Green, g (s)		28.0			28.0		0.8	37.6		8.7	45.5	
Actuated g/C Ratio		0.32			0.32		0.01	0.44		0.10	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)		499			502		16	740		178	979	
v/s Ratio Prot							0.00	c0.33		c0.07	0.17	
v/s Ratio Perm		0.01			c0.25							
v/c Ratio		0.03			0.78		0.06	0.76		0.67	0.33	
Uniform Delay, d1		19.9			26.4		42.4	20.6		37.4	11.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			7.8		1.6	4.7		9.1	0.2	
Delay (s)		19.9			34.2		44.0	25.3		46.6	11.8	
Level of Service		B			C		D	C		D	B	
Approach Delay (s)		19.9			34.2			25.3			21.3	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	86.3	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			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	8	2	606	5	6	405
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.67	0.67	0.95	0.95	0.91	0.91
Hourly flow rate (vph)	12	3	638	5	7	445
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	1099	641			643	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1099	641			643	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	99			99	
cM capacity (veh/h)	234	475			942	

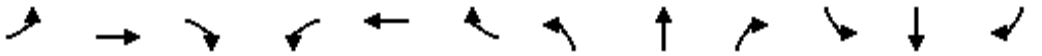
Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	15	643	7	445
Volume Left	12	0	7	0
Volume Right	3	5	0	0
cSH	292	1700	942	1700
Volume to Capacity	0.05	0.38	0.01	0.26
Queue Length 95th (ft)	4	0	1	0
Control Delay (s)	19.5	0.0	8.9	0.0
Lane LOS	C		A	
Approach Delay (s)	19.5	0.0	0.1	
Approach LOS	C			

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	15	307	49	34	8	309	1185	23	2	1018	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	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	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.97		1.00	1.00		1.00	0.98	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1784	1583	1770	1811		1770	3529		1770	3466	
Flt Permitted		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1784	1583	1770	1811		1770	3529		1770	3466	
Peak-hour factor, PHF	0.89	0.89	0.89	0.71	0.71	0.71	0.96	0.96	0.96	0.94	0.94	0.94
Adj. Flow (vph)	134	17	345	69	48	11	322	1234	24	2	1083	173
RTOR Reduction (vph)	0	0	204	0	8	0	0	1	0	0	10	0
Lane Group Flow (vph)	0	151	141	69	51	0	322	1257	0	2	1246	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7									
Actuated Green, G (s)		12.2	12.2	7.9	7.9		22.2	66.8		1.1	45.7	
Effective Green, g (s)		12.2	12.2	7.9	7.9		22.2	66.8		1.1	45.7	
Actuated g/C Ratio		0.12	0.12	0.08	0.08		0.21	0.64		0.01	0.44	
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)		209	186	134	138		378	2267		19	1523	
v/s Ratio Prot		0.08		c0.04	0.03		c0.18	0.36		0.00	c0.36	
v/s Ratio Perm			c0.09									
v/c Ratio		0.72	0.76	0.51	0.37		0.85	0.55		0.11	0.82	
Uniform Delay, d1		44.3	44.5	46.2	45.7		39.3	10.3		51.0	25.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.6	16.1	3.3	1.7		16.7	0.3		2.4	3.6	
Delay (s)		55.9	60.6	49.5	47.3		56.0	10.6		53.4	29.1	
Level of Service		E	E	D	D		E	B		D	C	
Approach Delay (s)		59.2			48.5			19.9			29.1	
Approach LOS		E			D			B			C	

Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	104.0	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			



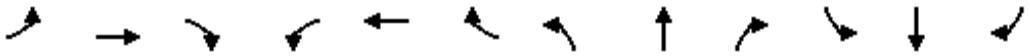
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	155	265	587	102	703	98	795	275	319	988	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	0.97	1.00	1.00	1.00	0.91	1.00	0.97	0.91	
Frt		0.98	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1711	1504	3433	1863	1583	1770	5085	1583	3433	5040	
Flt Permitted		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1711	1504	3433	1863	1583	1770	5085	1583	3433	5040	
Peak-hour factor, PHF	0.82	0.82	0.82	0.93	0.93	0.93	0.93	0.93	0.93	0.91	0.91	0.91
Adj. Flow (vph)	87	189	323	631	110	756	105	855	296	351	1086	69
RTOR Reduction (vph)	0	4	144	0	0	278	0	0	229	0	5	0
Lane Group Flow (vph)	0	314	137	631	110	478	105	855	67	351	1150	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			
Actuated Green, G (s)		26.6	26.6	42.7	42.7	42.7	10.5	29.7	29.7	15.3	34.5	
Effective Green, g (s)		26.6	26.6	42.7	42.7	42.7	10.5	29.7	29.7	15.3	34.5	
Actuated g/C Ratio		0.20	0.20	0.33	0.33	0.33	0.08	0.23	0.23	0.12	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)		349	307	1125	611	519	143	1159	361	403	1334	
v/s Ratio Prot		c0.18		0.18	0.06		0.06	0.17		c0.10	c0.23	
v/s Ratio Perm			0.09			c0.30			0.04			
v/c Ratio		0.90	0.45	0.56	0.18	0.92	0.73	0.74	0.19	0.87	0.86	
Uniform Delay, d1		50.6	45.4	36.1	31.3	42.2	58.5	46.7	40.6	56.5	45.6	
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		24.7	1.0	0.6	0.1	21.9	17.6	2.5	0.3	18.2	6.0	
Delay (s)		75.2	46.4	36.7	31.4	64.1	76.2	49.2	40.8	74.7	51.6	
Level of Service		E	D	D	C	E	E	D	D	E	D	
Approach Delay (s)		61.7			50.2			49.5			57.0	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM Average Control Delay	53.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (vph)	1070	360	290	1315	0	873	533
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	
Lane Util. Factor	0.97	1.00	0.97	0.91		0.91	
Frt	1.00	0.85	1.00	1.00		0.94	
Flt Protected	0.95	1.00	0.95	1.00		1.00	
Satd. Flow (prot)	3433	1583	3433	5085		4796	
Flt Permitted	0.95	1.00	0.95	1.00		1.00	
Satd. Flow (perm)	3433	1583	3433	5085		4796	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.77	0.77	0.77
Adj. Flow (vph)	1126	379	305	1384	0	1134	692
RTOR Reduction (vph)	0	59	0	0	0	92	0
Lane Group Flow (vph)	1126	320	305	1384	0	1734	0
Turn Type		Perm	Prot		Prot		
Protected Phases	4		5	2	1	6	
Permitted Phases		4					
Actuated Green, G (s)	42.3	42.3	12.7	64.2		47.5	
Effective Green, g (s)	42.3	42.3	12.7	64.2		47.5	
Actuated g/C Ratio	0.37	0.37	0.11	0.56		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)	1268	585	381	2851		1990	
v/s Ratio Prot	c0.33		c0.09	0.27		c0.36	
v/s Ratio Perm		0.20					
v/c Ratio	0.89	0.55	0.80	0.49		0.93dr	
Uniform Delay, d1	33.9	28.5	49.7	15.2		30.7	
Progression Factor	1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2	7.9	1.0	11.4	0.1		4.5	
Delay (s)	41.7	29.6	61.1	15.3		35.2	
Level of Service	D	C	E	B		D	
Approach Delay (s)	38.7			23.6		35.2	
Approach LOS	D			C		D	

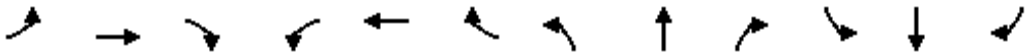
Intersection Summary			
HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	114.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

