



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	19	45	76	18	1	18	175	28	0	611	7
Peak Hour Factor	0.73	0.73	0.73	0.86	0.86	0.86	0.87	0.87	0.87	0.92	0.92	0.92
Hourly flow rate (vph)	3	26	62	88	21	1	21	201	32	0	664	8

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	90	110	254	672
Volume Left (vph)	3	88	21	0
Volume Right (vph)	62	1	32	8
Hadj (s)	-0.37	0.22	-0.01	0.03
Departure Headway (s)	6.2	6.7	5.5	5.0
Degree Utilization, x	0.16	0.21	0.39	0.93
Capacity (veh/h)	544	506	634	715
Control Delay (s)	10.3	11.4	11.9	40.7
Approach Delay (s)	10.3	11.4	11.9	40.7
Approach LOS	B	B	B	E

Intersection Summary			
Delay	28.9		
HCM Level of Service	D		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.87		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1597	3415		1656	3452		1770	1596		1444	1705	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1597	3415		1656	3452		1770	1596		1444	1705	
Volume (vph)	56	837	118	212	724	87	169	47	268	331	148	192
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	60	900	127	228	778	94	182	51	288	360	161	209
RTOR Reduction (vph)	0	11	0	0	9	0	0	214	0	0	49	0
Lane Group Flow (vph)	60	1016	0	228	863	0	182	125	0	360	321	0
Heavy Vehicles (%)	13%	4%	2%	9%	3%	2%	2%	9%	3%	25%	2%	2%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.7	29.9		14.0	37.2		12.8	11.9		24.1	23.2	
Effective Green, g (s)	6.7	29.9		14.0	37.2		12.8	11.9		24.1	23.2	
Actuated g/C Ratio	0.07	0.31		0.15	0.39		0.13	0.12		0.25	0.24	
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)	112	1065		242	1339		236	198		363	412	
v/s Ratio Prot	0.04	c0.30		c0.14	0.25		0.10	0.08		c0.25	c0.19	
v/s Ratio Perm												
v/c Ratio	0.54	0.95		0.94	0.64		0.77	0.63		0.99	0.78	
Uniform Delay, d1	43.1	32.3		40.5	24.0		40.1	39.9		35.8	34.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.9	17.5		41.9	1.1		14.4	6.5		44.8	9.3	
Delay (s)	48.0	49.8		82.5	25.0		54.5	46.4		80.6	43.2	
Level of Service	D	D		F	C		D	D		F	D	
Approach Delay (s)		49.7			36.9			49.2			61.7	
Approach LOS		D			D			D			E	

Intersection Summary

HCM Average Control Delay	48.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.3%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	47	2	3	6	3	5	1	84	7	5	283	94
Peak Hour Factor	0.88	0.88	0.88	0.67	0.67	0.67	0.92	0.92	0.92	0.87	0.87	0.87
Hourly flow rate (vph)	53	2	3	9	4	7	1	91	8	6	325	108

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	59	21	100	439
Volume Left (vph)	53	9	1	6
Volume Right (vph)	3	7	8	108
Hadj (s)	0.20	-0.09	0.13	-0.08
Departure Headway (s)	5.3	5.1	4.7	4.2
Degree Utilization, x	0.09	0.03	0.13	0.51
Capacity (veh/h)	610	625	733	845
Control Delay (s)	8.8	8.2	8.4	11.3
Approach Delay (s)	8.8	8.2	8.4	11.3
Approach LOS	A	A	A	B

Intersection Summary			
Delay		10.5	
HCM Level of Service		B	
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1423	5	121	756	2	190
Peak Hour Factor	0.95	0.95	0.92	0.92	0.83	0.83
Hourly flow rate (vph)	1498	5	132	822	2	229
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)				714		
pX, platoon unblocked						
vC, conflicting volume			1503		2174	752
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1503		2174	752
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			70		91	35
cM capacity (veh/h)			442		28	353

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	999	505	132	411	411	231
Volume Left	0	0	132	0	0	2
Volume Right	0	5	0	0	0	229
cSH	1700	1700	442	1700	1700	315
Volume to Capacity	0.59	0.30	0.30	0.24	0.24	0.74
Queue Length 95th (ft)	0	0	31	0	0	137
Control Delay (s)	0.0	0.0	16.6	0.0	0.0	42.5
Lane LOS			C			E
Approach Delay (s)	0.0		2.3			42.5
Approach LOS						E

Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization			68.1%		ICU Level of Service	C
Analysis Period (min)			15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑	↗↘		↙	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.94		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3314		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3314		1770	1583
Volume (vph)	253	1365	764	482	271	142
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.87	0.87
Adj. Flow (vph)	261	1407	822	518	311	163
RTOR Reduction (vph)	0	0	100	0	0	127
Lane Group Flow (vph)	261	1407	1240	0	311	36
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	16.1	56.2	36.1		18.5	18.5
Effective Green, g (s)	16.1	56.2	36.1		18.5	18.5
Actuated g/C Ratio	0.19	0.68	0.44		0.22	0.22
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)	345	2405	1447		396	354
v/s Ratio Prot	c0.15	0.40	c0.37		c0.18	
v/s Ratio Perm						0.02
v/c Ratio	0.76	0.59	0.86		0.79	0.10
Uniform Delay, d1	31.4	7.0	21.0		30.2	25.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	9.1	0.4	5.2		9.8	0.1
Delay (s)	40.6	7.4	26.2		40.1	25.6
Level of Service	D	A	C		D	C
Approach Delay (s)		12.6	26.2		35.1	
Approach LOS		B	C		D	

Intersection Summary

HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.6%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	7	31	31	61	26	1	53	692	94	1	396	6
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.92	0.92	0.92	0.87	0.87	0.87
Hourly flow rate (vph)	8	37	37	68	29	1	58	752	102	1	455	7

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	82	98	912	463
Volume Left (vph)	8	68	58	1
Volume Right (vph)	37	1	102	7
Hadj (s)	-0.22	0.17	-0.02	0.03
Departure Headway (s)	6.8	7.1	5.3	5.5
Degree Utilization, x	0.16	0.19	1.33	0.71
Capacity (veh/h)	483	466	688	636
Control Delay (s)	11.1	11.8	175.8	20.9
Approach Delay (s)	11.1	11.8	175.8	20.9
Approach LOS	B	B	F	C

Intersection Summary			
Delay		110.7	
HCM Level of Service		F	
Intersection Capacity Utilization	87.8%		ICU Level of Service E
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	0.90		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3455		1770	3237		1770	1641		1770	1603	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3455		1770	3237		1770	1641		1770	1603	
Volume (vph)	224	1094	207	354	1023	386	170	173	315	219	109	136
Peak-hour factor, PHF	0.94	0.94	0.94	0.97	0.97	0.97	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	238	1164	220	365	1055	398	185	188	342	252	125	156
RTOR Reduction (vph)	0	11	0	0	26	0	0	44	0	0	30	0
Lane Group Flow (vph)	238	1373	0	365	1427	0	185	486	0	252	251	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	20%	2%	2%	6%	2%	17%	2%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	17.0	50.0		27.0	60.0		18.5	40.0		17.0	38.5	
Effective Green, g (s)	17.0	50.0		27.0	60.0		18.5	40.0		17.0	38.5	
Actuated g/C Ratio	0.11	0.33		0.18	0.40		0.12	0.27		0.11	0.26	
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)	201	1152		319	1295		218	438		201	411	
v/s Ratio Prot	0.13	c0.40		c0.21	0.44		0.10	c0.30		c0.14	0.16	
v/s Ratio Perm												
v/c Ratio	1.18	1.19		1.14	1.10		0.85	1.11		1.25	0.61	
Uniform Delay, d1	66.5	50.0		61.5	45.0		64.4	55.0		66.5	49.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	122.0	95.3		95.4	57.9		25.2	76.2		148.3	6.6	
Delay (s)	188.5	145.3		156.9	102.9		89.5	131.2		214.8	55.8	
Level of Service	F	F		F	F		F	F		F	E	
Approach Delay (s)		151.6			113.7			120.4			130.9	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	129.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	110.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	118	5	5	7	2	4	2	318	8	8	200	87
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.87	0.87	0.87	0.92	0.92	0.92
Hourly flow rate (vph)	136	6	6	9	3	5	2	366	9	9	217	95

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	147	17	377	321
Volume Left (vph)	136	9	2	9
Volume Right (vph)	6	5	9	95
Hadj (s)	0.24	0.08	0.02	-0.13
Departure Headway (s)	5.8	6.0	4.8	4.8
Degree Utilization, x	0.24	0.03	0.51	0.42
Capacity (veh/h)	557	504	722	725
Control Delay (s)	10.7	9.2	12.7	11.2
Approach Delay (s)	10.7	9.2	12.7	11.2
Approach LOS	B	A	B	B

Intersection Summary			
Delay		11.7	
HCM Level of Service		B	
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	406	1	163	1170	0	67
Peak Hour Factor	0.87	0.87	0.94	0.94	0.60	0.60
Hourly flow rate (vph)	467	1	173	1245	0	112
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)				714		
pX, platoon unblocked					0.71	
vC, conflicting volume			468		1436	234
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			468		1210	234
tC, single (s)			4.4		6.8	7.1
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.4
p0 queue free %			83		100	85
cM capacity (veh/h)			1004		103	750

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	311	157	173	622	622	112
Volume Left	0	0	173	0	0	0
Volume Right	0	1	0	0	0	112
cSH	1700	1700	1004	1700	1700	750
Volume to Capacity	0.18	0.09	0.17	0.37	0.37	0.15
Queue Length 95th (ft)	0	0	16	0	0	13
Control Delay (s)	0.0	0.0	9.3	0.0	0.0	10.6
Lane LOS			A			B
Approach Delay (s)	0.0		1.1			10.6
Approach LOS						B

Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			43.2%		ICU Level of Service	A
Analysis Period (min)			15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑	↗↖		↘	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1444	3471	3411		1770	1292
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1444	3471	3411		1770	1292
Volume (vph)	67	425	1125	123	374	206
Peak-hour factor, PHF	0.92	0.92	0.93	0.93	0.92	0.92
Adj. Flow (vph)	73	462	1210	132	407	224
RTOR Reduction (vph)	0	0	8	0	0	132
Lane Group Flow (vph)	73	462	1334	0	407	92
Heavy Vehicles (%)	25%	4%	2%	25%	2%	25%
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	5.6	45.2	35.6		22.7	22.7
Effective Green, g (s)	5.6	45.2	35.6		22.7	22.7
Actuated g/C Ratio	0.07	0.60	0.47		0.30	0.30
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	107	2067	1600		529	386
v/s Ratio Prot	c0.05	0.13	c0.39		c0.23	
v/s Ratio Perm						0.07
v/c Ratio	0.68	0.22	0.83		0.77	0.24
Uniform Delay, d1	34.3	7.2	17.6		24.2	20.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	16.5	0.1	3.9		6.7	0.3
Delay (s)	50.7	7.2	21.5		30.9	20.4
Level of Service	D	A	C		C	C
Approach Delay (s)		13.2	21.5		27.2	
Approach LOS		B	C		C	

Intersection Summary

HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	19	45	75	18	1	18	172	26	0	583	5
Peak Hour Factor	0.73	0.73	0.73	0.86	0.86	0.86	0.87	0.87	0.87	0.92	0.92	0.92
Hourly flow rate (vph)	3	26	62	87	21	1	21	198	30	0	634	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	90	109	248	639
Volume Left (vph)	3	87	21	0
Volume Right (vph)	62	1	30	5
Hadj (s)	-0.37	0.22	-0.01	0.03
Departure Headway (s)	6.1	6.6	5.4	5.0
Degree Utilization, x	0.15	0.20	0.37	0.88
Capacity (veh/h)	544	507	632	639
Control Delay (s)	10.1	11.2	11.6	32.9
Approach Delay (s)	10.1	11.2	11.6	32.9
Approach LOS	B	B	B	D

Intersection Summary			
Delay		24.0	
HCM Level of Service		C	
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.87		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1597	3418		1656	3449		1770	1595		1444	1704	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1597	3418		1656	3449		1770	1595		1444	1704	
Volume (vph)	59	784	103	211	742	96	159	43	252	346	151	199
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	63	843	111	227	798	103	171	46	271	376	164	216
RTOR Reduction (vph)	0	10	0	0	9	0	0	212	0	0	49	0
Lane Group Flow (vph)	63	944	0	227	892	0	171	105	0	376	331	0
Heavy Vehicles (%)	13%	4%	2%	9%	3%	2%	2%	9%	3%	25%	2%	2%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.7	29.2		14.1	36.6		12.5	11.9		24.1	23.5	
Effective Green, g (s)	6.7	29.2		14.1	36.6		12.5	11.9		24.1	23.5	
Actuated g/C Ratio	0.07	0.31		0.15	0.38		0.13	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	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	112	1047		245	1325		232	199		365	420	
v/s Ratio Prot	0.04	c0.28		c0.14	0.26		0.10	0.07		c0.26	c0.19	
v/s Ratio Perm												
v/c Ratio	0.56	0.90		0.93	0.67		0.74	0.53		1.03	0.79	
Uniform Delay, d1	42.9	31.7		40.1	24.4		39.8	39.1		35.6	33.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.3	10.7		37.7	1.4		11.5	2.5		55.1	9.5	
Delay (s)	49.2	42.4		77.8	25.7		51.4	41.6		90.7	43.0	
Level of Service	D	D		E	C		D	D		F	D	
Approach Delay (s)		42.8			36.2			45.0			66.7	
Approach LOS		D			D			D			E	
Intersection Summary												
HCM Average Control Delay			46.3			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			95.3			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			87.0%			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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	45	2	3	6	3	5	1	78	7	5	268	93
Peak Hour Factor	0.88	0.88	0.88	0.67	0.67	0.67	0.92	0.92	0.92	0.87	0.87	0.87
Hourly flow rate (vph)	51	2	3	9	4	7	1	85	8	6	308	107

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	57	21	93	421
Volume Left (vph)	51	9	1	6
Volume Right (vph)	3	7	8	107
Hadj (s)	0.19	-0.09	0.13	-0.09
Departure Headway (s)	5.3	5.0	4.7	4.1
Degree Utilization, x	0.08	0.03	0.12	0.48
Capacity (veh/h)	619	636	739	849
Control Delay (s)	8.7	8.2	8.3	10.9
Approach Delay (s)	8.7	8.2	8.3	10.9
Approach LOS	A	A	A	B

Intersection Summary			
Delay		10.2	
HCM Level of Service		B	
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1368	5	116	721	2	183
Peak Hour Factor	0.95	0.95	0.92	0.92	0.83	0.83
Hourly flow rate (vph)	1440	5	126	784	2	220
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)				714		
pX, platoon unblocked						
vC, conflicting volume			1445		2087	723
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1445		2087	723
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			73		93	40
cM capacity (veh/h)			465		33	369

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	960	485	126	392	392	223
Volume Left	0	0	126	0	0	2
Volume Right	0	5	0	0	0	220
cSH	1700	1700	465	1700	1700	332
Volume to Capacity	0.56	0.29	0.27	0.23	0.23	0.67
Queue Length 95th (ft)	0	0	27	0	0	114
Control Delay (s)	0.0	0.0	15.6	0.0	0.0	35.3
Lane LOS			C			E
Approach Delay (s)	0.0		2.2			35.3
Approach LOS						E

Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			65.8%		ICU Level of Service	C
Analysis Period (min)			15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑	↗↘		↙	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.95		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3325		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3325		1770	1583
Volume (vph)	226	1328	725	415	241	131
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.87	0.87
Adj. Flow (vph)	233	1369	780	446	277	151
RTOR Reduction (vph)	0	0	80	0	0	116
Lane Group Flow (vph)	233	1369	1146	0	277	35
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	11.4	47.3	31.9		16.5	16.5
Effective Green, g (s)	11.4	47.3	31.9		16.5	16.5
Actuated g/C Ratio	0.16	0.66	0.44		0.23	0.23
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	281	2331	1477		407	364
v/s Ratio Prot	c0.13	0.39	c0.34		c0.16	
v/s Ratio Perm						0.02
v/c Ratio	0.83	0.59	0.78		0.68	0.10
Uniform Delay, d1	29.3	6.8	16.9		25.2	21.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	17.9	0.4	2.6		4.6	0.1
Delay (s)	47.2	7.2	19.5		29.9	21.9
Level of Service	D	A	B		C	C
Approach Delay (s)		13.0	19.5		27.1	
Approach LOS		B	B		C	

Intersection Summary

HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	71.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.2%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	6	31	31	56	26	1	53	641	90	1	365	5
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.92	0.92	0.92	0.87	0.87	0.87
Hourly flow rate (vph)	7	37	37	62	29	1	58	697	98	1	420	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	81	92	852	426
Volume Left (vph)	7	62	58	1
Volume Right (vph)	37	1	98	6
Hadj (s)	-0.22	0.16	-0.02	0.03
Departure Headway (s)	6.7	7.0	5.1	5.5
Degree Utilization, x	0.15	0.18	1.22	0.65
Capacity (veh/h)	495	474	709	638
Control Delay (s)	10.9	11.6	129.8	18.1
Approach Delay (s)	10.9	11.6	129.8	18.1
Approach LOS	B	B	F	C

Intersection Summary			
Delay		82.8	
HCM Level of Service		F	
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)		15	

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	0.90		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3459		1770	3223		1770	1640		1770	1602	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3459		1770	3223		1770	1640		1770	1602	
Volume (vph)	220	1072	190	329	949	382	149	164	301	214	96	130
Peak-hour factor, PHF	0.94	0.94	0.94	0.97	0.97	0.97	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	234	1140	202	339	978	394	162	178	327	246	110	149
RTOR Reduction (vph)	0	9	0	0	29	0	0	44	0	0	32	0
Lane Group Flow (vph)	234	1333	0	339	1343	0	162	461	0	246	227	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	20%	2%	2%	6%	2%	17%	2%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	17.0	50.0		27.0	60.0		17.4	40.0		17.0	39.6	
Effective Green, g (s)	17.0	50.0		27.0	60.0		17.4	40.0		17.0	39.6	
Actuated g/C Ratio	0.11	0.33		0.18	0.40		0.12	0.27		0.11	0.26	
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)	201	1153		319	1289		205	437		201	423	
v/s Ratio Prot	c0.13	c0.39		c0.19	0.42		0.09	c0.28		c0.14	0.14	
v/s Ratio Perm												
v/c Ratio	1.16	1.16		1.06	1.04		0.79	1.05		1.22	0.54	
Uniform Delay, d1	66.5	50.0		61.5	45.0		64.5	55.0		66.5	47.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	114.8	80.2		67.9	36.7		18.4	58.3		136.8	1.3	
Delay (s)	181.3	130.2		129.4	81.7		83.0	113.3		203.3	48.7	
Level of Service	F	F		F	F		F	F		F	D	
Approach Delay (s)		137.8			91.2			105.9			124.0	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM Average Control Delay			113.6			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.08									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			106.2%			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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	114	5	5	7	2	4	2	293	8	8	183	82
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.87	0.87	0.87	0.92	0.92	0.92
Hourly flow rate (vph)	131	6	6	9	3	5	2	337	9	9	199	89

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	143	17	348	297
Volume Left (vph)	131	9	2	9
Volume Right (vph)	6	5	9	89
Hadj (s)	0.24	0.08	0.02	-0.13
Departure Headway (s)	5.7	5.8	4.8	4.7
Degree Utilization, x	0.23	0.03	0.46	0.39
Capacity (veh/h)	572	528	730	735
Control Delay (s)	10.4	9.0	11.8	10.6
Approach Delay (s)	10.4	9.0	11.8	10.6
Approach LOS	B	A	B	B

Intersection Summary			
Delay		11.0	
HCM Level of Service		B	
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	361	1	171	1104	0	65
Peak Hour Factor	0.87	0.87	0.94	0.94	0.60	0.60
Hourly flow rate (vph)	415	1	182	1174	0	108
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)				714		
pX, platoon unblocked					0.76	
vC, conflicting volume			416		1367	208
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			416		1171	208
tC, single (s)			4.4		6.8	7.1
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.4
p0 queue free %			83		100	86
cM capacity (veh/h)			1052		117	780

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	277	139	182	587	587	108
Volume Left	0	0	182	0	0	0
Volume Right	0	1	0	0	0	108
cSH	1700	1700	1052	1700	1700	780
Volume to Capacity	0.16	0.08	0.17	0.35	0.35	0.14
Queue Length 95th (ft)	0	0	16	0	0	12
Control Delay (s)	0.0	0.0	9.1	0.0	0.0	10.4
Lane LOS			A			B
Approach Delay (s)	0.0		1.2			10.4
Approach LOS						B

Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			41.2%		ICU Level of Service	A
Analysis Period (min)			15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑↑	↑↑		↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1444	3471	3526		1770	1292
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1444	3471	3526		1770	1292
Volume (vph)	8	418	1255	13	33	19
Peak-hour factor, PHF	0.92	0.92	0.93	0.93	0.92	0.92
Adj. Flow (vph)	9	454	1349	14	36	21
RTOR Reduction (vph)	0	0	0	0	0	17
Lane Group Flow (vph)	9	454	1363	0	36	4
Heavy Vehicles (%)	25%	4%	2%	25%	2%	25%
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	0.8	29.3	24.5		7.9	7.9
Effective Green, g (s)	0.8	29.3	24.5		7.9	7.9
Actuated g/C Ratio	0.02	0.65	0.54		0.17	0.17
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)	26	2250	1911		309	226
v/s Ratio Prot	0.01	c0.13	c0.39		c0.02	
v/s Ratio Perm						0.00
v/c Ratio	0.35	0.20	0.71		0.12	0.02
Uniform Delay, d1	21.9	3.2	7.7		15.7	15.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	7.9	0.0	1.3		0.2	0.0
Delay (s)	29.8	3.3	9.0		15.9	15.5
Level of Service	C	A	A		B	B
Approach Delay (s)		3.8	9.0		15.7	
Approach LOS		A	A		B	

Intersection Summary

HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.1%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	19	45	481	18	1	18	0	129	0	1	0
Peak Hour Factor	0.73	0.73	0.73	0.86	0.86	0.86	0.87	0.87	0.87	0.92	0.92	0.92
Hourly flow rate (vph)	0	26	62	559	21	1	21	0	148	0	1	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	88	581	169	1
Volume Left (vph)	0	559	21	0
Volume Right (vph)	62	1	148	0
Hadj (s)	-0.39	0.23	-0.45	0.03
Departure Headway (s)	4.7	4.7	5.1	5.9
Degree Utilization, x	0.11	0.76	0.24	0.00
Capacity (veh/h)	719	752	647	543
Control Delay (s)	8.3	20.8	9.6	8.9
Approach Delay (s)	8.3	20.8	9.6	8.9
Approach LOS	A	C	A	A

Intersection Summary			
Delay		17.2	
HCM Level of Service		C	
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	0.94		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1597	3361		1656	3320		1770	1674		1444	1713	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1597	3361		1656	3320		1770	1674		1444	1713	
Volume (vph)	182	331	105	71	424	254	76	160	111	1005	605	697
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	196	356	113	76	456	273	82	172	119	1092	658	758
RTOR Reduction (vph)	0	32	0	0	100	0	0	24	0	0	36	0
Lane Group Flow (vph)	196	437	0	76	629	0	82	267	0	1092	1380	0
Heavy Vehicles (%)	13%	4%	2%	9%	3%	2%	2%	9%	3%	25%	2%	2%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	9.0	23.9		8.0	22.9		8.0	17.4		24.1	33.5	
Effective Green, g (s)	9.0	23.9		8.0	22.9		8.0	17.4		24.1	33.5	
Actuated g/C Ratio	0.10	0.27		0.09	0.26		0.09	0.19		0.27	0.37	
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)	161	899		148	850		158	326		389	642	
v/s Ratio Prot	c0.12	0.13		0.05	c0.19		0.05	0.16		c0.76	c0.81	
v/s Ratio Perm												
v/c Ratio	1.22	0.49		0.51	0.74		0.52	0.82		2.81	2.15	
Uniform Delay, d1	40.2	27.6		38.8	30.5		38.9	34.5		32.7	28.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	141.2	0.4		3.0	3.5		2.9	14.7		820.4	522.7	
Delay (s)	181.4	28.0		41.8	34.0		41.7	49.2		853.0	550.7	
Level of Service	F	C		D	C		D	D		F	F	
Approach Delay (s)		73.2			34.8			47.5			682.3	
Approach LOS		E			C			D			F	
Intersection Summary												
HCM Average Control Delay			415.0			HCM Level of Service		F				
HCM Volume to Capacity ratio			1.79									
Actuated Cycle Length (s)			89.4			Sum of lost time (s)		12.0				
Intersection Capacity Utilization			122.0%			ICU Level of Service		H				
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	148	2	3	6	3	5	1	77	7	5	289	499
Peak Hour Factor	0.88	0.88	0.88	0.67	0.67	0.67	0.92	0.92	0.92	0.87	0.87	0.87
Hourly flow rate (vph)	168	2	3	9	4	7	1	84	8	6	332	574

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	174	21	92	911
Volume Left (vph)	168	9	1	6
Volume Right (vph)	3	7	8	574
Hadj (s)	0.23	-0.09	0.13	-0.27
Departure Headway (s)	6.2	6.3	5.6	4.4
Degree Utilization, x	0.30	0.04	0.14	1.12
Capacity (veh/h)	567	546	621	810
Control Delay (s)	11.9	9.5	9.5	88.0
Approach Delay (s)	11.9	9.5	9.5	88.0
Approach LOS	B	A	A	F

Intersection Summary			
Delay		69.5	
HCM Level of Service		F	
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)		15	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1258	5	113	640	2	184
Peak Hour Factor	0.95	0.95	0.92	0.92	0.83	0.83
Hourly flow rate (vph)	1324	5	123	696	2	222
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)				714		
pX, platoon unblocked					0.95	
vC, conflicting volume			1329		1920	665
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1329		1916	665
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			76		94	45
cM capacity (veh/h)			515		43	403

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	883	447	123	348	348	224
Volume Left	0	0	123	0	0	2
Volume Right	0	5	0	0	0	222
cSH	1700	1700	515	1700	1700	369
Volume to Capacity	0.52	0.26	0.24	0.20	0.20	0.61
Queue Length 95th (ft)	0	0	23	0	0	96
Control Delay (s)	0.0	0.0	14.2	0.0	0.0	28.7
Lane LOS			B			D
Approach Delay (s)	0.0		2.1			28.7
Approach LOS						D

Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			62.7%		ICU Level of Service	B
Analysis Period (min)			15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3479		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3479		1770	1583
Volume (vph)	22	1420	741	41	21	12
Peak-hour factor, PHF	0.97	0.97	0.93	0.93	0.87	0.87
Adj. Flow (vph)	23	1464	797	44	24	14
RTOR Reduction (vph)	0	0	3	0	0	12
Lane Group Flow (vph)	23	1464	838	0	24	2
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	1.0	27.4	22.4		7.6	7.6
Effective Green, g (s)	1.0	27.4	22.4		7.6	7.6
Actuated g/C Ratio	0.02	0.64	0.52		0.18	0.18
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	41	2255	1812		313	280
v/s Ratio Prot	0.01	c0.41	0.24		c0.01	
v/s Ratio Perm						0.00
v/c Ratio	0.56	0.65	0.46		0.08	0.01
Uniform Delay, d1	20.8	4.8	6.5		14.8	14.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	16.4	0.7	0.2		0.1	0.0
Delay (s)	37.2	5.5	6.7		14.9	14.6
Level of Service	D	A	A		B	B
Approach Delay (s)		6.0	6.7		14.8	
Approach LOS		A	A		B	

Intersection Summary

HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	43.0	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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	31	31	285	26	1	53	2	512	1	0	2
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.92	0.92	0.92	0.87	0.87	0.87
Hourly flow rate (vph)	0	37	37	317	29	1	58	2	557	1	0	2
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	74	347	616	3								
Volume Left (vph)	0	317	58	1								
Volume Right (vph)	37	1	557	2								
Hadj (s)	-0.27	0.21	-0.49	-0.30								
Departure Headway (s)	5.8	5.8	4.7	5.8								
Degree Utilization, x	0.12	0.56	0.80	0.01								
Capacity (veh/h)	554	585	752	547								
Control Delay (s)	9.6	15.9	23.6	8.8								
Approach Delay (s)	9.6	15.9	23.6	8.8								
Approach LOS	A	C	C	A								
Intersection Summary												
Delay			20.0									
HCM Level of Service			C									
Intersection Capacity Utilization			67.0%	ICU Level of Service	C							
Analysis Period (min)			15									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.89		1.00	0.98		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3459		1770	2790		1770	1809		1770	1604	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3459		1770	2790		1770	1809		1770	1604	
Volume (vph)	728	601	107	142	383	1050	119	627	114	567	347	401
Peak-hour factor, PHF	0.94	0.94	0.94	0.97	0.97	0.97	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	774	639	114	146	395	1082	129	682	124	652	399	461
RTOR Reduction (vph)	0	9	0	0	167	0	0	4	0	0	27	0
Lane Group Flow (vph)	774	744	0	146	1310	0	129	802	0	652	833	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	20%	2%	2%	6%	2%	17%	2%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	17.0	60.1		16.9	60.0		15.5	40.0		17.0	41.5	
Effective Green, g (s)	17.0	60.1		16.9	60.0		15.5	40.0		17.0	41.5	
Actuated g/C Ratio	0.11	0.40		0.11	0.40		0.10	0.27		0.11	0.28	
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)	201	1386		199	1116		183	482		201	444	
v/s Ratio Prot	c0.44	0.22		0.08	c0.47		0.07	0.44		c0.37	c0.52	
v/s Ratio Perm												
v/c Ratio	3.85	0.54		0.73	1.53dr		0.70	1.66		3.24	1.88	
Uniform Delay, d1	66.5	34.3		64.4	45.0		65.0	55.0		66.5	54.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1294.8	0.4		13.1	87.8		11.7	307.5		1022.5	403.0	
Delay (s)	1361.3	34.7		77.4	132.8		76.7	362.5		1089.0	457.2	
Level of Service	F	C		E	F		E	F		F	F	
Approach Delay (s)		707.1			127.8			323.0			729.7	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	481.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.95		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	169.5%	ICU Level of Service	H
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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	536	5	5	7	2	4	2	300	8	8	181	311
Peak Hour Factor	0.87	0.87	0.87	0.75	0.75	0.75	0.87	0.87	0.87	0.92	0.92	0.92
Hourly flow rate (vph)	616	6	6	9	3	5	2	345	9	9	197	338

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	628	17	356	543
Volume Left (vph)	616	9	2	9
Volume Right (vph)	6	5	9	338
Hadj (s)	0.26	0.08	0.02	-0.31
Departure Headway (s)	7.0	8.8	7.1	6.4
Degree Utilization, x	1.23	0.04	0.70	0.96
Capacity (veh/h)	513	376	497	543
Control Delay (s)	141.2	12.2	24.8	54.7
Approach Delay (s)	141.2	12.2	24.8	54.7
Approach LOS	F	B	C	F

Intersection Summary			
Delay		82.5	
HCM Level of Service		F	
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)		15	

Appendix B-2: Freeway Operations

Existing Plus Preferred Alternative Conditions

Existing Plus Approved Specific Plan Conditions

Existing Plus Minimal Impact Conditions

Existing Plus No Federal Action Conditions

**HCM 2000
Basic Freeway Segments
Capacity Analysis**

Jurisdiction Sacramento County Agency or Company Caltrans
 Analysis Year Existing Plus Pref. Alt. Date 10/4/2010
 Analyst F&P Project Description Elverta Specific Plan

General Information			Flow Rate Calculation										Speed Calculation			Results		
Freeway/ Direction	From/To	Analysis Time Period	Volume (vph)	PHF	Lanes	Terrain	Truck/ Bus %	RV %	E _T	E _R	f _{RV}	f _P	Flow Rate v _p (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	Level of Service	
1	SR 99 SB	Sankey Road to Riego Road	AM	1,874	0.92	2	Level	7%	0%	1.5	1.2	0.966	1.00	1,054	65.0	60.5	17.4	B
2	SR 99 SB	Riego Road to Elverta Road	AM	2,420	0.92	2	Level	7%	0%	1.5	1.2	0.966	1.00	1,361	65.0	60.5	22.5	C
3	SR 99 SB	Elverta Road to Elkhorn Blvd	AM	3,399	0.92	2	Level	7%	0%	1.5	1.2	0.966	1.00	1,912	65.0	59.3	32.2	D
4	SR 99 SB	Elkhorn Blvd to I-5	AM	4,240	0.92	2	Level	7%	0%	1.5	1.2	0.966	1.00	2,385	65.0	-	-	F
5	SR 99 NB	I-5 to Elkhorn Blvd	AM	1,327	0.92	2	Level	23%	0%	1.5	1.2	0.897	1.00	804	65.0	60.5	13.3	B
6	SR 99 NB	Elkhorn Blvd to Elverta Road	AM	1,131	0.92	2	Level	23%	0%	1.5	1.2	0.897	1.00	685	65.0	60.5	11.3	B
7	SR 99 NB	Elverta Road to Riego Road	AM	902	0.92	2	Level	23%	0%	1.5	1.2	0.897	1.00	547	65.0	60.5	9.0	A
8	SR 99 NB	Riego Road to Sankey Road	AM	745	0.92	2	Level	23%	0%	1.5	1.2	0.897	1.00	451	65.0	60.5	7.5	A
1	SR 99 SB	Sankey Road to Riego Road	PM	1,090	0.92	2	Level	5%	0%	1.5	1.2	0.976	1.00	607	65.0	60.5	10.0	A
2	SR 99 SB	Riego Road to Elverta Road	PM	1,239	0.92	2	Level	5%	0%	1.5	1.2	0.976	1.00	690	65.0	60.5	11.4	B
3	SR 99 SB	Elverta Road to Elkhorn Blvd	PM	1,722	0.92	2	Level	5%	0%	1.5	1.2	0.976	1.00	959	65.0	60.5	15.9	B
4	SR 99 SB	Elkhorn Blvd to I-5	PM	2,052	0.92	2	Level	5%	0%	1.5	1.2	0.976	1.00	1,143	65.0	60.5	18.9	C
5	SR 99 NB	I-5 to Elkhorn Blvd	PM	4,728	0.92	2	Level	13%	0%	1.5	1.2	0.939	1.00	2,737	65.0	-	-	F
6	SR 99 NB	Elkhorn Blvd to Elverta Road	PM	3,664	0.92	2	Level	13%	0%	1.5	1.2	0.939	1.00	2,121	65.0	56.2	37.7	E
7	SR 99 NB	Elverta Road to Riego Road	PM	2,514	0.92	2	Level	13%	0%	1.5	1.2	0.939	1.00	1,455	65.0	60.5	24.1	C
8	SR 99 NB	Riego Road to Sankey Road	PM	1,991	0.92	2	Level	13%	0%	1.5	1.2	0.939	1.00	1,152	65.0	60.5	19.0	C

Appendix B-3: Peak Hour Signal Warrant Analysis

Existing Plus Preferred Alternative Conditions

Existing Plus Approved Specific Plan Conditions

Existing Plus Minimal Impact Conditions

Existing Plus No Federal Action Conditions

Major Street Elkhorn Boulevard
 Minor Street SR 99 SB Off-Ramp

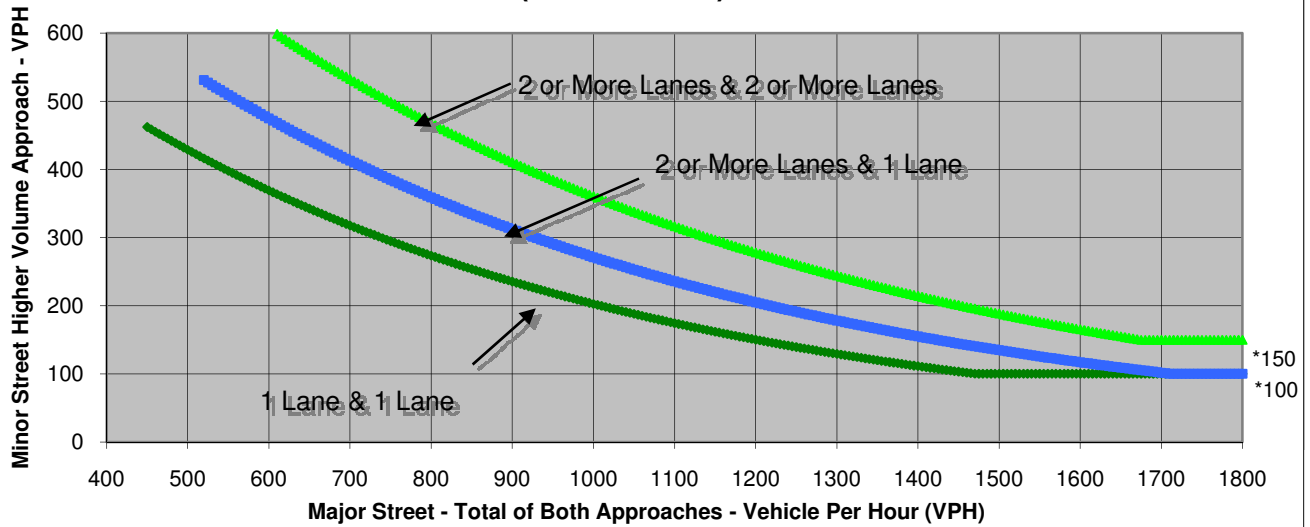
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	115	0	0
Through	0	0	2	7
Right	0	1	0	0
Total	0	116	2	7

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elkhorn Boulevard	SR 99 SB Off-Ramp	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	9	116	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elkhorn Boulevard
 Minor Street SR 99 SB Off-Ramp

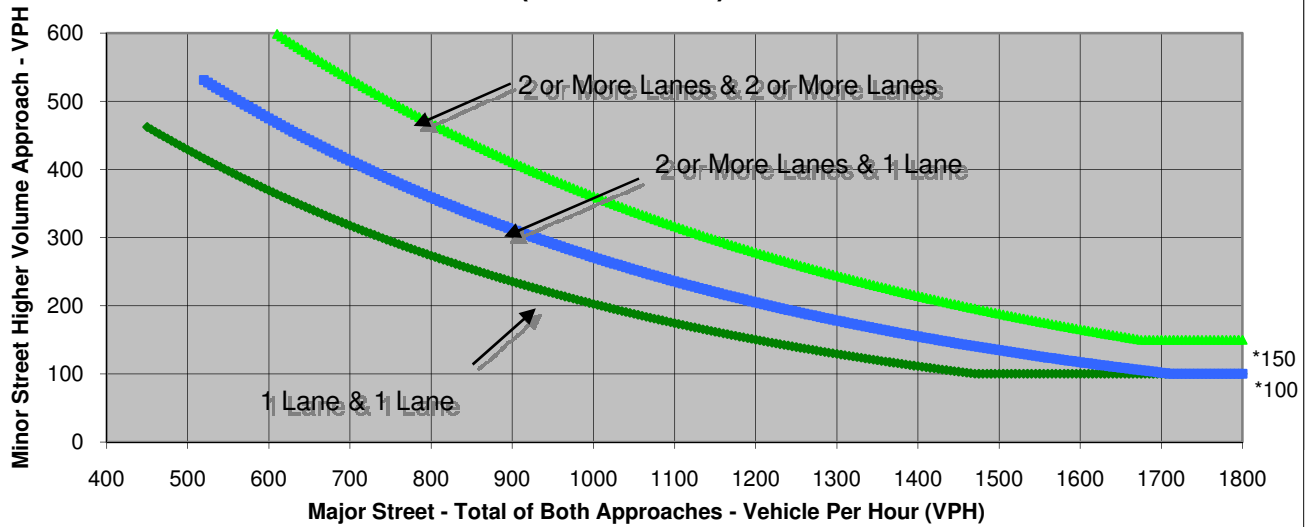
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	90	0	0
Through	0	0	7	13
Right	0	2	0	0
Total	0	92	7	13

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elkhorn Boulevard	SR 99 SB Off-Ramp	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	20	92	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elkhorn Boulevard
 Minor Street SR 99 NB Off-Ramp

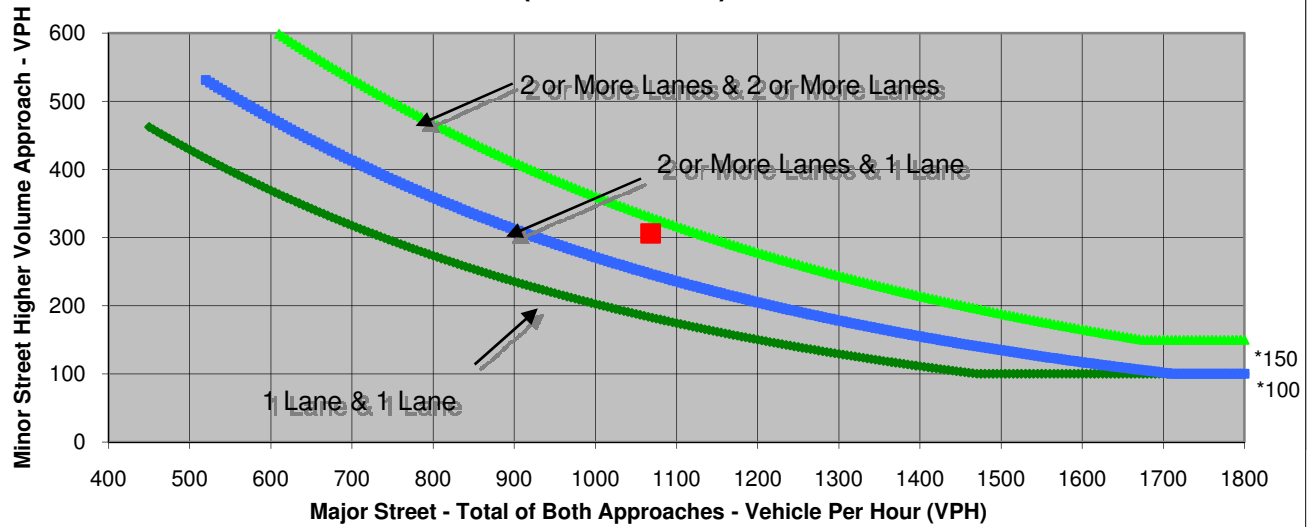
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	7	0	0	0
Through	0	0	116	952
Right	299	0	0	0
Total	306	0	116	952