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



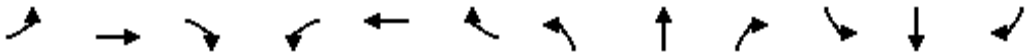
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	1388	208	26	826	16	246	71	51	31	68	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.98		1.00	1.00			0.98			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	3470		1770	3529			1769			1801	
Flt Permitted	0.95	1.00		0.95	1.00			0.67			0.85	
Satd. Flow (perm)	1770	3470		1770	3529			1232			1558	
Peak-hour factor, PHF	0.94	0.94	0.94	0.96	0.96	0.96	0.92	0.92	0.92	0.78	0.78	0.78
Adj. Flow (vph)	54	1477	221	27	860	17	267	77	55	40	87	22
RTOR Reduction (vph)	0	8	0	0	1	0	0	5	0	0	5	0
Lane Group Flow (vph)	54	1690	0	27	876	0	0	394	0	0	144	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	7.4	68.1		5.1	65.8			44.8			44.8	
Effective Green, g (s)	7.4	68.1		5.1	65.8			44.8			44.8	
Actuated g/C Ratio	0.06	0.52		0.04	0.51			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)	101	1818		69	1786			425			537	
v/s Ratio Prot	c0.03	c0.49		0.02	0.25							
v/s Ratio Perm								c0.32			0.09	
v/c Ratio	0.53	0.93		0.39	0.49			0.93			0.27	
Uniform Delay, d1	59.6	28.7		60.9	21.1			41.0			30.8	
Progression Factor	1.17	0.69		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.5	5.2		3.6	1.0			26.3			0.3	
Delay (s)	72.2	25.1		64.6	22.1			67.3			31.0	
Level of Service	E	C		E	C			E			C	
Approach Delay (s)		26.5			23.3			67.3			31.0	
Approach LOS		C			C			E			C	

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	1412	135	162	823	31	206	18	100	51	21	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	
Frt	1.00	0.99		1.00	0.99		1.00	0.87			0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1770	3493		1770	3520		1770	1625			1690	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1770	3493		1770	3520		1770	1625			1690	
Peak-hour factor, PHF	0.98	0.98	0.98	0.93	0.93	0.93	0.93	0.93	0.93	0.84	0.84	0.84
Adj. Flow (vph)	88	1441	138	174	885	33	222	19	108	61	25	123
RTOR Reduction (vph)	0	4	0	0	2	0	0	90	0	0	43	0
Lane Group Flow (vph)	88	1575	0	174	916	0	222	37	0	0	166	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												
Actuated Green, G (s)	11.3	57.9		17.2	63.8		21.1	21.1			17.8	
Effective Green, g (s)	11.3	57.9		17.2	63.8		21.1	21.1			17.8	
Actuated g/C Ratio	0.09	0.45		0.13	0.49		0.16	0.16			0.14	
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)	154	1556		234	1728		287	264			231	
v/s Ratio Prot	0.05	c0.45		c0.10	0.26		c0.13	0.02			c0.10	
v/s Ratio Perm												
v/c Ratio	0.57	1.01		0.74	0.53		0.77	0.14			0.72	
Uniform Delay, d1	57.0	36.0		54.3	22.8		52.2	46.7			53.7	
Progression Factor	0.96	1.06		1.05	1.03		1.00	1.00			1.00	
Incremental Delay, d2	2.5	19.1		10.2	1.0		12.2	0.2			10.2	
Delay (s)	57.4	57.3		67.3	24.4		64.4	46.9			63.9	
Level of Service	E	E		E	C		E	D			E	
Approach Delay (s)		57.3			31.3			58.0			63.9	
Approach LOS		E			C			E			E	

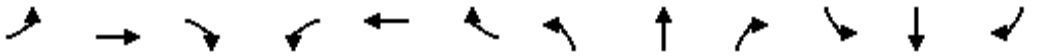
Intersection Summary			
HCM Average Control Delay	49.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1146	128	246	837	47	295	84	333	112	35	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	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	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		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)	1719	3386		1736	3444		1687	1776	1509	1626	1645	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1719	3386		1736	3444		1687	1776	1509	1626	1645	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.87	0.87	0.87
Adj. Flow (vph)	74	1206	135	259	881	49	311	88	351	129	40	14
RTOR Reduction (vph)	0	6	0	0	2	0	0	0	229	0	11	0
Lane Group Flow (vph)	74	1335	0	259	928	0	311	88	122	129	43	0
Heavy Vehicles (%)	5%	5%	5%	4%	4%	4%	7%	7%	7%	11%	11%	11%
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	9.6	53.4		28.4	72.2		22.0	18.1	18.1	14.1	10.2	
Effective Green, g (s)	9.6	53.4		28.4	72.2		22.0	18.1	18.1	14.1	10.2	
Actuated g/C Ratio	0.07	0.41		0.22	0.56		0.17	0.14	0.14	0.11	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)	127	1391		379	1913		285	247	210	176	129	
v/s Ratio Prot	0.04	c0.39		c0.15	0.27		c0.18	0.05		0.08	0.03	
v/s Ratio Perm									c0.08			
v/c Ratio	0.58	0.96		0.68	0.48		1.09	0.36	0.58	0.73	0.33	
Uniform Delay, d1	58.3	37.3		46.7	17.6		54.0	50.7	52.4	56.1	56.7	
Progression Factor	1.07	0.71		1.23	1.09		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	2.5		4.3	0.7		79.9	0.9	4.1	14.6	1.5	
Delay (s)	62.8	28.8		61.5	19.9		133.9	51.6	56.5	70.7	58.2	
Level of Service	E	C		E	B		F	D	E	E	E	
Approach Delay (s)		30.6			28.9			88.0			67.0	
Approach LOS		C			C			F			E	

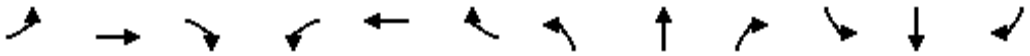
Intersection Summary			
HCM Average Control Delay	44.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



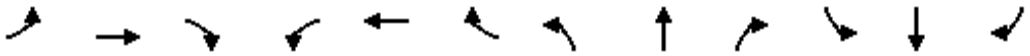
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	497	1052	284	153	867	166	254	309	136	237	432	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.91	0.91		0.91	0.91		0.91	0.91		0.91	0.91	1.00
Frt	1.00	0.97		1.00	0.98		1.00	0.96		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)	1610	3280		1610	3307		1610	3235		1610	3381	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1610	3280		1610	3307		1610	3235		1610	3381	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.95	0.95	0.95	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	529	1119	302	161	913	175	273	332	146	258	470	245
RTOR Reduction (vph)	0	16	0	0	11	0	0	31	0	0	0	101
Lane Group Flow (vph)	476	1458	0	145	1093	0	246	474	0	232	496	144
Turn Type	Split			Split			Split			Split		Perm
Protected Phases	2	2		6	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	39.3	39.3		28.0	28.0		23.3	23.3		23.4	23.4	23.4
Effective Green, g (s)	39.3	39.3		28.0	28.0		23.3	23.3		23.4	23.4	23.4
Actuated g/C Ratio	0.30	0.30		0.22	0.22		0.18	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)	487	992		347	712		289	580		290	609	285
v/s Ratio Prot	0.30	c0.44		0.09	c0.33		c0.15	0.15		0.14	c0.15	
v/s Ratio Perm												0.09
v/c Ratio	0.98	1.47		0.42	1.54		0.85	0.82		0.80	0.81	0.51
Uniform Delay, d1	44.9	45.4		44.0	51.0		51.7	51.3		51.1	51.2	48.1
Progression Factor	1.31	1.27		0.92	0.99		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	24.7	214.3		0.6	246.4		20.7	8.7		14.5	8.2	1.4
Delay (s)	83.7	271.8		41.3	296.9		72.4	60.0		65.6	59.4	49.5
Level of Service	F	F		D	F		E	E		E	E	D
Approach Delay (s)		225.9			267.3			64.1			58.4	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM Average Control Delay	178.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



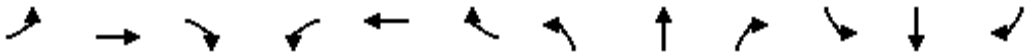
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1781	96	164	1183	60	76	39	26	34	61	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3512		1770	3514		1770	1863	1583	1770	1720	
Flt Permitted	0.95	1.00		0.95	1.00		0.41	1.00	1.00	0.72	1.00	
Satd. Flow (perm)	1770	3512		1770	3514		757	1863	1583	1347	1720	
Peak-hour factor, PHF	0.98	0.98	0.98	0.96	0.96	0.96	0.75	0.75	0.75	0.76	0.76	0.76
Adj. Flow (vph)	143	1817	98	171	1232	62	101	52	35	45	80	83
RTOR Reduction (vph)	0	3	0	0	2	0	0	0	30	0	32	0
Lane Group Flow (vph)	143	1912	0	171	1292	0	101	52	5	45	131	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	15.6	80.1		19.2	83.7		18.7	18.7	18.7	18.7	18.7	
Effective Green, g (s)	15.6	80.1		19.2	83.7		18.7	18.7	18.7	18.7	18.7	
Actuated g/C Ratio	0.12	0.62		0.15	0.64		0.14	0.14	0.14	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)	212	2164		261	2262		109	268	228	194	247	
v/s Ratio Prot	0.08	c0.54		c0.10	c0.37			0.03			0.08	
v/s Ratio Perm							c0.13		0.00	0.03		
v/c Ratio	0.67	0.88		0.66	0.57		0.93	0.19	0.02	0.23	0.53	
Uniform Delay, d1	54.8	21.0		52.3	13.0		55.0	49.0	47.8	49.3	51.6	
Progression Factor	1.00	1.00		0.88	1.97		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.2	5.7		0.5	0.1		62.7	0.4	0.0	0.6	2.2	
Delay (s)	63.0	26.7		46.3	25.8		117.7	49.4	47.8	49.9	53.8	
Level of Service	E	C		D	C		F	D	D	D	D	
Approach Delay (s)		29.2			28.2			85.8			52.9	
Approach LOS		C			C			F			D	

Intersection Summary			
HCM Average Control Delay	32.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	1581	390	199	711	367	258	766	226	319	441	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	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	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
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)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3443	
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)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3443	
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.96	0.96	0.96	0.98	0.98	0.98
Adj. Flow (vph)	170	1630	402	214	765	395	269	798	235	326	450	100
RTOR Reduction (vph)	0	0	143	0	0	174	0	0	105	0	15	0
Lane Group Flow (vph)	170	1630	259	214	765	221	269	798	130	326	535	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	17.1	59.0	59.0	9.3	51.2	51.2	11.0	30.7	30.7	13.0	32.7	
Effective Green, g (s)	17.1	60.0	60.0	9.3	52.2	52.2	11.0	31.7	31.7	13.0	33.7	
Actuated g/C Ratio	0.13	0.46	0.46	0.07	0.40	0.40	0.08	0.24	0.24	0.10	0.26	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	
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)	233	1633	731	246	1421	636	290	863	386	343	893	
v/s Ratio Prot	0.10	c0.46		c0.06	0.22		0.08	c0.23		c0.09	0.16	
v/s Ratio Perm			0.16			0.14			0.08			
v/c Ratio	0.73	1.00	0.35	0.87	0.54	0.35	0.93	0.92	0.34	0.95	0.60	
Uniform Delay, d1	54.2	34.9	22.5	59.8	29.7	27.1	59.1	48.0	40.5	58.2	42.2	
Progression Factor	0.85	1.63	3.46	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.3	16.2	0.8	26.2	1.5	1.5	34.0	15.4	0.5	35.6	1.1	
Delay (s)	52.1	73.1	78.7	86.0	31.2	28.6	93.1	63.3	41.0	93.8	43.3	
Level of Service	D	E	E	F	C	C	F	E	D	F	D	
Approach Delay (s)		72.5			39.0			65.5			62.1	
Approach LOS		E			D			E			E	

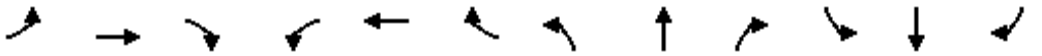
Intersection Summary			
HCM Average Control Delay	61.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	2002	44	6	967	0	16	0	8	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.95	0.95	0.95	0.81	0.81	0.81	1.00	1.00	1.00
Hourly flow rate (vph)	0	2043	45	6	1018	0	20	0	10	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					1035							
pX, platoon unblocked	0.85						0.85	0.85		0.85	0.85	0.85
vC, conflicting volume	1018			2088			2587	3096	703	1721	3118	509
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	680			2088			2516	3112	703	1503	3138	84
tC, single (s)	4.2			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	97	100	100	100
cM capacity (veh/h)	770			261			12	9	380	68	9	818

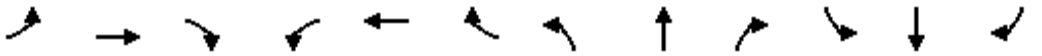
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	817	817	453	6	679	339	30	0
Volume Left	0	0	0	0	6	0	0	20	0
Volume Right	0	0	0	45	0	0	0	10	0
cSH	1700	1700	1700	1700	261	1700	1700	18	1700
Volume to Capacity	0.00	0.48	0.48	0.27	0.02	0.40	0.20	1.69	0.00
Queue Length 95th (ft)	0	0	0	0	2	0	0	104	0
Control Delay (s)	0.0	0.0	0.0	0.0	19.1	0.0	0.0	791.0	0.0
Lane LOS					C			F	A
Approach Delay (s)	0.0				0.1			791.0	0.0
Approach LOS								F	A

Intersection Summary				
Average Delay	7.5			
Intersection Capacity Utilization	49.7%	ICU Level of Service		A
Analysis Period (min)	15			



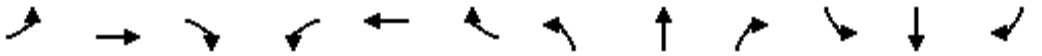
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	425	1518	268	254	758	91	180	820	206	344	827	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	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)	3433	5085	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
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)	3433	5085	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.93	0.93	0.93	0.95	0.95	0.95	0.97	0.97	0.97
Adj. Flow (vph)	434	1549	273	273	815	98	189	863	217	355	853	65
RTOR Reduction (vph)	0	0	66	0	0	63	0	0	154	0	0	43
Lane Group Flow (vph)	434	1549	207	273	815	35	189	863	63	355	853	22
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	17.0	42.0	42.0	11.0	36.0	36.0	16.8	32.0	32.0	27.0	42.2	42.2
Effective Green, g (s)	17.0	43.0	42.0	11.0	37.0	36.0	16.8	33.0	32.0	27.0	43.2	42.2
Actuated g/C Ratio	0.13	0.33	0.32	0.08	0.28	0.28	0.13	0.25	0.25	0.21	0.33	0.32
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
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)	449	1682	511	290	1007	438	229	898	390	368	1176	514
v/s Ratio Prot	c0.13	c0.30		0.08	0.23		0.11	c0.24		c0.20	0.24	
v/s Ratio Perm			0.13			0.02			0.04			0.01
v/c Ratio	0.97	0.92	0.40	0.94	0.81	0.08	0.83	0.96	0.16	0.96	0.73	0.04
Uniform Delay, d1	56.2	41.9	34.3	59.2	43.2	34.8	55.2	47.9	38.5	51.0	38.2	30.1
Progression Factor	1.19	1.00	1.12	0.82	1.19	2.23	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.6	6.7	1.5	33.6	6.0	0.3	20.9	21.0	0.2	37.3	2.3	0.0
Delay (s)	92.6	48.7	39.9	82.0	57.3	77.9	76.1	68.9	38.7	88.4	40.4	30.1
Level of Service	F	D	D	F	E	E	E	E	D	F	D	C
Approach Delay (s)		56.1			64.7			64.8			53.3	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM Average Control Delay	59.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