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elkhorn Boulevard	SR 99 NB Off-Ramp	
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	1,068	306	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elkhorn Boulevard
 Minor Street SR 99 NB Off-Ramp

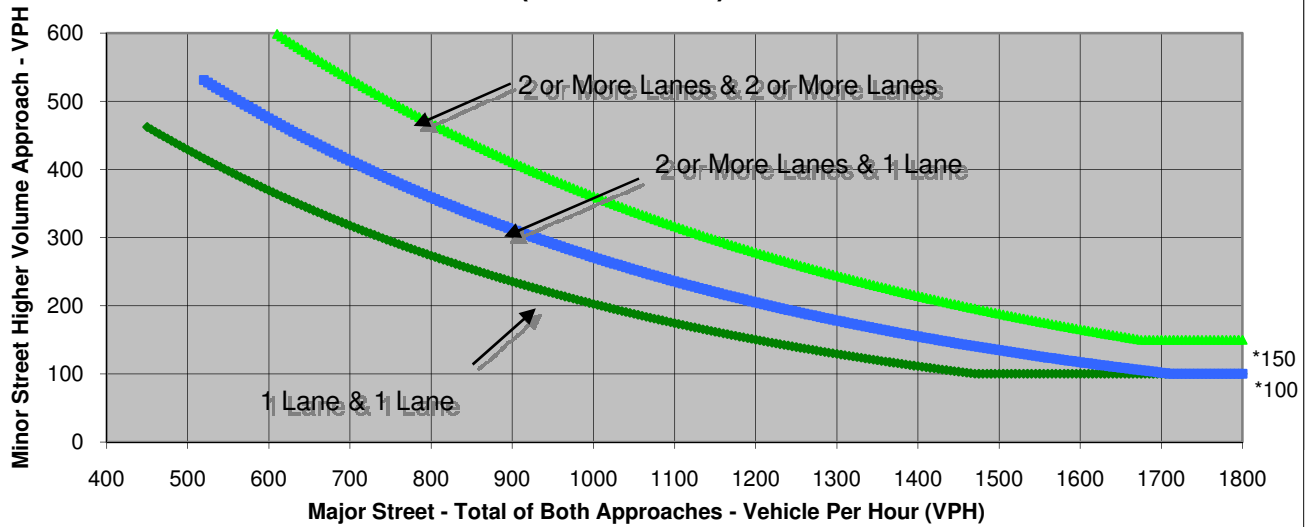
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	19	0	0	0
Through	0	0	94	410
Right	1,166	0	0	0
Total	1,185	0	94	410

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Elkhorn Boulevard	SR 99 NB Off-Ramp	
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	504	1,185	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street E. Levee Road

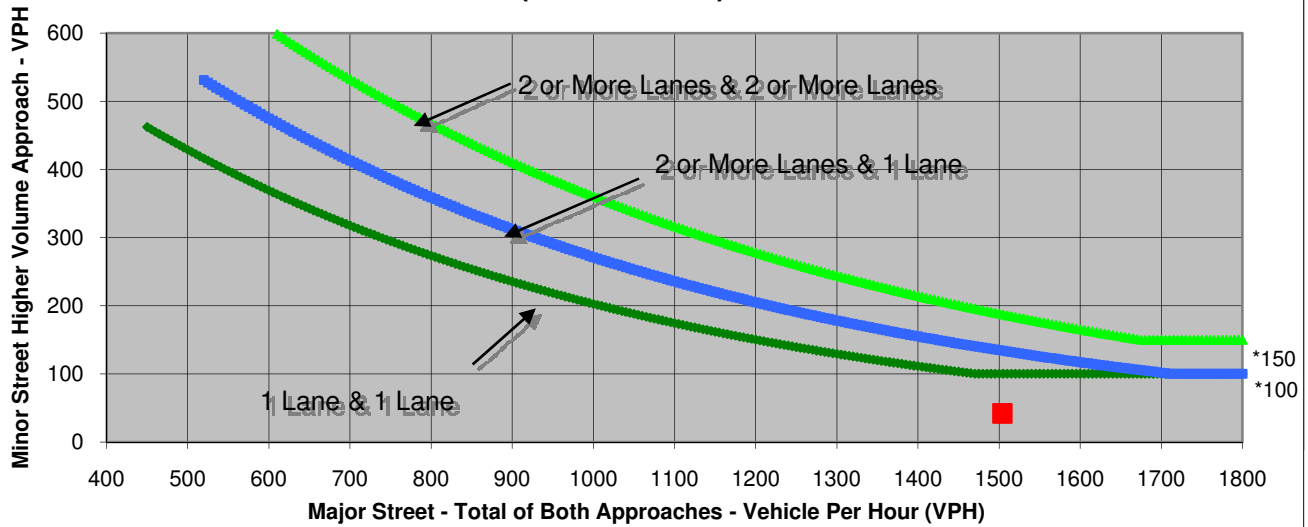
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	1	3	4	106
Through	13	35	284	1,102
Right	21	4	4	4
Total	35	42	292	1,212

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	E. Levee Road	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	1,504	42	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street E. Levee Road

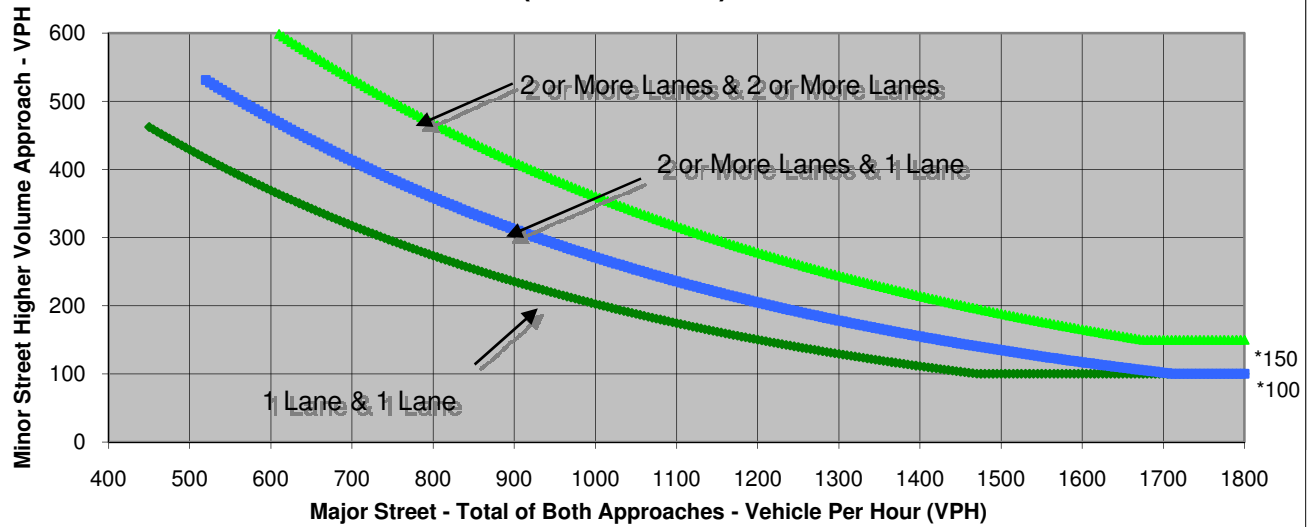
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	4	4	22	34
Through	60	25	1,397	562
Right	96	2	0	0
Total	160	31	1,419	596

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	E. Levee Road	
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	2,015	160	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elkhorn Boulevard
 Minor Street E. Levee Road

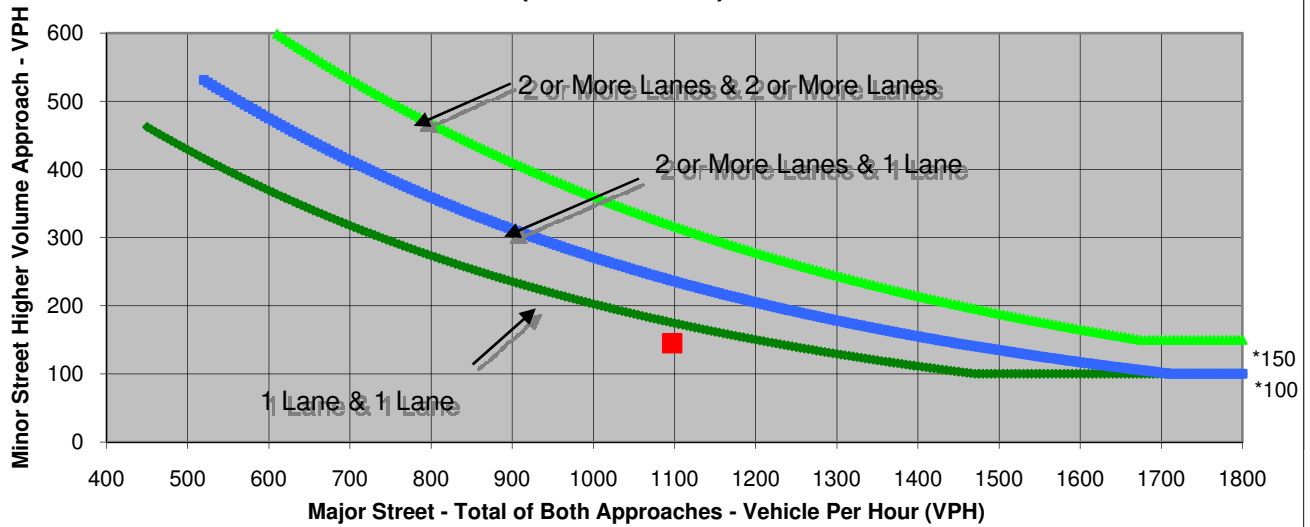
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	24	31	0
Through	0	0	416	644
Right	0	121	0	6
Total	0	145	447	650

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elkhorn Boulevard	E. Levee Road	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	1,097	145	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elkhorn Boulevard
 Minor Street E. Levee Road

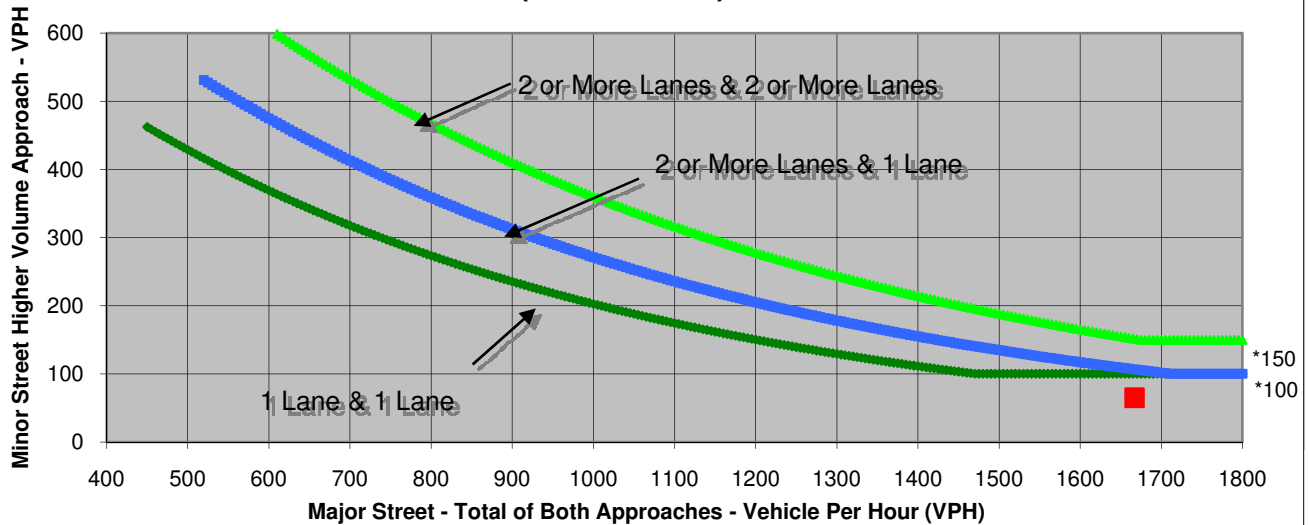
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	11	119	0
Through	0	0	968	546
Right	0	54	0	34
Total	0	65	1,087	580

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elkhorn Boulevard	Minor Street E. Levee Road	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	1,667	65	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street Sorento Road

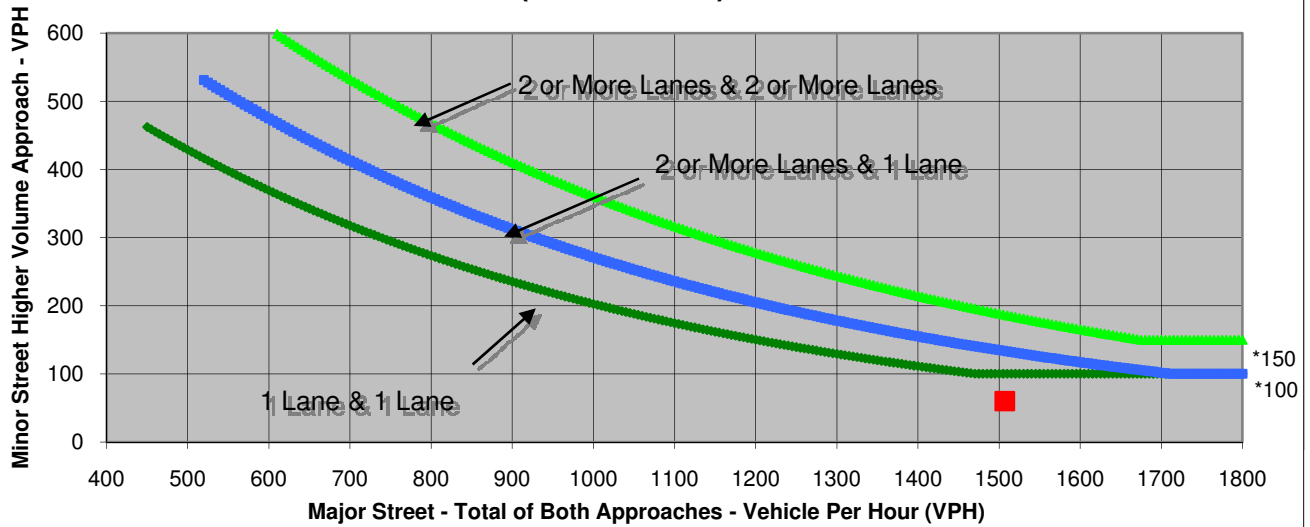
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	9	4	3
Through	1	1	303	1,162
Right	5	50	1	34
Total	6	60	308	1,199

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	Sorento Road	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	1,507	60	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street Sorento Road

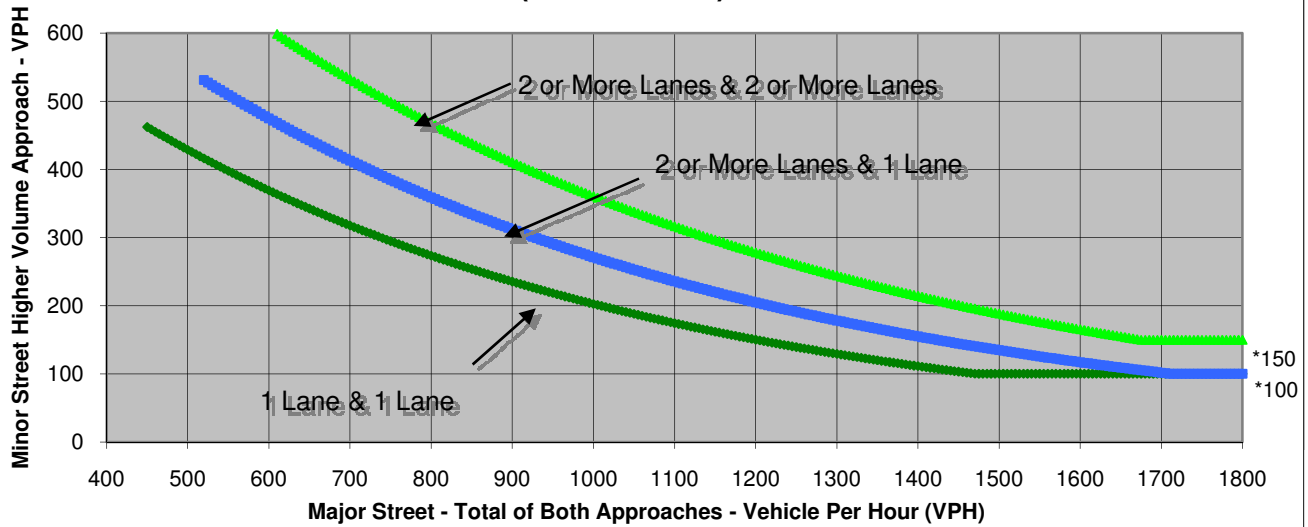
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	1	39	33	2
Through	1	2	1,461	584
Right	5	11	3	24
Total	7	52	1,497	610

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	Sorento Road	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	2,107	52	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street Elwyn Road

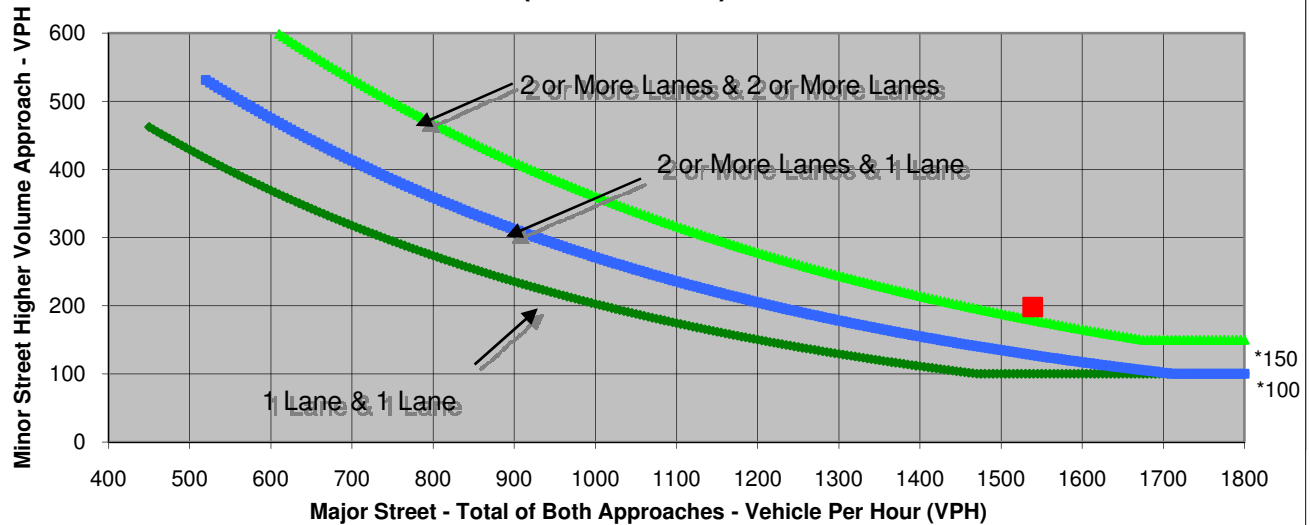
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	16	109	9	5
Through	27	25	299	1,117
Right	9	64	7	102
Total	52	198	315	1,224

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	Elwyn Road	
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	1,539	198	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street Elwyn Road

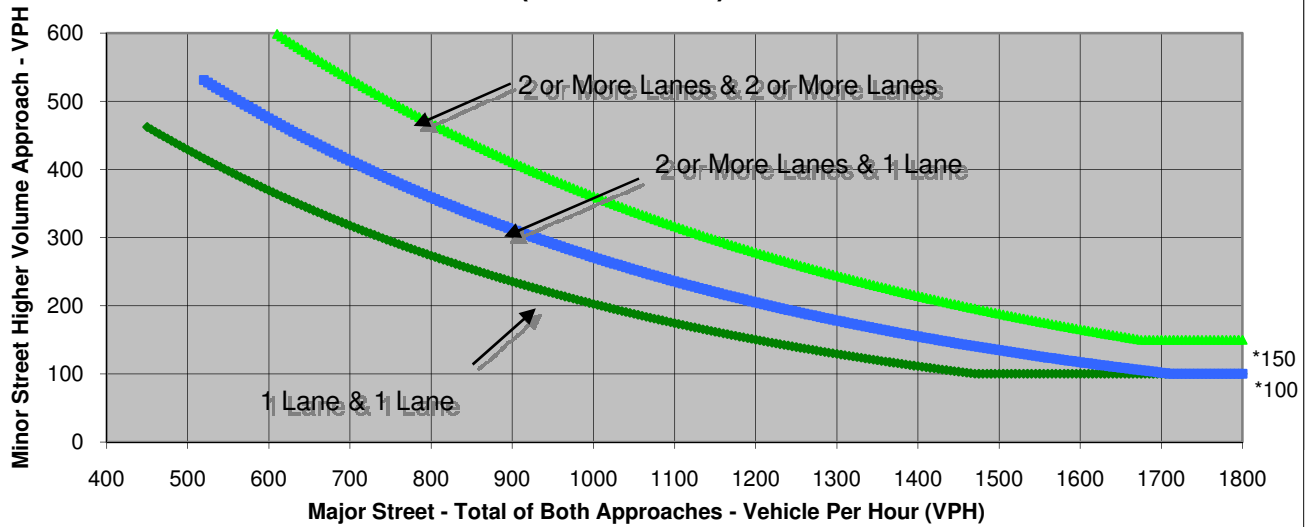
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	6	124	157	9
Through	18	26	1,326	593
Right	8	10	15	143
Total	32	160	1,498	745

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	Elwyn Road	
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	2,243	160	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 2

Major Street Elverta Road
 Minor Street Rio Linda Blvd

Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour AM

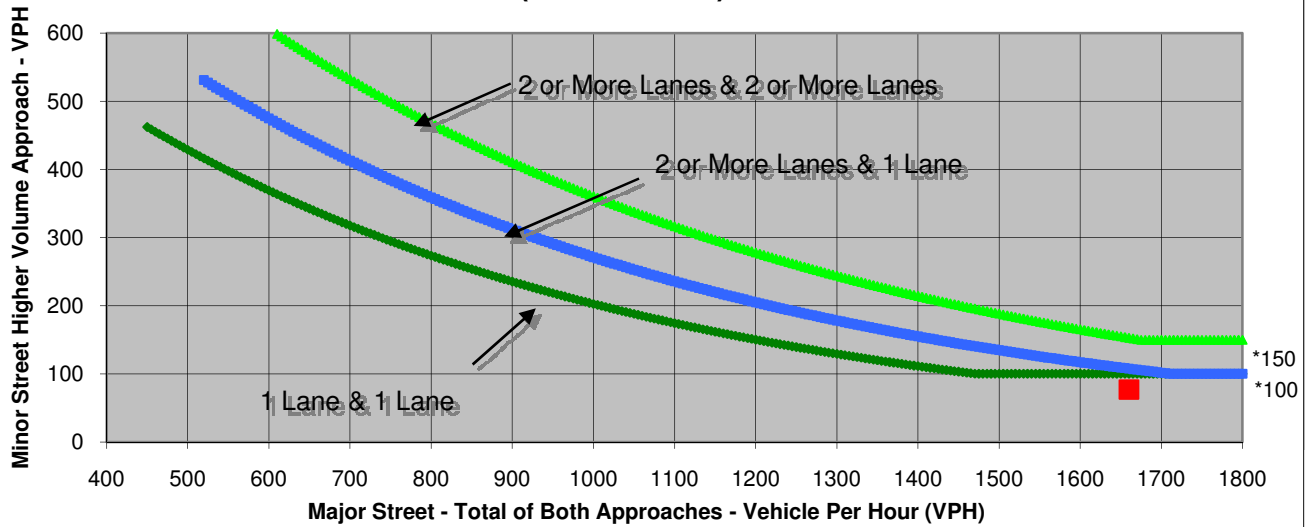
Turn Movement Volumes

	NB	SB	EB	WB
Left	49	0	0	59
Through	0	0	355	1,164
Right	28	0	82	0
Total	77	0	437	1,223

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Elverta Road	Minor Street Rio Linda Blvd	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	1,660	77	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **Rio Linda Blvd**

Project **Elverta Specific Plan EIS**
 Scenario **Existing Plus Preferred Alternative**
 Peak Hour **PM**

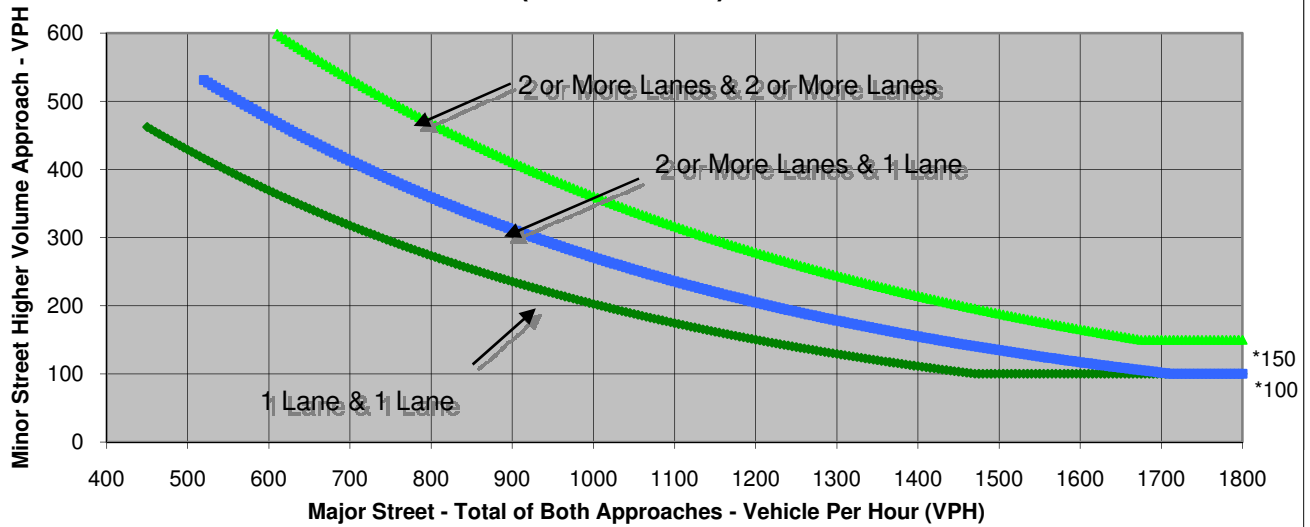
Turn Movement Volumes

	NB	SB	EB	WB
Left	105	0	0	55
Through	0	0	1,385	656
Right	55	0	87	0
Total	160	0	1,472	711

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street Rio Linda Blvd	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	2,183	160	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street 9th Street

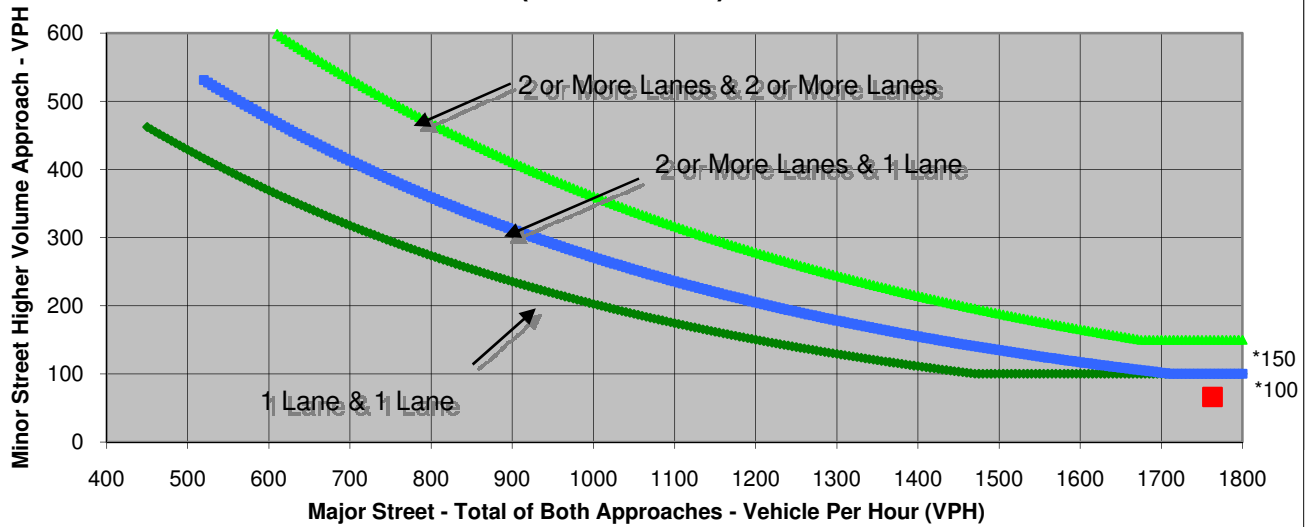
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	162
Through	0	0	407	1,193
Right	66	0	1	0
Total	66	0	408	1,355

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	1,763	66	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street U Street

Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour AM

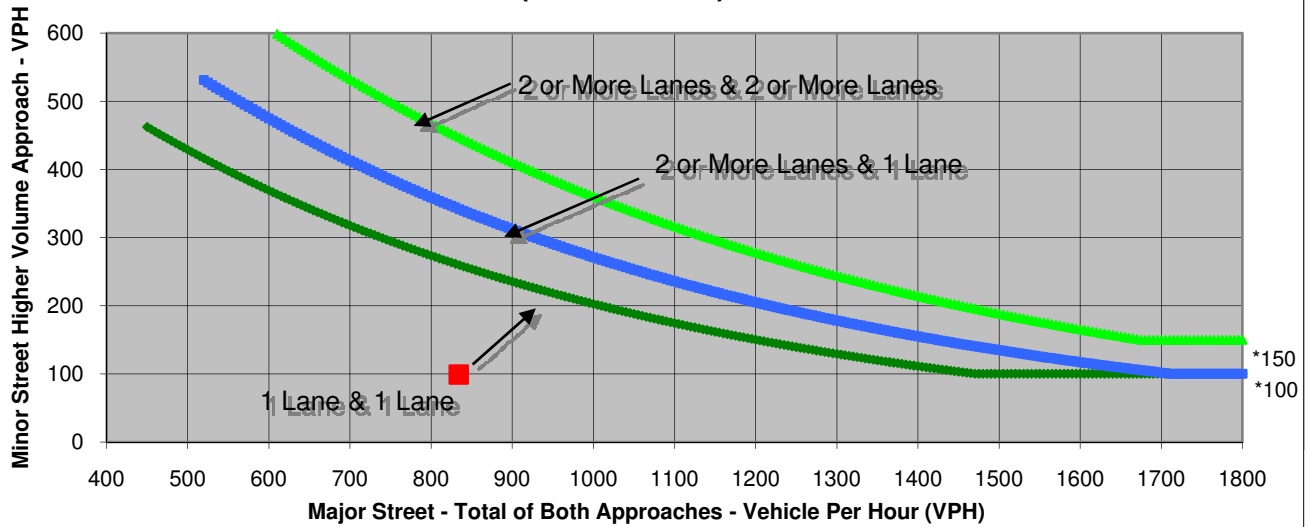
Turn Movement Volumes

	NB	SB	EB	WB
Left	18	0	2	80
Through	173	607	19	18
Right	29	7	45	1
Total	220	614	66	99

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	834	99	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Dry Creek Road**
 Minor Street **U Street**

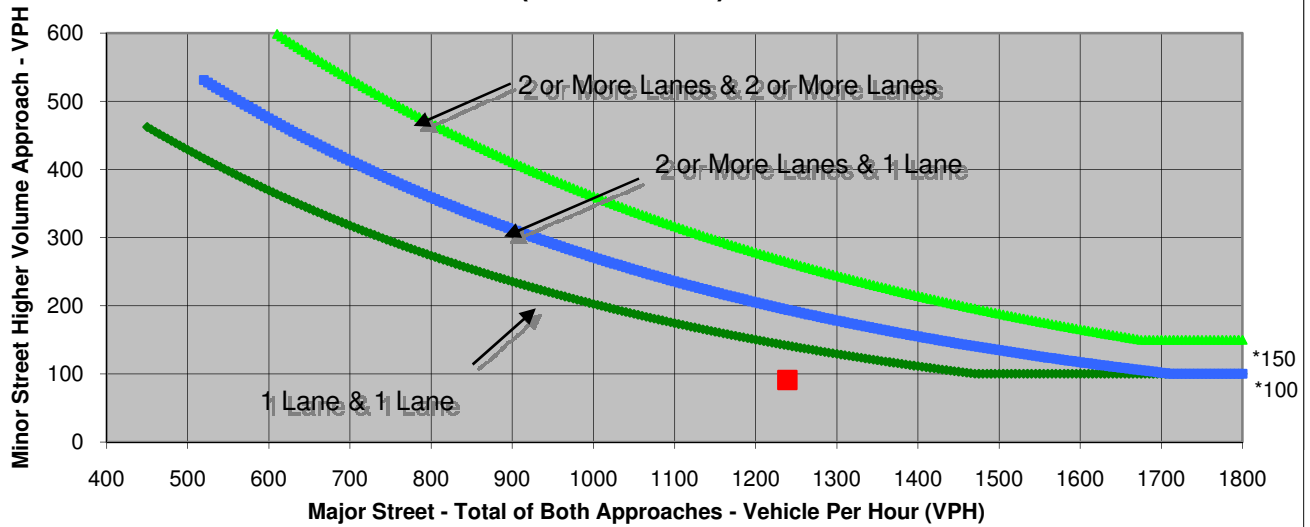
 Project **Elverta Specific Plan EIS**
 Scenario **Existing Plus Preferred Alternative**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	53	1	8	64
Through	688	392	31	26
Right	99	6	31	1
Total	840	399	70	91

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	1,239	91	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street Q Street

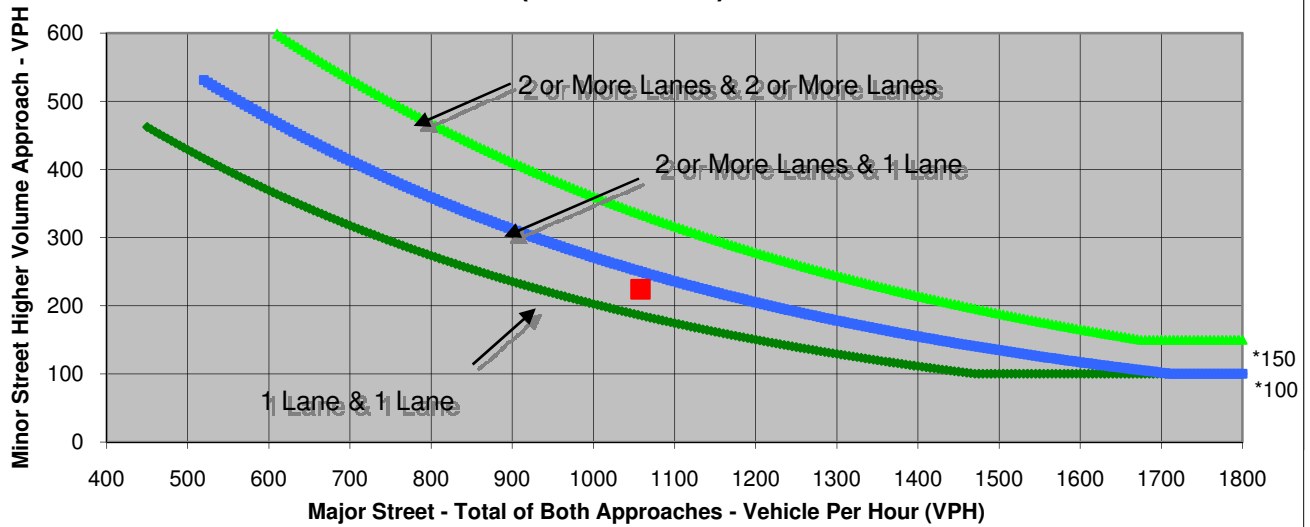
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	47	36	6	132
Through	208	696	56	77
Right	54	17	53	15
Total	309	749	115	224

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	Q Street	
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	1,058	224	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street Q Street

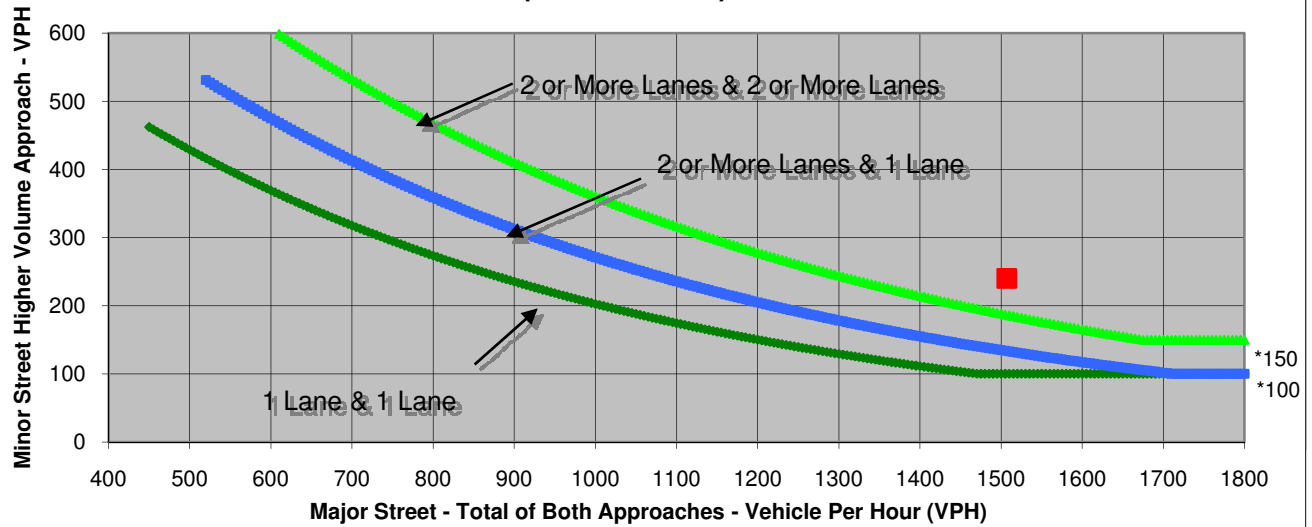
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	63	21	18	105
Through	786	463	90	89
Right	164	10	44	46
Total	1,013	494	152	240

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Dry Creek Road	Q Street	
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	1,507	240	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street 16th Street
 Minor Street U Street

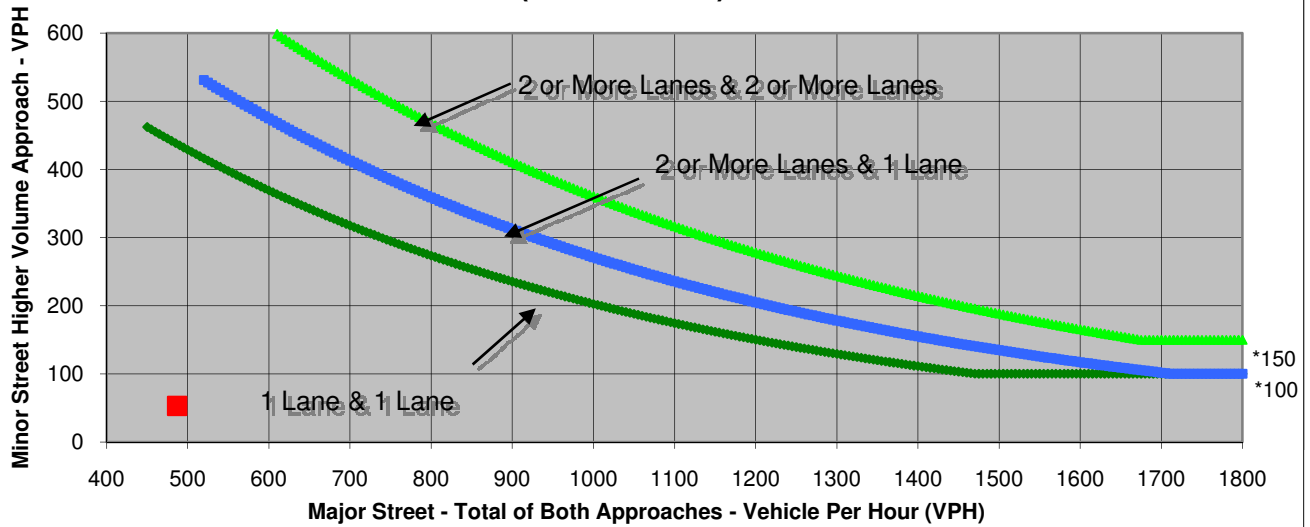
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	1	5	48	6
Through	86	290	2	3
Right	7	98	3	5
Total	94	393	53	14

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	487	53	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **16th Street**
 Minor Street **U Street**

Project **Elverta Specific Plan EIS**
 Scenario **Existing Plus Preferred Alternative**
 Peak Hour **PM**