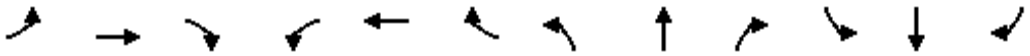
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	147	2205	3	1	870	6	2	0	2	19	0	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.93			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.95	1.00
Satd. Flow (prot)	1770	3539		1770	5080			1695			1770	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.88			0.75	1.00
Satd. Flow (perm)	1770	3539		1770	5080			1520			1402	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.93	0.93	0.93	0.50	0.50	0.50	0.87	0.87	0.87
Adj. Flow (vph)	155	2321	3	1	935	6	4	0	4	22	0	90
RTOR Reduction (vph)	0	0	0	0	0	0	0	4	0	0	0	85
Lane Group Flow (vph)	155	2324	0	1	941	0	0	4	0	0	22	5
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Actuated Green, G (s)	17.4	109.0		1.2	92.8			7.8			7.8	7.8
Effective Green, g (s)	17.4	109.0		1.2	92.8			7.8			7.8	7.8
Actuated g/C Ratio	0.13	0.84		0.01	0.71			0.06			0.06	0.06
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)	237	2967		16	3626			91			84	95
v/s Ratio Prot	c0.09	c0.66		0.00	0.19							
v/s Ratio Perm								0.00			c0.02	0.00
v/c Ratio	0.65	0.78		0.06	0.26			0.05			0.26	0.06
Uniform Delay, d1	53.4	4.9		63.8	6.5			57.6			58.4	57.6
Progression Factor	1.26	0.69		0.97	0.09			1.00			1.00	1.00
Incremental Delay, d2	3.8	1.3		1.0	0.1			0.2			1.7	0.3
Delay (s)	71.2	4.7		62.9	0.7			57.8			60.0	57.9
Level of Service	E	A		E	A			E			E	E
Approach Delay (s)		8.9			0.8			57.8			58.3	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	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			



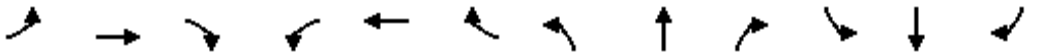
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	2211	235	9	931	96	135	12	84	19	12	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5014			1781	1583	1770	1753	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.72	1.00	0.44	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5014			1340	1583	815	1753	
Peak-hour factor, PHF	0.98	0.98	0.98	0.95	0.95	0.95	0.86	0.86	0.86	0.61	0.61	0.61
Adj. Flow (vph)	89	2256	240	9	980	101	157	14	98	31	20	13
RTOR Reduction (vph)	0	0	19	0	6	0	0	0	81	0	11	0
Lane Group Flow (vph)	89	2256	221	9	1075	0	0	171	17	31	22	0
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8		8	4		
Actuated Green, G (s)	12.1	93.6	93.6	2.0	83.5			22.4	22.4	22.4	22.4	
Effective Green, g (s)	12.1	93.6	93.6	2.0	83.5			22.4	22.4	22.4	22.4	
Actuated g/C Ratio	0.09	0.72	0.72	0.02	0.64			0.17	0.17	0.17	0.17	
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)	165	2548	1140	27	3221			231	273	140	302	
v/s Ratio Prot	0.05	c0.64		0.01	c0.21						0.01	
v/s Ratio Perm			0.14					c0.13	0.01	0.04		
v/c Ratio	0.54	0.89	0.19	0.33	0.33			0.74	0.06	0.22	0.07	
Uniform Delay, d1	56.3	14.1	5.9	63.3	10.6			51.0	45.0	46.3	45.1	
Progression Factor	1.00	1.00	1.00	0.65	0.71			1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.4	5.0	0.4	7.0	0.3			12.0	0.1	0.8	0.1	
Delay (s)	59.7	19.0	6.3	48.0	7.8			63.0	45.1	47.1	45.2	
Level of Service	E	B	A	D	A			E	D	D	D	
Approach Delay (s)		19.3			8.1			56.5			46.1	
Approach LOS		B			A			E			D	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



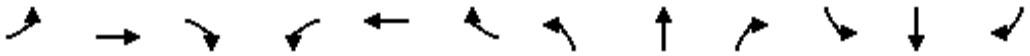
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1546	1758	0	914	150	1515	0	1065	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	2000	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	0.96	0.95			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.97	1.00			
Satd. Flow (prot)		3539	1583		3725	1583	1770	1566	1681			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.97	1.00			
Satd. Flow (perm)		3539	1583		3725	1583	1770	1566	1681			
Peak-hour factor, PHF	0.99	0.99	0.99	0.95	0.95	0.95	0.89	0.89	0.89	1.00	1.00	1.00
Adj. Flow (vph)	0	1562	1776	0	962	158	1702	0	1197	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	2	0	0	0
Lane Group Flow (vph)	0	1562	1776	0	962	158	1004	983	908	0	0	0
Turn Type			Free			Free	Split		custom			
Protected Phases		2			6		3	3	3			
Permitted Phases			Free			Free			3			
Actuated Green, G (s)		36.0	90.0		36.0	90.0	46.0	46.0	46.0			
Effective Green, g (s)		36.0	90.0		36.0	90.0	46.0	46.0	46.0			
Actuated g/C Ratio		0.40	1.00		0.40	1.00	0.51	0.51	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)		1416	1583		1490	1583	905	800	859			
v/s Ratio Prot		0.44			0.26		0.57	c0.63	0.54			
v/s Ratio Perm			c1.12			0.10						
v/c Ratio		1.10	1.12		0.65	0.10	1.11	1.23	1.06			
Uniform Delay, d1		27.0	45.0		21.8	0.0	22.0	22.0	22.0			
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		57.4	63.9		1.0	0.1	64.6	113.6	46.7			
Delay (s)		84.4	108.9		22.8	0.1	86.6	135.6	68.7			
Level of Service		F	F		C	A	F	F	E			
Approach Delay (s)		97.4			19.6			97.7			0.0	
Approach LOS		F			B			F			A	

Intersection Summary			
HCM Average Control Delay	85.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	3056	1510	0	1647	587	0	0	0	216	0	1167
Ideal Flow (vphpl)	1900	1900	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			0.95	1.00				0.97		1.00
Frt		0.95			1.00	0.85				1.00		1.00
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		4836			3539	1583				3433		1863
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		4836			3539	1583				3433		1863
Peak-hour factor, PHF	0.98	0.98	1.00	1.00	0.97	0.97	1.00	1.00	1.00	0.97	1.00	0.97
Adj. Flow (vph)	0	3118	1510	0	1698	605	0	0	0	223	0	1203
RTOR Reduction (vph)	0	57	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	4571	0	0	1698	605	0	0	0	223	0	1203
Turn Type						Free				Prot		Free
Protected Phases		2			6					7		
Permitted Phases						Free						Free
Actuated Green, G (s)		58.4			58.4	76.6				10.2		76.6
Effective Green, g (s)		58.4			58.4	76.6				10.2		76.6
Actuated g/C Ratio		0.76			0.76	1.00				0.13		1.00
Clearance Time (s)		4.0			4.0					4.0		
Vehicle Extension (s)		3.0			3.0					3.0		
Lane Grp Cap (vph)		3687			2698	1583				457		1863
v/s Ratio Prot		c0.95			0.48					0.06		
v/s Ratio Perm						0.38						c0.65
v/c Ratio		1.24			0.63	0.38				0.49		0.65
Uniform Delay, d1		9.1			4.2	0.0				30.8		0.0
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		110.3			0.5	0.7				0.8		1.7
Delay (s)		119.4			4.6	0.7				31.6		1.7
Level of Service		F			A	A				C		A
Approach Delay (s)		119.4			3.6			0.0			6.4	
Approach LOS		F			A			A			A	

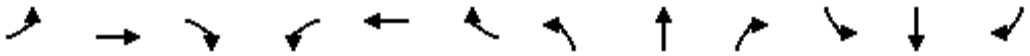
Intersection Summary			
HCM Average Control Delay	68.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	76.6	Sum of lost time (s)	4.0
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	44	116	31	31	33	74	1541	27	63	917	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	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	0.95		1.00	0.95	
Frt		0.91		1.00	1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1652		1456	1532	1302	1752	3496		1687	3367	
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1652		1456	1532	1302	1752	3496		1687	3367	
Peak-hour factor, PHF	0.74	0.74	0.74	0.86	0.86	0.86	0.97	0.97	0.97	0.98	0.98	0.98
Adj. Flow (vph)	11	59	157	36	36	38	76	1589	28	64	936	13
RTOR Reduction (vph)	0	67	0	0	0	36	0	1	0	0	0	0
Lane Group Flow (vph)	0	160	0	36	36	2	76	1616	0	64	949	0
Heavy Vehicles (%)	4%	4%	4%	24%	24%	24%	3%	3%	3%	7%	7%	7%
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)		15.5		6.4	6.4	6.4	6.9	55.4		5.1	53.6	
Effective Green, g (s)		15.5		6.4	6.4	6.4	6.9	55.4		5.1	53.6	
Actuated g/C Ratio		0.16		0.07	0.07	0.07	0.07	0.56		0.05	0.54	
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)		260		95	100	85	123	1968		87	1834	
v/s Ratio Prot		c0.10		c0.02	0.02		c0.04	c0.46		0.04	0.28	
v/s Ratio Perm						0.00						
v/c Ratio		0.62		0.38	0.36	0.03	0.62	0.82		0.74	0.52	
Uniform Delay, d1		38.7		44.1	44.0	43.1	44.5	17.5		46.0	14.2	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.3		2.5	2.2	0.1	8.9	2.9		27.3	0.2	
Delay (s)		43.0		46.6	46.2	43.2	53.4	20.4		73.2	14.4	
Level of Service		D		D	D	D	D	C		E	B	
Approach Delay (s)		43.0			45.3			21.8			18.2	
Approach LOS		D			D			C			B	

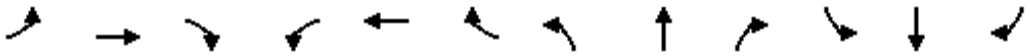
Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	55	91	127	120	39	36	522	169	98	645	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	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	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.96		1.00	0.96		1.00	0.98	
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1807	1583	1770	1795		1770	3409		1770	3453	
Flt Permitted		0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1807	1583	1770	1795		1770	3409		1770	3453	
Peak-hour factor, PHF	0.73	0.73	0.73	0.79	0.79	0.79	0.91	0.91	0.91	0.97	0.97	0.97
Adj. Flow (vph)	119	75	125	161	152	49	40	574	186	101	665	129
RTOR Reduction (vph)	0	0	102	0	11	0	0	25	0	0	12	0
Lane Group Flow (vph)	0	194	23	161	190	0	40	735	0	101	782	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases			3									
Actuated Green, G (s)		14.3	14.3	14.2	14.2		3.2	24.7		8.3	29.8	
Effective Green, g (s)		14.3	14.3	14.2	14.2		3.2	24.7		8.3	29.8	
Actuated g/C Ratio		0.18	0.18	0.18	0.18		0.04	0.32		0.11	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)		333	292	324	329		73	1086		190	1328	
v/s Ratio Prot		c0.11		0.09	c0.11		0.02	c0.22		c0.06	0.23	
v/s Ratio Perm			0.01									
v/c Ratio		0.58	0.08	0.50	0.58		0.55	0.68		0.53	0.59	
Uniform Delay, d1		28.9	26.2	28.4	28.9		36.4	22.9		32.8	19.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.6	0.1	1.2	2.5		8.2	1.7		2.8	0.7	
Delay (s)		31.5	26.3	29.6	31.4		44.6	24.6		35.6	19.7	
Level of Service		C	C	C	C		D	C		D	B	
Approach Delay (s)		29.4			30.6			25.6			21.5	
Approach LOS		C			C			C			C	

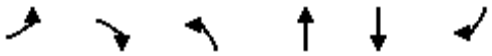
Intersection Summary			
HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	77.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	4	12	30	10	18	10	1164	8	14	961	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.66	0.66	0.66	0.79	0.79	0.79	0.96	0.96	0.96	0.97	0.97	0.97
Hourly flow rate (vph)	32	6	18	38	13	23	10	1212	8	14	991	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											759	
pX, platoon unblocked												
vC, conflicting volume	1687	2273	342	1618	2280	610	1013			1221		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1687	2273	342	1618	2280	610	1013			1221		
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 %	23	84	97	33	66	95	98			97		
cM capacity (veh/h)	42	38	654	57	38	437	680			567		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	56	73	10	808	412	14	396	396	221
Volume Left	32	38	10	0	0	14	0	0	0
Volume Right	18	23	0	0	8	0	0	0	23
cSH	59	70	680	1700	1700	567	1700	1700	1700
Volume to Capacity	0.95	1.05	0.02	0.48	0.24	0.03	0.23	0.23	0.13
Queue Length 95th (ft)	110	137	1	0	0	2	0	0	0
Control Delay (s)	218.0	226.1	10.4	0.0	0.0	11.5	0.0	0.0	0.0
Lane LOS	F	F	B			B			
Approach Delay (s)	218.0	226.1	0.1			0.2			
Approach LOS	F	F							

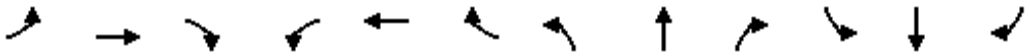
Intersection Summary				
Average Delay	12.2			
Intersection Capacity Utilization	43.0%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	34	52	76	1145	956	62
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.96	0.96	0.95	0.95
Hourly flow rate (vph)	41	63	79	1193	1006	65
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				795		
pX, platoon unblocked	0.75					
vC, conflicting volume	1794	536	1072			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1385	536	1072			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	53	87	88			
cM capacity (veh/h)	88	489	646			

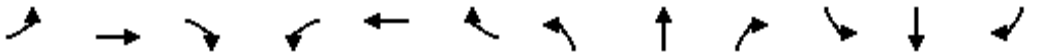
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	104	79	596	596	671	401
Volume Left	41	79	0	0	0	0
Volume Right	63	0	0	0	0	65
cSH	175	646	1700	1700	1700	1700
Volume to Capacity	0.59	0.12	0.35	0.35	0.39	0.24
Queue Length 95th (ft)	80	10	0	0	0	0
Control Delay (s)	51.9	11.3	0.0	0.0	0.0	0.0
Lane LOS	F	B				
Approach Delay (s)	51.9	0.7			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		



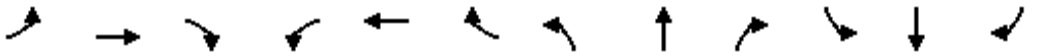
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	35	24	191	74	63	44	1114	524	124	775	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.96			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98			0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1766			1798	1583	1770	3539	1583	1770	3512	
Flt Permitted		0.85			0.74	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1532			1376	1583	1770	3539	1583	1770	3512	
Peak-hour factor, PHF	0.88	0.88	0.88	0.94	0.94	0.94	0.96	0.96	0.96	0.94	0.94	0.94
Adj. Flow (vph)	32	40	27	203	79	67	46	1160	546	132	824	45
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	245	0	3	0
Lane Group Flow (vph)	0	87	0	0	282	67	46	1160	301	132	866	0
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8			2			
Actuated Green, G (s)		23.9			23.9	23.9	4.2	40.2	40.2	8.5	44.5	
Effective Green, g (s)		23.9			23.9	23.9	4.2	40.2	40.2	8.5	44.5	
Actuated g/C Ratio		0.28			0.28	0.28	0.05	0.48	0.48	0.10	0.53	
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)		433			389	447	88	1682	752	178	1847	
v/s Ratio Prot							0.03	c0.33		c0.07	0.25	
v/s Ratio Perm		0.06			c0.20	0.04			0.19			
v/c Ratio		0.20			0.72	0.15	0.52	0.69	0.40	0.74	0.47	
Uniform Delay, d1		23.1			27.4	22.7	39.2	17.3	14.4	37.0	12.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2			6.6	0.2	5.5	1.2	0.4	15.3	0.2	
Delay (s)		23.3			34.0	22.9	44.7	18.5	14.7	52.3	12.8	
Level of Service		C			C	C	D	B	B	D	B	
Approach Delay (s)		23.3			31.8			18.0			18.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