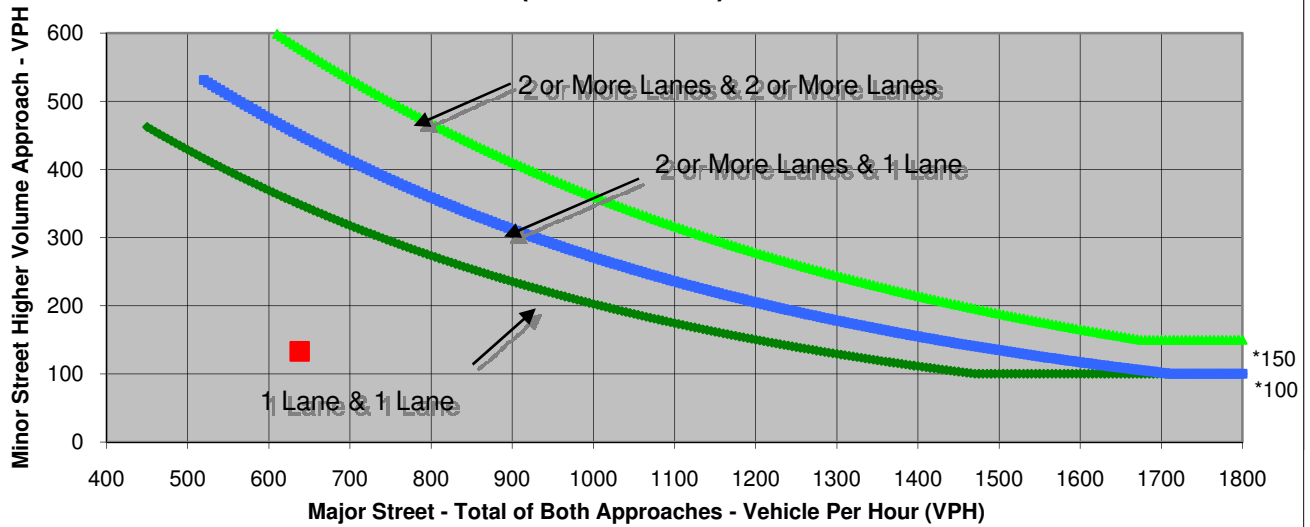
Turn Movement Volumes

	NB	SB	EB	WB
Left	2	8	123	7
Through	325	205	5	2
Right	8	90	5	4
Total	335	303	133	13

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	638	133	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street 16th Street
 Minor Street Q Street

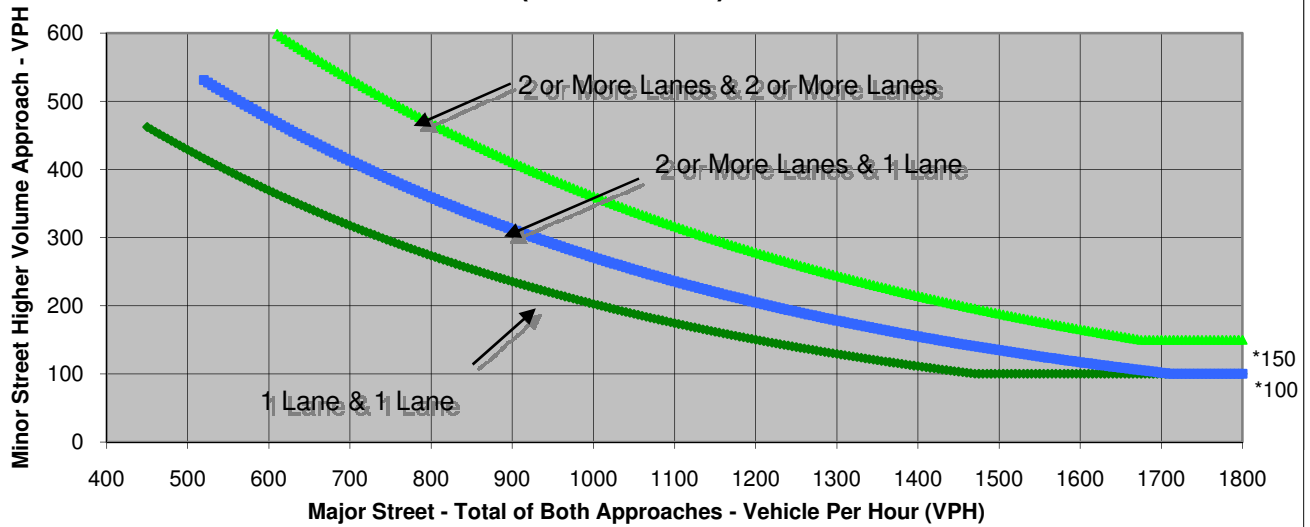
 Project Elverta Specific Plan EIS
 Scenario Existing Plus Preferred Alternative
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	163	38	0
Through	0	0	130	76
Right	0	139	0	52
Total	0	302	168	128

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	16th Street	Q Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	296	302	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **16th Street**
 Minor Street **Q Street**

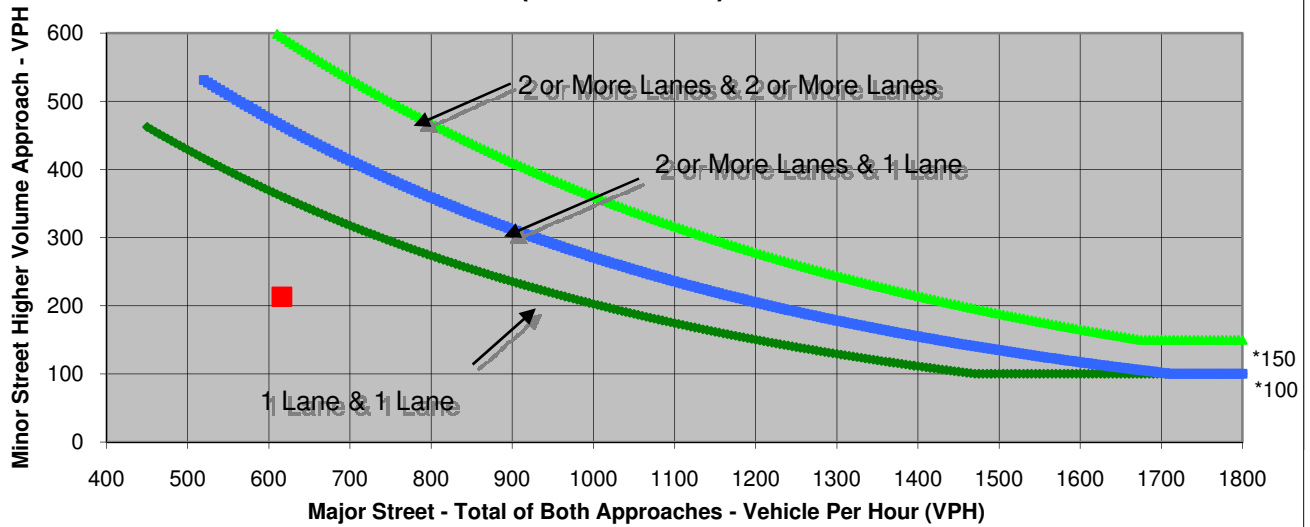
 Project **Elverta Specific Plan EIS**
 Scenario **Existing Plus Preferred Alternative**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	114	149	0
Through	0	0	140	141
Right	0	99	0	186
Total	0	213	289	327

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	Q Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	616	213	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street 9th Street

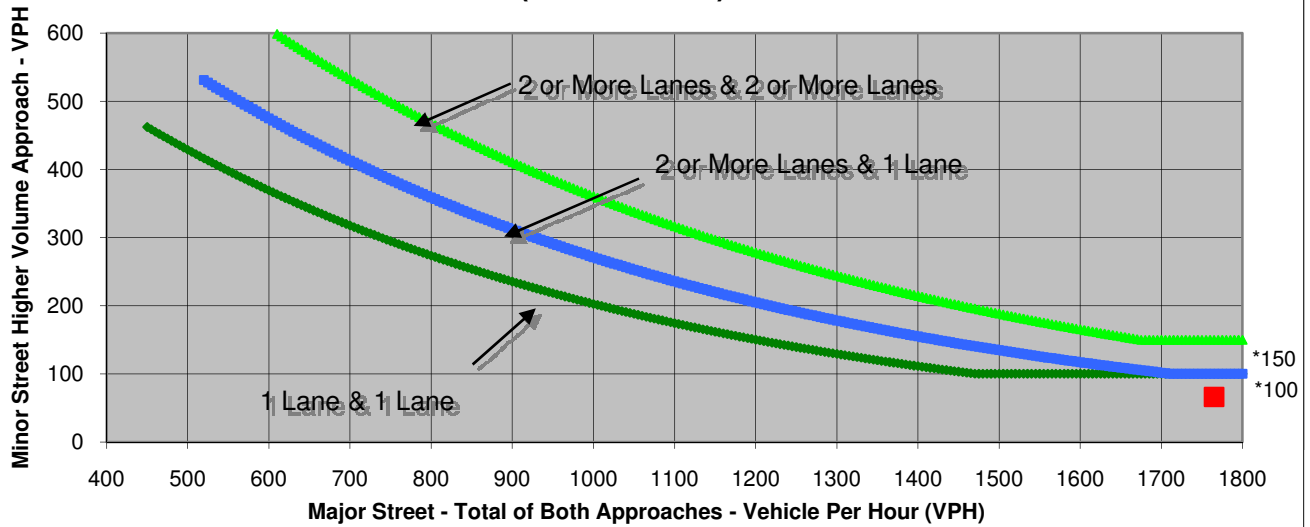
 Project Elverta Specific Plan
 Scenario Existing Plus Approved SP
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	163
Through	0	0	408	1,193
Right	66	0	1	0
Total	66	0	409	1,356

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	1,765	66	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **9th Street**

Project **Elverta Specific Plan**
 Scenario **Existing Plus Approved SP**
 Peak Hour **PM**

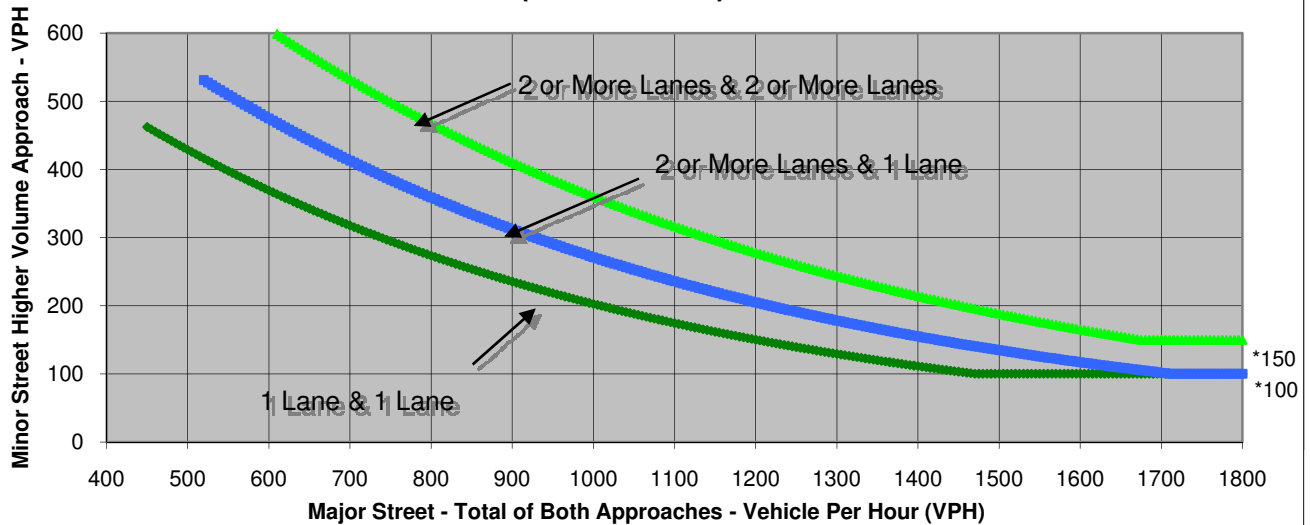
Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	0	121
Through	0	0	1,423	756
Right	190	0	5	0
Total	192	0	1,428	877

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,305	192	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street U Street

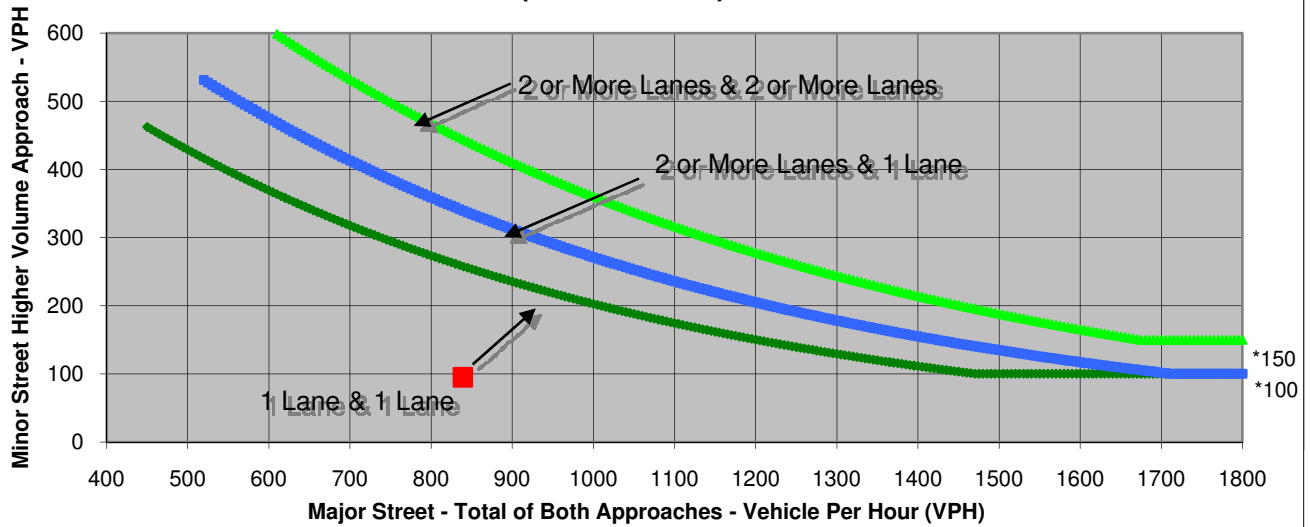
 Project Elverta Specific Plan
 Scenario Existing Plus Approved SP
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	18	0	2	76
Through	175	611	19	18
Right	28	7	45	1
Total	221	618	66	95

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	839	95	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No **2** of **2**

Major Street **Dry Creek Road**
 Minor Street **U Street**

Project **Elverta Specific Plan**
 Scenario **Existing Plus Approved SP**
 Peak Hour **PM**

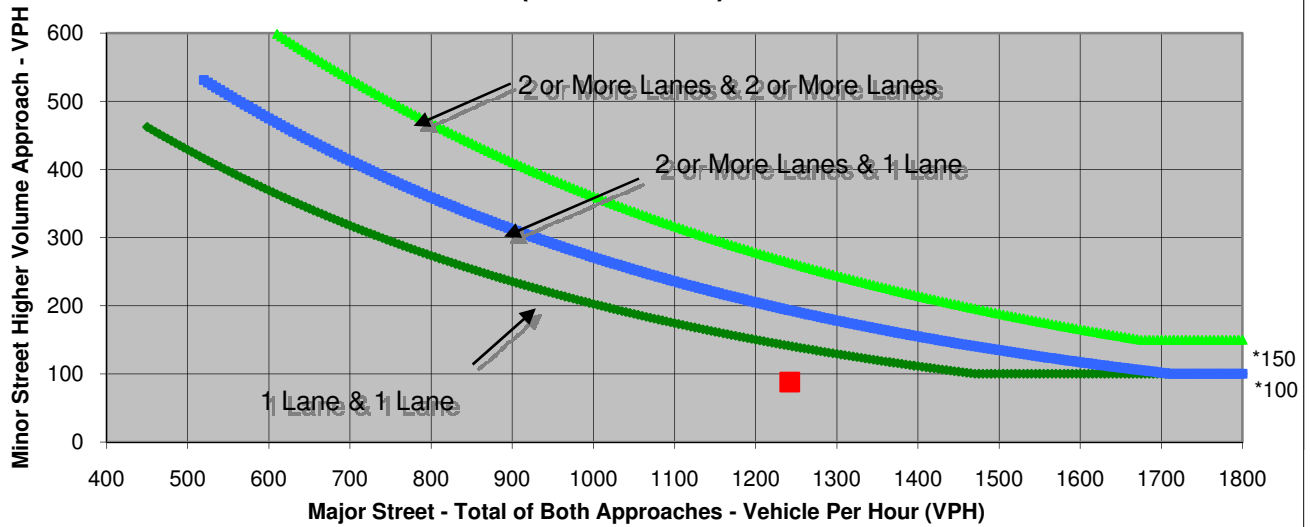
Turn Movement Volumes

	NB	SB	EB	WB
Left	53	1	7	61
Through	692	396	31	26
Right	94	6	31	1
Total	839	403	69	88

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	1,242	88	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street 16th Street
 Minor Street U Street

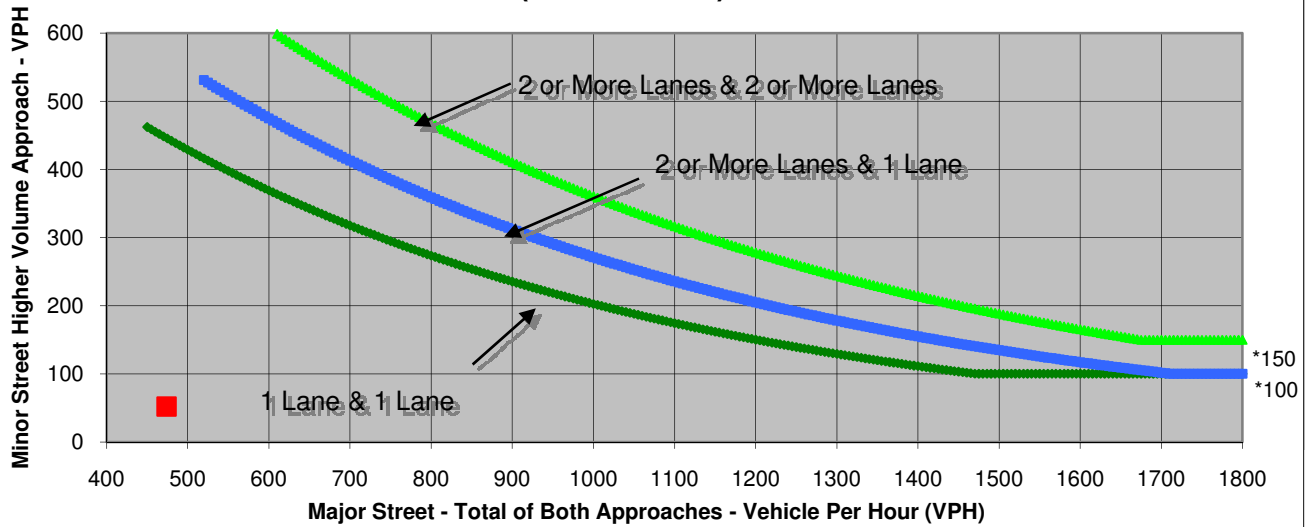
 Project Elverta Specific Plan
 Scenario Existing Plus Approved SP
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	1	5	47	6
Through	84	283	2	3
Right	7	94	3	5
Total	92	382	52	14

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	474	52	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **16th Street**
 Minor Street **U Street**

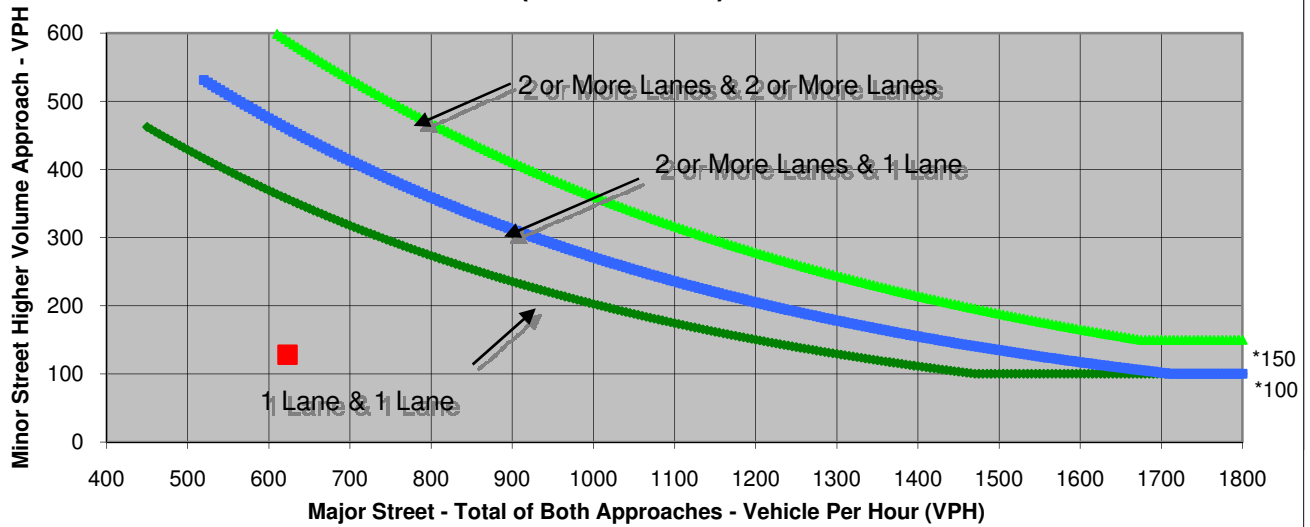
 Project **Elverta Specific Plan**
 Scenario **Existing Plus Approved SP**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	2	8	118	7
Through	318	200	5	2
Right	8	87	5	4
Total	328	295	128	13

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	623	128	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street 9th Street

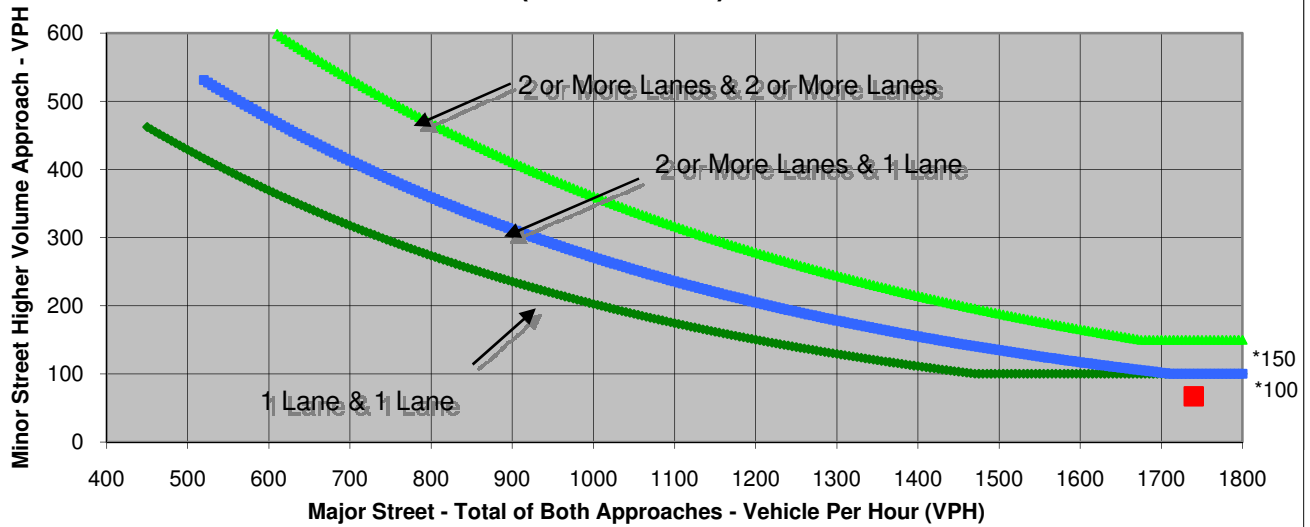
 Project Elverta Specific Plan
 Scenario Existing Plus Minimal Impact
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	163
Through	0	0	406	1,170
Right	67	0	1	0
Total	67	0	407	1,333

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	1,740	67	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **9th Street**

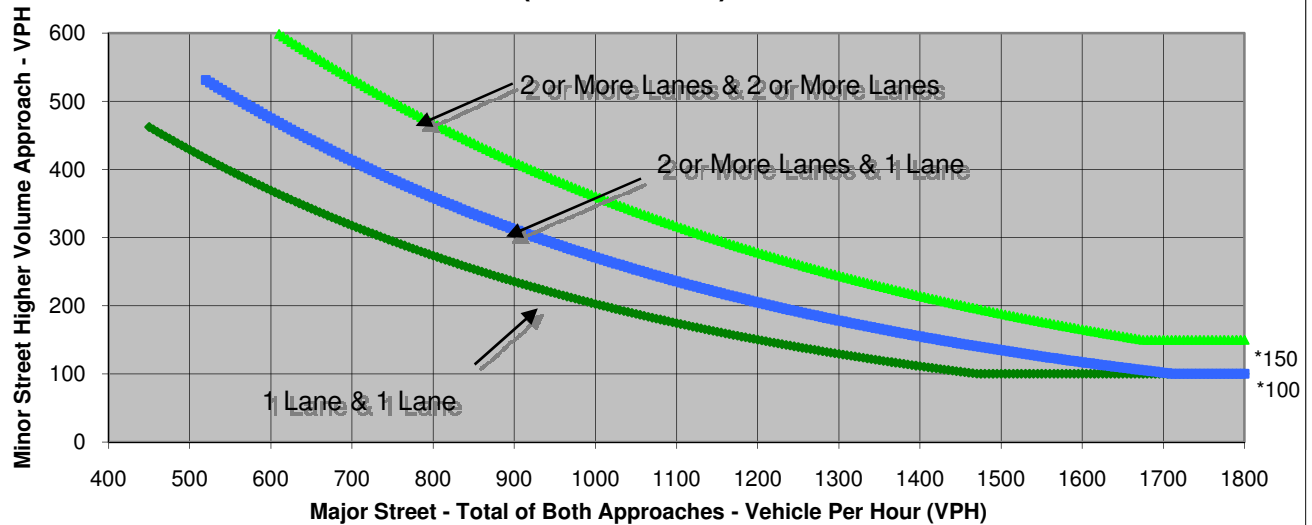
 Project **Elverta Specific Plan**
 Scenario **Existing Plus Minimal Impact**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	0	116
Through	0	0	1,368	721
Right	183	0	5	0
Total	185	0	1,373	837

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,210	185	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street U Street

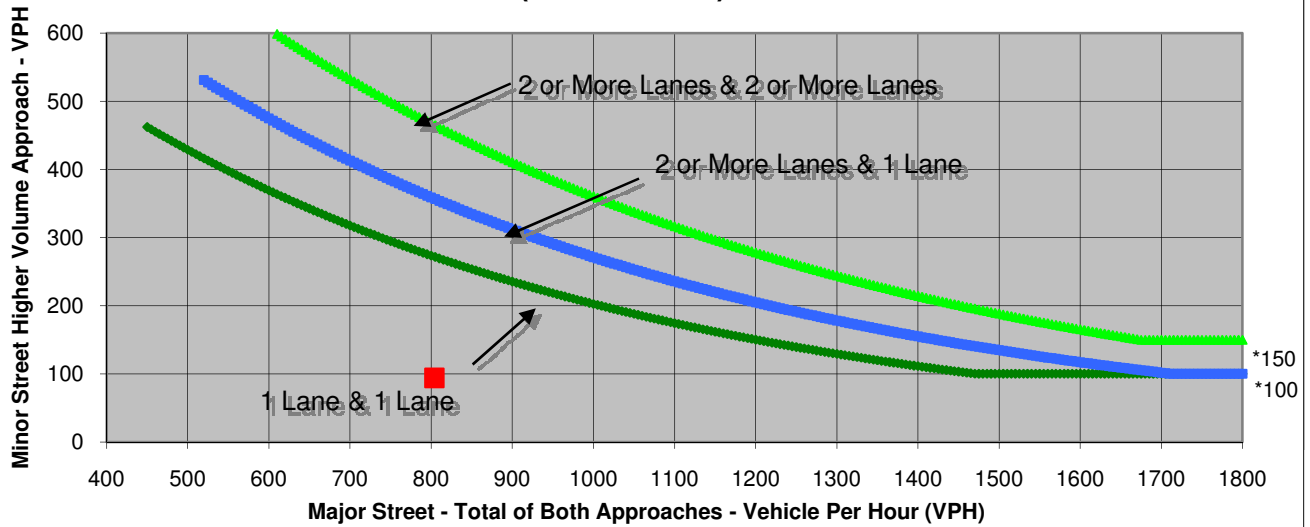
 Project Elverta Specific Plan
 Scenario Existing Plus Minimal Impact
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	18	0	2	75
Through	172	583	19	18
Right	26	5	45	1
Total	216	588	66	94

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	804	94	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Dry Creek Road**
 Minor Street **U Street**

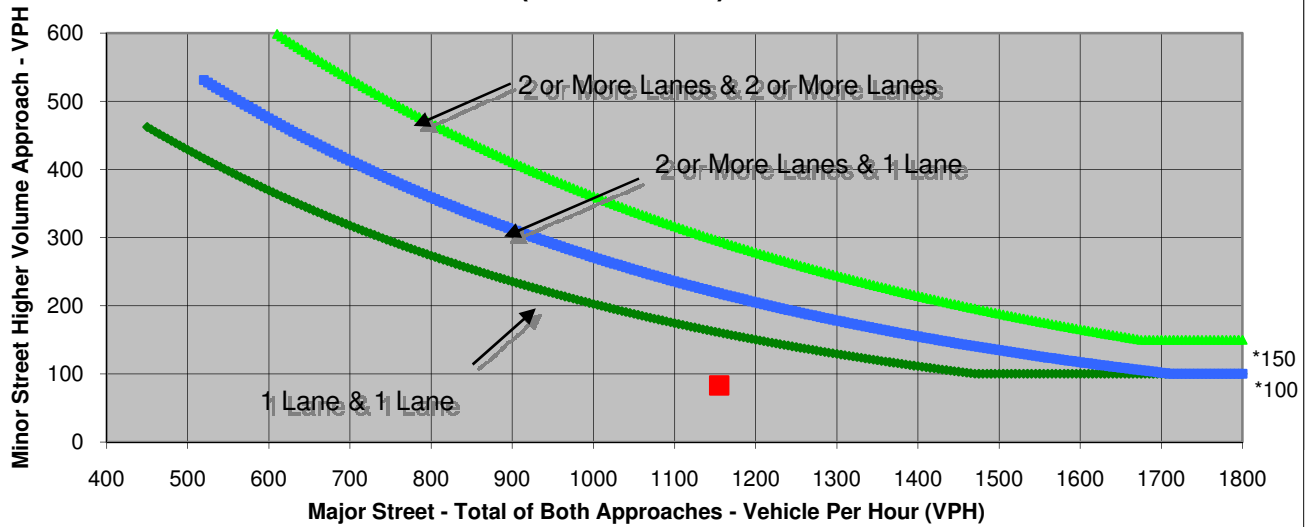
 Project **Elverta Specific Plan**
 Scenario **Existing Plus Minimal Impact**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	53	1	6	56
Through	641	365	31	26
Right	90	5	31	1
Total	784	371	68	83

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	1,155	83	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street 16th Street
 Minor Street U Street

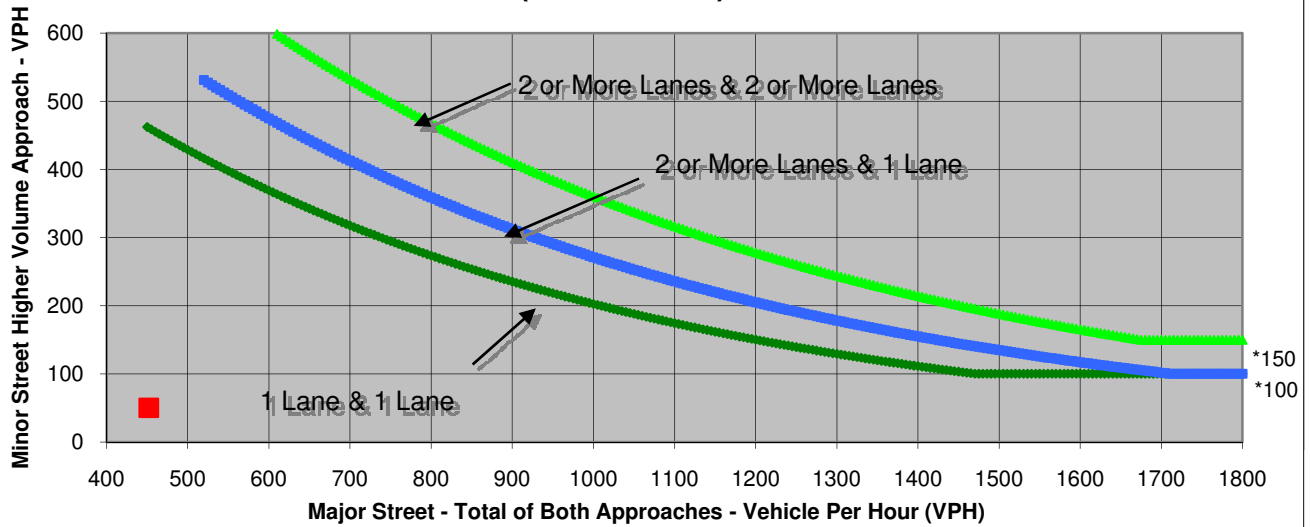
 Project Elverta Specific Plan
 Scenario Existing Plus Minimal Impact
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	1	5	45	6
Through	78	268	2	3
Right	7	93	3	5
Total	86	366	50	14

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	452	50	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **16th Street**
 Minor Street **U Street**

Project **Elverta Specific Plan**
 Scenario **Existing Plus Minimal Impact**
 Peak Hour **PM**

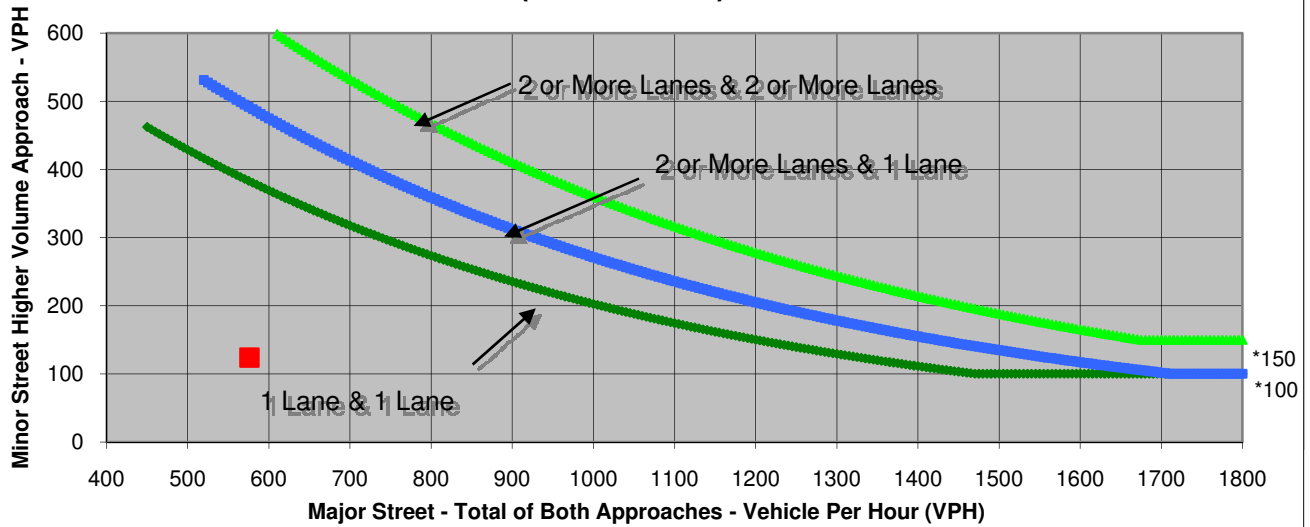
Turn Movement Volumes

	NB	SB	EB	WB
Left	2	8	114	7
Through	293	183	5	2
Right	8	82	5	4
Total	303	273	124	13

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	576	124	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **9th Street**

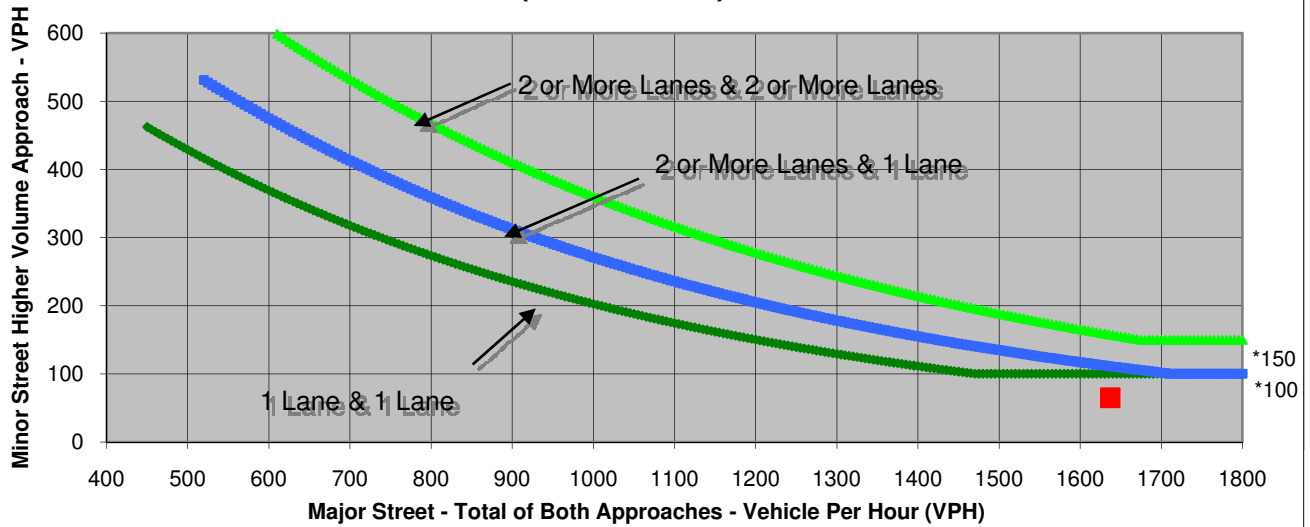
 Project **Elverta Specific Plan**
 Scenario **Existing Plus No Federal Action**
 Peak Hour **AM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	171
Through	0	0	361	1,104
Right	65	0	1	0
Total	65	0	362	1,275

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	Warrant Met
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	1,637	65	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **9th Street**

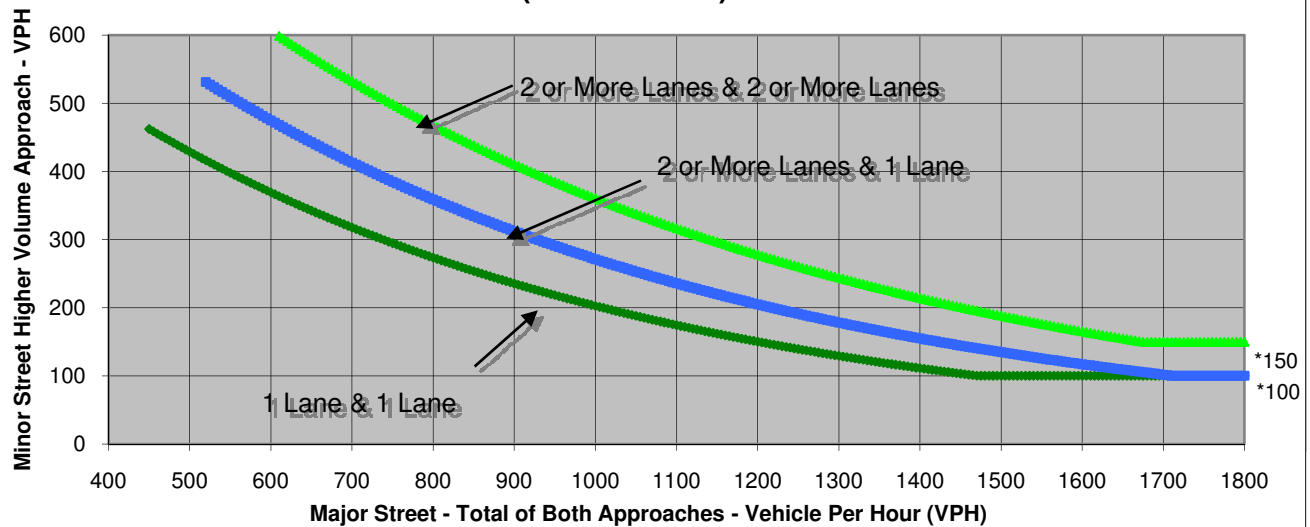
 Project **Elverta Specific Plan**
 Scenario **Existing Plus No Federal Action**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	2	0	0	113
Through	0	0	1,258	640
Right	184	0	5	0
Total	186	0	1,263	753

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,016	186	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street U Street

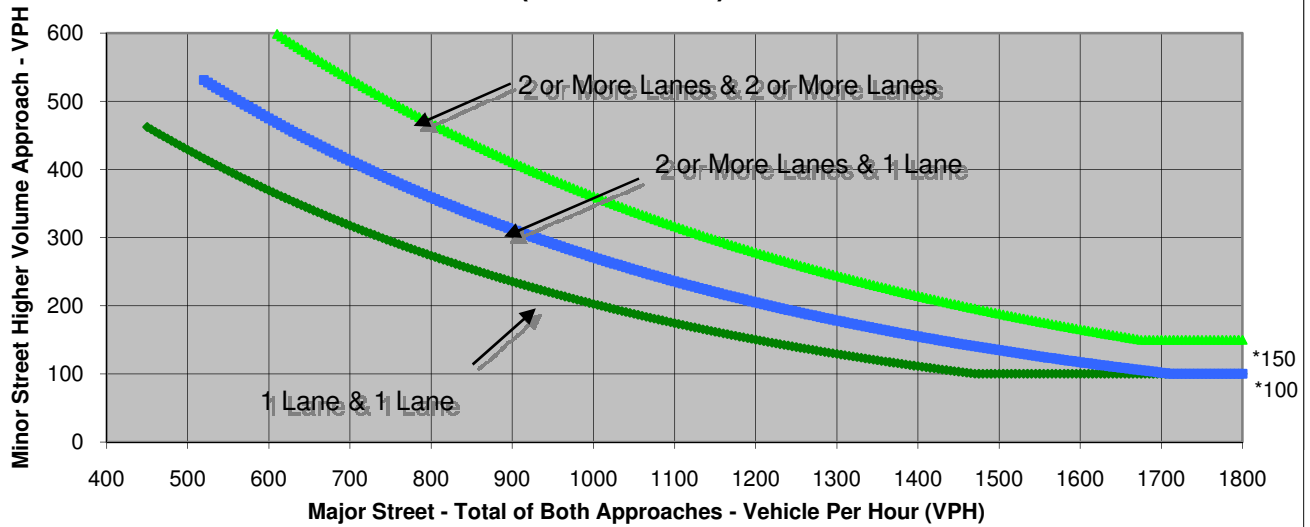
 Project Elverta Specific Plan
 Scenario Existing Plus No Federal Action
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	18	0	0	481
Through	0	1	19	18
Right	129	0	45	1
Total	147	1	64	500