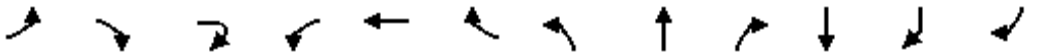
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	506	37	500	12	13	10	507	1170	20	3	760	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1610	3249	1583	1770	1863	1583	3433	3530		1770	5085	1583
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1610	3249	1583	1770	1863	1583	3433	3530		1770	5085	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.81	0.81	0.81	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	556	41	549	15	16	12	534	1232	21	3	800	281
RTOR Reduction (vph)	0	0	293	0	0	12	0	1	0	0	0	196
Lane Group Flow (vph)	278	319	256	15	16	0	534	1252	0	3	800	85
Turn Type	Split		Perm	Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8						6
Actuated Green, G (s)	23.7	23.7	23.7	3.4	3.4	3.4	19.7	46.4		0.5	27.2	27.2
Effective Green, g (s)	23.7	23.7	23.7	3.4	3.4	3.4	19.7	46.4		0.5	27.2	27.2
Actuated g/C Ratio	0.26	0.26	0.26	0.04	0.04	0.04	0.22	0.52		0.01	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)	424	856	417	67	70	60	751	1820		10	1537	478
v/s Ratio Prot	c0.17	0.10		0.01	c0.01		c0.16	c0.35		0.00	0.16	
v/s Ratio Perm			0.16			0.00						0.05
v/c Ratio	0.66	0.37	0.61	0.22	0.23	0.01	0.71	0.69		0.30	0.52	0.18
Uniform Delay, d1	29.5	27.1	29.1	42.0	42.0	41.7	32.5	16.4		44.6	26.0	23.2
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	3.6	0.3	2.7	1.7	1.7	0.1	3.2	1.1		16.1	0.3	0.2
Delay (s)	33.2	27.4	31.8	43.7	43.7	41.7	35.7	17.5		60.7	26.3	23.3
Level of Service	C	C	C	D	D	D	D	B		E	C	C
Approach Delay (s)		30.9			43.2			22.9			25.6	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



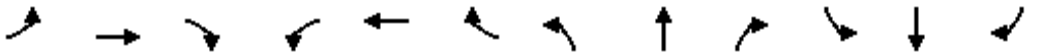
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	359	79	70	356	348	155	1452	33	385	886	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.97		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)	1770	3443		1770	3539	1583	1770	3527		1770	3539	1583
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)	1770	3443		1770	3539	1583	1770	3527		1770	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.82	0.82	0.82	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	59	366	81	85	434	424	165	1545	35	418	963	41
RTOR Reduction (vph)	0	14	0	0	0	274	0	1	0	0	0	19
Lane Group Flow (vph)	59	433	0	85	434	150	165	1579	0	418	963	22
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)	5.5	23.4		7.0	24.9	24.9	16.8	57.1		30.0	70.3	70.3
Effective Green, g (s)	5.5	23.4		7.0	24.9	24.9	16.8	57.1		30.0	70.3	70.3
Actuated g/C Ratio	0.04	0.18		0.05	0.19	0.19	0.13	0.43		0.22	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
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	603		93	660	295	223	1509		398	1864	834
v/s Ratio Prot	0.03	c0.13		c0.05	0.12		0.09	c0.45		c0.24	0.27	
v/s Ratio Perm						0.09						0.01
v/c Ratio	0.81	0.72		0.91	0.66	0.51	0.74	1.05		1.05	0.52	0.03
Uniform Delay, d1	63.5	51.9		63.0	50.3	48.8	56.2	38.2		51.8	20.6	15.2
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	46.1	4.1		65.4	2.4	1.4	12.1	36.3		58.9	0.2	0.0
Delay (s)	109.5	56.0		128.4	52.7	50.2	68.4	74.5		110.7	20.8	15.2
Level of Service	F	E		F	D	D	E	E		F	C	B
Approach Delay (s)		62.3			58.4			73.9			47.0	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM Average Control Delay	61.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	133.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



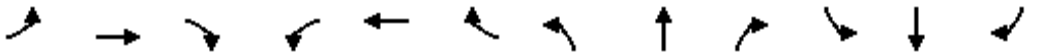
Movement	EBL	EBR	EBR2	WBL2	WBT	WBR	NBL	NBT	NBR	SBT	SBR	SBR2
Lane Configurations												
Volume (vph)	62	200	94	532	220	194	54	1446	118	833	242	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	0.88	1.00	0.97	1.00	1.00	1.00	0.91	1.00	0.91		
Frt	1.00	0.85	0.85	1.00	1.00	0.85	1.00	1.00	0.85	0.95		
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1770	2787	1583	3433	1863	1583	1770	5085	1583	4853		
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1770	2787	1583	3433	1863	1583	1770	5085	1583	4853		
Peak-hour factor, PHF	0.81	0.81	1.00	0.92	0.92	0.92	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	77	247	94	578	239	211	57	1522	124	868	252	128
RTOR Reduction (vph)	0	0	80	0	0	113	0	0	0	13	0	0
Lane Group Flow (vph)	77	247	14	578	239	98	57	1522	124	1235	0	0
Turn Type	Prot	custom	custom	Split		Perm	Prot		Free			
Protected Phases	7	7		8	8		5	2		6		
Permitted Phases			7			8			Free			
Actuated Green, G (s)	13.6	13.6	13.6	21.7	21.7	21.7	6.2	42.3	89.6	32.1		
Effective Green, g (s)	13.6	13.6	13.6	21.7	21.7	21.7	6.2	42.3	89.6	32.1		
Actuated g/C Ratio	0.15	0.15	0.15	0.24	0.24	0.24	0.07	0.47	1.00	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)	269	423	240	831	451	383	122	2401	1583	1739		
v/s Ratio Prot	0.04	c0.09		c0.17	0.13		0.03	c0.30		c0.25		
v/s Ratio Perm			0.01			0.06			0.08			
v/c Ratio	0.29	0.58	0.06	0.70	0.53	0.26	0.47	0.63	0.08	0.71		
Uniform Delay, d1	33.7	35.4	32.5	30.9	29.5	27.4	40.1	17.8	0.0	24.7		
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	0.6	2.1	0.1	2.5	1.1	0.4	2.8	0.6	0.1	1.4		
Delay (s)	34.3	37.4	32.6	33.5	30.6	27.8	42.9	18.4	0.1	26.1		
Level of Service	C	D	C	C	C	C	D	B	A	C		
Approach Delay (s)					31.7			17.9		26.1		
Approach LOS					C			B		C		

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	89.6	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			