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	148	500	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Dry Creek Road**
 Minor Street **U Street**

Project **Elverta Specific Plan**
 Scenario **Existing Plus No Federal Action**
 Peak Hour **PM**

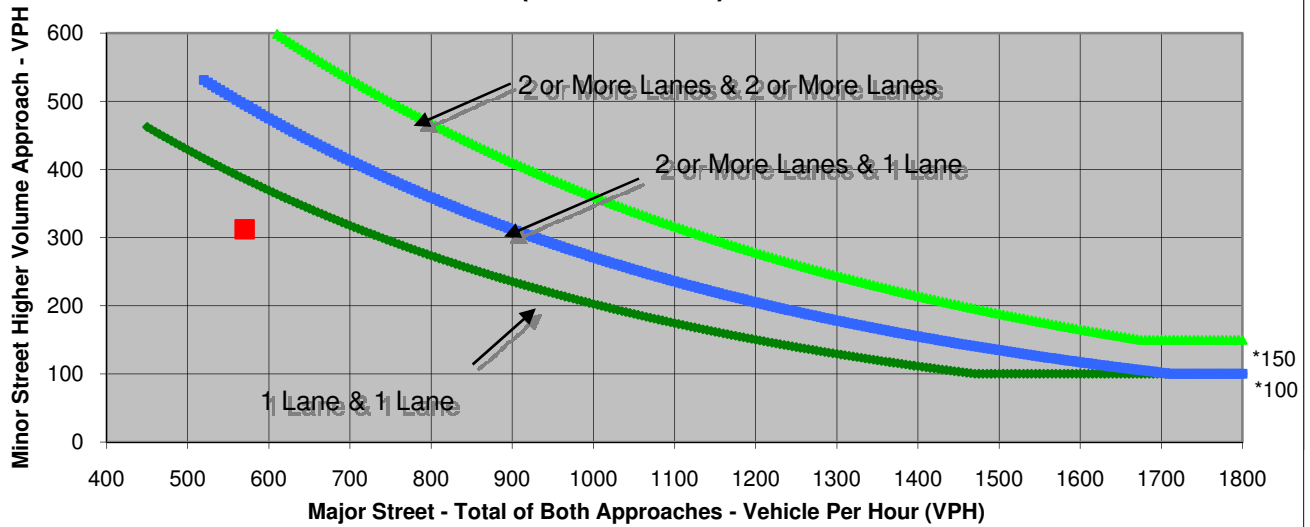
Turn Movement Volumes

	NB	SB	EB	WB
Left	53	1	0	285
Through	2	0	31	26
Right	512	2	31	1
Total	567	3	62	312

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Dry Creek Road	Minor Street U Street	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	570	312	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **16th Street**
 Minor Street **U Street**

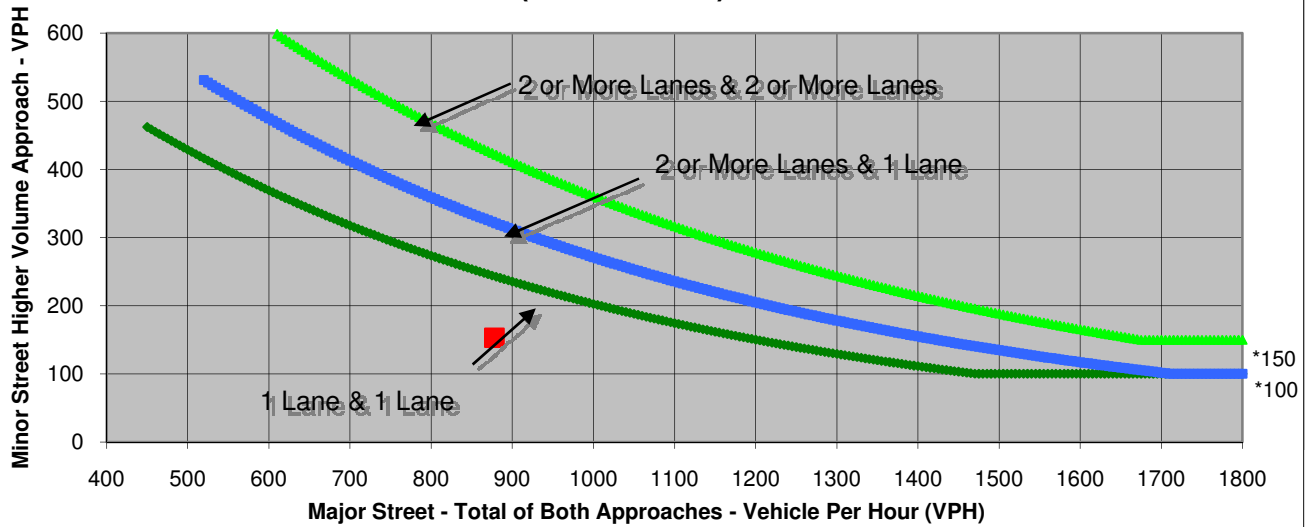
 Project **Elverta Specific Plan**
 Scenario **Existing Plus No Federal Action**
 Peak Hour **AM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	1	5	148	6
Through	77	289	2	3
Right	7	499	3	5
Total	85	793	153	14

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	878	153	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **16th Street**
 Minor Street **U Street**

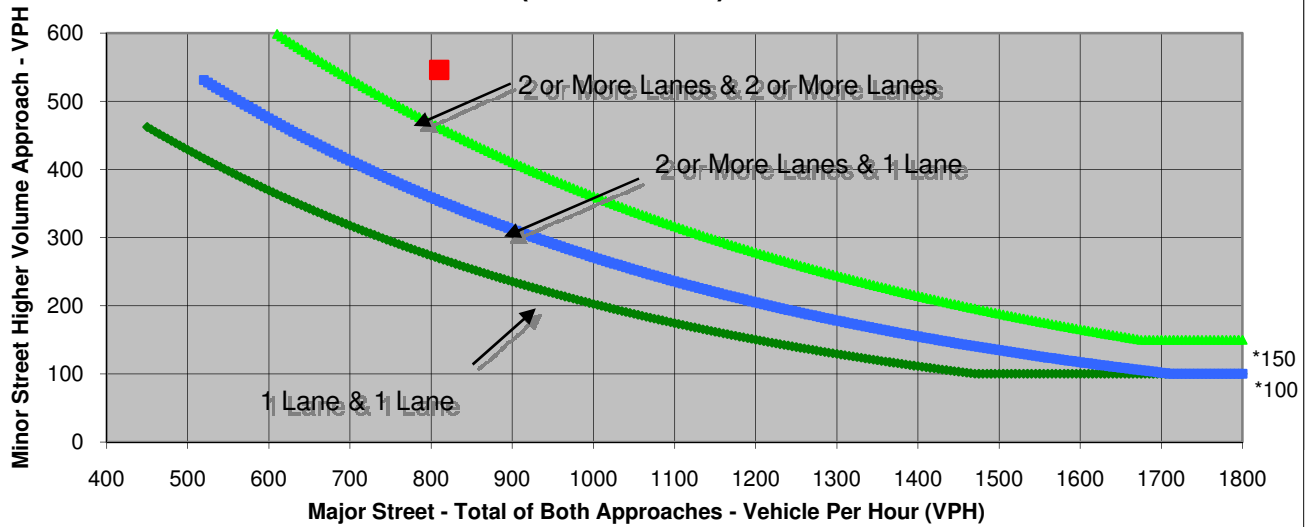
 Project **Elverta Specific Plan**
 Scenario **Existing Plus No Federal Action**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	2	8	536	7
Through	300	181	5	2
Right	8	311	5	4
Total	310	500	546	13

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	810	546	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Appendix C
Cumulative Conditions

Appendix C-1: Intersection Operations

Cumulative No Project Conditions

Cumulative Plus Preferred Alternative Conditions

Cumulative Plus Approved Specific Plan Conditions

Cumulative Plus Minimal Impact Conditions

Cumulative Plus No Federal Action Conditions



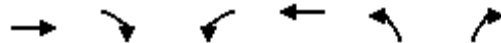
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑		↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.95	0.91		1.00	1.00
Frt		1.00	0.93		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	4731		1770	1583
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	4731		1770	1583
Volume (vph)	0	480	1270	1100	400	130
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	495	1309	1134	412	134
RTOR Reduction (vph)	0	0	190	0	0	28
Lane Group Flow (vph)	0	495	2253	0	412	106
Turn Type						Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		37.1	37.1		19.4	19.4
Effective Green, g (s)		37.1	37.1		19.4	19.4
Actuated g/C Ratio		0.58	0.58		0.30	0.30
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)		2036	2721		532	476
v/s Ratio Prot		0.14	c0.48		c0.23	
v/s Ratio Perm						0.07
v/c Ratio		0.24	1.02dr		0.77	0.22
Uniform Delay, d1		6.8	11.1		20.6	16.9
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	2.2		6.9	0.2
Delay (s)		6.8	13.3		27.5	17.1
Level of Service		A	B		C	B
Approach Delay (s)		6.8	13.3		25.0	
Approach LOS		A	B		C	

Intersection Summary

HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

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

c Critical Lane Group



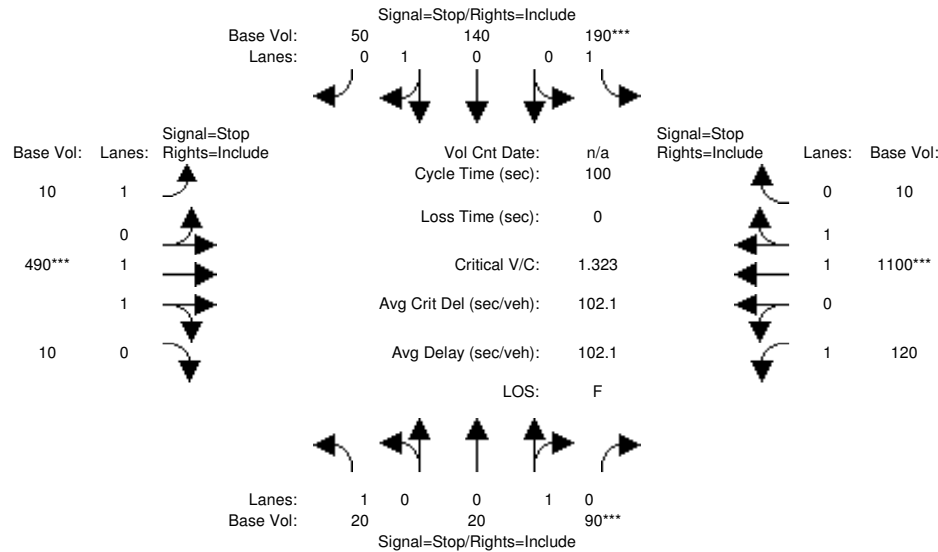
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	4973			5085	1770	1583
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	4973			5085	1770	1583
Volume (vph)	750	130	0	1970	400	530
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	773	134	0	2031	412	546
RTOR Reduction (vph)	35	0	0	0	0	76
Lane Group Flow (vph)	872	0	0	2031	412	470
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	28.1			28.1	20.7	20.7
Effective Green, g (s)	28.1			28.1	20.7	20.7
Actuated g/C Ratio	0.49			0.49	0.36	0.36
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)	2460			2516	645	577
v/s Ratio Prot	0.18			c0.40	0.23	
v/s Ratio Perm						c0.30
v/c Ratio	0.35			0.81	0.64	0.82
Uniform Delay, d1	8.8			12.1	15.0	16.3
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			2.0	2.1	8.7
Delay (s)	8.9			14.1	17.0	25.0
Level of Service	A			B	B	C
Approach Delay (s)	8.9			14.1	21.6	
Approach LOS	A			B	C	

Intersection Summary

HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
 2000 HCM 4-Way Stop (Base Volume Alternative)
 Cumulative No Project AM

Intersection #5: Elverta Road / East Levee Road



Street Name:	East Levee Road						Elverta Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	20	20	90	190	140	50	10	490	10	120	1100	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	20	90	190	140	50	10	490	10	120	1100	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	21	21	93	196	144	52	10	505	10	124	1134	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	21	93	196	144	52	10	505	10	124	1134	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	21	21	93	196	144	52	10	505	10	124	1134	10

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.18	0.82	1.00	0.74	0.26	1.00	1.96	0.04	1.00	1.98	0.02
Final Sat.:	349	71	321	385	306	109	363	758	15	397	857	8

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.06	0.29	0.29	0.51	0.47	0.47	0.03	0.67	0.67	0.31	1.32	1.32
Crit Moves:			****	****			****			****		
Delay/Veh:	13.2	14.9	14.9	20.8	18.3	18.3	12.7	28.0	27.9	15.3	184	183.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.2	14.9	14.9	20.8	18.3	18.3	12.7	28.0	27.9	15.3	184	183.7
LOS by Move:	B	B	B	C	C	C	B	D	D	C	F	F
ApproachDel:		14.6			19.6			27.7			167.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.6			19.6			27.7			167.7	
LOS by Appr:		B			C			D			F	
AllWayAvgQ:	0.1	0.4	0.4	0.9	0.8	0.8	0.0	1.7	1.7	0.4	20.8	20.8

Note: Queue reported is the number of cars per lane.
 Peak Hour Volume Signal Warrant Report [Urban]

 Intersection #5 Elverta Road / East Levee Road

 Base Volume Alternative: Peak Hour Warrant Met

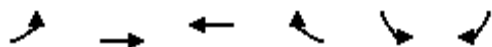
Approach:	North Bound	South Bound	East Bound	West Bound
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Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	1	0	0	1	0	0	1	0	1	0	1	0
Initial Vol:	20	20	90	190	140	50	10	490	10	120	1100	10
Major Street Volume:	1740											
Minor Approach Volume:	380											
Minor Approach Volume Threshold:	136 [less than minimum of 150]											

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

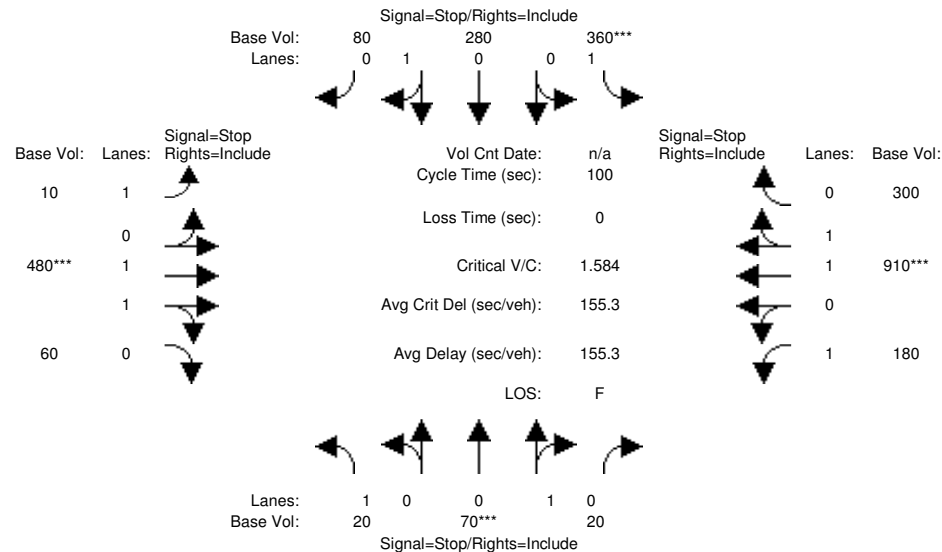


Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations	↶	↑↑↑	↑↑↑↷		↷	↶			
Sign Control		Free	Free		Stop				
Grade		0%	0%		0%				
Volume (veh/h)	90	630	1650	30	60	260			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97			
Hourly flow rate (vph)	93	649	1701	31	62	268			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type					None				
Median storage (veh)									
Upstream signal (ft)									
pX, platoon unblocked									
vC, conflicting volume	1732				2119	582			
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	1732				2119	582			
tC, single (s)	4.1				6.8	6.9			
tC, 2 stage (s)									
tF (s)	2.2				3.5	3.3			
p0 queue free %	74				0	41			
cM capacity (veh/h)	360				32	456			
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1	SB 2
Volume Total	93	216	216	216	680	680	371	62	268
Volume Left	93	0	0	0	0	0	0	62	0
Volume Right	0	0	0	0	0	0	31	0	268
cSH	360	1700	1700	1700	1700	1700	1700	32	456
Volume to Capacity	0.26	0.13	0.13	0.13	0.40	0.40	0.22	1.92	0.59
Queue Length 95th (ft)	25	0	0	0	0	0	0	175	92
Control Delay (s)	18.4	0.0	0.0	0.0	0.0	0.0	0.0	699.7	23.5
Lane LOS	C							F	C
Approach Delay (s)	2.3				0.0			150.3	
Approach LOS								F	
Intersection Summary									
Average Delay			18.3						
Intersection Capacity Utilization			55.3%		ICU Level of Service				B
Analysis Period (min)			15						

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Free		Free		Stop		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	170	590	10	10	900	10	10	10	10	10	10	330
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	175	608	10	10	928	10	10	10	10	10	10	340
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	938			619			1794	1923	309	1624	1923	469
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	938			619			1794	1923	309	1624	1923	469
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	76			99			20	79	98	78	79	37
cM capacity (veh/h)	726			958			13	50	687	46	50	541
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2		
Volume Total	175	405	213	10	619	320	10	21	10	351		
Volume Left	175	0	0	10	0	0	10	0	10	0		
Volume Right	0	0	10	0	0	10	0	10	0	340		
cSH	726	1700	1700	958	1700	1700	13	93	46	419		
Volume to Capacity	0.24	0.24	0.13	0.01	0.36	0.19	0.80	0.22	0.22	0.84		
Queue Length 95th (ft)	24	0	0	1	0	0	45	20	19	199		
Control Delay (s)	11.5	0.0	0.0	8.8	0.0	0.0	561.9	54.6	105.0	44.6		
Lane LOS	B			A			F	F	F	E		
Approach Delay (s)	2.5			0.1			223.7			46.3		
Approach LOS							F			E		
Intersection Summary												
Average Delay			12.1									
Intersection Capacity Utilization			65.6%		ICU Level of Service						C	
Analysis Period (min)			15									

Level Of Service Computation Report
 2000 HCM 4-Way Stop (Base Volume Alternative)
 Cumulative No Project AM

Intersection #8: Elverta Road / Elwyn Road



Street Name:	Elwyn Road						Elverta Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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Volume Module:

Base Vol:	20	70	20	360	280	80	10	480	60	180	910	300
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	70	20	360	280	80	10	480	60	180	910	300
User Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	20	70	20	360	280	80	10	480	60	180	910	300
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	20	70	20	360	280	80	10	480	60	180	910	300
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	20	70	20	360	280	80	10	480	60	180	910	300

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.78	0.22	1.00	0.78	0.22	1.00	1.78	0.22	1.00	1.50	0.50
Final Sat.:	314	260	74	376	314	90	306	587	74	349	574	194

Capacity Analysis Module:

Vol/Sat:	0.06	0.27	0.27	0.96	0.89	0.89	0.03	0.82	0.81	0.52	1.58	1.55
Crit Moves:	****			****			****			****		
Delay/Veh:	14.6	16.9	16.9	67.1	51.5	51.5	14.5	47.0	45.8	22.5	299	281.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.6	16.9	16.9	67.1	51.5	51.5	14.5	47.0	45.8	22.5	299	281.4
LOS by Move:	B	C	C	F	F	F	B	E	E	C	F	F
ApproachDel:	16.5			59.3			46.3			259.2		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	16.5			59.3			46.3			259.2		
LOS by Appr:	C			F			E			F		
AllWayAvgQ:	0.1	0.3	0.3	5.7	4.5	4.5	0.0	3.1	3.0	0.9	30.9	29.3

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #8 Elverta Road / Elwyn Road

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound	South Bound	East Bound	West Bound
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Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	1	0	0	1	0	0	1	0	1	0	1	0
Initial Vol:	20	70	20	360	280	80	10	480	60	180	910	300
Major Street Volume:	1940											
Minor Approach Volume:	720											
Minor Approach Volume Threshold:	89 [less than minimum of 150]											

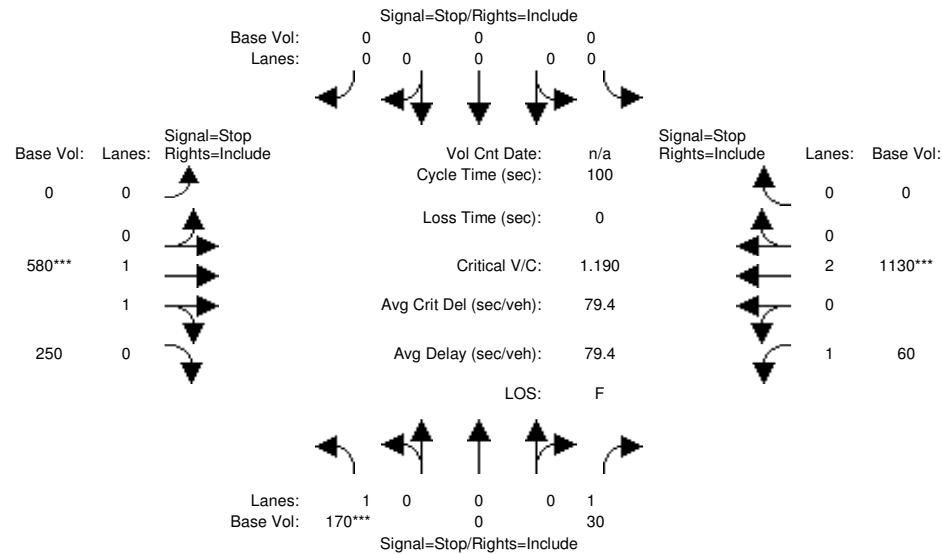
SIGNAL WARRANT DISCLAIMER

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The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Level Of Service Computation Report
 2000 HCM 4-Way Stop (Base Volume Alternative)
 Cumulative No Project AM

Intersection #9: Elverta Road / Rio Linda Boulevard



Street Name:	Rio Linda Boulevard						Elverta Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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Volume Module:

Base Vol:	170	0	30	0	0	0	0	580	250	60	1130	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	170	0	30	0	0	0	0	580	250	60	1130	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	175	0	31	0	0	0	0	598	258	62	1165	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	175	0	31	0	0	0	0	598	258	62	1165	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	175	0	31	0	0	0	0	598	258	62	1165	0

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.40	0.60	1.00	2.00	0.00
Final Sat.:	397	0	451	0	0	0	0	729	328	451	979	0

Capacity Analysis Module:

Vol/Sat:	0.44	xxxx	0.07	xxxx	xxxx	xxxx	xxxx	0.82	0.78	0.14	1.19	xxxx
Crit Moves:	****							****			****	
Delay/Veh:	18.1	0.0	10.9	0.0	0.0	0.0	0.0	33.7	29.0	11.8	129	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.1	0.0	10.9	0.0	0.0	0.0	0.0	33.7	29.0	11.8	129	0.0
LOS by Move:	C	*	B	*	*	*	*	D	D	B	F	*
ApproachDel:	17.0			xxxxxx				32.3			122.7	
Delay Adj:	1.00			xxxxxx				1.00			1.00	
ApprAdjDel:	17.0			xxxxxx				32.3			122.7	
LOS by Appr:	C			*				D			F	
AllWayAvgQ:	0.7	0.0	0.1	0.0	0.0	0.0	0.0	3.7	3.0	0.2	16.1	0.0

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #9 Elverta Road / Rio Linda Boulevard

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound	South Bound	East Bound	West Bound
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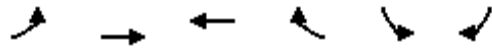
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign			
Lanes:	1	0	0	0	1	0	0	0	0	0	1	1	0
Initial Vol:	170	0	30	0	0	0	0	580	250	60	1130	0	
Major Street Volume:	2020												
Minor Approach Volume:	200												
Minor Approach Volume Threshold:	72 [less than minimum of 150]												

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑		↖	↑↑	↖	↗	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Volume (veh/h)	660	10	270	1190	10	80	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	680	10	278	1227	10	82	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume			691		1856	345	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			691		1856	345	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			69		77	87	
cM capacity (veh/h)			900		45	651	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	454	237	278	613	613	10	82
Volume Left	0	0	278	0	0	10	0
Volume Right	0	10	0	0	0	0	82
cSH	1700	1700	900	1700	1700	45	651
Volume to Capacity	0.27	0.14	0.31	0.36	0.36	0.23	0.13
Queue Length 95th (ft)	0	0	33	0	0	19	11
Control Delay (s)	0.0	0.0	10.8	0.0	0.0	107.2	11.3
Lane LOS			B			F	B
Approach Delay (s)	0.0		2.0			22.0	
Approach LOS						C	
Intersection Summary							
Average Delay			2.2				
Intersection Capacity Utilization			46.9%	ICU Level of Service		A	
Analysis Period (min)			15				



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	↗
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	70	670	960	10	10	500
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	72	691	990	10	10	515
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1000				1485	500
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1000				1485	500
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				90	0
cM capacity (veh/h)	688				103	516

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	72	345	345	660	340	10	515
Volume Left	72	0	0	0	0	10	0
Volume Right	0	0	0	0	10	0	515
cSH	688	1700	1700	1700	1700	103	516
Volume to Capacity	0.10	0.20	0.20	0.39	0.20	0.10	1.00
Queue Length 95th (ft)	9	0	0	0	0	8	346
Control Delay (s)	10.8	0.0	0.0	0.0	0.0	43.7	67.6
Lane LOS	B					E	F
Approach Delay (s)	1.0			0.0		67.1	
Approach LOS						F	

Intersection Summary			
Average Delay		15.8	
Intersection Capacity Utilization	64.5%		ICU Level of Service C
Analysis Period (min)		15	



































Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	50	110	230	30	10	20	10	190	10	10	10
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	10	52	113	237	31	10	21	10	196	10	10	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	175	278	227	31
Volume Left (vph)	10	237	21	10
Volume Right (vph)	113	10	196	10
Hadj (s)	-0.34	0.18	-0.47	-0.10
Departure Headway (s)	4.6	4.9	4.6	5.2
Degree Utilization, x	0.22	0.38	0.29	0.04
Capacity (veh/h)	730	693	715	602
Control Delay (s)	8.8	10.9	9.4	8.5
Approach Delay (s)	8.8	10.9	9.4	8.5
Approach LOS	A	B	A	A

Intersection Summary			
Delay	9.8		
HCM Level of Service	A		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	90	60	210	100	10	50	180	30	20	280	50
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	21	93	62	216	103	10	52	186	31	21	289	52
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	175	330	268	361								
Volume Left (vph)	21	216	52	21								
Volume Right (vph)	62	10	31	52								
Hadj (s)	-0.15	0.15	0.00	-0.04								
Departure Headway (s)	6.6	6.5	6.4	6.2								
Degree Utilization, x	0.32	0.59	0.48	0.62								
Capacity (veh/h)	463	508	508	538								
Control Delay (s)	12.7	18.4	15.1	18.6								
Approach Delay (s)	12.7	18.4	15.1	18.6								
Approach LOS	B	C	C	C								
Intersection Summary												
Delay			16.8									
HCM Level of Service			C									
Intersection Capacity Utilization			66.3%	ICU Level of Service	C							
Analysis Period (min)			15									

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	  					 	 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	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	5085	1583	1770	1863	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	5085	1583	1770	1863	1583	1770	3539	1583
Volume (vph)	120	570	210	150	950	90	100	240	190	140	480	50
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	124	588	216	155	979	93	103	247	196	144	495	52
RTOR Reduction (vph)	0	0	150	0	0	65	0	0	153	0	0	38
Lane Group Flow (vph)	124	588	66	155	979	28	103	247	43	144	495	14
Turn Type	Prot		Perm		Prot		Perm		Prot		Perm	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases			6			2			8			4
Actuated Green, G (s)	4.3	17.8	17.8	3.2	17.0	17.0	3.8	12.5	12.5	6.9	15.4	15.4
Effective Green, g (s)	5.1	18.9	18.9	4.7	18.5	18.5	5.3	13.6	13.6	8.4	16.7	16.7
Actuated g/C Ratio	0.08	0.31	0.31	0.08	0.30	0.30	0.09	0.22	0.22	0.14	0.27	0.27
Clearance Time (s)	4.8	5.1	5.1	5.5	5.5	5.5	5.5	5.1	5.1	5.5	5.3	5.3
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	284	1560	486	262	1527	475	152	411	349	241	959	429
v/s Ratio Prot	0.04	0.12		c0.05	c0.19		0.06	0.13		c0.08	c0.14	
v/s Ratio Perm			0.04			0.02			0.03			0.01
v/c Ratio	0.44	0.38	0.14	0.59	0.64	0.06	0.68	0.60	0.12	0.60	0.52	0.03
Uniform Delay, d1	26.9	16.7	15.4	27.5	18.7	15.3	27.3	21.6	19.2	25.0	19.0	16.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.0	2.4	0.7	0.0	9.0	1.7	0.1	2.6	0.2	0.0
Delay (s)	27.3	16.8	15.5	29.9	19.4	15.4	36.4	23.3	19.3	27.7	19.2	16.5
Level of Service	C	B	B	C	B	B	D	C	B	C	B	B
Approach Delay (s)		17.9			20.4			24.3			20.8	
Approach LOS		B			C			C			C	
Intersection Summary												
HCM Average Control Delay			20.4	HCM Level of Service				C				
HCM Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			61.6	Sum of lost time (s)				16.0				
Intersection Capacity Utilization			55.5%	ICU Level of Service				B				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕		
Sign Control	Free			Free			Stop			Stop			
Grade	0%			0%			0%			0%			
Volume (veh/h)	70	590	30	150	840	190	20	210	60	330	420	90	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	72	608	31	155	866	196	21	216	62	340	433	93	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type							None			None			
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1062			639			1820	2139	320	1892	2057	531	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1062			639			1820	2139	320	1892	2057	531	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	89			84			0	0	91	0	0	81	
cM capacity (veh/h)	652			941			0	36	676	0	41	493	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2			
Volume Total	72	405	234	155	577	485	21	278	340	526			
Volume Left	72	0	0	155	0	0	21	0	340	0			
Volume Right	0	0	31	0	0	196	0	62	0	93			
cSH	652	1700	1700	941	1700	1700	0	45	0	48			
Volume to Capacity	0.11	0.24	0.14	0.16	0.34	0.29	Err	6.12	Err	10.88			
Queue Length 95th (ft)	9	0	0	15	0	0	Err	Err	Err	Err			
Control Delay (s)	11.2	0.0	0.0	9.6	0.0	0.0	Err	Err	Err	Err			
Lane LOS	B			A			F	F	F	F			
Approach Delay (s)	1.1			1.2			Err	Err					
Approach LOS							F	F					
Intersection Summary													
Average Delay				Err									
Intersection Capacity Utilization				79.5%			ICU Level of Service			D			
Analysis Period (min)				15									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	230	10	40	30	10	10	10	50	10	10	290	310
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	237	10	41	31	10	10	10	52	10	10	299	320
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	289	52	72	629								
Volume Left (vph)	237	31	10	10								
Volume Right (vph)	41	10	10	320								
Hadj (s)	0.11	0.03	-0.02	-0.27								
Departure Headway (s)	5.9	6.4	5.9	4.8								
Degree Utilization, x	0.47	0.09	0.12	0.84								
Capacity (veh/h)	575	516	564	733								
Control Delay (s)	14.1	10.0	9.7	27.8								
Approach Delay (s)	14.1	10.0	9.7	27.8								
Approach LOS	B	A	A	D								
Intersection Summary												
Delay			21.9									
HCM Level of Service			C									
Intersection Capacity Utilization			64.0%	ICU Level of Service	B							
Analysis Period (min)			15									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	20	140	70	40	100	260
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	21	144	72	41	103	268
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	113				278	93
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	113				278	93
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				85	72
cM capacity (veh/h)	1476				702	964
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	165	113	371			
Volume Left	21	0	103			
Volume Right	0	41	268			
cSH	1476	1700	873			
Volume to Capacity	0.01	0.07	0.42			
Queue Length 95th (ft)	1	0	54			
Control Delay (s)	1.0	0.0	12.1			
Lane LOS	A		B			
Approach Delay (s)	1.0	0.0	12.1			
Approach LOS			B			
Intersection Summary						
Average Delay			7.2			
Intersection Capacity Utilization		43.4%		ICU Level of Service		A
Analysis Period (min)			15			



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↑↑↑	↗	↖	↑↑↑	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1770	1583
Volume (vph)	10	730	140	610	1140	60	290
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	753	144	629	1175	62	299
RTOR Reduction (vph)	0	0	87	0	0	0	254
Lane Group Flow (vph)	10	753	57	629	1175	62	45
Turn Type	Prot		Perm	Prot		Perm	
Protected Phases	1	6		4 5	2	3	
Permitted Phases			6				3
Actuated Green, G (s)	0.3	21.7	21.7	14.2	28.6	7.3	7.3
Effective Green, g (s)	1.0	22.8	22.8	14.2	29.7	8.7	8.7
Actuated g/C Ratio	0.02	0.40	0.40	0.25	0.51	0.15	0.15
Clearance Time (s)	4.7	5.1	5.1		5.1	5.4	5.4
Vehicle Extension (s)	1.0	4.9	4.9		4.9	1.0	1.0
Lane Grp Cap (vph)	31	2009	626	436	2617	267	239
v/s Ratio Prot	0.01	0.15		c0.36	c0.23	c0.04	
v/s Ratio Perm			0.04				0.03
v/c Ratio	0.32	0.37	0.09	1.44	0.45	0.23	0.19
Uniform Delay, d1	28.0	12.4	10.9	21.8	8.8	21.6	21.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.2	0.1	211.8	0.2	0.2	0.1
Delay (s)	30.2	12.6	11.1	233.6	9.1	21.7	21.6
Level of Service	C	B	B	F	A	C	C
Approach Delay (s)		12.6			87.4	21.6	
Approach LOS		B			F	C	

Intersection Summary

HCM Average Control Delay	57.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	↵
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3452		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3452		1770	3539	1770	1583
Volume (vph)	1010	200	360	1280	30	250
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1041	206	371	1320	31	258
RTOR Reduction (vph)	11	0	0	0	0	247
Lane Group Flow (vph)	1236	0	371	1320	31	11
Turn Type			Split		Perm	
Protected Phases	2		1	1	3	
Permitted Phases						3
Actuated Green, G (s)	55.3		57.4	57.4	6.6	6.6
Effective Green, g (s)	56.3		58.2	58.2	6.1	6.1
Actuated g/C Ratio	0.41		0.42	0.42	0.04	0.04
Clearance Time (s)	5.0		4.8	4.8	3.5	3.5
Vehicle Extension (s)	6.8		6.3	6.3	2.0	2.0
Lane Grp Cap (vph)	1403		744	1487	78	70
v/s Ratio Prot	c0.36		0.21	c0.37	c0.02	
v/s Ratio Perm						0.01
v/c Ratio	0.88		0.50	0.89	0.40	0.16
Uniform Delay, d1	38.0		29.4	37.1	64.4	63.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	7.9		1.6	7.7	1.2	0.4
Delay (s)	45.9		31.0	44.8	65.6	64.1
Level of Service	D		C	D	E	E
Approach Delay (s)	45.9			41.8	64.3	
Approach LOS	D			D	E	

Intersection Summary

HCM Average Control Delay	45.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	138.5	Sum of lost time (s)	17.9
Intersection Capacity Utilization	67.6%	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	↖↖	↗↗↗	↖	↖↖	↗↗↗	↖	↖	↗↗	↖	↖	↗↗	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	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	5085	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	5085	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	340	1080	40	410	1520	10	40	490	190	10	610	500
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	351	1113	41	423	1567	10	41	505	196	10	629	515
RTOR Reduction (vph)	0	0	27	0	0	6	0	0	91	0	0	287
Lane Group Flow (vph)	351	1113	14	423	1567	4	41	505	105	10	629	228
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	5	2		1	6		4	8	1	7	3	
Permitted Phases			2			6			8			3
Actuated Green, G (s)	8.9	20.1	20.1	10.1	20.9	20.9	3.6	17.9	28.0	0.7	13.4	13.4
Effective Green, g (s)	8.9	22.1	22.1	9.7	22.9	22.9	3.9	16.9	26.6	0.7	13.7	13.7
Actuated g/C Ratio	0.14	0.34	0.34	0.15	0.35	0.35	0.06	0.26	0.41	0.01	0.21	0.21
Clearance Time (s)	4.0	6.0	6.0	3.6	6.0	6.0	4.3	3.0	3.6	4.0	4.3	4.3
Vehicle Extension (s)	3.0	2.0	2.0	1.0	2.0	2.0	1.0	0.2	1.0	3.0	1.0	1.0
Lane Grp Cap (vph)	467	1718	535	509	1781	554	106	915	741	19	741	332
v/s Ratio Prot	0.10	0.22		c0.12	c0.31		0.02	c0.14	0.02	0.01	c0.18	
v/s Ratio Perm			0.01			0.00			0.05			0.14
v/c Ratio	0.75	0.65	0.03	0.83	0.88	0.01	0.39	0.55	0.14	0.53	0.85	0.69
Uniform Delay, d1	27.2	18.4	14.5	27.1	20.0	13.8	29.6	21.0	12.2	32.2	24.9	23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	0.6	0.0	10.6	5.2	0.0	0.9	0.4	0.0	23.9	8.6	4.7
Delay (s)	33.9	19.0	14.5	37.6	25.1	13.8	30.5	21.4	12.2	56.0	33.5	28.5
Level of Service	C	B	B	D	C	B	C	C	B	E	C	C
Approach Delay (s)		22.3			27.7			19.5			31.5	
Approach LOS		C			C			B			C	

Intersection Summary

HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	65.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.7%	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	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	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	5085	1583	3433	5085	1583	3433	5085	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	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	520	140	640	430	470	350	860	1270	90	120	1870	540
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	536	144	660	443	485	361	887	1309	93	124	1928	557
RTOR Reduction (vph)	0	0	211	0	0	97	0	0	50	0	0	165
Lane Group Flow (vph)	536	144	449	443	485	264	887	1309	43	124	1928	392
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.5	38.1	38.1	13.5	35.0	35.0	27.5	68.5	68.5	7.8	48.4	48.4
Effective Green, g (s)	18.0	39.7	39.7	15.0	36.7	36.7	29.0	70.0	70.0	9.3	50.3	50.3
Actuated g/C Ratio	0.12	0.26	0.26	0.10	0.24	0.24	0.19	0.47	0.47	0.06	0.34	0.34
Clearance Time (s)	5.5	5.6	5.6	5.5	5.7	5.7	5.5	5.5	5.5	5.5	5.9	5.9
Vehicle Extension (s)	1.0	5.0	5.0	1.0	5.9	5.9	1.0	5.4	5.4	1.0	5.4	5.4
Lane Grp Cap (vph)	412	1346	419	343	1244	387	664	2373	739	213	1705	531
v/s Ratio Prot	c0.16	0.03		0.13	0.10		c0.26	0.26		0.04	c0.38	
v/s Ratio Perm			c0.28			0.17			0.03			0.25
v/c Ratio	1.30	0.11	1.07	1.29	0.39	0.68	1.34	0.55	0.06	0.58	1.13	0.74
Uniform Delay, d1	66.0	41.7	55.1	67.5	47.3	51.3	60.5	28.7	21.9	68.5	49.9	44.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	152.2	0.1	64.4	151.3	0.6	7.2	161.2	0.5	0.1	2.6	66.9	6.8
Delay (s)	218.2	41.8	119.5	218.8	47.9	58.6	221.7	29.3	22.0	71.1	116.7	50.8
Level of Service	F	D	F	F	D	E	F	C	C	E	F	D
Approach Delay (s)		150.7			109.6			103.5			100.5	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	111.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
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	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	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	5085	1583	3433	5085	1583	3433	5085	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	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	330	670	270	270	1000	280	380	930	50	270	1750	470
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	340	691	278	278	1031	289	392	959	52	278	1804	485
RTOR Reduction (vph)	0	0	167	0	0	177	0	0	30	0	0	168
Lane Group Flow (vph)	340	691	111	278	1031	112	392	959	22	278	1804	317
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.9	31.4	31.4	14.0	30.7	30.7	17.0	56.9	56.9	14.0	53.9	53.9
Effective Green, g (s)	16.4	33.1	33.1	15.5	32.2	32.2	18.5	58.5	58.5	15.5	55.5	55.5
Actuated g/C Ratio	0.12	0.24	0.24	0.11	0.23	0.23	0.13	0.42	0.42	0.11	0.40	0.40
Clearance Time (s)	5.5	5.7	5.7	5.5	5.5	5.5	5.5	5.6	5.6	5.5	5.6	5.6
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.9	4.9	1.0	4.9	4.9	1.0	4.9	4.9
Lane Grp Cap (vph)	406	1214	378	384	1181	368	458	2146	668	384	2036	634
v/s Ratio Prot	c0.10	0.14		0.08	c0.20		c0.11	c0.19		0.08	c0.35	
v/s Ratio Perm			0.07			0.07			0.01			0.20
v/c Ratio	0.84	0.57	0.29	0.72	0.87	0.31	0.86	0.45	0.03	0.72	0.89	0.50
Uniform Delay, d1	59.8	46.5	43.2	59.5	51.2	44.0	58.7	28.5	23.5	59.5	38.6	31.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.4	1.0	0.9	5.6	7.9	1.0	14.0	0.3	0.0	5.6	5.4	1.2
Delay (s)	73.2	47.5	44.0	65.1	59.1	44.9	72.8	28.8	23.5	65.1	44.0	32.4
Level of Service	E	D	D	E	E	D	E	C	C	E	D	C
Approach Delay (s)		53.4			57.6			40.9			44.1	
Approach LOS		D			E			D			D	

Intersection Summary

HCM Average Control Delay	48.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	138.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



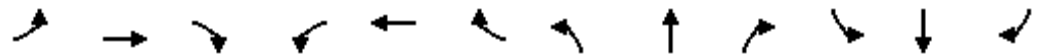
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑↑	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.86	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	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	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	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Volume (vph)	130	550	810	90	350	170	370	1100	50	140	1810	110
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	134	567	835	93	361	175	381	1134	52	144	1866	113
RTOR Reduction (vph)	0	0	170	0	0	110	0	0	35	0	0	68
Lane Group Flow (vph)	134	567	665	93	361	65	381	1134	17	144	1866	45
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.2	44.0	44.0	7.0	43.8	43.8	14.0	37.0	37.0	12.0	35.0	35.0
Effective Green, g (s)	8.2	46.0	46.0	7.0	44.8	44.8	14.0	39.0	39.0	12.0	37.0	37.0
Actuated g/C Ratio	0.07	0.38	0.38	0.06	0.37	0.37	0.12	0.32	0.32	0.10	0.31	0.31
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	2.0	3.4	3.4	2.0	4.1	4.1
Lane Grp Cap (vph)	235	1357	607	103	1898	591	401	1653	514	177	1976	488
v/s Ratio Prot	0.04	0.16		c0.05	0.07		c0.11	0.22		0.08	c0.29	
v/s Ratio Perm			c0.42			0.04			0.01			0.03
v/c Ratio	0.57	0.42	1.10	0.90	0.19	0.11	0.95	0.69	0.03	0.81	0.94	0.09
Uniform Delay, d1	54.2	27.2	37.0	56.2	25.4	24.6	52.7	35.2	27.6	52.9	40.5	29.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.4	65.6	57.5	0.1	0.2	32.0	2.3	0.1	22.9	10.8	0.4
Delay (s)	56.3	27.5	102.6	113.7	25.5	24.8	84.7	37.5	27.8	75.8	51.3	29.9
Level of Service	E	C	F	F	C	C	F	D	C	E	D	C
Approach Delay (s)		70.8			38.3			48.7			51.8	
Approach LOS		E			D			D			D	

Intersection Summary

HCM Average Control Delay	54.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↓					↑		↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0		4.0
Lane Util. Factor		0.95			0.95					1.00		1.00
Frt		0.98			0.95					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		3463			3351					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		3463			3351					1770		1583
Volume (vph)	0	180	30	0	1200	660	0	0	0	40	0	610
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	186	31	0	1237	680	0	0	0	41	0	629
RTOR Reduction (vph)	0	13	0	0	75	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	204	0	0	1842	0	0	0	0	41	0	598
Turn Type										Prot		custom
Protected Phases		4			8					2		
Permitted Phases												2
Actuated Green, G (s)		54.0			54.0					38.0		38.0
Effective Green, g (s)		54.0			54.0					38.0		38.0
Actuated g/C Ratio		0.54			0.54					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)		1870			1810					673		602
v/s Ratio Prot		0.06			c0.55					0.02		
v/s Ratio Perm												c0.38
v/c Ratio		0.11			1.02					0.06		0.99
Uniform Delay, d1		11.2			23.0					19.7		30.9
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		0.0			25.8					0.0		34.8
Delay (s)		11.3			48.8					19.7		65.7
Level of Service		B			D					B		E
Approach Delay (s)		11.3			48.8			0.0			62.9	
Approach LOS		B			D			A			E	
Intersection Summary												
HCM Average Control Delay			49.2									HCM Level of Service D
HCM Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			100.0									Sum of lost time (s) 8.0
Intersection Capacity Utilization			98.7%									ICU Level of Service F
Analysis Period (min)			15									
c Critical Lane Group												



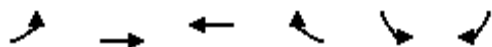
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↓		↑		↑			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0		4.0			
Lane Util. Factor		0.95			0.95		1.00		1.00			
Frt		0.96			0.99		1.00		0.85			
Flt Protected		1.00			1.00		0.95		1.00			
Satd. Flow (prot)		3394			3512		1770		1583			
Flt Permitted		1.00			1.00		0.95		1.00			
Satd. Flow (perm)		3394			3512		1770		1583			
Volume (vph)	0	160	60	0	1500	80	360	0	300	0	0	0
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	165	62	0	1546	82	371	0	309	0	0	0
RTOR Reduction (vph)	0	28	0	0	6	0	0	0	218	0	0	0
Lane Group Flow (vph)	0	199	0	0	1622	0	371	0	91	0	0	0
Turn Type							Prot		custom			
Protected Phases		4			8		2					
Permitted Phases									2			
Actuated Green, G (s)		28.5			28.5		15.3		15.3			
Effective Green, g (s)		28.5			28.5		15.3		15.3			
Actuated g/C Ratio		0.55			0.55		0.30		0.30			
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)		1867			1932		523		468			
v/s Ratio Prot		0.06			c0.46		c0.21					
v/s Ratio Perm									0.06			
v/c Ratio		0.11			0.84		0.71		0.20			
Uniform Delay, d1		5.6			9.7		16.3		13.6			
Progression Factor		1.00			1.00		1.00		1.00			
Incremental Delay, d2		0.0			3.4		4.4		0.2			
Delay (s)		5.6			13.1		20.7		13.9			
Level of Service		A			B		C		B			
Approach Delay (s)		5.6			13.1			17.6			0.0	
Approach LOS		A			B			B			A	
Intersection Summary												
HCM Average Control Delay			13.6				HCM Level of Service		B			
HCM Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			51.8				Sum of lost time (s)		8.0			
Intersection Capacity Utilization			70.6%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												



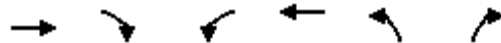
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑					↘		↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0		4.0
Lane Util. Factor		0.91			0.91					1.00		1.00
Frt		0.95			0.92					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		4815			4655					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		4815			4655					1770		1583
Volume (vph)	0	110	60	0	580	750	0	0	0	320	0	280
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	113	62	0	598	773	0	0	0	330	0	289
RTOR Reduction (vph)	0	37	0	0	416	0	0	0	0	0	0	57
Lane Group Flow (vph)	0	138	0	0	955	0	0	0	0	330	0	232
Turn Type										Prot		custom
Protected Phases		4			8					1		
Permitted Phases												1
Actuated Green, G (s)		13.8			13.8					13.1		13.1
Effective Green, g (s)		13.8			13.8					13.1		13.1
Actuated g/C Ratio		0.40			0.40					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)		1904			1841					664		594
v/s Ratio Prot		0.03			c0.21					c0.19		
v/s Ratio Perm												0.15
v/c Ratio		0.07			0.52					0.50		0.39
Uniform Delay, d1		6.6			8.0					8.4		8.0
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		0.0			0.2					0.6		0.4
Delay (s)		6.6			8.3					9.0		8.4
Level of Service		A			A					A		A
Approach Delay (s)		6.6			8.3			0.0			8.7	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM Average Control Delay			8.3		HCM Level of Service					A		
HCM Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			34.9		Sum of lost time (s)					8.0		
Intersection Capacity Utilization			52.5%		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		↑↑↑			↑↑↑		↑		↑			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0		4.0			
Lane Util. Factor		0.91			0.91		1.00		1.00			
Frt		0.99			0.99		1.00		0.85			
Flt Protected		1.00			1.00		0.95		1.00			
Satd. Flow (prot)		5049			5031		1770		1583			
Flt Permitted		1.00			1.00		0.95		1.00			
Satd. Flow (perm)		5049			5031		1770		1583			
Volume (vph)	0	410	20	0	1180	90	150	0	600	0	0	0
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	423	21	0	1216	93	155	0	619	0	0	0
RTOR Reduction (vph)	0	10	0	0	16	0	0	0	112	0	0	0
Lane Group Flow (vph)	0	434	0	0	1293	0	155	0	507	0	0	0
Turn Type							Prot		custom			
Protected Phases		4			8		2					
Permitted Phases									2			
Actuated Green, G (s)		15.3			15.3		17.0		17.0			
Effective Green, g (s)		15.3			15.3		17.0		17.0			
Actuated g/C Ratio		0.38			0.38		0.42		0.42			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1917			1910		747		668			
v/s Ratio Prot		0.09			0.26		0.09					
v/s Ratio Perm									0.32			
v/c Ratio		0.23			0.68		0.21		0.76			
Uniform Delay, d1		8.5			10.4		7.4		9.9			
Progression Factor		1.00			1.00		1.00		1.00			
Incremental Delay, d2		0.1			1.0		0.1		5.0			
Delay (s)		8.5			11.4		7.5		14.9			
Level of Service		A			B		A		B			
Approach Delay (s)		8.5			11.4			13.4			0.0	
Approach LOS		A			B			B			A	
Intersection Summary												
HCM Average Control Delay			11.5				HCM Level of Service		B			
HCM Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			40.3				Sum of lost time (s)		8.0			
Intersection Capacity Utilization			52.2%				ICU Level of Service		A			
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↑↑		↘	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.91		1.00	1.00
Frt		1.00	0.93		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1863	4712		1770	1583
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1863	4712		1770	1583
Volume (vph)	0	900	690	660	380	160
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	928	711	680	392	165
RTOR Reduction (vph)	0	0	220	0	0	115
Lane Group Flow (vph)	0	928	1171	0	392	50
Turn Type						Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		33.8	33.8		18.0	18.0
Effective Green, g (s)		33.8	33.8		18.0	18.0
Actuated g/C Ratio		0.57	0.57		0.30	0.30
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)		1053	2663		533	476
v/s Ratio Prot		c0.50	0.25		c0.22	
v/s Ratio Perm						0.03
v/c Ratio		0.88	0.44		0.74	0.10
Uniform Delay, d1		11.3	7.5		18.8	15.1
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		8.8	0.1		5.2	0.1
Delay (s)		20.1	7.6		24.0	15.2
Level of Service		C	A		C	B
Approach Delay (s)		20.1	7.6		21.4	
Approach LOS		C	A		C	
Intersection Summary						
HCM Average Control Delay			14.3		HCM Level of Service	B
HCM Volume to Capacity ratio			0.83			
Actuated Cycle Length (s)			59.8		Sum of lost time (s)	8.0
Intersection Capacity Utilization			75.1%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						



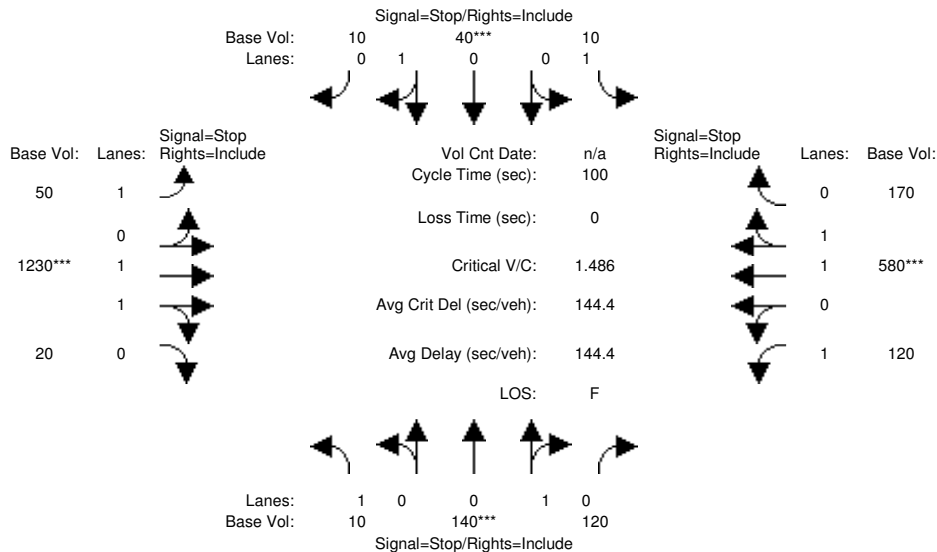
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	4996			5085	1770	1583
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	4996			5085	1770	1583
Volume (vph)	1130	150	0	1060	290	1350
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1165	155	0	1093	299	1392
RTOR Reduction (vph)	26	0	0	0	0	0
Lane Group Flow (vph)	1294	0	0	1093	299	1392
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	16.0			16.0	41.0	41.0
Effective Green, g (s)	16.0			16.0	41.0	41.0
Actuated g/C Ratio	0.25			0.25	0.63	0.63
Clearance Time (s)	4.0			4.0	4.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1230			1252	1116	999
v/s Ratio Prot	c0.26			0.21	0.17	
v/s Ratio Perm						c0.88
v/c Ratio	1.05			0.87	0.27	1.39
Uniform Delay, d1	24.5			23.5	5.3	12.0
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	40.4			7.0	0.1	183.0
Delay (s)	64.9			30.5	5.5	195.0
Level of Service	E			C	A	F
Approach Delay (s)	64.9			30.5	161.5	
Approach LOS	E			C	F	

Intersection Summary

HCM Average Control Delay	95.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	115.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
 2000 HCM 4-Way Stop (Base Volume Alternative)
 Cumulative No Project PM

Intersection #5: Elverta Road / East Levee Road



Street Name:	East Levee Road						Elverta Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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Volume Module:

Base Vol:	10	140	120	10	40	10	50	1230	20	120	580	170
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	140	120	10	40	10	50	1230	20	120	580	170
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	10	144	124	10	41	10	52	1268	21	124	598	175
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	144	124	10	41	10	52	1268	21	124	598	175
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	10	144	124	10	41	10	52	1268	21	124	598	175

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.54	0.46	1.00	0.80	0.20	1.00	1.97	0.03	1.00	1.55	0.45
Final Sat.:	375	223	191	344	294	74	399	853	14	403	675	203

Capacity Analysis Module:

Vol/Sat:	0.03	0.65	0.65	0.03	0.14	0.14	0.13	1.49	1.48	0.31	0.89	0.87
Crit Moves:	****			****			****			****		
Delay/Veh:	12.3	25.2	25.2	13.0	13.6	13.6	12.8	253	251.6	15.4	48.1	43.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.3	25.2	25.2	13.0	13.6	13.6	12.8	253	251.6	15.4	48.1	43.7
LOS by Move:	B	D	D	B	B	B	B	F	F	C	E	E
ApproachDel:	24.7			13.5			243.3			42.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	24.7			13.5			243.3			42.7		
LOS by Appr:	C			B			F			E		
AllWayAvgQ:	0.0	1.6	1.6	0.0	0.1	0.1	0.1	29.2	29.0	0.4	4.7	4.1

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #5 Elverta Road / East Levee Road

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound	South Bound	East Bound	West Bound
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Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	1	0	0	1	0	0	1	0	1	0	1	0
Initial Vol:	10	140	120	10	40	10	50	1230	20	120	580	170
Major Street Volume:	2170											
Minor Approach Volume:	270											
Minor Approach Volume Threshold:	41 [less than minimum of 150]											

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑↑	↑↑↑↘		↘	↗
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	240	1860	830	90	40	140
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	247	1918	856	93	41	144
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	948				2036	332
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	948				2036	332
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	66				0	78
cM capacity (veh/h)	720				32	664

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1	SB 2
Volume Total	247	639	639	639	342	342	264	41	144
Volume Left	247	0	0	0	0	0	0	41	0
Volume Right	0	0	0	0	0	0	93	0	144
cSH	720	1700	1700	1700	1700	1700	1700	32	664
Volume to Capacity	0.34	0.38	0.38	0.38	0.20	0.20	0.16	1.28	0.22
Queue Length 95th (ft)	38	0	0	0	0	0	0	113	21
Control Delay (s)	12.6	0.0	0.0	0.0	0.0	0.0	0.0	438.8	11.9
Lane LOS	B							F	B
Approach Delay (s)	1.4				0.0			106.8	
Approach LOS								F	

Intersection Summary	
Average Delay	7.0
Intersection Capacity Utilization	45.9%
ICU Level of Service	A
Analysis Period (min)	15



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Sign Control	Free		Free		Free		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	310	1040	10	10	600	10	10	10	10	10	10	260
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	320	1072	10	10	619	10	10	10	10	10	10	268
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	629			1082			2320	2366	541	1835	2366	314
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	629			1082			2320	2366	541	1835	2366	314
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	66			98			0	54	98	54	54	61
cM capacity (veh/h)	949			640			6	23	485	22	23	681

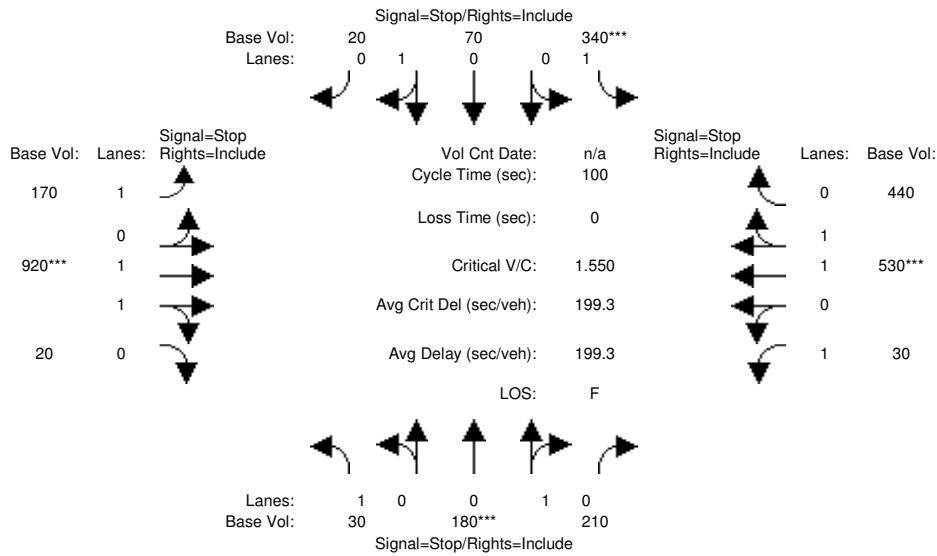
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	320	715	368	10	412	216	10	21	10	278
Volume Left	320	0	0	10	0	0	10	0	10	0
Volume Right	0	0	10	0	0	10	0	10	0	268
cSH	949	1700	1700	640	1700	1700	6	43	22	328
Volume to Capacity	0.34	0.42	0.22	0.02	0.24	0.13	1.75	0.48	0.46	0.85
Queue Length 95th (ft)	37	0	0	1	0	0	57	43	34	190
Control Delay (s)	10.7	0.0	0.0	10.7	0.0	0.0	1502.8	148.9	265.7	55.3
Lane LOS	B			B			F	F	F	F
Approach Delay (s)	2.4			0.2			600.2	62.8		
Approach LOS							F	F		

Intersection Summary

Average Delay	17.0	
Intersection Capacity Utilization	60.7%	ICU Level of Service
Analysis Period (min)	15	

Level Of Service Computation Report
 2000 HCM 4-Way Stop (Base Volume Alternative)
 Cumulative No Project PM

Intersection #8: Elverta Road / Elwyn Road



Street Name:	Elwyn Road						Elverta Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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Volume Module:

Base Vol:	30	180	210	340	70	20	170	920	20	30	530	440
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	180	210	340	70	20	170	920	20	30	530	440
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	31	186	216	351	72	21	175	948	21	31	546	454
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	186	216	351	72	21	175	948	21	31	546	454
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	31	186	216	351	72	21	175	948	21	31	546	454

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.46	0.54	1.00	0.78	0.22	1.00	1.96	0.04	1.00	1.09	0.91
Final Sat.:	322	162	189	326	269	77	317	650	14	307	352	309

Capacity Analysis Module:

Vol/Sat:	0.10	1.14	1.14	1.08	0.27	0.27	0.55	1.46	1.46	0.10	1.55	1.47
Crit Moves:	****			****			****			****		
Delay/Veh:	15.0	125	125.2	105.1	16.8	16.8	27.2	249	248.3	15.7	288	252.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.0	125	125.2	105.1	16.8	16.8	27.2	249	248.3	15.7	288	252.4
LOS by Move:	C	F	F	F	C	C	D	F	F	C	F	F
ApproachDel:	117.3			86.6			215.2			264.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	117.3			86.6			215.2			264.4		
LOS by Appr:	F			F			F			F		
AllWayAvgQ:	0.1	11.0	11.0	8.3	0.4	0.4	1.2	21.8	21.7	0.1	24.8	22.6

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

 Intersection #8 Elverta Road / Elwyn Road

 Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound	South Bound	East Bound	West Bound
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Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	1	0	0	1	0	0	1	0	1	0	1	0
Initial Vol:	30	180	210	340	70	20	170	920	20	30	530	440
Major Street Volume:	2110											
Minor Approach Volume:	430											
Minor Approach Volume Threshold:	53 [less than minimum of 150]											

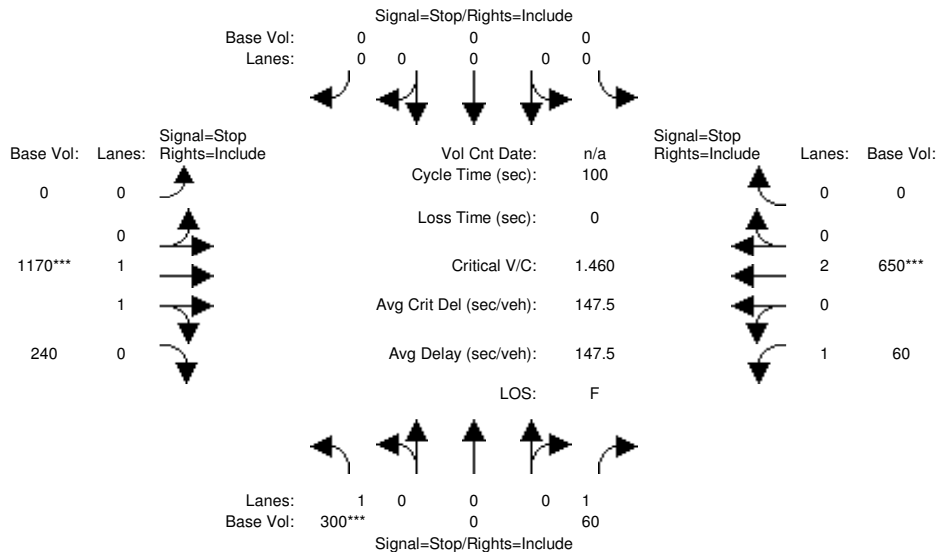
SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Level Of Service Computation Report
 2000 HCM 4-Way Stop (Base Volume Alternative)
 Cumulative No Project PM

Intersection #9: Elverta Road / Rio Linda Boulevard



Street Name:	Rio Linda Boulevard						Elverta Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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Volume Module:

Base Vol:	300	0	60	0	0	0	0	1170	240	60	650	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	300	0	60	0	0	0	0	1170	240	60	650	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	309	0	62	0	0	0	0	1206	247	62	670	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	309	0	62	0	0	0	0	1206	247	62	670	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	309	0	62	0	0	0	0	1206	247	62	670	0

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.66	0.34	1.00	2.00	0.00
Final Sat.:	406	0	462	0	0	0	0	826	173	408	867	0

Capacity Analysis Module:

Vol/Sat:	0.76	xxxx	0.13	xxxx	xxxx	xxxx	xxxx	1.46	1.43	0.15	0.77	xxxx
Crit Moves:	****							****			****	
Delay/Veh:	34.1	0.0	11.5	0.0	0.0	0.0	0.0	238	225.1	13.0	33.7	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.1	0.0	11.5	0.0	0.0	0.0	0.0	238	225.1	13.0	33.7	0.0
LOS by Move:	D	*	B	*	*	*	*	F	F	B	D	*
ApproachDel:				30.3	xxxxxx			235.7			31.9	
Delay Adj:				1.00	xxxxxx			1.00			1.00	
ApprAdjDel:				30.3	xxxxxx			235.7			31.9	
LOS by Appr:				D	*			F			D	
AllWayAvgQ:	2.5	0.0	0.1	0.0	0.0	0.0	0.0	32.3	30.4	0.2	2.7	0.0

Note: Queue reported is the number of cars per lane.
 Peak Hour Volume Signal Warrant Report [Urban]

 Intersection #9 Elverta Road / Rio Linda Boulevard

 Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound	South Bound	East Bound	West Bound
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Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign			
Lanes:	1	0	0	0	1	0	0	0	0	0	1	1	0
Initial Vol:	300	0	60	0	0	0	0	1170	240	60	650	0	
Major Street Volume:	2120												
Minor Approach Volume:	360												
Minor Approach Volume Threshold:	51 [less than minimum of 150]												

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

	→	↘	↙	←	↖	↗	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑		↘	↑↑	↘	↗	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Volume (veh/h)	1250	10	110	770	10	230	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	1289	10	113	794	10	237	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume			1299		1918	649	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			1299		1918	649	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			79		78	42	
cM capacity (veh/h)			529		47	412	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	859	440	113	397	397	10	237
Volume Left	0	0	113	0	0	10	0
Volume Right	0	10	0	0	0	0	237
cSH	1700	1700	529	1700	1700	47	412
Volume to Capacity	0.51	0.26	0.21	0.23	0.23	0.22	0.58
Queue Length 95th (ft)	0	0	20	0	0	18	88
Control Delay (s)	0.0	0.0	13.6	0.0	0.0	103.1	24.9
Lane LOS			B			F	C
Approach Delay (s)	0.0		1.7			28.2	
Approach LOS						D	
Intersection Summary							
Average Delay			3.5				
Intersection Capacity Utilization			55.8%		ICU Level of Service		B
Analysis Period (min)			15				



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑	↑↑↗		↙	↘
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	440	1040	770	10	10	120
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	454	1072	794	10	10	124
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	804				2242	402
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	804				2242	402
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	44				35	79
cM capacity (veh/h)	816				16	598

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	454	536	536	529	275	10	124
Volume Left	454	0	0	0	0	10	0
Volume Right	0	0	0	0	10	0	124
cSH	816	1700	1700	1700	1700	16	598
Volume to Capacity	0.56	0.32	0.32	0.31	0.16	0.65	0.21
Queue Length 95th (ft)	87	0	0	0	0	41	19
Control Delay (s)	14.8	0.0	0.0	0.0	0.0	424.1	12.6
Lane LOS	B					F	B
Approach Delay (s)	4.4			0.0		44.2	
Approach LOS						E	

Intersection Summary			
Average Delay		5.1	
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	40	50	200	50	10	110	10	210	10	10	10
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	10	41	52	206	52	10	113	10	216	10	10	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	103	268	340	31
Volume Left (vph)	10	206	113	10
Volume Right (vph)	52	10	216	10
Hadj (s)	-0.25	0.16	-0.28	-0.10
Departure Headway (s)	5.0	5.1	4.6	5.2
Degree Utilization, x	0.14	0.38	0.44	0.05
Capacity (veh/h)	654	660	737	607
Control Delay (s)	8.8	11.2	11.2	8.5
Approach Delay (s)	8.8	11.2	11.2	8.5
Approach LOS	A	B	B	A

Intersection Summary			
Delay		10.8	
HCM Level of Service		B	
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	110	50	80	120	20	70	280	210	10	240	10
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	31	113	52	82	124	21	72	289	216	10	247	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	196	227	577	268
Volume Left (vph)	31	82	72	10
Volume Right (vph)	52	21	216	10
Hadj (s)	-0.09	0.05	-0.17	0.02
Departure Headway (s)	7.1	7.1	5.9	6.7
Degree Utilization, x	0.39	0.45	0.94	0.50
Capacity (veh/h)	473	477	603	507
Control Delay (s)	14.5	15.9	48.0	16.1
Approach Delay (s)	14.5	15.9	48.0	16.1
Approach LOS	B	C	E	C

Intersection Summary			
Delay		30.4	
HCM Level of Service		D	
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	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	5085	1583	1770	1863	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	5085	1583	1770	1863	1583	1770	3539	1583
Volume (vph)	70	1250	190	230	750	170	150	470	110	110	390	20
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	72	1289	196	237	773	175	155	485	113	113	402	21
RTOR Reduction (vph)	0	0	130	0	0	113	0	0	79	0	0	14
Lane Group Flow (vph)	72	1289	66	237	773	62	155	485	34	113	402	7
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7		4
Permitted Phases			6			2			8			4
Actuated Green, G (s)	2.3	24.3	24.3	3.1	25.4	25.4	3.1	21.4	21.4	5.4	23.5	23.5
Effective Green, g (s)	3.1	25.4	25.4	4.6	26.9	26.9	4.6	22.5	22.5	6.9	24.8	24.8
Actuated g/C Ratio	0.04	0.34	0.34	0.06	0.36	0.36	0.06	0.30	0.30	0.09	0.33	0.33
Clearance Time (s)	4.8	5.1	5.1	5.5	5.5	5.5	5.5	5.1	5.1	5.5	5.3	5.3
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	141	1713	533	209	1814	565	108	556	472	162	1164	521
v/s Ratio Prot	0.02	c0.25		c0.07	0.15		c0.09	c0.26		0.06	0.11	
v/s Ratio Perm			0.04			0.04			0.02			0.00
v/c Ratio	0.51	0.75	0.12	1.13	0.43	0.11	1.44	0.87	0.07	0.70	0.35	0.01
Uniform Delay, d1	35.4	22.2	17.3	35.4	18.4	16.2	35.4	25.1	19.0	33.2	19.2	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	1.7	0.0	103.0	0.1	0.0	240.6	13.7	0.0	10.1	0.1	0.0
Delay (s)	36.7	23.9	17.3	138.4	18.5	16.3	276.0	38.8	19.0	43.3	19.2	17.1
Level of Service	D	C	B	F	B	B	F	D	B	D	B	B
Approach Delay (s)		23.7			42.1			84.6			24.2	
Approach LOS		C			D			F			C	
Intersection Summary												
HCM Average Control Delay			40.6				HCM Level of Service				D	
HCM Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			75.4				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			74.9%				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	↖	↕		↖	↕		↖	↕		↖	↕	
Sign Control	Free		Free		Stop		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	90	920	30	90	670	350	30	380	140	280	220	80
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	93	948	31	93	691	361	31	392	144	289	227	82
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1052			979			1876	2387	490	2057	2222	526
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1052			979			1876	2387	490	2057	2222	526
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	86			87			0	0	72	0	0	83
cM capacity (veh/h)	658			700			0	25	524	0	32	497

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	93	632	347	93	460	591	31	536	289	309
Volume Left	93	0	0	93	0	0	31	0	289	0
Volume Right	0	0	31	0	0	361	0	144	0	82
cSH	658	1700	1700	700	1700	1700	0	34	0	43
Volume to Capacity	0.14	0.37	0.20	0.13	0.27	0.35	Err	15.93	Err	7.27
Queue Length 95th (ft)	12	0	0	11	0	0	Err	Err	Err	Err
Control Delay (s)	11.4	0.0	0.0	10.9	0.0	0.0	Err	Err	Err	Err
Lane LOS	B			B			F	F	F	F
Approach Delay (s)	1.0			0.9			Err	Err		
Approach LOS							F	F		

Intersection Summary

Average Delay	Err	
Intersection Capacity Utilization	92.1%	ICU Level of Service
Analysis Period (min)	15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	290	10	10	10	10	10	30	270	30	10	110	240
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	299	10	10	10	10	10	31	278	31	10	113	247
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	320	31	340	371								
Volume Left (vph)	299	10	31	10								
Volume Right (vph)	10	10	31	247								
Hadj (s)	0.20	-0.10	0.00	-0.36								
Departure Headway (s)	6.1	6.5	5.6	5.2								
Degree Utilization, x	0.54	0.06	0.53	0.54								
Capacity (veh/h)	545	432	602	650								
Control Delay (s)	15.9	9.9	14.8	14.2								
Approach Delay (s)	15.9	9.9	14.8	14.2								
Approach LOS	C	A	B	B								
Intersection Summary												
Delay			14.8									
HCM Level of Service			B									
Intersection Capacity Utilization			60.9%	ICU Level of Service	B							
Analysis Period (min)			15									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	230	130	160	100	60	70
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	237	134	165	103	62	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	268				825	216
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	268				825	216
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	82				78	91
cM capacity (veh/h)	1296				280	823
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	371	268	134			
Volume Left	237	0	62			
Volume Right	0	103	72			
cSH	1296	1700	434			
Volume to Capacity	0.18	0.16	0.31			
Queue Length 95th (ft)	17	0	32			
Control Delay (s)	6.0	0.0	17.0			
Lane LOS	A		C			
Approach Delay (s)	6.0	0.0	17.0			
Approach LOS			C			
Intersection Summary						
Average Delay			5.8			
Intersection Capacity Utilization		51.7%		ICU Level of Service		A
Analysis Period (min)			15			



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↑↑↑	↗	↖	↑↑↑	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1770	1583
Volume (vph)	10	1390	40	420	960	180	590
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	1433	41	433	990	186	608
RTOR Reduction (vph)	0	0	21	0	0	0	498
Lane Group Flow (vph)	10	1433	20	433	990	186	110
Turn Type	Prot		Perm	Prot		Perm	
Protected Phases	1	6		4 5	2	3	
Permitted Phases			6				3
Actuated Green, G (s)	0.4	30.3	30.3	9.9	32.4	10.0	10.0
Effective Green, g (s)	1.1	31.4	31.4	9.9	33.5	11.4	11.4
Actuated g/C Ratio	0.02	0.49	0.49	0.15	0.52	0.18	0.18
Clearance Time (s)	4.7	5.1	5.1		5.1	5.4	5.4
Vehicle Extension (s)	1.0	4.9	4.9		4.9	1.0	1.0
Lane Grp Cap (vph)	30	2468	768	271	2633	312	279
v/s Ratio Prot	0.01	c0.28		c0.24	0.19	c0.11	
v/s Ratio Perm			0.01				0.07
v/c Ratio	0.33	0.58	0.03	1.60	0.38	0.60	0.39
Uniform Delay, d1	31.4	11.9	8.7	27.4	9.3	24.5	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.5	0.0	285.7	0.2	2.0	0.3
Delay (s)	33.8	12.5	8.7	313.1	9.5	26.6	23.9
Level of Service	C	B	A	F	A	C	C
Approach Delay (s)		12.5			101.9	24.5	
Approach LOS		B			F	C	

Intersection Summary

HCM Average Control Delay	49.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3514		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3514		1770	3539	1770	1583
Volume (vph)	1430	70	320	1190	280	350
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1474	72	330	1227	289	361
RTOR Reduction (vph)	2	0	0	0	0	307
Lane Group Flow (vph)	1544	0	330	1227	289	54
Turn Type			Split			Perm
Protected Phases	2		1	1	3	
Permitted Phases						3
Actuated Green, G (s)	55.6		43.3	43.3	21.5	21.5
Effective Green, g (s)	56.6		44.1	44.1	21.0	21.0
Actuated g/C Ratio	0.41		0.32	0.32	0.15	0.15
Clearance Time (s)	5.0		4.8	4.8	3.5	3.5
Vehicle Extension (s)	6.8		6.3	6.3	2.0	2.0
Lane Grp Cap (vph)	1425		559	1118	266	238
v/s Ratio Prot	c0.44		0.19	c0.35	c0.16	
v/s Ratio Perm						0.03
v/c Ratio	1.08		0.59	1.10	1.09	0.23
Uniform Delay, d1	41.5		40.2	47.8	59.3	52.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	49.8		3.2	57.7	80.2	0.2
Delay (s)	91.3		43.4	105.4	139.5	52.3
Level of Service	F		D	F	F	D
Approach Delay (s)	91.3			92.3	91.1	
Approach LOS	F			F	F	

Intersection Summary

HCM Average Control Delay	91.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	139.6	Sum of lost time (s)	17.9
Intersection Capacity Utilization	85.0%	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	↖↗	↕↕↕	↖	↖↗	↕↕↕	↖	↖	↕↕	↖	↖	↕↕	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	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	5085	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	5085	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	500	1770	50	210	1180	10	50	580	350	10	530	410
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	515	1825	52	216	1216	10	52	598	361	10	546	423
RTOR Reduction (vph)	0	0	31	0	0	7	0	0	93	0	0	338
Lane Group Flow (vph)	515	1825	21	216	1216	3	52	598	268	10	546	85
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	5	2		1	6		4	8	1	7	3	
Permitted Phases			2			6			8			3
Actuated Green, G (s)	12.1	23.5	23.5	6.0	17.0	17.0	4.6	17.0	23.0	0.7	11.5	11.5
Effective Green, g (s)	12.1	25.5	25.5	5.6	19.0	19.0	4.9	16.0	21.6	0.7	11.8	11.8
Actuated g/C Ratio	0.19	0.40	0.40	0.09	0.30	0.30	0.08	0.25	0.34	0.01	0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	3.6	6.0	6.0	4.3	3.0	3.6	4.0	4.3	4.3
Vehicle Extension (s)	3.0	2.0	2.0	1.0	2.0	2.0	1.0	0.2	1.0	3.0	1.0	1.0
Lane Grp Cap (vph)	651	2032	633	301	1514	471	136	888	635	19	655	293
v/s Ratio Prot	c0.15	c0.36		0.06	0.24		0.03	c0.17	0.04	0.01	c0.15	
v/s Ratio Perm			0.01			0.00			0.13			0.05
v/c Ratio	0.79	0.90	0.03	0.72	0.80	0.01	0.38	0.67	0.42	0.53	0.83	0.29
Uniform Delay, d1	24.6	17.9	11.6	28.3	20.7	15.8	28.0	21.5	16.3	31.4	25.1	22.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	5.6	0.0	6.6	3.0	0.0	0.7	1.6	0.2	23.9	8.6	0.2
Delay (s)	31.2	23.5	11.7	35.0	23.7	15.8	28.7	23.1	16.4	55.2	33.6	22.6
Level of Service	C	C	B	C	C	B	C	C	B	E	C	C
Approach Delay (s)		24.9			25.3			21.0			29.1	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.9%	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	↖↖	↗↗↗	↖	↖↖	↗↗↗	↖	↖↖	↗↗↗	↖	↖↖	↗↗↗	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	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	5085	1583	3433	5085	1583	3433	5085	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	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	550	490	930	270	290	90	910	1410	280	140	1260	440
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	567	505	959	278	299	93	938	1454	289	144	1299	454
RTOR Reduction (vph)	0	0	277	0	0	70	0	0	141	0	0	243
Lane Group Flow (vph)	567	505	682	278	299	23	938	1454	148	144	1299	211
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.8	48.4	48.4	9.5	36.0	36.0	33.5	61.2	61.2	8.8	36.1	36.1
Effective Green, g (s)	23.3	50.0	50.0	11.0	37.7	37.7	35.0	62.7	62.7	10.3	38.0	38.0
Actuated g/C Ratio	0.16	0.33	0.33	0.07	0.25	0.25	0.23	0.42	0.42	0.07	0.25	0.25
Clearance Time (s)	5.5	5.6	5.6	5.5	5.7	5.7	5.5	5.5	5.5	5.5	5.9	5.9
Vehicle Extension (s)	1.0	5.0	5.0	1.0	5.9	5.9	1.0	5.4	5.4	1.0	5.4	5.4
Lane Grp Cap (vph)	533	1695	528	252	1278	398	801	2126	662	236	1288	401
v/s Ratio Prot	c0.17	0.10		0.08	0.06		c0.27	0.29		0.04	c0.26	
v/s Ratio Perm			c0.43			0.01			0.09			0.13
v/c Ratio	1.06	0.30	1.29	1.10	0.23	0.06	1.17	0.68	0.22	0.61	1.01	0.53
Uniform Delay, d1	63.4	37.0	50.0	69.5	44.7	42.7	57.5	35.6	28.0	67.9	56.0	48.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	57.0	0.2	144.7	87.1	0.3	0.2	90.1	1.3	0.4	3.3	27.2	2.7
Delay (s)	120.4	37.2	194.7	156.6	44.9	42.8	147.6	36.9	28.4	71.2	83.2	50.9
Level of Service	F	D	F	F	D	D	F	D	C	E	F	D
Approach Delay (s)		134.8			91.0			74.7			74.5	
Approach LOS		F			F			E			E	