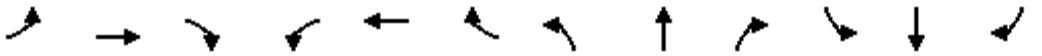
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	639	0	487	0	0	0	0	940	603	229	1110	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97		0.88					0.91	1.00	0.97	0.91	
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)	3433		2787					5085	1583	3433	5085	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433		2787					5085	1583	3433	5085	
Peak-hour factor, PHF	0.93	1.00	0.93	1.00	1.00	1.00	1.00	0.98	0.98	0.96	0.96	0.96
Adj. Flow (vph)	687	0	524	0	0	0	0	959	615	239	1156	0
RTOR Reduction (vph)	0	0	173	0	0	0	0	0	400	0	0	0
Lane Group Flow (vph)	687	0	351	0	0	0	0	959	215	239	1156	0
Turn Type	Prot		custom						Perm	Prot		
Protected Phases	7		7					2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	16.2		16.2					20.2	20.2	9.5	33.7	
Effective Green, g (s)	16.2		16.2					20.2	20.2	9.5	33.7	
Actuated g/C Ratio	0.28		0.28					0.35	0.35	0.16	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)	961		780					1774	552	563	2960	
v/s Ratio Prot	c0.20		0.13					c0.19		0.07	c0.23	
v/s Ratio Perm									0.14			
v/c Ratio	0.71		0.45					0.54	0.39	0.42	0.39	
Uniform Delay, d1	18.8		17.2					15.1	14.2	21.7	6.5	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6		0.4					0.3	0.5	0.5	0.1	
Delay (s)	21.3		17.6					15.5	14.7	22.3	6.6	
Level of Service	C		B					B	B	C	A	
Approach Delay (s)		19.7			0.0			15.1			9.3	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	57.9	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			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	181	352	250	49	409	383	246	994	30	413	946	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	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	0.91	1.00	0.97	0.91	
Frt	1.00	0.94		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)	3433	3319		1770	3539	1583	3433	5085	1583	3433	4986	
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)	3433	3319		1770	3539	1583	3433	5085	1583	3433	4986	
Peak-hour factor, PHF	0.97	0.97	0.97	0.94	0.94	0.94	0.94	0.94	0.94	0.98	0.98	0.98
Adj. Flow (vph)	187	363	258	52	435	407	262	1057	32	421	965	144
RTOR Reduction (vph)	0	97	0	0	0	276	0	0	16	0	14	0
Lane Group Flow (vph)	187	524	0	52	435	131	262	1057	16	421	1095	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	11.1	24.6		7.0	20.5	20.5	13.2	27.6	27.6	17.9	32.3	
Effective Green, g (s)	11.1	24.6		7.0	20.5	20.5	13.2	27.6	27.6	17.9	32.3	
Actuated g/C Ratio	0.12	0.26		0.08	0.22	0.22	0.14	0.30	0.30	0.19	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)	409	877		133	779	349	487	1507	469	660	1730	
v/s Ratio Prot	c0.05	c0.16		0.03	0.12		0.08	c0.21		c0.12	0.22	
v/s Ratio Perm						0.08			0.01			
v/c Ratio	0.46	0.60		0.39	0.56	0.38	0.54	0.70	0.03	0.64	0.63	
Uniform Delay, d1	38.2	29.9		41.0	32.3	30.9	37.1	29.1	23.3	34.6	25.4	
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	0.8	1.1		1.9	0.9	0.7	1.1	1.5	0.0	2.0	0.8	
Delay (s)	39.0	31.0		42.9	33.1	31.5	38.3	30.6	23.3	36.6	26.2	
Level of Service	D	C		D	C	C	D	C	C	D	C	
Approach Delay (s)		32.9			33.0			31.9			29.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	93.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

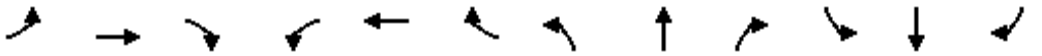


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1212	628	0	1327	320	0	0	0	714	0	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.95	1.00				0.97		1.00
Frt		0.95			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		4830			3539	1583				3433		1583
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		4830			3539	1583				3433		1583
Peak-hour factor, PHF	0.97	0.97	1.00	1.00	0.95	0.95	1.00	1.00	1.00	0.89	1.00	0.89
Adj. Flow (vph)	0	1249	628	0	1397	337	0	0	0	802	0	438
RTOR Reduction (vph)	0	97	0	0	0	0	0	0	0	0	0	14
Lane Group Flow (vph)	0	1780	0	0	1397	337	0	0	0	802	0	424
Turn Type						Free				Prot		custom
Protected Phases		2			6					7		7
Permitted Phases						Free						
Actuated Green, G (s)		34.5			34.5	68.3				25.8		25.8
Effective Green, g (s)		34.5			34.5	68.3				25.8		25.8
Actuated g/C Ratio		0.51			0.51	1.00				0.38		0.38
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)		2440			1788	1583				1297		598
v/s Ratio Prot		0.37			c0.39					0.23		c0.27
v/s Ratio Perm						0.21						
v/c Ratio		0.73			0.78	0.21				0.62		0.71
Uniform Delay, d1		13.2			13.8	0.0				17.3		18.1
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		1.1			2.3	0.3				0.9		3.9
Delay (s)		14.4			16.1	0.3				18.1		21.9
Level of Service		B			B	A				B		C
Approach Delay (s)		14.4			13.0			0.0			19.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

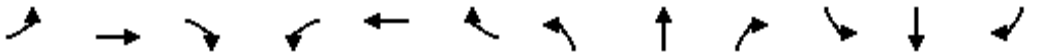
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1437	491	0	1110	542	428
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	1.00		0.91	0.97	0.91
Frt	1.00	0.85		1.00	0.97	0.85
Flt Protected	1.00	1.00		1.00	0.96	1.00
Satd. Flow (prot)	3539	1583		5085	3375	1441
Flt Permitted	1.00	1.00		1.00	0.96	1.00
Satd. Flow (perm)	3539	1583		5085	3375	1441
Peak-hour factor, PHF	0.98	0.98	0.96	0.96	0.94	0.94
Adj. Flow (vph)	1466	501	0	1156	577	455
RTOR Reduction (vph)	0	0	0	0	22	30
Lane Group Flow (vph)	1466	501	0	1156	687	293
Turn Type		Free				Prot
Protected Phases	2			6	3	3
Permitted Phases		Free				
Actuated Green, G (s)	34.9	62.1		34.9	19.2	19.2
Effective Green, g (s)	34.9	62.1		34.9	19.2	19.2
Actuated g/C Ratio	0.56	1.00		0.56	0.31	0.31
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)	1989	1583		2858	1043	446
v/s Ratio Prot	c0.41			0.23	0.20	c0.20
v/s Ratio Perm		0.32				
v/c Ratio	0.74	0.32		0.40	0.66	0.66
Uniform Delay, d1	10.2	0.0		7.7	18.6	18.6
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.5	0.5		0.1	1.5	3.5
Delay (s)	11.6	0.5		7.8	20.1	22.1
Level of Service	B	A		A	C	C
Approach Delay (s)	8.8			7.8	20.7	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1513	369	253	929	184	163	202	202	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			
Lane Util. Factor		0.95	1.00	1.00	0.95	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			
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3539	1583	1770	3539	1583	1770	1863	1583			
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3539	1583	1770	3539	1583	1770	1863	1583			
Peak-hour factor, PHF	1.00	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	1.00	1.00	1.00
Adj. Flow (vph)	0	1528	373	266	978	194	179	222	222	0	0	0
RTOR Reduction (vph)	0	0	179	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	1528	194	266	978	194	179	222	221	0	0	0
Turn Type			Perm	Prot		Free	Split		custom			
Protected Phases		2		1	6		8	8	1 8			
Permitted Phases			2			Free			8			
Actuated Green, G (s)		31.5	31.5	16.4	51.9	74.0	14.1	14.1	34.5			
Effective Green, g (s)		31.5	31.5	16.4	51.9	74.0	14.1	14.1	34.5			
Actuated g/C Ratio		0.43	0.43	0.22	0.70	1.00	0.19	0.19	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)		1506	674	392	2482	1583	337	355	738			
v/s Ratio Prot		c0.43		c0.15	0.28		0.10	c0.12	0.14			
v/s Ratio Perm			0.12			0.12						
v/c Ratio		1.01	0.29	0.68	0.39	0.12	0.53	0.63	0.30			
Uniform Delay, d1		21.2	13.9	26.4	4.6	0.0	27.0	27.5	12.3			
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		26.9	0.2	4.6	0.1	0.2	1.6	3.4	0.2			
Delay (s)		48.1	14.2	31.0	4.7	0.2	28.6	30.9	12.5			
Level of Service		D	B	C	A	A	C	C	B			
Approach Delay (s)		41.5			8.9			23.7			0.0	
Approach LOS		D			A			C			A	