Intersection Summary

HCM Average Control Delay	92.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.6%	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	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	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	5085	1583	3433	5085	1583	3433	5085	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	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	570	950	420	240	860	380	320	1800	170	390	1350	340
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	588	979	433	247	887	392	330	1856	175	402	1392	351
RTOR Reduction (vph)	0	0	156	0	0	159	0	0	59	0	0	158
Lane Group Flow (vph)	588	979	277	247	887	233	330	1856	116	402	1392	193
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	22.5	41.1	41.1	11.2	30.0	30.0	14.6	49.9	49.9	15.5	50.8	50.8
Effective Green, g (s)	24.0	42.8	42.8	12.7	31.5	31.5	16.1	51.5	51.5	17.0	52.4	52.4
Actuated g/C Ratio	0.17	0.31	0.31	0.09	0.22	0.22	0.12	0.37	0.37	0.12	0.37	0.37
Clearance Time (s)	5.5	5.7	5.7	5.5	5.5	5.5	5.5	5.6	5.6	5.5	5.6	5.6
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.9	4.9	1.0	4.9	4.9	1.0	4.9	4.9
Lane Grp Cap (vph)	589	1555	484	311	1144	356	395	1871	582	417	1903	592
v/s Ratio Prot	c0.17	0.19		0.07	c0.17		0.10	c0.36		c0.12	0.27	
v/s Ratio Perm			0.17			0.15			0.07			0.12
v/c Ratio	1.00	0.63	0.57	0.79	0.78	0.65	0.84	0.99	0.20	0.96	0.73	0.33
Uniform Delay, d1	58.0	41.8	40.9	62.4	50.9	49.3	60.7	44.0	30.2	61.2	37.7	31.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.3	1.1	2.5	12.2	3.9	5.6	13.6	18.9	0.3	34.4	1.8	0.7
Delay (s)	94.3	42.9	43.4	74.6	54.8	54.9	74.2	62.9	30.5	95.6	39.5	31.9
Level of Service	F	D	D	E	D	D	E	E	C	F	D	C
Approach Delay (s)		58.1			58.1			62.1			48.8	
Approach LOS		E			E			E			D	

Intersection Summary

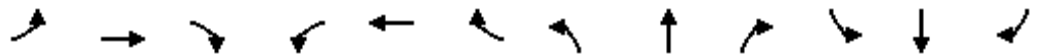
HCM Average Control Delay	56.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑↑	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.86	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	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	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	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Volume (vph)	190	470	480	110	590	230	700	1650	90	220	1660	140
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	196	485	495	113	608	237	722	1701	93	227	1711	144
RTOR Reduction (vph)	0	0	259	0	0	181	0	0	46	0	0	91
Lane Group Flow (vph)	196	485	236	113	608	56	722	1701	47	227	1711	53
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.6	26.0	26.0	6.0	24.4	24.4	22.1	40.2	40.2	15.1	33.2	33.2
Effective Green, g (s)	8.6	28.0	28.0	6.0	25.4	25.4	22.1	42.2	42.2	15.1	35.2	35.2
Actuated g/C Ratio	0.08	0.26	0.26	0.06	0.24	0.24	0.21	0.39	0.39	0.14	0.33	0.33
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	2.0	3.4	3.4	2.0	4.1	4.1
Lane Grp Cap (vph)	275	924	413	99	1204	375	707	2000	623	249	2102	519
v/s Ratio Prot	0.06	0.14		c0.06	0.12		c0.21	c0.33		0.13	0.27	
v/s Ratio Perm			c0.15			0.04			0.03			0.03
v/c Ratio	0.71	0.52	0.57	1.14	0.50	0.15	1.02	0.85	0.08	0.91	0.81	0.10
Uniform Delay, d1	48.1	34.0	34.4	50.6	35.5	32.4	42.6	29.7	20.4	45.4	33.0	25.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	0.9	2.7	133.6	0.7	0.4	39.3	4.8	0.2	33.8	3.6	0.4
Delay (s)	55.2	34.8	37.1	184.2	36.2	32.8	81.9	34.5	20.6	79.2	36.6	25.5
Level of Service	E	C	D	F	D	C	F	C	C	E	D	C
Approach Delay (s)		39.2			52.8			47.6			40.5	
Approach LOS		D			D			D			D	

Intersection Summary

HCM Average Control Delay	44.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	107.3	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		↑↓			↑↓					↘		↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0		4.0
Lane Util. Factor		0.95			0.95					1.00		1.00
Frt		0.98			0.89					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		3481			3151					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		3481			3151					1770		1583
Volume (vph)	0	1230	150	0	170	460	0	0	0	120	0	170
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1268	155	0	175	474	0	0	0	124	0	175
RTOR Reduction (vph)	0	14	0	0	191	0	0	0	0	0	0	142
Lane Group Flow (vph)	0	1409	0	0	458	0	0	0	0	124	0	33
Turn Type										Prot		custom
Protected Phases		4			8					2		
Permitted Phases												2
Actuated Green, G (s)		22.5			22.5					7.2		7.2
Effective Green, g (s)		22.5			22.5					7.2		7.2
Actuated g/C Ratio		0.60			0.60					0.19		0.19
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)		2078			1881					338		302
v/s Ratio Prot		c0.40			0.15					c0.07		
v/s Ratio Perm												0.02
v/c Ratio		0.68			0.24					0.37		0.11
Uniform Delay, d1		5.1			3.6					13.3		12.6
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		0.9			0.1					0.7		0.2
Delay (s)		6.0			3.7					13.9		12.8
Level of Service		A			A					B		B
Approach Delay (s)		6.0			3.7			0.0			13.3	
Approach LOS		A			A			A			B	
Intersection Summary												
HCM Average Control Delay			6.3			HCM Level of Service				A		
HCM Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			37.7			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			52.1%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↓		↑		↑			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0		4.0			
Lane Util. Factor		0.95			0.95		1.00		1.00			
Frt		0.94			0.99		1.00		0.85			
Flt Protected		1.00			1.00		0.95		1.00			
Satd. Flow (prot)		3319			3499		1770		1583			
Flt Permitted		1.00			1.00		0.95		1.00			
Satd. Flow (perm)		3319			3499		1770		1583			
Volume (vph)	0	790	560	0	610	50	20	0	450	0	0	0
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	814	577	0	629	52	21	0	464	0	0	0
RTOR Reduction (vph)	0	250	0	0	12	0	0	0	61	0	0	0
Lane Group Flow (vph)	0	1141	0	0	669	0	21	0	403	0	0	0
Turn Type							Prot		custom			
Protected Phases		4			8		2					
Permitted Phases									2			
Actuated Green, G (s)		18.8			18.8		14.6		14.6			
Effective Green, g (s)		18.8			18.8		14.6		14.6			
Actuated g/C Ratio		0.45			0.45		0.35		0.35			
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)		1507			1589		624		558			
v/s Ratio Prot		c0.34			0.19		0.01					
v/s Ratio Perm									c0.25			
v/c Ratio		0.76			0.42		0.03		0.72			
Uniform Delay, d1		9.4			7.6		8.8		11.6			
Progression Factor		1.00			1.00		1.00		1.00			
Incremental Delay, d2		2.2			0.2		0.0		4.6			
Delay (s)		11.6			7.8		8.8		16.2			
Level of Service		B			A		A		B			
Approach Delay (s)		11.6			7.8			15.9			0.0	
Approach LOS		B			A			B			A	
Intersection Summary												
HCM Average Control Delay			11.4				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			41.4				Sum of lost time (s)				8.0	
Intersection Capacity Utilization			74.3%				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		↑↑↑			↑↑↑					↘		↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0		4.0
Lane Util. Factor		0.91			0.91					1.00		1.00
Frt		0.96			0.88					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		4871			4495					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		4871			4495					1770		1583
Volume (vph)	0	410	160	0	190	650	0	0	0	80	0	30
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	423	165	0	196	670	0	0	0	82	0	31
RTOR Reduction (vph)	0	85	0	0	344	0	0	0	0	0	0	26
Lane Group Flow (vph)	0	503	0	0	522	0	0	0	0	82	0	5
Turn Type										Prot		custom
Protected Phases		4			8					1		
Permitted Phases												1
Actuated Green, G (s)		10.9			10.9					3.5		3.5
Effective Green, g (s)		10.9			10.9					3.5		3.5
Actuated g/C Ratio		0.49			0.49					0.16		0.16
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)		2370			2187					277		247
v/s Ratio Prot		0.10			c0.12					c0.05		
v/s Ratio Perm												0.00
v/c Ratio		0.21			0.24					0.30		0.02
Uniform Delay, d1		3.3			3.3					8.4		8.0
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		0.0			0.1					0.6		0.0
Delay (s)		3.3			3.4					9.0		8.0
Level of Service		A			A					A		A
Approach Delay (s)		3.3			3.4			0.0			8.7	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM Average Control Delay			3.8			HCM Level of Service				A		
HCM Volume to Capacity ratio			0.25									
Actuated Cycle Length (s)			22.4			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			29.5%			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		↑↑↑			↑↑↑		↗		↗			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0		4.0			
Lane Util. Factor		0.91			0.91		1.00		1.00			
Frt		0.98			0.96		1.00		0.85			
Flt Protected		1.00			1.00		0.95		1.00			
Satd. Flow (prot)		4992			4864		1770		1583			
Flt Permitted		1.00			1.00		0.95		1.00			
Satd. Flow (perm)		4992			4864		1770		1583			
Volume (vph)	0	430	60	0	760	310	80	0	1030	0	0	0
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	443	62	0	784	320	82	0	1062	0	0	0
RTOR Reduction (vph)	0	28	0	0	114	0	0	0	37	0	0	0
Lane Group Flow (vph)	0	477	0	0	990	0	82	0	1025	0	0	0
Turn Type							Prot		custom			
Protected Phases		4			8		2					
Permitted Phases									2			
Actuated Green, G (s)		15.8			15.8		41.0		41.0			
Effective Green, g (s)		15.8			15.8		41.0		41.0			
Actuated g/C Ratio		0.24			0.24		0.63		0.63			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1217			1186		1120		1002			
v/s Ratio Prot		0.10			c0.20		0.05					
v/s Ratio Perm									c0.65			
v/c Ratio		0.39			0.83		0.07		1.02			
Uniform Delay, d1		20.5			23.3		4.6		11.9			
Progression Factor		1.00			1.00		1.00		1.00			
Incremental Delay, d2		0.2			5.2		0.0		34.5			
Delay (s)		20.7			28.5		4.6		46.4			
Level of Service		C			C		A		D			
Approach Delay (s)		20.7			28.5			43.4			0.0	
Approach LOS		C			C			D			A	
Intersection Summary												
HCM Average Control Delay			33.2				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			64.8				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			80.1%				ICU Level of Service				D	
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑↓		↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.95	0.91		1.00	1.00
Frt		1.00	0.93		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3539	4723		1770	1583
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3539	4723		1770	1583
Volume (vph)	0	500	1280	1160	410	140
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	515	1320	1196	423	144
RTOR Reduction (vph)	0	0	198	0	0	27
Lane Group Flow (vph)	0	515	2318	0	423	117
Turn Type						Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		37.7	37.7		19.9	19.9
Effective Green, g (s)		37.7	37.7		19.9	19.9
Actuated g/C Ratio		0.57	0.57		0.30	0.30
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)		2034	2714		537	480
v/s Ratio Prot		0.15	c0.49		c0.24	
v/s Ratio Perm						0.07
v/c Ratio		0.25	1.07dr		0.79	0.24
Uniform Delay, d1		6.9	11.7		20.9	17.2
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	2.8		7.5	0.3
Delay (s)		7.0	14.5		28.4	17.5
Level of Service		A	B		C	B
Approach Delay (s)		7.0	14.5		25.6	
Approach LOS		A	B		C	

Intersection Summary

HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.1%	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			



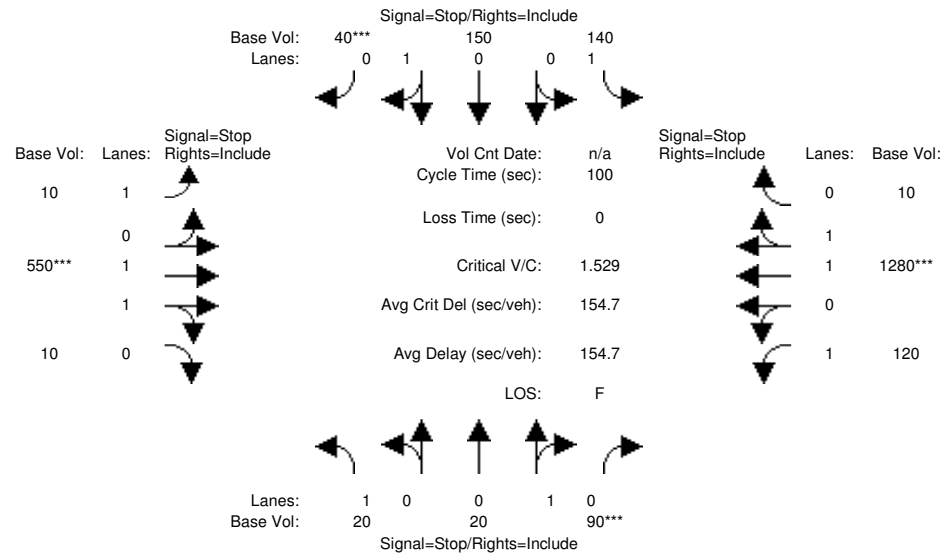
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	4976			5085	1770	1583
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	4976			5085	1770	1583
Volume (vph)	780	130	0	2050	390	520
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	804	134	0	2113	402	536
RTOR Reduction (vph)	33	0	0	0	0	70
Lane Group Flow (vph)	905	0	0	2113	402	466
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	28.3			28.3	20.6	20.6
Effective Green, g (s)	28.3			28.3	20.6	20.6
Actuated g/C Ratio	0.50			0.50	0.36	0.36
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)	2475			2529	641	573
v/s Ratio Prot	0.18			c0.42	0.23	
v/s Ratio Perm						c0.29
v/c Ratio	0.37			0.84	0.63	0.81
Uniform Delay, d1	8.8			12.3	15.0	16.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			2.5	1.9	8.7
Delay (s)	8.9			14.8	16.9	25.1
Level of Service	A			B	B	C
Approach Delay (s)	8.9			14.8	21.6	
Approach LOS	A			B	C	

Intersection Summary

HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
 2000 HCM 4-Way Stop (Base Volume Alternative)
 C. + Preferred Alt. AM

Intersection #5: Elverta Road / East Levee Road



Street Name:	East Levee Road						Elverta Road					
	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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Volume Module:

Base Vol:	20	20	90	140	150	40	10	550	10	120	1280	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	20	90	140	150	40	10	550	10	120	1280	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	21	21	93	144	155	41	10	567	10	124	1320	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	21	93	144	155	41	10	567	10	124	1320	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	21	21	93	144	155	41	10	567	10	124	1320	10

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.18	0.82	1.00	0.79	0.21	1.00	1.96	0.04	1.00	1.98	0.02
Final Sat.:	349	71	321	378	322	86	370	779	14	399	863	7

Capacity Analysis Module:

Vol/Sat:	0.06	0.29	0.29	0.38	0.48	0.48	0.03	0.73	0.73	0.31	1.53	1.53
Crit Moves:			****			****		****			****	
Delay/Veh:	13.2	14.8	14.8	17.4	18.8	18.8	12.5	32.0	31.9	15.2	271	270.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.2	14.8	14.8	17.4	18.8	18.8	12.5	32.0	31.9	15.2	271	270.5
LOS by Move:	B	B	B	C	C	C	B	D	D	C	F	F
ApproachDel:		14.6			18.2			31.7			249.2	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.6			18.2			31.7			249.2	
LOS by Appr:		B			C			D			F	
AllWayAvgQ:	0.1	0.4	0.4	0.6	0.8	0.8	0.0	2.2	2.2	0.4	31.4	31.4

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #5 Elverta Road / East Levee Road

Base Volume Alternative: Peak Hour Warrant Met

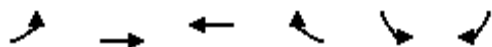
Approach:	North Bound	South Bound	East Bound	West Bound
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Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	1	0	0	1	0	0	1	0	1	0	1	0
Initial Vol:	20	20	90	140	150	40	10	550	10	120	1280	10
Major Street Volume:	1980											
Minor Approach Volume:	330											
Minor Approach Volume Threshold:	80 [less than minimum of 150]											

SIGNAL WARRANT DISCLAIMER

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The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.



Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations	↶	↶↶↶	↶↶↶		↶	↶			
Sign Control		Free	Free		Stop				
Grade		0%	0%		0%				
Volume (veh/h)	90	600	1850	30	70	260			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97			
Hourly flow rate (vph)	93	619	1907	31	72	268			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type	None								
Median storage (veh)									
Upstream signal (ft)									
pX, platoon unblocked									
vC, conflicting volume	1938				2314	651			
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	1938				2314	651			
tC, single (s)	4.1				6.8	6.9			
tC, 2 stage (s)									
tF (s)	2.2				3.5	3.3			
p0 queue free %	69				0	35			
cM capacity (veh/h)	299				22	411			
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1	SB 2
Volume Total	93	206	206	206	763	763	412	72	268
Volume Left	93	0	0	0	0	0	0	72	0
Volume Right	0	0	0	0	0	0	31	0	268
cSH	299	1700	1700	1700	1700	1700	1700	22	411
Volume to Capacity	0.31	0.12	0.12	0.12	0.45	0.45	0.24	3.29	0.65
Queue Length 95th (ft)	32	0	0	0	0	0	0	Err	112
Control Delay (s)	22.4	0.0	0.0	0.0	0.0	0.0	0.0	Err	28.7
Lane LOS	C							F	D
Approach Delay (s)	2.9				0.0			2143.6	
Approach LOS								F	
Intersection Summary									
Average Delay			244.6						
Intersection Capacity Utilization			59.2%		ICU Level of Service				B
Analysis Period (min)			15						



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↗		↖	↑↗		↖	↗		↖	↗	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	170	600	10	10	1100	10	10	10	10	20	10	300
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	175	619	10	10	1134	10	10	10	10	21	10	309
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1144			629			1876	2139	314	1835	2139	572
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1144			629			1876	2139	314	1835	2139	572
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	71			99			0	70	98	26	70	33
cM capacity (veh/h)	606			949			9	34	681	28	34	463

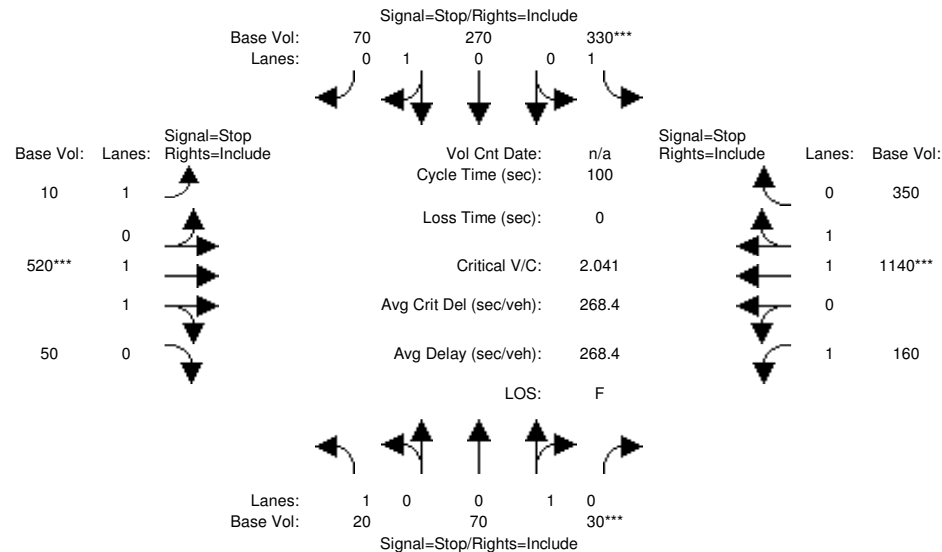
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	175	412	216	10	756	388	10	21	21	320
Volume Left	175	0	0	10	0	0	10	0	21	0
Volume Right	0	0	10	0	0	10	0	10	0	309
cSH	606	1700	1700	949	1700	1700	9	65	28	329
Volume to Capacity	0.29	0.24	0.13	0.01	0.44	0.23	1.18	0.32	0.74	0.97
Queue Length 95th (ft)	30	0	0	1	0	0	52	29	59	259
Control Delay (s)	13.3	0.0	0.0	8.8	0.0	0.0	929.9	84.7	292.7	78.9
Lane LOS	B			A			F	F	F	F
Approach Delay (s)	2.9			0.1			366.4		91.8	
Approach LOS							F		F	

Intersection Summary

Average Delay	19.3
Intersection Capacity Utilization	69.2%
ICU Level of Service	C
Analysis Period (min)	15

Level Of Service Computation Report
 2000 HCM 4-Way Stop (Base Volume Alternative)
 C. + Preferred Alt. AM

Intersection #8: Elverta Road / Elwyn Road



Street Name:	Elwyn Road						Elverta Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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Volume Module:												
Base Vol:	20	70	30	330	270	70	10	520	50	160	1140	350
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	70	30	330	270	70	10	520	50	160	1140	350
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	21	72	31	340	278	72	10	536	52	165	1175	361
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	72	31	340	278	72	10	536	52	165	1175	361
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	21	72	31	340	278	72	10	536	52	165	1175	361

Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.70	0.30	1.00	0.79	0.21	1.00	1.82	0.18	1.00	1.53	0.47
Final Sat.:	311	233	100	371	315	82	310	610	59	344	576	181

Capacity Analysis Module:												
Vol/Sat:	0.07	0.31	0.31	0.92	0.88	0.88	0.03	0.88	0.87	0.48	2.04	2.00
Crit Moves:			****	****				****		****		
Delay/Veh:	14.7	17.6	17.6	59.3	50.4	50.4	14.4	56.2	55.0	21.5	499	478.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.7	17.6	17.6	59.3	50.4	50.4	14.4	56.2	55.0	21.5	499	478.2
LOS by Move:	B	C	C	F	F	F	B	F	F	C	F	F
ApproachDel:		17.1			54.8			55.4			448.3	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		17.1			54.8			55.4			448.3	
LOS by Appr:		C			F			F			F	
AllWayAvgQ:	0.1	0.4	0.4	4.8	4.3	4.3	0.0	4.0	3.9	0.8	51.4	49.8

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #8 Elverta Road / Elwyn Road

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound	South Bound	East Bound	West Bound
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Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	1	0	0	1	0	0	1	0	1	0	1	0
Initial Vol:	20	70	30	330	270	70	10	520	50	160	1140	350
Major Street Volume:	2230											
Minor Approach Volume:	670											
Minor Approach Volume Threshold:	29 [less than minimum of 150]											

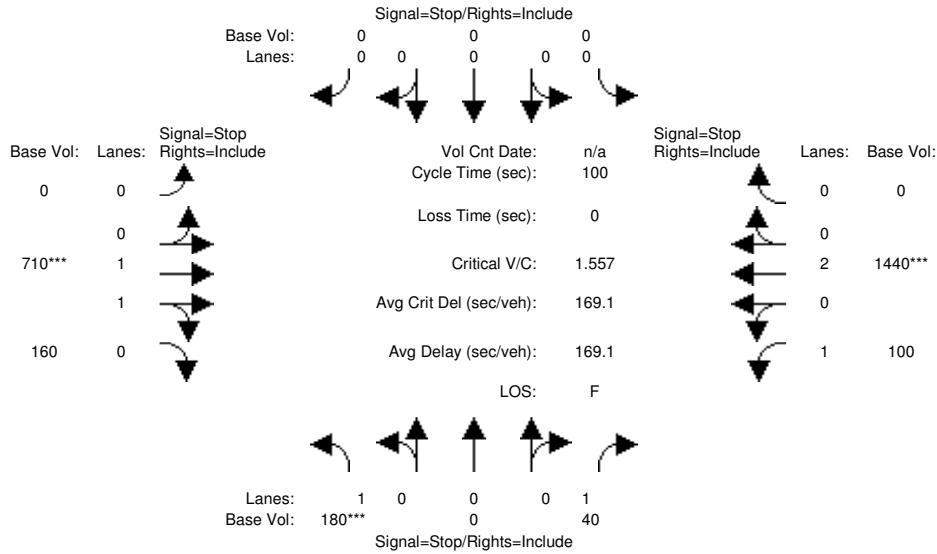
SIGNAL WARRANT DISCLAIMER

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Level Of Service Computation Report
 2000 HCM 4-Way Stop (Base Volume Alternative)
 C. + Preferred Alt. AM

Intersection #9: Elverta Road / Rio Linda Boulevard



Street Name: Rio Linda Boulevard Elverta Road
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0

Volume Module:

Base Vol:	180	0	40	0	0	0	0	710	160	100	1440	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	0	40	0	0	0	0	710	160	100	1440	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	186	0	41	0	0	0	0	732	165	103	1485	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	186	0	41	0	0	0	0	732	165	103	1485	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	186	0	41	0	0	0	0	732	165	103	1485	0

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.63	0.37	1.00	2.00	0.00
Final Sat.:	390	0	446	0	0	0	0	833	192	441	954	0

Capacity Analysis Module:

Vol/Sat:	0.48	xxxx	0.09	xxxx	xxxx	xxxx	xxxx	0.88	0.86	0.23	1.56	xxxx
Crit Moves:	****							****			****	
Delay/Veh:	19.3	0.0	11.3	0.0	0.0	0.0	0.0	41.7	38.2	13.1	280	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.3	0.0	11.3	0.0	0.0	0.0	0.0	41.7	38.2	13.1	280	0.0
LOS by Move:	C	*	B	*	*	*	*	E	E	B	F	*
ApproachDel:	17.8			xxxxxx				41.1			263.0	
Delay Adj:	1.00			xxxxxx				1.00			1.00	
ApprAdjDel:	17.8			xxxxxx				41.1			263.0	
LOS by Appr:	C			*				E			F	
AllWayAvgQ:	0.8	0.0	0.1	0.0	0.0	0.0	0.0	4.8	4.1	0.3	35.8	0.0

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

 Intersection #9 Elverta Road / Rio Linda Boulevard

 Base Volume Alternative: Peak Hour Warrant Met

Approach: North Bound South Bound East Bound West Bound

Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign			
Lanes:	1	0	0	0	1	0	0	0	0	0	1	1	0
Initial Vol:	180	0	40	0	0	0	0	710	160	100	1440	0	
Major Street Volume:	2410												
Minor Approach Volume:	220												
Minor Approach Volume Threshold:	-4 [less than minimum of 150]												

SIGNAL WARRANT DISCLAIMER

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	→	↘	↙	←	↖	↗	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑		↘	↑↑	↘	↗	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Volume (veh/h)	680	60	330	1160	10	90	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	701	62	340	1196	10	93	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage (veh)							
Upstream signal (ft)				714			
pX, platoon unblocked					0.82		
vC, conflicting volume			763		2010	381	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			763		2013	381	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			60		59	85	
cM capacity (veh/h)			845		25	617	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	467	296	340	598	598	10	93
Volume Left	0	0	340	0	0	10	0
Volume Right	0	62	0	0	0	0	93
cSH	1700	1700	845	1700	1700	25	617
Volume to Capacity	0.27	0.17	0.40	0.35	0.35	0.41	0.15
Queue Length 95th (ft)	0	0	49	0	0	31	13
Control Delay (s)	0.0	0.0	12.1	0.0	0.0	224.8	11.9
Lane LOS			B			F	B
Approach Delay (s)	0.0		2.7			33.2	
Approach LOS						D	
Intersection Summary							
Average Delay			3.1				
Intersection Capacity Utilization			52.3%		ICU Level of Service		A
Analysis Period (min)			15				



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3530		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3530		1770	1583
Volume (vph)	60	710	1130	20	60	360
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	62	732	1165	21	62	371
RTOR Reduction (vph)	0	0	2	0	0	145
Lane Group Flow (vph)	62	732	1184	0	62	226
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	2.8	30.2	23.4		12.5	12.5
Effective Green, g (s)	2.8	30.2	23.4		12.5	12.5
Actuated g/C Ratio	0.06	0.60	0.46		0.25	0.25
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)	98	2108	1629		436	390
v/s Ratio Prot	c0.04	0.21	c0.34		0.04	
v/s Ratio Perm						c0.14
v/c Ratio	0.63	0.35	0.73		0.14	0.58
Uniform Delay, d1	23.4	5.2	11.1		14.9	16.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	12.6	0.1	1.6		0.2	2.1
Delay (s)	36.0	5.3	12.7		15.1	18.9
Level of Service	D	A	B		B	B
Approach Delay (s)		7.7	12.7		18.3	
Approach LOS		A	B		B	

Intersection Summary

HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	50.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.8%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	50	110	20	50	10	20	190	100	10	410	60
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	10	52	113	21	52	10	21	196	103	10	423	62
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	175	82	320	495								
Volume Left (vph)	10	21	21	10								
Volume Right (vph)	113	10	103	62								
Hadj (s)	-0.34	0.01	-0.15	-0.04								
Departure Headway (s)	5.8	6.4	5.3	5.2								
Degree Utilization, x	0.28	0.15	0.47	0.71								
Capacity (veh/h)	532	474	634	677								
Control Delay (s)	11.1	10.5	12.9	19.7								
Approach Delay (s)	11.1	10.5	12.9	19.7								
Approach LOS	B	B	B	C								
Intersection Summary												
Delay			15.6									
HCM Level of Service			C									
Intersection Capacity Utilization			45.3%	ICU Level of Service	A							
Analysis Period (min)			15									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	110	60	200	200	10	50	270	60	20	380	120
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	31	113	62	206	206	10	52	278	62	21	392	124
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	206	423	392	536								
Volume Left (vph)	31	206	52	21								
Volume Right (vph)	62	10	62	124								
Hadj (s)	-0.12	0.12	-0.03	-0.10								
Departure Headway (s)	9.1	8.2	8.2	8.1								
Degree Utilization, x	0.52	0.97	0.89	1.20								
Capacity (veh/h)	372	429	426	444								
Control Delay (s)	21.5	63.9	49.7	137.8								
Approach Delay (s)	21.5	63.9	49.7	137.8								
Approach LOS	C	F	E	F								
Intersection Summary												
Delay			80.2									
HCM Level of Service			F									
Intersection Capacity Utilization			82.6%	ICU Level of Service	E							
Analysis Period (min)			15									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	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	5085	1583	1770	1863	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	5085	1583	1770	1863	1583	1770	3539	1583
Volume (vph)	120	590	210	140	1000	90	100	330	180	210	520	50
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	124	608	216	144	1031	93	103	340	186	216	536	52
RTOR Reduction (vph)	0	0	151	0	0	65	0	0	138	0	0	36
Lane Group Flow (vph)	124	608	65	144	1031	28	103	340	48	216	536	16
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7		4
Permitted Phases			6			2			8			4
Actuated Green, G (s)	4.3	18.9	18.9	3.2	18.1	18.1	3.7	15.5	15.5	7.2	18.8	18.8
Effective Green, g (s)	5.1	20.0	20.0	4.7	19.6	19.6	5.2	16.6	16.6	8.7	20.1	20.1
Actuated g/C Ratio	0.08	0.30	0.30	0.07	0.30	0.30	0.08	0.25	0.25	0.13	0.30	0.30
Clearance Time (s)	4.8	5.1	5.1	5.5	5.5	5.5	5.5	5.1	5.1	5.5	5.3	5.3
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	265	1541	480	244	1510	470	139	469	398	233	1078	482
v/s Ratio Prot	0.04	0.12		c0.04	c0.20		0.06	c0.18		c0.12	c0.15	
v/s Ratio Perm			0.04			0.02			0.03			0.01
v/c Ratio	0.47	0.39	0.14	0.59	0.68	0.06	0.74	0.72	0.12	0.93	0.50	0.03
Uniform Delay, d1	29.2	18.2	16.7	29.7	20.5	16.6	29.7	22.6	19.1	28.3	18.8	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	0.0	2.5	1.0	0.0	16.8	4.7	0.0	38.6	0.1	0.0
Delay (s)	29.6	18.3	16.8	32.3	21.5	16.6	46.6	27.3	19.1	66.9	18.9	16.1
Level of Service	C	B	B	C	C	B	D	C	B	E	B	B
Approach Delay (s)		19.4			22.4			28.0			31.7	
Approach LOS		B			C			C			C	
Intersection Summary												
HCM Average Control Delay			24.6				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			66.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			65.1%				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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.93		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3533		1770	3501		1770	1726		1770	1794	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3533		1770	3501		1770	1726		1770	1794	
Volume (vph)	100	850	10	240	1020	80	10	230	220	170	370	120
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	103	876	10	247	1052	82	10	237	227	175	381	124
RTOR Reduction (vph)	0	1	0	0	6	0	0	38	0	0	12	0
Lane Group Flow (vph)	103	885	0	247	1128	0	10	426	0	175	493	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.0	24.6		13.1	31.7		0.8	26.9		9.1	35.2	
Effective Green, g (s)	6.0	24.6		13.1	31.7		0.8	26.9		9.1	35.2	
Actuated g/C Ratio	0.07	0.27		0.15	0.35		0.01	0.30		0.10	0.39	
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)	118	969		258	1237		16	518		180	704	
v/s Ratio Prot	0.06	0.25		c0.14	c0.32		0.01	c0.25		c0.10	0.27	
v/s Ratio Perm												
v/c Ratio	0.87	0.91		0.96	0.91		0.62	0.82		0.97	0.70	
Uniform Delay, d1	41.5	31.5		38.0	27.7		44.3	29.2		40.2	22.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	46.0	12.7		43.9	10.2		57.6	10.2		58.6	3.1	
Delay (s)	87.5	44.2		81.9	37.9		101.9	39.4		98.8	26.0	
Level of Service	F	D		F	D		F	D		F	C	
Approach Delay (s)		48.7			45.7			40.7			44.7	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM Average Control Delay			45.7			HCM Level of Service					D	
HCM Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			89.7			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			85.4%			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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	140	10	30	30	10	20	10	80	10	10	600	100
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	144	10	31	31	10	21	10	82	10	10	619	103

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	186	62	103	732
Volume Left (vph)	144	31	10	10
Volume Right (vph)	31	21	10	103
Hadj (s)	0.09	-0.07	-0.01	-0.05
Departure Headway (s)	6.3	6.4	5.7	4.8
Degree Utilization, x	0.32	0.11	0.16	0.98
Capacity (veh/h)	566	539	606	740
Control Delay (s)	12.2	10.2	9.9	50.2
Approach Delay (s)	12.2	10.2	9.9	50.2
Approach LOS	B	B	A	F

Intersection Summary			
Delay		37.6	
HCM Level of Service		E	
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	50	150	70	50	300	360
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	52	155	72	52	309	371
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	124				356	98
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	124				356	98
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				50	61
cM capacity (veh/h)	1463				620	958
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	206	124	680			
Volume Left	52	0	309			
Volume Right	0	52	371			
cSH	1463	1700	768			
Volume to Capacity	0.04	0.07	0.89			
Queue Length 95th (ft)	3	0	286			
Control Delay (s)	2.1	0.0	34.4			
Lane LOS	A		D			
Approach Delay (s)	2.1	0.0	34.4			
Approach LOS			D			
Intersection Summary						
Average Delay			23.6			
Intersection Capacity Utilization		62.7%		ICU Level of Service		B
Analysis Period (min)			15			



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↑↑↑	↗	↖	↑↑↑	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1770	1583
Volume (vph)	10	720	230	620	1190	60	270
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	742	237	639	1227	62	278
RTOR Reduction (vph)	0	0	142	0	0	0	237
Lane Group Flow (vph)	10	742	95	639	1227	62	41
Turn Type	Prot		Perm	Prot		Perm	
Protected Phases	1	6		4 5	2	3	
Permitted Phases			6				3
Actuated Green, G (s)	0.3	22.3	22.3	14.3	29.2	7.3	7.3
Effective Green, g (s)	1.0	23.4	23.4	14.3	30.3	8.7	8.7
Actuated g/C Ratio	0.02	0.40	0.40	0.24	0.52	0.15	0.15
Clearance Time (s)	4.7	5.1	5.1		5.1	5.4	5.4
Vehicle Extension (s)	1.0	4.9	4.9		4.9	1.0	1.0
Lane Grp Cap (vph)	30	2037	634	433	2638	264	236
v/s Ratio Prot	0.01	0.15		c0.36	c0.24	c0.04	
v/s Ratio Perm			0.06				0.03
v/c Ratio	0.33	0.36	0.15	1.48	0.47	0.23	0.18
Uniform Delay, d1	28.4	12.3	11.2	22.0	8.9	21.9	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.2	0.2	226.3	0.3	0.2	0.1
Delay (s)	30.8	12.5	11.4	248.3	9.2	22.1	21.8
Level of Service	C	B	B	F	A	C	C
Approach Delay (s)		12.4			91.1	21.9	
Approach LOS		B			F	C	

Intersection Summary
































HCM Average Control Delay	59.4	HCM Level of Service	E
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	↵
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3444		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3444		1770	3539	1770	1583
Volume (vph)	1510	330	300	1360	80	240
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1557	340	309	1402	82	247
RTOR Reduction (vph)	12	0	0	0	0	234
Lane Group Flow (vph)	1885	0	309	1402	82	13
Turn Type			Split			Perm
Protected Phases	2		1	1	3	
Permitted Phases						3
Actuated Green, G (s)	55.3		57.3	57.3	7.8	7.8
Effective Green, g (s)	56.3		58.1	58.1	7.3	7.3
Actuated g/C Ratio	0.40		0.42	0.42	0.05	0.05
Clearance Time (s)	5.0		4.8	4.8	3.5	3.5
Vehicle Extension (s)	6.8		6.3	6.3	2.0	2.0
Lane Grp Cap (vph)	1389		737	1473	93	83
v/s Ratio Prot	c0.55		0.17	c0.40	c0.05	
v/s Ratio Perm						0.01
v/c Ratio	1.36		0.42	0.95	0.88	0.16
Uniform Delay, d1	41.6		28.8	39.4	65.7	63.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	165.5		1.2	14.2	55.4	0.3
Delay (s)	207.1		30.0	53.6	121.1	63.5
Level of Service	F		C	D	F	E
Approach Delay (s)	207.1			49.4	77.9	
Approach LOS	F			D	E	

Intersection Summary

HCM Average Control Delay	127.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	139.6	Sum of lost time (s)	17.9
Intersection Capacity Utilization	83.3%	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	 	  		 	  			 			 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	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	5085	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	5085	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	410	1110	40	410	1540	10	40	480	190	10	590	470
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	423	1144	41	423	1588	10	41	495	196	10	608	485
RTOR Reduction (vph)	0	0	27	0	0	6	0	0	92	0	0	289
Lane Group Flow (vph)	423	1144	14	423	1588	4	41	495	104	10	608	196
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	5	2		1	6		4	8	1	7	3	
Permitted Phases			2			6			8			3
Actuated Green, G (s)	9.2	20.6	20.6	10.1	21.1	21.1	3.7	17.7	27.8	0.7	13.1	13.1
Effective Green, g (s)	9.2	22.6	22.6	9.7	23.1	23.1	4.0	16.7	26.4	0.7	13.4	13.4
Actuated g/C Ratio	0.14	0.34	0.34	0.15	0.35	0.35	0.06	0.25	0.40	0.01	0.20	0.20
Clearance Time (s)	4.0	6.0	6.0	3.6	6.0	6.0	4.3	3.0	3.6	4.0	4.3	4.3
Vehicle Extension (s)	3.0	2.0	2.0	1.0	2.0	2.0	1.0	0.2	1.0	3.0	1.0	1.0
Lane Grp Cap (vph)	481	1749	545	507	1788	557	108	900	732	19	722	323
v/s Ratio Prot	c0.12	0.22		0.12	c0.31		0.02	c0.14	0.02	0.01	c0.17	
v/s Ratio Perm			0.01			0.00			0.04			0.12
v/c Ratio	0.88	0.65	0.03	0.83	0.89	0.01	0.38	0.55	0.14	0.53	0.84	0.61
Uniform Delay, d1	27.7	18.2	14.3	27.2	20.1	13.8	29.7	21.2	12.5	32.3	25.1	23.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.6	0.7	0.0	10.8	5.6	0.0	0.8	0.4	0.0	23.9	8.5	2.2
Delay (s)	44.3	18.9	14.3	38.1	25.7	13.8	30.5	21.7	12.5	56.2	33.6	26.0
Level of Service	D	B	B	D	C	B	C	C	B	E	C	C
Approach Delay (s)		25.5			28.2			19.7			30.4	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM Average Control Delay			26.7			HCM Level of Service		C				
HCM Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			65.7			Sum of lost time (s)		8.0				
Intersection Capacity Utilization			74.4%			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	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	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	5085	1583	3433	5085	1583	3433	5085	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	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	580	220	930	430	440	350	910	1290	90	120	1890	520
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	598	227	959	443	454	361	938	1330	93	124	1948	536
RTOR Reduction (vph)	0	0	211	0	0	97	0	0	50	0	0	169
Lane Group Flow (vph)	598	227	748	443	454	264	938	1330	43	124	1948	367
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.5	38.1	38.1	13.5	35.0	35.0	27.5	68.5	68.5	7.8	48.4	48.4
Effective Green, g (s)	18.0	39.7	39.7	15.0	36.7	36.7	29.0	70.0	70.0	9.3	50.3	50.3
Actuated g/C Ratio	0.12	0.26	0.26	0.10	0.24	0.24	0.19	0.47	0.47	0.06	0.34	0.34
Clearance Time (s)	5.5	5.6	5.6	5.5	5.7	5.7	5.5	5.5	5.5	5.5	5.9	5.9
Vehicle Extension (s)	1.0	5.0	5.0	1.0	5.9	5.9	1.0	5.4	5.4	1.0	5.4	5.4
Lane Grp Cap (vph)	412	1346	419	343	1244	387	664	2373	739	213	1705	531
v/s Ratio Prot	c0.17	0.04		0.13	0.09		c0.27	0.26		0.04	c0.38	
v/s Ratio Perm			c0.47			0.17			0.03			0.23
v/c Ratio	1.45	0.17	1.79	1.29	0.36	0.68	1.41	0.56	0.06	0.58	1.14	0.69
Uniform Delay, d1	66.0	42.4	55.1	67.5	47.0	51.4	60.5	28.9	21.9	68.5	49.9	43.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	216.3	0.1	362.8	151.3	0.5	7.3	194.6	0.6	0.1	2.6	71.7	5.2
Delay (s)	282.3	42.6	418.0	218.8	47.5	58.7	255.1	29.4	22.0	71.1	121.6	48.3
Level of Service	F	D	F	F	D	E	F	C	C	E	F	D
Approach Delay (s)		324.7			111.0			118.8			104.1	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	158.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	116.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	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	5085	1583	3433	5085	1583	3433	5085	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	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	330	700	350	270	960	280	380	960	50	280	1830	510
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	340	722	361	278	990	289	392	990	52	289	1887	526
RTOR Reduction (vph)	0	0	167	0	0	183	0	0	30	0	0	170
Lane Group Flow (vph)	340	722	194	278	990	106	392	990	22	289	1887	356
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.9	31.4	31.4	14.0	30.7	30.7	17.0	56.7	56.7	14.2	53.9	53.9
Effective Green, g (s)	16.4	33.1	33.1	15.5	32.2	32.2	18.5	58.3	58.3	15.7	55.5	55.5
Actuated g/C Ratio	0.12	0.24	0.24	0.11	0.23	0.23	0.13	0.42	0.42	0.11	0.40	0.40
Clearance Time (s)	5.5	5.7	5.7	5.5	5.5	5.5	5.5	5.6	5.6	5.5	5.6	5.6
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.9	4.9	1.0	4.9	4.9	1.0	4.9	4.9
Lane Grp Cap (vph)	406	1214	378	384	1181	368	458	2139	666	389	2036	634
v/s Ratio Prot	c0.10	0.14		0.08	c0.19		c0.11	c0.19		0.08	c0.37	
v/s Ratio Perm			0.12			0.07			0.01			0.22
v/c Ratio	0.84	0.59	0.51	0.72	0.84	0.29	0.86	0.46	0.03	0.74	0.93	0.56
Uniform Delay, d1	59.8	46.8	45.7	59.5	50.7	43.8	58.7	28.9	23.6	59.5	39.6	32.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.4	1.2	2.2	5.6	5.9	0.9	14.0	0.3	0.0	6.6	8.2	1.8
Delay (s)	73.2	48.0	48.0	65.1	56.6	44.6	72.8	29.2	23.6	66.1	47.8	34.0
Level of Service	E	D	D	E	E	D	E	C	C	E	D	C
Approach Delay (s)		54.0			55.9			40.9			47.1	
Approach LOS		D			E			D			D	