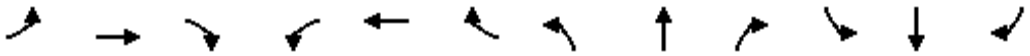
Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	514	676	250	141	404	159	182	461	105	159	511	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	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	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95		0.97	0.95	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)	3433	3539	1583	1770	3539	1583	3400	3407		3400	3505	1568
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)	3433	3539	1583	1770	3539	1583	3400	3407		3400	3505	1568
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.89	0.89	0.89	0.91	0.91	0.91
Adj. Flow (vph)	553	727	269	152	434	171	204	518	118	175	562	188
RTOR Reduction (vph)	0	0	134	0	0	132	0	17	0	0	0	142
Lane Group Flow (vph)	553	727	135	152	434	39	204	619	0	175	562	46
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
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)	20.7	27.5	27.5	13.6	20.4	20.4	11.2	23.0		10.5	22.3	22.3
Effective Green, g (s)	20.7	27.5	27.5	13.6	20.4	20.4	11.2	23.0		10.5	22.3	22.3
Actuated g/C Ratio	0.23	0.30	0.30	0.15	0.23	0.23	0.12	0.25		0.12	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)	784	1074	480	266	797	356	420	865		394	863	386
v/s Ratio Prot	c0.16	c0.21		0.09	0.12		0.06	c0.18		0.05	c0.16	
v/s Ratio Perm			0.08			0.02						0.03
v/c Ratio	0.71	0.68	0.28	0.57	0.54	0.11	0.49	0.72		0.44	0.65	0.12
Uniform Delay, d1	32.1	27.7	24.0	35.8	31.0	27.9	37.0	30.8		37.3	30.7	26.5
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	2.9	1.7	0.3	3.0	0.8	0.1	0.9	2.8		0.8	1.8	0.1
Delay (s)	35.0	29.4	24.3	38.7	31.8	28.0	37.9	33.7		38.1	32.4	26.7
Level of Service	D	C	C	D	C	C	D	C		D	C	C
Approach Delay (s)		30.5			32.3			34.7			32.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	90.6	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



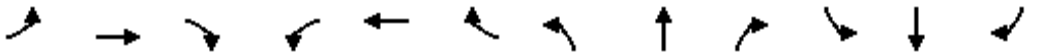
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	12	17	36	3	381	7	229	473	48	385	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.88		1.00	0.90		1.00	1.00	
Flt Protected		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1730			1628		1770	1675		1770	1860	
Flt Permitted		0.77			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1341			1578		1770	1675		1770	1860	
Peak-hour factor, PHF	0.68	0.68	0.68	0.96	0.96	0.96	0.91	0.91	0.91	0.95	0.95	0.95
Adj. Flow (vph)	13	18	25	38	3	397	8	252	520	51	405	4
RTOR Reduction (vph)	0	21	0	0	340	0	0	41	0	0	0	0
Lane Group Flow (vph)	0	35	0	0	98	0	8	731	0	51	409	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		9.9			9.9		1.0	43.0		4.5	46.5	
Effective Green, g (s)		9.9			9.9		1.0	43.0		4.5	46.5	
Actuated g/C Ratio		0.14			0.14		0.01	0.62		0.06	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)		191			225		26	1038		115	1246	
v/s Ratio Prot							0.00	c0.44		c0.03	c0.22	
v/s Ratio Perm		0.03			c0.06							
v/c Ratio		0.18			0.43		0.31	0.70		0.44	0.33	
Uniform Delay, d1		26.2			27.2		33.9	8.9		31.2	4.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			1.3		6.6	2.2		2.7	0.2	
Delay (s)		26.6			28.5		40.5	11.1		34.0	5.0	
Level of Service		C			C		D	B		C	A	
Approach Delay (s)		26.6			28.5			11.4			8.2	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	9	4	519	11	4	607
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.61	0.61	0.97	0.97	0.91	0.91
Hourly flow rate (vph)	15	7	535	11	4	667
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	1217	541			546	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1217	541			546	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	99			100	
cM capacity (veh/h)	199	541			1023	

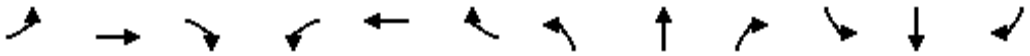
Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	21	546	4	667
Volume Left	15	0	4	0
Volume Right	7	11	0	0
cSH	287	1700	1023	1700
Volume to Capacity	0.07	0.32	0.00	0.39
Queue Length 95th (ft)	6	0	0	0
Control Delay (s)	20.6	0.0	8.5	0.0
Lane LOS	C		A	
Approach Delay (s)	20.6	0.0	0.1	
Approach LOS	C			

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	18	432	18	7	1	373	1638	22	3	692	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	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	0.98		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785	1583	1770	1835		1770	3532		1770	3491	
Flt Permitted		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1785	1583	1770	1835		1770	3532		1770	3491	
Peak-hour factor, PHF	0.82	0.82	0.82	0.77	0.77	0.77	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	146	22	527	23	9	1	397	1743	23	3	736	74
RTOR Reduction (vph)	0	0	271	0	1	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	168	256	23	9	0	397	1766	0	3	804	0
Turn Type	Split		Perm	Split			Prot			Prot		
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7									
Actuated Green, G (s)		17.2	17.2	4.3	4.3		26.4	59.2		0.7	33.5	
Effective Green, g (s)		17.2	17.2	4.3	4.3		26.4	59.2		0.7	33.5	
Actuated g/C Ratio		0.18	0.18	0.04	0.04		0.27	0.61		0.01	0.34	
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)		315	280	78	81		480	2147		13	1201	
v/s Ratio Prot		0.09		c0.01	0.00		c0.22	c0.50		0.00	0.23	
v/s Ratio Perm			c0.16									
v/c Ratio		0.53	0.91	0.29	0.11		0.83	0.82		0.23	0.67	
Uniform Delay, d1		36.5	39.4	45.1	44.7		33.4	15.0		48.1	27.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.7	32.1	2.1	0.6		11.2	2.7		8.9	1.4	
Delay (s)		38.2	71.5	47.2	45.3		44.5	17.7		57.0	28.7	
Level of Service		D	E	D	D		D	B		E	C	
Approach Delay (s)		63.4			46.6			22.6			28.8	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	97.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	157	188	484	119	521	276	1418	508	547	528	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	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		0.95	0.95	0.97	1.00	1.00	1.00	0.91	1.00	0.97	0.91	
Frt		0.98	0.85	1.00	1.00	0.85	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	1.00	0.95	1.00	
Satd. Flow (prot)		1734	1504	3433	1863	1583	1770	5085	1583	3433	5043	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1734	1504	3433	1863	1583	1770	5085	1583	3433	5043	
Peak-hour factor, PHF	1.00	0.90	0.90	0.89	0.89	0.89	0.98	0.98	0.98	0.93	0.93	0.93
Adj. Flow (vph)	19	174	209	544	134	585	282	1447	518	588	568	33
RTOR Reduction (vph)	0	3	160	0	0	421	0	0	245	0	4	0
Lane Group Flow (vph)	0	213	26	544	134	164	282	1447	273	588	597	0
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8			2			
Actuated Green, G (s)		18.1	18.1	28.1	28.1	28.1	25.5	42.1	42.1	25.1	41.7	
Effective Green, g (s)		18.1	18.1	28.1	28.1	28.1	25.5	42.1	42.1	25.1	41.7	
Actuated g/C Ratio		0.14	0.14	0.22	0.22	0.22	0.20	0.33	0.33	0.19	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)		243	210	745	405	344	349	1654	515	666	1625	
v/s Ratio Prot		c0.12		c0.16	0.07		0.16	c0.28		c0.17	0.12	
v/s Ratio Perm			0.02			0.10			0.17			
v/c Ratio		0.87	0.12	0.73	0.33	0.48	0.81	0.87	0.53	0.88	0.37	
Uniform Delay, d1		54.5	48.7	47.1	42.7	44.2	49.6	41.2	35.6	50.7	33.7	
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		27.5	0.3	3.7	0.5	1.0	12.9	5.5	1.1	13.2	0.1	
Delay (s)		82.1	49.0	50.8	43.2	45.3	62.5	46.7	36.6	63.9	33.9	
Level of Service		F	D	D	D	D	E	D	D	E	C	
Approach Delay (s)		66.8			47.4			46.3			48.7	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM Average Control Delay	48.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	129.4	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			