Intersection Summary

HCM Average Control Delay	49.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	138.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	87.5%	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	↖↗	↑↑	↖	↖	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑↑	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.86	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	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	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	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Volume (vph)	130	550	830	90	350	170	360	1120	50	140	1790	110
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	134	567	856	93	361	175	371	1155	52	144	1845	113
RTOR Reduction (vph)	0	0	170	0	0	110	0	0	35	0	0	70
Lane Group Flow (vph)	134	567	686	93	361	65	371	1155	17	144	1845	43
Turn Type	Prot		Perm		Prot		Perm		Prot		Perm	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.2	44.0	44.0	7.0	43.8	43.8	14.0	37.0	37.0	12.0	35.0	35.0
Effective Green, g (s)	8.2	46.0	46.0	7.0	44.8	44.8	14.0	39.0	39.0	12.0	37.0	37.0
Actuated g/C Ratio	0.07	0.38	0.38	0.06	0.37	0.37	0.12	0.32	0.32	0.10	0.31	0.31
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	2.0	3.4	3.4	2.0	4.1	4.1
Lane Grp Cap (vph)	235	1357	607	103	1898	591	401	1653	514	177	1976	488
v/s Ratio Prot	0.04	0.16		c0.05	0.07		c0.11	0.23		0.08	c0.29	
v/s Ratio Perm			c0.43			0.04			0.01			0.03
v/c Ratio	0.57	0.42	1.13	0.90	0.19	0.11	0.93	0.70	0.03	0.81	0.93	0.09
Uniform Delay, d1	54.2	27.2	37.0	56.2	25.4	24.6	52.5	35.4	27.6	52.9	40.3	29.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.4	78.2	57.5	0.1	0.2	26.6	2.5	0.1	22.9	9.7	0.4
Delay (s)	56.3	27.5	115.2	113.7	25.5	24.8	79.0	37.8	27.8	75.8	50.0	29.9
Level of Service	E	C	F	F	C	C	E	D	C	E	D	C
Approach Delay (s)		78.2			38.3			47.2			50.7	
Approach LOS		E			D			D			D	

Intersection Summary

HCM Average Control Delay	55.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.3%	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		↑↓			↑↓					↑		↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0		4.0
Lane Util. Factor		0.95			0.95					1.00		1.00
Frt		0.98			0.94					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		3463			3324					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		3463			3324					1770		1583
Volume (vph)	0	180	30	0	1040	710	0	0	0	40	0	820
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	186	31	0	1072	732	0	0	0	41	0	845
RTOR Reduction (vph)	0	14	0	0	124	0	0	0	0	0	0	47
Lane Group Flow (vph)	0	203	0	0	1680	0	0	0	0	41	0	798
Turn Type										Prot		custom
Protected Phases		4			8					2		
Permitted Phases												2
Actuated Green, G (s)		52.3			52.3					38.0		38.0
Effective Green, g (s)		52.3			52.3					38.0		38.0
Actuated g/C Ratio		0.53			0.53					0.39		0.39
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)		1842			1769					684		612
v/s Ratio Prot		0.06			c0.51					0.02		
v/s Ratio Perm												c0.50
v/c Ratio		0.11			0.95					0.06		1.30
Uniform Delay, d1		11.4			21.8					18.9		30.1
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		0.0			11.5					0.0		148.2
Delay (s)		11.5			33.3					19.0		178.4
Level of Service		B			C					B		F
Approach Delay (s)		11.5			33.3			0.0			171.0	
Approach LOS		B			C			A				F
Intersection Summary												
HCM Average Control Delay			73.6			HCM Level of Service				E		
HCM Volume to Capacity ratio			1.10									
Actuated Cycle Length (s)			98.3			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			108.9%			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		↑↓			↑↓		↑		↑			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0		4.0			
Lane Util. Factor		0.95			0.95		1.00		1.00			
Frt		0.96			0.98		1.00		0.85			
Flt Protected		1.00			1.00		0.95		1.00			
Satd. Flow (prot)		3394			3465		1770		1583			
Flt Permitted		1.00			1.00		0.95		1.00			
Satd. Flow (perm)		3394			3465		1770		1583			
Volume (vph)	0	160	60	0	1480	240	270	0	330	0	0	0
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	165	62	0	1526	247	278	0	340	0	0	0
RTOR Reduction (vph)	0	26	0	0	19	0	0	0	252	0	0	0
Lane Group Flow (vph)	0	201	0	0	1754	0	278	0	88	0	0	0
Turn Type							Prot		custom			
Protected Phases		4			8		2					
Permitted Phases									2			
Actuated Green, G (s)		30.4			30.4		13.5		13.5			
Effective Green, g (s)		30.4			30.4		13.5		13.5			
Actuated g/C Ratio		0.59			0.59		0.26		0.26			
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)		1988			2030		460		412			
v/s Ratio Prot		0.06			c0.51		c0.16					
v/s Ratio Perm									0.06			
v/c Ratio		0.10			0.86		0.60		0.21			
Uniform Delay, d1		4.7			9.0		16.9		15.0			
Progression Factor		1.00			1.00		1.00		1.00			
Incremental Delay, d2		0.0			4.1		2.2		0.3			
Delay (s)		4.8			13.1		19.1		15.3			
Level of Service		A			B		B		B			
Approach Delay (s)		4.8			13.1			17.0			0.0	
Approach LOS		A			B			B			A	
Intersection Summary												
HCM Average Control Delay			13.3			HCM Level of Service			B			
HCM Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			51.9			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			70.2%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												



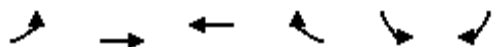
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑					↘		↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0		4.0
Lane Util. Factor		0.91			0.91					1.00		1.00
Frt		0.95			0.92					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		4815			4666					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		4815			4666					1770		1583
Volume (vph)	0	110	60	0	670	820	0	0	0	300	0	330
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	113	62	0	691	845	0	0	0	309	0	340
RTOR Reduction (vph)	0	36	0	0	379	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	139	0	0	1157	0	0	0	0	309	0	301
Turn Type										Prot		custom
Protected Phases		4			8					1		
Permitted Phases												1
Actuated Green, G (s)		15.0			15.0					13.1		13.1
Effective Green, g (s)		15.0			15.0					13.1		13.1
Actuated g/C Ratio		0.42			0.42					0.36		0.36
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)		2001			1939					642		574
v/s Ratio Prot		0.03			c0.25					0.17		
v/s Ratio Perm												c0.19
v/c Ratio		0.07			0.60					0.48		0.52
Uniform Delay, d1		6.3			8.2					8.9		9.0
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		0.0			0.5					0.6		0.9
Delay (s)		6.4			8.7					9.4		9.9
Level of Service		A			A					A		A
Approach Delay (s)		6.4			8.7			0.0			9.7	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM Average Control Delay			8.8			HCM Level of Service				A		
HCM Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			36.1			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			58.5%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑		↖		↗			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0		4.0			
Lane Util. Factor		0.91			0.91		1.00		1.00			
Frt		0.99			0.99		1.00		0.85			
Flt Protected		1.00			1.00		0.95		1.00			
Satd. Flow (prot)		5047			5023		1770		1583			
Flt Permitted		1.00			1.00		0.95		1.00			
Satd. Flow (perm)		5047			5023		1770		1583			
Volume (vph)	0	390	20	0	1350	120	140	0	600	0	0	0
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	402	21	0	1392	124	144	0	619	0	0	0
RTOR Reduction (vph)	0	10	0	0	18	0	0	0	125	0	0	0
Lane Group Flow (vph)	0	413	0	0	1498	0	144	0	494	0	0	0
Turn Type							Prot		custom			
Protected Phases		4			8		2					
Permitted Phases									2			
Actuated Green, G (s)		16.2			16.2		16.8		16.8			
Effective Green, g (s)		16.2			16.2		16.8		16.8			
Actuated g/C Ratio		0.40			0.40		0.41		0.41			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1994			1985		725		649			
v/s Ratio Prot		0.08			c0.30		0.08					
v/s Ratio Perm									c0.31			
v/c Ratio		0.21			0.75		0.20		0.76			
Uniform Delay, d1		8.2			10.7		7.8		10.4			
Progression Factor		1.00			1.00		1.00		1.00			
Incremental Delay, d2		0.1			1.7		0.1		5.3			
Delay (s)		8.2			12.4		7.9		15.7			
Level of Service		A			B		A		B			
Approach Delay (s)		8.2			12.4			14.2			0.0	
Approach LOS		A			B			B			A	
Intersection Summary												
HCM Average Control Delay			12.2			HCM Level of Service			B			
HCM Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			41.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			51.8%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	500	300	0	1420	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	515	309	0	1464	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)				582		
pX, platoon unblocked						
vC, conflicting volume			825		1158	326
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			825		1158	326
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			801		189	669
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3
Volume Total	206	206	412	488	488	488
Volume Left	0	0	0	0	0	0
Volume Right	0	0	309	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.12	0.12	0.24	0.29	0.29	0.29
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						
Approach Delay (s)	0.0			0.0		
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			30.8%		ICU Level of Service	A
Analysis Period (min)			15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	1300	2050	380	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1340	2113	392	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)		325				
pX, platoon unblocked					0.91	
vC, conflicting volume	2505				2756	900
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2505				2733	900
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	179				15	281
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3
Volume Total	447	447	447	845	845	814
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	392
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.26	0.26	0.26	0.50	0.50	0.48
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						
Approach Delay (s)	0.0			0.0		
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			51.4%		ICU Level of Service	A
Analysis Period (min)			15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↑↑		↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.91		1.00	1.00
Frt		1.00	0.93		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1863	4710		1770	1583
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1863	4710		1770	1583
Volume (vph)	0	890	680	660	390	160
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	918	701	680	402	165
RTOR Reduction (vph)	0	0	226	0	0	114
Lane Group Flow (vph)	0	918	1155	0	402	51
Turn Type						Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		33.4	33.4		18.3	18.3
Effective Green, g (s)		33.4	33.4		18.3	18.3
Actuated g/C Ratio		0.56	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)		1042	2635		543	485
v/s Ratio Prot		c0.49	0.25		c0.23	
v/s Ratio Perm						0.03
v/c Ratio		0.88	0.44		0.74	0.10
Uniform Delay, d1		11.4	7.7		18.6	14.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		8.9	0.1		5.4	0.1
Delay (s)		20.3	7.8		24.0	14.9
Level of Service		C	A		C	B
Approach Delay (s)		20.3	7.8		21.3	
Approach LOS		C	A		C	
Intersection Summary						
HCM Average Control Delay			14.5		HCM Level of Service	B
HCM Volume to Capacity ratio			0.83			
Actuated Cycle Length (s)			59.7		Sum of lost time (s)	8.0
Intersection Capacity Utilization			75.1%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						



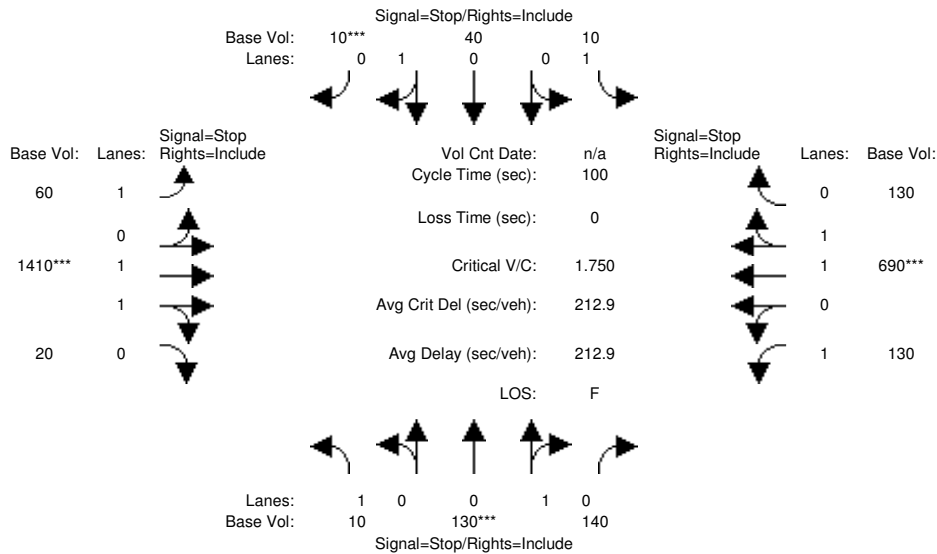
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	5002			5085	1770	1583
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	5002			5085	1770	1583
Volume (vph)	1140	140	0	1050	290	1390
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1175	144	0	1082	299	1433
RTOR Reduction (vph)	23	0	0	0	0	0
Lane Group Flow (vph)	1296	0	0	1082	299	1433
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	16.0			16.0	41.0	41.0
Effective Green, g (s)	16.0			16.0	41.0	41.0
Actuated g/C Ratio	0.25			0.25	0.63	0.63
Clearance Time (s)	4.0			4.0	4.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1231			1252	1116	999
v/s Ratio Prot	c0.26			0.21	0.17	
v/s Ratio Perm						c0.90
v/c Ratio	1.05			0.86	0.27	1.43
Uniform Delay, d1	24.5			23.5	5.3	12.0
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	40.7			6.4	0.1	201.1
Delay (s)	65.2			29.9	5.5	213.1
Level of Service	E			C	A	F
Approach Delay (s)	65.2			29.9	177.3	
Approach LOS	E			C	F	

Intersection Summary

HCM Average Control Delay	102.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	117.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
 2000 HCM 4-Way Stop (Base Volume Alternative)
 C. + Preferred Alt. PM

Intersection #5: Elverta Road / East Levee Road



Street Name:	East Levee Road						Elverta Road					
	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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Volume Module:

Base Vol:	10	130	140	10	40	10	60	1410	20	130	690	130
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	130	140	10	40	10	60	1410	20	130	690	130
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	10	134	144	10	41	10	62	1454	21	134	711	134
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	134	144	10	41	10	62	1454	21	134	711	134
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	10	134	144	10	41	10	62	1454	21	134	711	134

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.48	0.52	1.00	0.80	0.20	1.00	1.97	0.03	1.00	1.68	0.32
Final Sat.:	374	198	214	341	291	73	393	831	12	400	725	139

Capacity Analysis Module:

Vol/Sat:	0.03	0.68	0.68	0.03	0.14	0.14	0.16	1.75	1.75	0.33	0.98	0.97
Crit Moves:	****			****			****			****		
Delay/Veh:	12.5	27.4	27.4	13.3	13.9	13.9	13.4	368	366.6	16.1	67.8	63.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.5	27.4	27.4	13.3	13.9	13.9	13.4	368	366.6	16.1	67.8	63.5
LOS by Move:	B	D	D	B	B	B	B	F	F	C	F	F
ApproachDel:	26.9			13.8			353.2			60.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	26.9			13.8			353.2			60.1		
LOS by Appr:	D			B			F			F		
AllWayAvgQ:	0.0	1.8	1.8	0.0	0.2	0.2	0.2	41.7	41.6	0.5	7.1	6.4

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #5 Elverta Road / East Levee Road

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound	South Bound	East Bound	West Bound
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Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	1	0	0	1	0	0	1	0	1	0	1	0
Initial Vol:	10	130	140	10	40	10	60	1410	20	130	690	130
Major Street Volume:	2440											
Minor Approach Volume:	280											
Minor Approach Volume Threshold:	-10 [less than minimum of 150]											

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑↑	↑↑↑↔		↘	↘
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	250	1990	810	90	40	150
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	258	2052	835	93	41	155
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	928				2081	325
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	928				2081	325
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	65				0	77
cM capacity (veh/h)	733				30	671

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1	SB 2
Volume Total	258	684	684	684	334	334	260	41	155
Volume Left	258	0	0	0	0	0	0	41	0
Volume Right	0	0	0	0	0	0	93	0	155
cSH	733	1700	1700	1700	1700	1700	1700	30	671
Volume to Capacity	0.35	0.40	0.40	0.40	0.20	0.20	0.15	1.39	0.23
Queue Length 95th (ft)	40	0	0	0	0	0	0	118	22
Control Delay (s)	12.6	0.0	0.0	0.0	0.0	0.0	0.0	500.4	12.0
Lane LOS	B							F	B
Approach Delay (s)	1.4				0.0			114.8	
Approach LOS								F	

Intersection Summary			
Average Delay		7.5	
Intersection Capacity Utilization	48.4%		ICU Level of Service
Analysis Period (min)		15	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Sign Control	Free		Free		Free		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	330	1220	10	10	690	10	10	10	10	10	10	250
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	340	1258	10	10	711	10	10	10	10	10	10	258
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	722			1268			2582	2686	634	2062	2686	361
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	722			1268			2582	2686	634	2062	2686	361
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	61			98			0	20	98	0	20	59
cM capacity (veh/h)	876			544			2	13	422	8	13	636

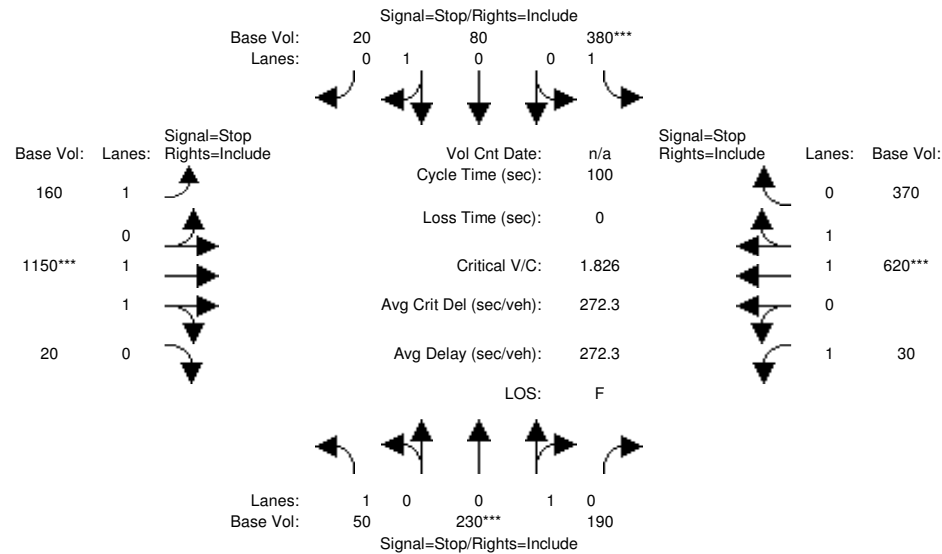
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	340	838	430	10	474	247	10	21	10	268
Volume Left	340	0	0	10	0	0	10	0	10	0
Volume Right	0	0	10	0	0	10	0	10	0	258
cSH	876	1700	1700	544	1700	1700	2	25	8	223
Volume to Capacity	0.39	0.49	0.25	0.02	0.28	0.15	5.56	0.82	1.34	1.20
Queue Length 95th (ft)	46	0	0	1	0	0	Err	63	53	332
Control Delay (s)	11.7	0.0	0.0	11.7	0.0	0.0	Err	343.3	1090.4	171.5
Lane LOS	B			B			F	F	F	F
Approach Delay (s)	2.5			0.2			3561.9	205.5		
Approach LOS							F	F		

Intersection Summary

Average Delay	64.7	
Intersection Capacity Utilization	63.7%	ICU Level of Service
Analysis Period (min)	15	

Level Of Service Computation Report
 2000 HCM 4-Way Stop (Base Volume Alternative)
 C. + Preferred Alt. PM

Intersection #8: Elverta Road / Elwyn Road



Street Name:	Elwyn Road						Elverta Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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Volume Module:												
Base Vol:	50	230	190	380	80	20	160	1150	20	30	620	370
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	230	190	380	80	20	160	1150	20	30	620	370
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	52	237	196	392	82	21	165	1186	21	31	639	381
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	237	196	392	82	21	165	1186	21	31	639	381
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	52	237	196	392	82	21	165	1186	21	31	639	381

Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.55	0.45	1.00	0.80	0.20	1.00	1.97	0.03	1.00	1.25	0.75
Final Sat.:	323	191	158	326	276	69	315	649	11	304	404	250

Capacity Analysis Module:												
Vol/Sat:	0.16	1.24	1.24	1.20	0.30	0.30	0.52	1.83	1.82	0.10	1.58	1.52
Crit Moves:	****			****			****			****		
Delay/Veh:	15.9	160	159.8	148.2	17.4	17.4	26.0	408	406.9	15.8	304	277.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.9	160	159.8	148.2	17.4	17.4	26.0	408	406.9	15.8	304	277.2
LOS by Move:	C	F	F	F	C	C	D	F	F	C	F	F
ApproachDel:	144.5			120.9			361.9			285.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	144.5			120.9			361.9			285.7		
LOS by Appr:	F			F			F			F		
AllWayAvgQ:	0.2	14.2	14.2	12.2	0.4	0.4	1.0	36.2	36.1	0.1	26.3	24.5

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #8 Elverta Road / Elwyn Road

Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound	South Bound	East Bound	West Bound
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Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	1	0	0	1	0	0	1	0	1	0	1	0
Initial Vol:	50	230	190	380	80	20	160	1150	20	30	620	370
Major Street Volume:	2350											
Minor Approach Volume:	480											
Minor Approach Volume Threshold:	7 [less than minimum of 150]											

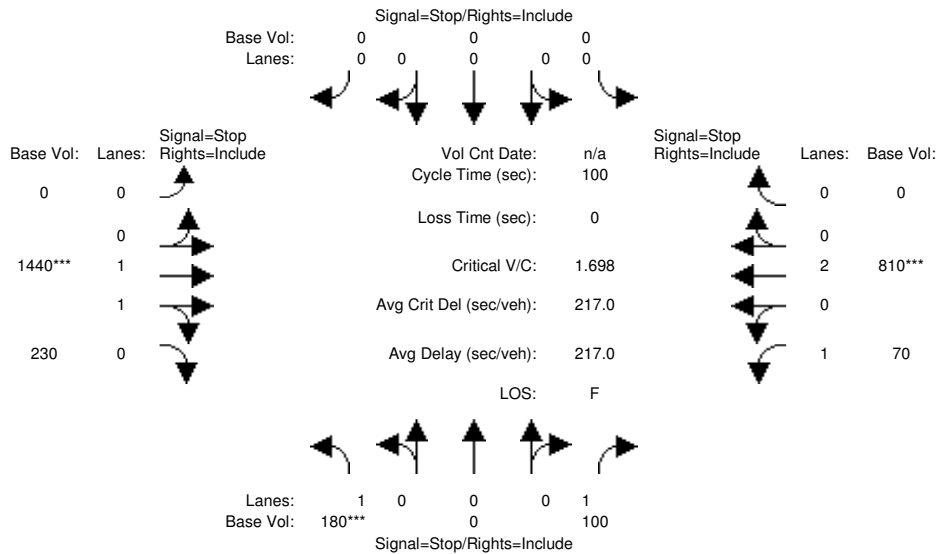
SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Level Of Service Computation Report
 2000 HCM 4-Way Stop (Base Volume Alternative)
 C. + Preferred Alt. PM

Intersection #9: Elverta Road / Rio Linda Boulevard



Street Name:	Rio Linda Boulevard						Elverta Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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Volume Module:

Base Vol:	180	0	100	0	0	0	0	1440	230	70	810	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	0	100	0	0	0	0	1440	230	70	810	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	186	0	103	0	0	0	0	1485	237	72	835	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	186	0	103	0	0	0	0	1485	237	72	835	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	186	0	103	0	0	0	0	1485	237	72	835	0

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.72	0.28	1.00	2.00	0.00
Final Sat.:	390	0	446	0	0	0	0	874	142	426	907	0

Capacity Analysis Module:

Vol/Sat:	0.48	xxxx	0.23	xxxx	xxxx	xxxx	xxxx	1.70	1.67	0.17	0.92	xxxx
Crit Moves:	****							****			****	
Delay/Veh:	19.5	0.0	12.9	0.0	0.0	0.0	0.0	340	328.4	12.8	52.7	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.5	0.0	12.9	0.0	0.0	0.0	0.0	340	328.4	12.8	52.7	0.0
LOS by Move:	C	*	B	*	*	*	*	F	F	B	F	*
ApproachDel:		17.2		xxxxxx				338.8			49.5	
Delay Adj:		1.00		xxxxxx				1.00			1.00	
ApprAdjDel:		17.2		xxxxxx				338.8			49.5	
LOS by Appr:		C		*				F			E	
AllWayAvgQ:	0.8	0.0	0.3	0.0	0.0	0.0	0.0	47.2	45.6	0.2	5.3	0.0

Note: Queue reported is the number of cars per lane.

Peak Hour Volume Signal Warrant Report [Urban]

 Intersection #9 Elverta Road / Rio Linda Boulevard

 Base Volume Alternative: Peak Hour Warrant Met

Approach:	North Bound	South Bound	East Bound	West Bound
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Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign			
Lanes:	1	0	0	0	1	0	0	0	0	0	1	1	0
Initial Vol:	180	0	100	0	0	0	0	1440	230	70	810	0	
Major Street Volume:	2550												
Minor Approach Volume:	280												
Minor Approach Volume Threshold:	-28 [less than minimum of 150]												

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

	→	↘	↙	←	↖	↗	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑		↘	↑↑	↘	↗	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Volume (veh/h)	1280	40	110	830	60	290	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	1320	41	113	856	62	299	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage (veh)							
Upstream signal (ft)				714			
pX, platoon unblocked					0.85		
vC, conflicting volume			1361		1995	680	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			1361		1994	680	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			77		0	24	
cM capacity (veh/h)			501		34	393	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	880	481	113	428	428	62	299
Volume Left	0	0	113	0	0	62	0
Volume Right	0	41	0	0	0	0	299
cSH	1700	1700	501	1700	1700	34	393
Volume to Capacity	0.52	0.28	0.23	0.25	0.25	1.80	0.76
Queue Length 95th (ft)	0	0	22	0	0	171	156
Control Delay (s)	0.0	0.0	14.3	0.0	0.0	630.9	37.9
Lane LOS			B			F	E
Approach Delay (s)	0.0		1.7			139.6	
Approach LOS						F	
Intersection Summary							
Average Delay			19.3				
Intersection Capacity Utilization			61.3%		ICU Level of Service		B
Analysis Period (min)			15				



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3509		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3509		1770	1583
Volume (vph)	360	1210	830	50	20	110
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	371	1247	856	52	21	113
RTOR Reduction (vph)	0	0	5	0	0	99
Lane Group Flow (vph)	371	1247	903	0	21	14
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	16.0	39.5	19.5		6.8	6.8
Effective Green, g (s)	16.0	39.5	19.5		6.8	6.8
Actuated g/C Ratio	0.29	0.73	0.36		0.13	0.13
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)	522	2574	1260		222	198
v/s Ratio Prot	c0.21	0.35	c0.26		c0.01	
v/s Ratio Perm						0.01
v/c Ratio	0.71	0.48	0.72		0.09	0.07
Uniform Delay, d1	17.1	3.1	15.0		21.0	21.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.5	0.1	2.0		0.2	0.2
Delay (s)	21.6	3.3	17.0		21.2	21.1
Level of Service	C	A	B		C	C
Approach Delay (s)		7.5	17.0		21.1	
Approach LOS		A	B		C	

Intersection Summary

HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.8%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	40	60	50	100	70	10	110	390	30	10	220	10
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	41	62	52	103	72	10	113	402	31	10	227	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	155	186	546	247
Volume Left (vph)	41	103	113	10
Volume Right (vph)	52	10	31	10
Hadj (s)	-0.11	0.11	0.04	0.02
Departure Headway (s)	6.6	6.7	5.6	6.1
Degree Utilization, x	0.28	0.35	0.85	0.42
Capacity (veh/h)	496	492	632	538
Control Delay (s)	12.2	13.2	31.9	13.4
Approach Delay (s)	12.2	13.2	31.9	13.4
Approach LOS	B	B	D	B

Intersection Summary			
Delay		22.1	
HCM Level of Service		C	
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)		15	



























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	150	130	50	120	140	20	90	350	210	10	330	50
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	155	134	52	124	144	21	93	361	216	10	340	52

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	340	289	670	402
Volume Left (vph)	155	124	93	10
Volume Right (vph)	52	21	216	52
Hadj (s)	0.03	0.08	-0.13	-0.04
Departure Headway (s)	8.7	9.0	8.3	8.4
Degree Utilization, x	0.83	0.72	1.55	0.94
Capacity (veh/h)	390	377	433	420
Control Delay (s)	41.6	32.4	278.4	58.3
Approach Delay (s)	41.6	32.4	278.4	58.3
Approach LOS	E	D	F	F

Intersection Summary			
Delay		137.3	
HCM Level of Service		F	
Intersection Capacity Utilization		91.0%	ICU Level of Service E
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	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	5085	1583	1770	1863	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	5085	1583	1770	1863	1583	1770	3539	1583
Volume (vph)	60	1270	180	200	740	170	140	570	80	110	490	20
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	62	1309	186	206	763	175	144	588	82	113	505	21
RTOR Reduction (vph)	0	0	126	0	0	118	0	0	51	0	0	13
Lane Group Flow (vph)	62	1309	60	206	763	57	144	588	31	113	505	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7		4
Permitted Phases			6			2			8			4
Actuated Green, G (s)	3.3	25.0	25.0	3.1	25.1	25.1	3.1	26.9	26.9	5.3	28.9	28.9
Effective Green, g (s)	4.1	26.1	26.1	4.6	26.6	26.6	4.6	28.0	28.0	6.8	30.2	30.2
Actuated g/C Ratio	0.05	0.32	0.32	0.06	0.33	0.33	0.06	0.34	0.34	0.08	0.37	0.37
Clearance Time (s)	4.8	5.1	5.1	5.5	5.5	5.5	5.5	5.1	5.1	5.5	5.3	5.3
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	173	1628	507	194	1660	517	100	640	544	148	1311	587
v/s Ratio Prot	0.02	c0.26		c0.06	0.15		c0.08	c0.32		0.06	0.14	
v/s Ratio Perm			0.04			0.04			0.02			0.00
v/c Ratio	0.36	0.80	0.12	1.06	0.46	0.11	1.44	0.92	0.06	0.76	0.39	0.01
Uniform Delay, d1	37.4	25.4	19.6	38.5	21.8	19.2	38.5	25.7	17.9	36.6	18.8	16.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	2.8	0.0	81.9	0.1	0.0	245.5	17.9	0.0	18.7	0.1	0.0
Delay (s)	37.9	28.2	19.6	120.4	21.8	19.2	284.0	43.6	17.9	55.3	18.9	16.2
Level of Service	D	C	B	F	C	B	F	D	B	E	B	B
Approach Delay (s)		27.5			39.2			83.5			25.2	
Approach LOS		C			D			F			C	
Intersection Summary												
HCM Average Control Delay			41.4				HCM Level of Service			D		
HCM Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			81.5				Sum of lost time (s)		16.0			
Intersection Capacity Utilization			79.7%				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		 			 			 			 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.97		1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3535		1770	3443		1770	1748		1770	1780	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3535		1770	3443		1770	1748		1770	1780	
Volume (vph)	90	1160	10	210	900	200	10	330	230	110	260	110
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	93	1196	10	216	928	206	10	340	237	113	268	113
RTOR Reduction (vph)	0	1	0	0	21	0	0	27	0	0	16	0
Lane Group Flow (vph)	93	1205	0	216	1113	0	10	550	0	113	365	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.6	30.8		11.0	36.2		0.8	30.2		6.0	35.4	
Effective Green, g (s)	5.6	30.8		11.0	36.2		0.8	30.2		6.0	35.4	
Actuated g/C Ratio	0.06	0.33		0.12	0.39		0.01	0.32		0.06	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)	105	1158		207	1326		15	562		113	670	
v/s Ratio Prot	0.05	c0.34		c0.12	0.32		0.01	c0.31		c0.06	0.21	
v/s Ratio Perm												
v/c Ratio	0.89	1.04		1.04	0.84		0.67	0.98		1.00	0.55	
Uniform Delay, d1	43.9	31.6		41.5	26.3		46.5	31.6		44.0	23.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	52.9	37.7		74.4	4.8		75.9	32.1		84.7	0.9	
Delay (s)	96.8	69.3		115.9	31.1		122.3	63.7		128.7	23.9	
Level of Service	F	E		F	C		F	E		F	C	
Approach Delay (s)		71.3			44.7			64.7			47.9	
Approach LOS		E			D			E			D	
Intersection Summary												
HCM Average Control Delay			57.5			HCM Level of Service		E				
HCM Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			94.0			Sum of lost time (s)		16.0				
Intersection Capacity Utilization			94.9%			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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	120	10	10	20	10	10	40	500	30	30	200	160
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	124	10	10	21	10	10	41	515	31	31	206	165

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	144	41	588	402
Volume Left (vph)	124	21	41	31
Volume Right (vph)	10	10	31	165
Hadj (s)	0.16	-0.02	0.02	-0.20
Departure Headway (s)	6.6	6.8	5.1	5.2
Degree Utilization, x	0.27	0.08	0.84	0.58
Capacity (veh/h)	502	463	688	668
Control Delay (s)	12.0	10.4	28.8	15.0
Approach Delay (s)	12.0	10.4	28.8	15.0
Approach LOS	B	B	D	C

Intersection Summary			
Delay		21.4	
HCM Level of Service		C	
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	270	130	150	300	90	140
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	278	134	155	309	93	144
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	464				1000	309
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	464				1000	309
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	75				54	80
cM capacity (veh/h)	1097				201	731
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	412	464	237			
Volume Left	278	0	93			
Volume Right	0	309	144			
cSH	1097	1700	360			
Volume to Capacity	0.25	0.27	0.66			
Queue Length 95th (ft)	25	0	112			
Control Delay (s)	7.2	0.0	32.4			
Lane LOS	A		D			
Approach Delay (s)	7.2	0.0	32.4			
Approach LOS			D			
Intersection Summary						
Average Delay			9.5			
Intersection Capacity Utilization		71.7%		ICU Level of Service		C
Analysis Period (min)			15			



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↑↑↑	↗	↖	↑↑↑	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1770	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1770	1583
Volume (vph)	10	1380	50	410	930	170	640
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	1423	52	423	959	175	660
RTOR Reduction (vph)	0	0	27	0	0	0	497
Lane Group Flow (vph)	10	1423	25	423	959	175	163
Turn Type	Prot		Perm	Prot		Perm	
Protected Phases	1	6		4 5	2	3	
Permitted Phases			6				3
Actuated Green, G (s)	0.4	30.3	30.3	9.9	32.4	10.2	10.2
Effective Green, g (s)	1.1	31.4	31.4	9.9	33.5	11.6	11.6
Actuated g/C Ratio	0.02	0.48	0.48	0.15	0.52	0.18	0.18
Clearance Time (s)	4.7	5.1	5.1		5.1	5.4	5.4
Vehicle Extension (s)	1.0	4.9	4.9		4.9	1.0	1.0
Lane Grp Cap (vph)	30	2460	766	270	2625	316	283
v/s Ratio Prot	0.01	c0.28		c0.24	0.19	0.10	
v/s Ratio Perm			0.02				c0.10
v/c Ratio	0.33	0.58	0.03	1.57	0.37	0.55	0.58
Uniform Delay, d1	31.5	12.0	8.8	27.5	9.4	24.3	24.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.5	0.0	272.3	0.2	1.2	1.8
Delay (s)	33.9	12.5	8.8	299.8	9.5	25.5	26.2
Level of Service	C	B	A	F	A	C	C
Approach Delay (s)		12.5			98.4	26.0	
Approach LOS		B			F	C	

Intersection Summary

HCM Average Control Delay	47.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3487		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3487		1770	3539	1770	1583
Volume (vph)	1560	170	290	1590	410	300
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1608	175	299	1639	423	309
RTOR Reduction (vph)	5	0	0	0	0	190
Lane Group Flow (vph)	1778	0	299	1639	423	119
Turn Type			Split			Perm
Protected Phases	2		1	1	3	
Permitted Phases						3
Actuated Green, G (s)	55.6		43.3	43.3	21.5	21.5
Effective Green, g (s)	56.6		44.1	44.1	21.0	21.0
Actuated g/C Ratio	0.41		0.32	0.32	0.15	0.15
Clearance Time (s)	5.0		4.8	4.8	3.5	3.5
Vehicle Extension (s)	6.8		6.3	6.3	2.0	2.0
Lane Grp Cap (vph)	1414		559	1118	266	238
v/s Ratio Prot	c0.51		0.17	c0.46	c0.24	
v/s Ratio Perm						0.07
v/c Ratio	1.26		0.53	1.47	1.59	0.50
Uniform Delay, d1	41.5		39.3	47.8	59.3	54.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	121.6		2.5	214.7	282.7	0.6
Delay (s)	163.1		41.8	262.4	342.0	55.1
Level of Service	F		D	F	F	E
Approach Delay (s)	163.1			228.4	220.9	
Approach LOS	F			F	F	

Intersection Summary

HCM Average Control Delay	201.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	139.6	Sum of lost time (s)	17.9
Intersection Capacity Utilization	97.3%	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	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	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	5085	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	5085	1583	1770	3539	1583	1770	3539	1583	
Volume (vph)	480	1810	50	210	1220	10	50	570	350	10	510	440	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Adj. Flow (vph)	495	1866	52	216	1258	10	52	588	361	10	526	454	
RTOR Reduction (vph)	0	0	31	0	0	7	0	0	94	0	0	340	
Lane Group Flow (vph)	495	1866	21	216	1258	3	52	588	267	10	526	114	
Turn Type	Prot		Perm		Prot		Perm		pm+ov		Prot		Perm
Protected Phases	5	2		1	6		4	8	1	7	3		
Permitted Phases			2			6			8			3	
Actuated Green, G (s)	12.0	24.3	24.3	6.0	17.9	17.9	4.6	16.9	22.9	0.7	11.4	11.4	
Effective Green, g (s)	12.0	26.3	26.3	5.6	19.9	19.9	4.9	15.9	21.5	0.7	11.7	11.7	
Actuated g/C Ratio	0.19	0.41	0.41	0.09	0.31	0.31	0.08	0.25	0.33	0.01	0.18	0.18	
Clearance Time (s)	4.0	6.0	6.0	3.6	6.0	6.0	4.3	3.0	3.6	4.0	4.3	4.3	
Vehicle Extension (s)	3.0	2.0	2.0	1.0	2.0	2.0	1.0	0.2	1.0	3.0	1.0	1.0	
Lane Grp Cap (vph)	639	2073	645	298	1569	488	134	872	626	19	642	287	
v/s Ratio Prot	c0.14	c0.37		0.06	0.25		0.03	c0.17	0.04	0.01	c0.15		
v/s Ratio Perm			0.01			0.00			0.13			0.07	
v/c Ratio	0.77	0.90	0.03	0.72	0.80	0.01	0.39	0.67	0.43	0.53	0.82	0.40	
Uniform Delay, d1	25.0	17.9	11.5	28.7	20.5	15.4	28.4	22.0	16.7	31.7	25.4	23.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.8	5.7	0.0	7.2	2.9	0.0	0.7	1.6	0.2	23.9	7.6	0.3	
Delay (s)	30.8	23.6	11.5	35.9	23.4	15.5	29.1	23.6	16.9	55.6	33.0	23.6	
Level of Service	C	C	B	D	C	B	C	C	B	E	C	C	
Approach Delay (s)		24.8			25.1			21.5			28.9		
Approach LOS		C			C			C			C		

Intersection Summary

HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.4%	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	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	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	5085	1583	3433	5085	1583	3433	5085	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	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	530	500	960	270	360	90	1170	1420	280	140	1330	440
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	546	515	990	278	371	93	1206	1464	289	144	1371	454
RTOR Reduction (vph)	0	0	277	0	0	70	0	0	141	0	0	218
Lane Group Flow (vph)	546	515	713	278	371	23	1206	1464	148	144	1371	236
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.8	48.4	48.4	9.5	36.0	36.0	33.5	61.2	61.2	8.8	36.1	36.1
Effective Green, g (s)	23.3	50.0	50.0	11.0	37.7	37.7	35.0	62.7	62.7	10.3	38.0	38.0
Actuated g/C Ratio	0.16	0.33	0.33	0.07	0.25	0.25	0.23	0.42	0.42	0.07	0.25	0.25
Clearance Time (s)	5.5	5.6	5.6	5.5	5.7	5.7	5.5	5.5	5.5	5.5	5.9	5.9
Vehicle Extension (s)	1.0	5.0	5.0	1.0	5.9	5.9	1.0	5.4	5.4	1.0	5.4	5.4
Lane Grp Cap (vph)	533	1695	528	252	1278	398	801	2126	662	236	1288	401
v/s Ratio Prot	c0.16	0.10		0.08	0.07		c0.35	0.29		0.04	c0.27	
v/s Ratio Perm			c0.45			0.01			0.09			0.15
v/c Ratio	1.02	0.30	1.35	1.10	0.29	0.06	1.51	0.69	0.22	0.61	1.06	0.59
Uniform Delay, d1	63.4	37.1	50.0	69.5	45.3	42.7	57.5	35.7	28.0	67.9	56.0	49.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	45.3	0.2	169.6	87.1	0.3	0.2	234.0	1.3	0.4	3.3	44.2	3.7
Delay (s)	108.7	37.3	219.6	156.6	45.7	42.8	291.5	37.0	28.4	71.2	100.2	52.9
Level of Service	F	D	F	F	D	D	F	D	C	E	F	D
Approach Delay (s)		144.3			86.9			139.9			87.1	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	122.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.8%	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	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	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	5085	1583	3433	5085	1583	3433	5085	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	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	610	920	410	240	880	390	400	1840	170	380	1390	350
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	629	948	423	247	907	402	412	1897	175	392	1433	361
RTOR Reduction (vph)	0	0	156	0	0	158	0	0	58	0	0	159
Lane Group Flow (vph)	629	948	267	247	907	244	412	1897	117	392	1433	202
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	22.5	41.1	41.1	11.2	30.0	30.0	15.2	49.9	49.9	15.5	50.2	50.2
Effective Green, g (s)	24.0	42.8	42.8	12.7	31.5	31.5	16.7	51.5	51.5	17.0	51.8	51.8
Actuated g/C Ratio	0.17	0.31	0.31	0.09	0.22	0.22	0.12	0.37	0.37	0.12	0.37	0.37
Clearance Time (s)	5.5	5.7	5.7	5.5	5.5	5.5	5.5	5.6	5.6	5.5	5.6	5.6
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.9	4.9	1.0	4.9	4.9	1.0	4.9	4.9
Lane Grp Cap (vph)	589	1555	484	311	1144	356	410	1871	582	417	1881	586
v/s Ratio Prot	c0.18	0.19		0.07	c0.18		c0.12	c0.37		0.11	0.28	
v/s Ratio Perm			0.17			0.15			0.07			0.13
v/c Ratio	1.07	0.61	0.55	0.79	0.79	0.69	1.00	1.01	0.20	0.94	0.76	0.34
Uniform Delay, d1	58.0	41.5	40.6	62.4	51.2	49.7	61.6	44.2	30.2	61.0	38.7	31.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	56.5	1.0	2.3	12.2	4.4	6.8	45.7	24.3	0.3	29.1	2.2	0.7
Delay (s)	114.5	42.5	42.9	74.6	55.6	56.5	107.3	68.6	30.5	90.1	40.9	32.5
Level of Service	F	D	D	E	E	E	F	E	C	F	D	C
Approach Delay (s)		65.2			58.8			72.3			48.3	
Approach LOS		E			E			E			D	

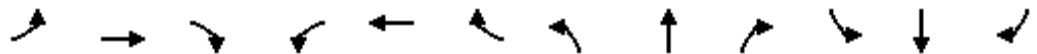
Intersection Summary

HCM Average Control Delay	61.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.91	1.00	1.00	0.86	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	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	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	3539	1583	1770	5085	1583	3433	5085	1583	1770	6408	1583
Volume (vph)	190	480	480	110	590	240	730	1630	90	220	1660	140
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	196	495	495	113	608	247	753	1680	93	227	1711	144
RTOR Reduction (vph)	0	0	259	0	0	189	0	0	47	0	0	91
Lane Group Flow (vph)	196	495	236	113	608	58	753	1680	46	227	1711	53
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.6	26.0	26.0	6.0	24.4	24.4	22.1	40.2	40.2	15.1	33.2	33.2
Effective Green, g (s)	8.6	28.0	28.0	6.0	25.4	25.4	22.1	42.2	42.2	15.1	35.2	35.2
Actuated g/C Ratio	0.08	0.26	0.26	0.06	0.24	0.24	0.21	0.39	0.39	0.14	0.33	0.33
Clearance Time (s)	4.0	6.0	6.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	2.0	4.5	4.5	2.0	5.0	5.0	2.0	3.4	3.4	2.0	4.1	4.1
Lane Grp Cap (vph)	275	924	413	99	1204	375	707	2000	623	249	2102	519
v/s Ratio Prot	0.06	0.14		c0.06	0.12		c0.22	c0.33		0.13	0.27	
v/s Ratio Perm			c0.15			0.04			0.03			0.03
v/c Ratio	0.71	0.54	0.57	1.14	0.50	0.16	1.07	0.84	0.07	0.91	0.81	0.10
Uniform Delay, d1	48.1	34.1	34.4	50.6	35.5	32.5	42.6	29.5	20.3	45.4	33.0	25.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	0.9	2.7	133.6	0.7	0.4	52.5	4.4	0.2	33.8	3.6	0.4
Delay (s)	55.2	35.0	37.1	184.2	36.2	32.9	95.1	33.9	20.6	79.2	36.6	25.5
Level of Service	E	C	D	F	D	C	F	C	C	E	D	C
Approach Delay (s)		39.2			52.6			51.7			40.5	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM Average Control Delay			46.2				HCM Level of Service			D		
HCM Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			107.3				Sum of lost time (s)		12.0			
Intersection Capacity Utilization			77.6%				ICU Level of Service		D			
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↓					↑		↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0		4.0
Lane Util. Factor		0.95			0.95					1.00		1.00
Frt		0.99			0.89					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		3491			3139					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		3491			3139					1770		1583
Volume (vph)	0	1310	130	0	170	520	0	0	0	100	0	180
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1351	134	0	175	536	0	0	0	103	0	186
RTOR Reduction (vph)	0	11	0	0	210	0	0	0	0	0	0	152
Lane Group Flow (vph)	0	1474	0	0	501	0	0	0	0	103	0	34
Turn Type										Prot		custom
Protected Phases		4			8					2		
Permitted Phases												2
Actuated Green, G (s)		23.3			23.3					7.0		7.0
Effective Green, g (s)		23.3			23.3					7.0		7.0
Actuated g/C Ratio		0.61			0.61					0.18		0.18
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2124			1910					323		289
v/s Ratio Prot		c0.42			0.16					c0.06		
v/s Ratio Perm												0.02
v/c Ratio		0.69			0.26					0.32		0.12
Uniform Delay, d1		5.1			3.5					13.6		13.1
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		1.0			0.1					0.6		0.2
Delay (s)		6.1			3.6					14.2		13.3
Level of Service		A			A					B		B
Approach Delay (s)		6.1			3.6			0.0			13.6	
Approach LOS		A			A			A			B	
Intersection Summary												
HCM Average Control Delay			6.2			HCM Level of Service				A		
HCM Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			38.3			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			52.6%			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		↑↓			↑↓		↑		↑			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0		4.0			
Lane Util. Factor		0.95			0.95		1.00		1.00			
Frt		0.94			0.99		1.00		0.85			
Flt Protected		1.00			1.00		0.95		1.00			
Satd. Flow (prot)		3332			3502		1770		1583			
Flt Permitted		1.00			1.00		0.95		1.00			
Satd. Flow (perm)		3332			3502		1770		1583			
Volume (vph)	0	860	550	0	670	50	20	0	520	0	0	0
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	887	567	0	691	52	21	0	536	0	0	0
RTOR Reduction (vph)	0	203	0	0	11	0	0	0	46	0	0	0
Lane Group Flow (vph)	0	1251	0	0	732	0	21	0	490	0	0	0
Turn Type							Prot		custom			
Protected Phases		4			8		2					
Permitted Phases									2			
Actuated Green, G (s)		20.4			20.4		17.1		17.1			
Effective Green, g (s)		20.4			20.4		17.1		17.1			
Actuated g/C Ratio		0.45			0.45		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)		1494			1570		665		595			
v/s Ratio Prot		c0.38			0.21		0.01					
v/s Ratio Perm									c0.31			
v/c Ratio		0.84			0.47		0.03		0.82			
Uniform Delay, d1		11.1			8.8		9.0		12.8			
Progression Factor		1.00			1.00		1.00		1.00			
Incremental Delay, d2		4.3			0.2		0.0		9.0			
Delay (s)		15.4			9.0		9.0		21.8			
Level of Service		B			A		A		C			
Approach Delay (s)		15.4			9.0			21.4			0.0	
Approach LOS		B			A			C			A	
Intersection Summary												
HCM Average Control Delay			14.8				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			45.5				Sum of lost time (s)				8.0	
Intersection Capacity Utilization			80.3%				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		↑↑↑			↑↑↑					↘		↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0		4.0
Lane Util. Factor		0.91			0.91					1.00		1.00
Frt		0.96			0.88					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		4895			4473					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		4895			4473					1770		1583
Volume (vph)	0	480	160	0	170	690	0	0	0	90	0	30
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	495	165	0	175	711	0	0	0	93	0	31
RTOR Reduction (vph)	0	84	0	0	362	0	0	0	0	0	0	26
Lane Group Flow (vph)	0	576	0	0	524	0	0	0	0	93	0	5
Turn Type										Prot		custom
Protected Phases		4			8					1		
Permitted Phases												1
Actuated Green, G (s)		11.1			11.1					3.5		3.5
Effective Green, g (s)		11.1			11.1					3.5		3.5
Actuated g/C Ratio		0.49			0.49					0.15		0.15
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2404			2197					274		245
v/s Ratio Prot		c0.12			0.12					c0.05		
v/s Ratio Perm												0.00
v/c Ratio		0.24			0.24					0.34		0.02
Uniform Delay, d1		3.3			3.3					8.5		8.1
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		0.1			0.1					0.7		0.0
Delay (s)		3.4			3.4					9.3		8.1
Level of Service		A			A					A		A
Approach Delay (s)		3.4			3.4			0.0			9.0	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM Average Control Delay			3.8			HCM Level of Service				A		
HCM Volume to Capacity ratio			0.26									
Actuated Cycle Length (s)			22.6			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			30.5%			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		↑↑↑			↑↑↑		↖		↗			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0		4.0			
Lane Util. Factor		0.91			0.91		1.00		1.00			
Frt		0.98			0.96		1.00		0.85			
Flt Protected		1.00			1.00		0.95		1.00			
Satd. Flow (prot)		4992			4884		1770		1583			
Flt Permitted		1.00			1.00		0.95		1.00			
Satd. Flow (perm)		4992			4884		1770		1583			
Volume (vph)	0	500	70	0	780	280	80	0	1110	0	0	0
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	515	72	0	804	289	82	0	1144	0	0	0
RTOR Reduction (vph)	0	28	0	0	101	0	0	0	25	0	0	0
Lane Group Flow (vph)	0	559	0	0	992	0	82	0	1119	0	0	0
Turn Type							Prot		custom			
Protected Phases		4			8		2					
Permitted Phases									2			
Actuated Green, G (s)		15.8			15.8		41.0		41.0			
Effective Green, g (s)		15.8			15.8		41.0		41.0			
Actuated g/C Ratio		0.24			0.24		0.63		0.63			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1217			1191		1120		1002			
v/s Ratio Prot		0.11			c0.20		0.05					
v/s Ratio Perm									c0.71			
v/c Ratio		0.46			0.83		0.07		1.12			
Uniform Delay, d1		20.9			23.3		4.6		11.9			
Progression Factor		1.00			1.00		1.00		1.00			
Incremental Delay, d2		0.3			5.1		0.0		66.3			
Delay (s)		21.1			28.4		4.6		78.2			
Level of Service		C			C		A		E			
Approach Delay (s)		21.1			28.4			73.3			0.0	
Approach LOS		C			C			E			A	
Intersection Summary												
HCM Average Control Delay			45.9				HCM Level of Service				D	
HCM Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			64.8				Sum of lost time (s)				8.0	
Intersection Capacity Utilization			86.6%				ICU Level of Service				E	
Analysis Period (min)			15									
c	Critical Lane Group											

Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑		↖	↑↑	↖	↗	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Volume (veh/h)	680	70	320	1170	10	80	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	701	72	330	1206	10	82	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage (veh)							
Upstream signal (ft)				714			
pX, platoon unblocked					0.82		
vC, conflicting volume			773		2000	387	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			773		2000	387	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			61		60	87	
cM capacity (veh/h)			838		26	612	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	467	306	330	603	603	10	82
Volume Left	0	0	330	0	0	10	0
Volume Right	0	72	0	0	0	0	82
cSH	1700	1700	838	1700	1700	26	612
Volume to Capacity	0.27	0.18	0.39	0.35	0.35	0.40	0.13
Queue Length 95th (ft)	0	0	47	0	0	30	12
Control Delay (s)	0.0	0.0	12.1	0.0	0.0	215.8	11.8
Lane LOS			B			F	B
Approach Delay (s)	0.0		2.6			34.5	
Approach LOS						D	
Intersection Summary							
Average Delay			3.0				
Intersection Capacity Utilization			52.1%		ICU Level of Service		A
Analysis Period (min)			15				



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3530		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3530		1770	1583
Volume (vph)	60	710	1130	20	60	370
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	62	732	1165	21	62	381
RTOR Reduction (vph)	0	0	2	0	0	145
Lane Group Flow (vph)	62	732	1184	0	62	236
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	2.8	30.3	23.5		12.8	12.8
Effective Green, g (s)	2.8	30.3	23.5		12.8	12.8
Actuated g/C Ratio	0.05	0.59	0.46		0.25	0.25
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)	97	2098	1623		443	397
v/s Ratio Prot	c0.04	0.21	c0.34		0.04	
v/s Ratio Perm						c0.15
v/c Ratio	0.64	0.35	0.73		0.14	0.60
Uniform Delay, d1	23.7	5.3	11.2		14.9	16.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	13.0	0.1	1.7		0.1	2.4
Delay (s)	36.7	5.4	12.9		15.0	19.3
Level of Service	D	A	B		B	B
Approach Delay (s)		7.9	12.9		18.7	
Approach LOS		A	B		B	

Intersection Summary

HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.4%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	50	100	20	60	10	20	190	110	10	460	50
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	10	52	103	21	62	10	21	196	113	10	474	52
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	165	93	330	536								
Volume Left (vph)	10	21	21	10								
Volume Right (vph)	103	10	113	52								
Hadj (s)	-0.33	0.01	-0.16	-0.02								
Departure Headway (s)	6.0	6.6	5.4	5.2								
Degree Utilization, x	0.28	0.17	0.49	0.78								
Capacity (veh/h)	530	474	624	671								
Control Delay (s)	11.4	10.9	13.5	24.1								
Approach Delay (s)	11.4	10.9	13.5	24.1								
Approach LOS	B	B	B	C								
Intersection Summary												
Delay			18.0									
HCM Level of Service			C									
Intersection Capacity Utilization			47.5%	ICU Level of Service	A							
Analysis Period (min)			15									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.93		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3533		1770	3500		1770	1726		1770	1784	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3533		1770	3500		1770	1726		1770	1784	
Volume (vph)	100	870	10	230	1000	80	10	230	220	200	330	130
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	103	897	10	237	1031	82	10	237	227	206	340	134
RTOR Reduction (vph)	0	1	0	0	6	0	0	38	0	0	15	0
Lane Group Flow (vph)	103	906	0	237	1107	0	10	426	0	206	459	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.0	24.8		13.0	31.8		0.8	26.9		9.1	35.2	
Effective Green, g (s)	6.0	24.8		13.0	31.8		0.8	26.9		9.1	35.2	
Actuated g/C Ratio	0.07	0.28		0.14	0.35		0.01	0.30		0.10	0.39	
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)	118	976		256	1239		16	517		179	699	
v/s Ratio Prot	0.06	0.26		c0.13	c0.32		0.01	c0.25		c0.12	0.26	
v/s Ratio Perm												
v/c Ratio	0.87	0.93		0.93	0.89		0.62	0.82		1.15	0.66	
Uniform Delay, d1	41.5	31.6		37.9	27.4		44.4	29.3		40.4	22.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	46.0	14.4		36.5	8.5		57.6	10.3		113.7	2.2	
Delay (s)	87.5	46.1		74.5	35.9		101.9	39.5		154.0	24.6	
Level of Service	F	D		E	D		F	D		F	C	
Approach Delay (s)		50.3			42.7			40.9			63.8	
Approach LOS		D			D			D			E	

Intersection Summary

HCM Average Control Delay	48.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.1%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	150	10	40	30	10	10	20	70	10	10	560	80
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	155	10	41	31	10	10	21	72	10	10	577	82

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	206	52	103	670
Volume Left (vph)	155	31	21	10
Volume Right (vph)	41	10	10	82
Hadj (s)	0.06	0.03	0.01	-0.04
Departure Headway (s)	6.1	6.4	5.7	4.9
Degree Utilization, x	0.35	0.09	0.16	0.90
Capacity (veh/h)	571	525	601	732
Control Delay (s)	12.2	10.0	9.8	35.6
Approach Delay (s)	12.2	10.0	9.8	35.6
Approach LOS	B	B	A	E

Intersection Summary			
Delay		27.1	
HCM Level of Service		D	
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)		15	

	→	↘	↙	←	↖	↗	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑		↘	↑↑	↘	↗	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Volume (veh/h)	1290	40	110	820	70	250	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	1330	41	113	845	72	258	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage (veh)							
Upstream signal (ft)				714			
pX, platoon unblocked					0.88		
vC, conflicting volume			1371		2000	686	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			1371		2000	686	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			77		0	34	
cM capacity (veh/h)			496		35	390	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	887	485	113	423	423	72	258
Volume Left	0	0	113	0	0	72	0
Volume Right	0	41	0	0	0	0	258
cSH	1700	1700	496	1700	1700	35	390
Volume to Capacity	0.52	0.29	0.23	0.25	0.25	2.04	0.66
Queue Length 95th (ft)	0	0	22	0	0	200	114
Control Delay (s)	0.0	0.0	14.4	0.0	0.0	727.5	30.5
Lane LOS			B			F	D
Approach Delay (s)	0.0		1.7			182.9	
Approach LOS						F	
Intersection Summary							
Average Delay			23.3				
Intersection Capacity Utilization			59.1%		ICU Level of Service		B
Analysis Period (min)			15				



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3503		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3503		1770	1583
Volume (vph)	350	1190	830	60	20	110
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	361	1227	856	62	21	113
RTOR Reduction (vph)	0	0	5	0	0	100
Lane Group Flow (vph)	361	1227	913	0	21	13
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	12.6	39.4	22.8		6.3	6.3
Effective Green, g (s)	12.6	39.4	22.8		6.3	6.3
Actuated g/C Ratio	0.23	0.73	0.42		0.12	0.12
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)	415	2597	1487		208	186
v/s Ratio Prot	c0.20	0.35	c0.26		c0.01	
v/s Ratio Perm						0.01
v/c Ratio	0.87	0.47	0.61		0.10	0.07
Uniform Delay, d1	19.8	2.9	12.0		21.2	21.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	17.4	0.1	0.8		0.2	0.2
Delay (s)	37.1	3.1	12.8		21.4	21.3
Level of Service	D	A	B		C	C
Approach Delay (s)		10.8	12.8		21.3	
Approach LOS		B	B		C	

Intersection Summary

HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	40	60	60	110	70	10	120	410	30	10	240	10
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	41	62	62	113	72	10	124	423	31	10	247	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	165	196	577	268
Volume Left (vph)	41	113	124	10
Volume Right (vph)	62	10	31	10
Hadj (s)	-0.14	0.12	0.04	0.02
Departure Headway (s)	6.9	7.0	5.8	6.3
Degree Utilization, x	0.31	0.38	0.93	0.47
Capacity (veh/h)	487	484	611	543
Control Delay (s)	13.0	14.3	44.4	14.9
Approach Delay (s)	13.0	14.3	44.4	14.9
Approach LOS	B	B	E	B

Intersection Summary			
Delay		28.7	
HCM Level of Service		D	
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.97		1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3535		1770	3442		1770	1742		1770	1780	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3535		1770	3442		1770	1742		1770	1780	
Volume (vph)	90	1130	10	220	930	210	10	330	250	110	260	110
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	93	1165	10	227	959	216	10	340	258	113	268	113
RTOR Reduction (vph)	0	1	0	0	22	0	0	29	0	0	16	0
Lane Group Flow (vph)	93	1174	0	227	1153	0	10	569	0	113	365	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.6	30.8		11.0	36.2		0.8	30.2		6.0	35.4	
Effective Green, g (s)	5.6	30.8		11.0	36.2		0.8	30.2		6.0	35.4	
Actuated g/C Ratio	0.06	0.33		0.12	0.39		0.01	0.32		0.06	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)	105	1158		207	1326		15	560		113	670	
v/s Ratio Prot	0.05	c0.33		c0.13	0.34		0.01	c0.33		c0.06	0.21	
v/s Ratio Perm												
v/c Ratio	0.89	1.01		1.10	0.87		0.67	1.02		1.00	0.55	
Uniform Delay, d1	43.9	31.6		41.5	26.7		46.5	31.9		44.0	23.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	52.9	30.0		90.8	6.4		75.9	42.0		84.7	0.9	
Delay (s)	96.8	61.6		132.3	33.1		122.3	73.9		128.7	23.9	
Level of Service	F	E		F	C		F	E		F	C	
Approach Delay (s)		64.2			49.1			74.7			47.9	
Approach LOS		E			D			E			D	

Intersection Summary

HCM Average Control Delay	58.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	94.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.8%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	120	10	10	20	10	10	50	520	30	30	190	160
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	124	10	10	21	10	10	52	536	31	31	196	165
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	144	41	619	392								
Volume Left (vph)	124	21	52	31								
Volume Right (vph)	10	10	31	165								
Hadj (s)	0.16	-0.02	0.02	-0.20								
Departure Headway (s)	6.7	6.9	5.1	5.2								
Degree Utilization, x	0.27	0.08	0.88	0.57								
Capacity (veh/h)	503	466	693	652								
Control Delay (s)	12.1	10.4	34.0	14.9								
Approach Delay (s)	12.1	10.4	34.0	14.9								
Approach LOS	B	B	D	B								
Intersection Summary												
Delay			24.3									
HCM Level of Service			C									
Intersection Capacity Utilization			61.6%	ICU Level of Service	B							
Analysis Period (min)			15									

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑		↘	↑↑	↘	↗		
Sign Control	Free			Free	Stop			
Grade	0%			0%	0%			
Volume (veh/h)	670	50	340	1200	10	90		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Hourly flow rate (vph)	691	52	351	1237	10	93		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type								None
Median storage (veh)								
Upstream signal (ft)				714				
pX, platoon unblocked					0.81			
vC, conflicting volume			742			2036	371	
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol			742			2045	371	
tC, single (s)			4.1			6.8	6.9	
tC, 2 stage (s)								
tF (s)			2.2			3.5	3.3	
p0 queue free %			59			56	85	
cM capacity (veh/h)			861			23	626	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2	
Volume Total	460	282	351	619	619	10	93	
Volume Left	0	0	351	0	0	10	0	
Volume Right	0	52	0	0	0	0	93	
cSH	1700	1700	861	1700	1700	23	626	
Volume to Capacity	0.27	0.17	0.41	0.36	0.36	0.44	0.15	
Queue Length 95th (ft)	0	0	50	0	0	33	13	
Control Delay (s)	0.0	0.0	12.0	0.0	0.0	249.5	11.7	
Lane LOS			B			F	B	
Approach Delay (s)	0.0	2.7				35.5		
Approach LOS						E		
Intersection Summary								
Average Delay			3.2					
Intersection Capacity Utilization			52.3%	ICU Level of Service		A		
Analysis Period (min)			15					



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3530		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3530		1770	1583
Volume (vph)	70	690	1160	20	60	380
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	72	711	1196	21	62	392
RTOR Reduction (vph)	0	0	2	0	0	142
Lane Group Flow (vph)	72	711	1215	0	62	250
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	2.8	31.2	24.4		13.3	13.3
Effective Green, g (s)	2.8	31.2	24.4		13.3	13.3
Actuated g/C Ratio	0.05	0.59	0.46		0.25	0.25
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)	94	2103	1641		448	401
v/s Ratio Prot	c0.04	0.20	c0.34		0.04	
v/s Ratio Perm						c0.16
v/c Ratio	0.77	0.34	0.74		0.14	0.62
Uniform Delay, d1	24.5	5.4	11.5		15.2	17.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	30.4	0.1	1.8		0.1	3.0
Delay (s)	54.9	5.5	13.3		15.3	20.4
Level of Service	D	A	B		B	C
Approach Delay (s)		10.0	13.3		19.7	
Approach LOS		B	B		B	

Intersection Summary

HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	52.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	50	80	20	50	10	20	180	120	10	440	40
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	10	52	82	21	52	10	21	186	124	10	454	41

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	144	82	330	505
Volume Left (vph)	10	21	21	10
Volume Right (vph)	82	10	124	41
Hadj (s)	-0.29	0.01	-0.18	-0.01
Departure Headway (s)	5.9	6.4	5.2	5.1
Degree Utilization, x	0.24	0.15	0.47	0.71
Capacity (veh/h)	521	483	653	688
Control Delay (s)	10.7	10.4	12.7	19.7
Approach Delay (s)	10.7	10.4	12.7	19.7
Approach LOS	B	B	B	C

Intersection Summary			
Delay		15.6	
HCM Level of Service		C	
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.93		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3533		1770	3500		1770	1726		1770	1795	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3533		1770	3500		1770	1726		1770	1795	
Volume (vph)	100	870	10	210	1000	80	10	210	200	200	340	110
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	103	897	10	216	1031	82	10	216	206	206	351	113
RTOR Reduction (vph)	0	1	0	0	6	0	0	38	0	0	12	0
Lane Group Flow (vph)	103	906	0	216	1107	0	10	384	0	206	452	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.1	24.5		12.3	30.7		0.7	25.1		9.1	33.5	
Effective Green, g (s)	6.1	24.5		12.3	30.7		0.7	25.1		9.1	33.5	
Actuated g/C Ratio	0.07	0.28		0.14	0.35		0.01	0.29		0.10	0.39	
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)	124	995		250	1235		14	498		185	691	
v/s Ratio Prot	0.06	0.26		c0.12	c0.32		0.01	c0.22		c0.12	0.25	
v/s Ratio Perm												
v/c Ratio	0.83	0.91		0.86	0.90		0.71	0.77		1.11	0.65	
Uniform Delay, d1	39.9	30.2		36.5	26.6		43.1	28.3		39.0	22.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	35.4	12.1		25.2	8.7		100.1	7.2		99.9	2.2	
Delay (s)	75.3	42.3		61.7	35.4		143.2	35.5		138.8	24.2	
Level of Service	E	D		E	D		F	D		F	C	
Approach Delay (s)		45.7			39.6			38.0			59.5	
Approach LOS		D			D			D			E	

Intersection Summary

HCM Average Control Delay	45.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	160	10	40	30	10	10	10	70	10	10	560	90
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	165	10	41	31	10	10	10	72	10	10	577	93

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	216	52	93	680
Volume Left (vph)	165	31	10	10
Volume Right (vph)	41	10	10	93
Hadj (s)	0.07	0.03	-0.01	-0.04
Departure Headway (s)	6.1	6.4	5.7	4.9
Degree Utilization, x	0.37	0.09	0.15	0.92
Capacity (veh/h)	573	527	598	731
Control Delay (s)	12.5	10.1	9.7	38.2
Approach Delay (s)	12.5	10.1	9.7	38.2
Approach LOS	B	B	A	E

Intersection Summary			
Delay		28.9	
HCM Level of Service		D	
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)		15	

	→	↘	↙	←	↖	↗	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑		↘	↑↑	↘	↗	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Volume (veh/h)	1320	30	110	820	50	270	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	1361	31	113	845	52	278	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage (veh)							
Upstream signal (ft)				714			
pX, platoon unblocked					0.85		
vC, conflicting volume			1392		2026	696	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			1392		2030	696	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			77		0	28	
cM capacity (veh/h)			487		32	384	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	907	485	113	423	423	52	278
Volume Left	0	0	113	0	0	52	0
Volume Right	0	31	0	0	0	0	278
cSH	1700	1700	487	1700	1700	32	384
Volume to Capacity	0.53	0.29	0.23	0.25	0.25	1.59	0.72
Queue Length 95th (ft)	0	0	22	0	0	144	139
Control Delay (s)	0.0	0.0	14.6	0.0	0.0	563.0	35.4
Lane LOS			B			F	E
Approach Delay (s)	0.0		1.7			117.9	
Approach LOS						F	
Intersection Summary							
Average Delay			15.1				
Intersection Capacity Utilization			60.8%		ICU Level of Service		B
Analysis Period (min)			15				



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↶↶	↶↶		↶	↶
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3508		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3508		1770	1583
Volume (vph)	370	1220	820	50	20	110
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	381	1258	845	52	21	113
RTOR Reduction (vph)	0	0	5	0	0	99
Lane Group Flow (vph)	381	1258	892	0	21	14
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	16.5	39.7	19.2		6.8	6.8
Effective Green, g (s)	16.5	39.7	19.2		6.8	6.8
Actuated g/C Ratio	0.30	0.73	0.35		0.12	0.12
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)	536	2578	1236		221	198
v/s Ratio Prot	c0.22	0.36	c0.25		c0.01	
v/s Ratio Perm						0.01
v/c Ratio	0.71	0.49	0.72		0.10	0.07
Uniform Delay, d1	16.9	3.1	15.3		21.1	21.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.4	0.1	2.1		0.2	0.2
Delay (s)	21.3	3.3	17.4		21.3	21.2
Level of Service	C	A	B		C	C
Approach Delay (s)		7.5	17.4		21.2	
Approach LOS		A	B		C	

Intersection Summary

HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	54.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	50	40	100	70	10	90	400	40	10	240	10
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	31	52	41	103	72	10	93	412	41	10	247	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	124	186	546	268
Volume Left (vph)	31	103	93	10
Volume Right (vph)	41	10	41	10
Hadj (s)	-0.12	0.11	0.02	0.02
Departure Headway (s)	6.6	6.6	5.5	5.9
Degree Utilization, x	0.23	0.34	0.83	0.44
Capacity (veh/h)	490	497	645	557
Control Delay (s)	11.5	13.0	29.5	13.5
Approach Delay (s)	11.5	13.0	29.5	13.5
Approach LOS	B	B	D	B

Intersection Summary			
Delay		21.0	
HCM Level of Service		C	
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.97		1.00	0.93		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3535		1770	3449		1770	1741		1770	1769	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3535		1770	3449		1770	1741		1770	1769	
Volume (vph)	110	1120	10	200	930	190	10	310	240	100	240	120
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	113	1155	10	206	959	196	10	320	247	103	247	124
RTOR Reduction (vph)	0	1	0	0	20	0	0	30	0	0	19	0
Lane Group Flow (vph)	113	1164	0	206	1135	0	10	537	0	103	352	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	7.0	30.0		11.0	34.0		0.8	30.2		6.0	35.4	
Effective Green, g (s)	7.0	30.0		11.0	34.0		0.8	30.2		6.0	35.4	
Actuated g/C Ratio	0.08	0.32		0.12	0.36		0.01	0.32		0.06	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)	133	1138		209	1258		15	564		114	672	
v/s Ratio Prot	0.06	c0.33		c0.12	c0.33		0.01	c0.31		c0.06	0.20	
v/s Ratio Perm												
v/c Ratio	0.85	1.02		0.99	0.90		0.67	0.95		0.90	0.52	
Uniform Delay, d1	42.6	31.6		41.0	28.0		46.1	30.8		43.3	22.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	36.8	32.7		57.7	9.2		75.9	26.4		54.9	0.7	
Delay (s)	79.4	64.3		98.7	37.2		121.9	57.2		98.2	23.1	
Level of Service	E	E		F	D		F	E		F	C	
Approach Delay (s)		65.6			46.5			58.3			39.4	
Approach LOS		E			D			E			D	

Intersection Summary

HCM Average Control Delay	54.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	93.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	92.2%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	140	10	10	20	10	10	50	480	30	30	190	160
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	144	10	10	21	10	10	52	495	31	31	196	165

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	165	41	577	392
Volume Left (vph)	144	21	52	31
Volume Right (vph)	10	10	31	165
Hadj (s)	0.17	-0.02	0.02	-0.20
Departure Headway (s)	6.6	6.9	5.2	5.3
Degree Utilization, x	0.30	0.08	0.84	0.57
Capacity (veh/h)	503	457	677	657
Control Delay (s)	12.5	10.4	28.9	15.0
Approach Delay (s)	12.5	10.4	28.9	15.0
Approach LOS	B	B	D	C

Intersection Summary			
Delay		21.3	
HCM Level of Service		C	
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑		↖	↑↑	↖	↗	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Volume (veh/h)	690	10	240	1190	10	70	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	711	10	247	1227	10	72	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage (veh)							
Upstream signal (ft)				714			
pX, platoon unblocked					0.80		
vC, conflicting volume			722		1825	361	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			722		1782	361	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			72		76	89	
cM capacity (veh/h)			876		42	636	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	474	247	247	613	613	10	72
Volume Left	0	0	247	0	0	10	0
Volume Right	0	10	0	0	0	0	72
cSH	1700	1700	876	1700	1700	42	636
Volume to Capacity	0.28	0.15	0.28	0.36	0.36	0.24	0.11
Queue Length 95th (ft)	0	0	29	0	0	20	10
Control Delay (s)	0.0	0.0	10.7	0.0	0.0	115.9	11.4
Lane LOS			B			F	B
Approach Delay (s)	0.0		1.8			24.5	
Approach LOS						C	
Intersection Summary							
Average Delay			2.0				
Intersection Capacity Utilization			46.0%		ICU Level of Service		A
Analysis Period (min)			15				



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3536		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3536		1770	1583
Volume (vph)	10	750	1400	10	20	30
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	773	1443	10	21	31
RTOR Reduction (vph)	0	0	0	0	0	29
Lane Group Flow (vph)	10	773	1453	0	21	2
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	0.6	29.0	24.4		3.1	3.1
Effective Green, g (s)	0.6	29.0	24.4		3.1	3.1
Actuated g/C Ratio	0.01	0.72	0.61		0.08	0.08
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)	26	2559	2152		137	122
v/s Ratio Prot	0.01	c0.22	c0.41		c0.01	
v/s Ratio Perm						0.00
v/c Ratio	0.38	0.30	0.68		0.15	0.02
Uniform Delay, d1	19.6	2.0	5.2		17.3	17.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	9.2	0.1	0.8		0.5	0.1
Delay (s)	28.8	2.0	6.1		17.8	17.2
Level of Service	C	A	A		B	B
Approach Delay (s)		2.4	6.1		17.4	
Approach LOS		A	A		B	

Intersection Summary

HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	40.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	60	90	260	30	10	20	10	180	10	10	10
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	10	62	93	268	31	10	21	10	186	10	10	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	165	309	216	31
Volume Left (vph)	10	268	21	10
Volume Right (vph)	93	10	186	10
Hadj (s)	-0.29	0.19	-0.46	-0.10
Departure Headway (s)	4.6	4.9	4.6	5.3
Degree Utilization, x	0.21	0.42	0.28	0.05
Capacity (veh/h)	717	699	712	595
Control Delay (s)	8.9	11.4	9.4	8.5
Approach Delay (s)	8.9	11.4	9.4	8.5
Approach LOS	A	B	A	A

Intersection Summary			
Delay		10.1	
HCM Level of Service		B	
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.96		1.00	0.95		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3495		1770	3405		1770	1776		1770	1728	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3495		1770	3405		1770	1776		1770	1728	
Volume (vph)	190	660	60	160	860	290	40	220	100	520	480	450
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	196	680	62	165	887	299	41	227	103	536	495	464
RTOR Reduction (vph)	0	8	0	0	37	0	0	19	0	0	37	0
Lane Group Flow (vph)	196	734	0	165	1149	0	41	311	0	536	922	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.0	26.3		11.5	31.8		2.3	24.5		9.0	31.2	
Effective Green, g (s)	6.0	26.3		11.5	31.8		2.3	24.5		9.0	31.2	
Actuated g/C Ratio	0.07	0.30		0.13	0.36		0.03	0.28		0.10	0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	122	1053		233	1240		47	498		182	618	
v/s Ratio Prot	c0.11	0.21		c0.09	c0.34		0.02	0.18		c0.30	c0.53	
v/s Ratio Perm												
v/c Ratio	1.61	0.70		0.71	0.93		0.87	0.63		2.95	1.49	
Uniform Delay, d1	40.6	27.0		36.3	26.6		42.4	27.4		39.1	28.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	307.6	2.0		9.4	11.8		84.1	2.4		890.0	230.1	
Delay (s)	348.3	29.0		45.7	38.4		126.5	29.8		929.2	258.2	
Level of Service	F	C		D	D		F	C		F	F	
Approach Delay (s)		95.7			39.3			40.5			498.7	
Approach LOS		F			D			D			F	

Intersection Summary

HCM Average Control Delay	217.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	87.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	113.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	230	10	40	30	10	10	10	70	10	10	390	350
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	237	10	41	31	10	10	10	72	10	10	402	361
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	289	52	93	773								
Volume Left (vph)	237	31	10	10								
Volume Right (vph)	41	10	10	361								
Hadj (s)	0.11	0.03	-0.01	-0.24								
Departure Headway (s)	6.2	6.7	6.1	4.9								
Degree Utilization, x	0.50	0.10	0.16	1.06								
Capacity (veh/h)	571	508	563	724								
Control Delay (s)	15.2	10.4	10.2	72.7								
Approach Delay (s)	15.2	10.4	10.2	72.7								
Approach LOS	C	B	B	F								
Intersection Summary												
Delay			51.5									
HCM Level of Service			F									
Intersection Capacity Utilization			72.0%	ICU Level of Service	C							
Analysis Period (min)			15									

	→	↘	↙	←	↖	↗	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑		↘	↑↑	↘	↗	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Volume (veh/h)	1210	10	80	830	10	260	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	1247	10	82	856	10	268	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage (veh)							
Upstream signal (ft)				714			
pX, platoon unblocked					0.97		
vC, conflicting volume			1258		1845	629	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			1258		1841	629	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			85		81	37	
cM capacity (veh/h)			549		55	425	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	832	426	82	428	428	10	268
Volume Left	0	0	82	0	0	10	0
Volume Right	0	10	0	0	0	0	268
cSH	1700	1700	549	1700	1700	55	425
Volume to Capacity	0.49	0.25	0.15	0.25	0.25	0.19	0.63
Queue Length 95th (ft)	0	0	13	0	0	15	105
Control Delay (s)	0.0	0.0	12.7	0.0	0.0	84.5	26.8
Lane LOS			B			F	D
Approach Delay (s)	0.0		1.1			29.0	
Approach LOS						D	
Intersection Summary							
Average Delay			3.7				
Intersection Capacity Utilization			56.5%		ICU Level of Service		B
Analysis Period (min)			15				



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↶↶	↶↶		↶	↶
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3522		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3522		1770	1583
Volume (vph)	30	1440	900	30	10	20
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	31	1485	928	31	10	21
RTOR Reduction (vph)	0	0	2	0	0	19
Lane Group Flow (vph)	31	1485	957	0	10	2
Turn Type	Prot			Perm		
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	0.8	27.7	22.9		3.0	3.0
Effective Green, g (s)	0.8	27.7	22.9		3.0	3.0
Actuated g/C Ratio	0.02	0.72	0.59		0.08	0.08
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)	37	2533	2084		137	123
v/s Ratio Prot	0.02	c0.42	0.27		c0.01	
v/s Ratio Perm						0.00
v/c Ratio	0.84	0.59	0.46		0.07	0.01
Uniform Delay, d1	18.9	2.7	4.4		16.6	16.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	84.7	0.3	0.2		0.2	0.0
Delay (s)	103.6	3.0	4.6		16.8	16.5
Level of Service	F	A	A		B	B
Approach Delay (s)		5.1	4.6		16.6	
Approach LOS		A	A		B	

Intersection Summary

HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.8%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	40	40	230	60	10	80	10	220	10	10	10
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	10	41	41	237	62	10	82	10	227	10	10	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	93	309	320	31
Volume Left (vph)	10	237	82	10
Volume Right (vph)	41	10	227	10
Hadj (s)	-0.21	0.17	-0.34	-0.10
Departure Headway (s)	5.0	5.1	4.6	5.3
Degree Utilization, x	0.13	0.44	0.41	0.05
Capacity (veh/h)	648	672	730	596
Control Delay (s)	8.7	11.9	10.9	8.6
Approach Delay (s)	8.7	11.9	10.9	8.6
Approach LOS	A	B	B	A

Intersection Summary			
Delay		10.9	
HCM Level of Service		B	
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.94		1.00	0.95		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3513		1770	3312		1770	1771		1770	1743	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3513		1770	3312		1770	1771		1770	1743	
Volume (vph)	420	980	50	120	720	540	60	390	190	380	320	240
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	433	1010	52	124	742	557	62	402	196	392	330	247
RTOR Reduction (vph)	0	4	0	0	152	0	0	19	0	0	29	0
Lane Group Flow (vph)	433	1058	0	124	1147	0	62	579	0	392	548	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	7.0	32.4		8.5	33.9		3.2	27.9		6.0	30.7	
Effective Green, g (s)	7.0	32.4		8.5	33.9		3.2	27.9		6.0	30.7	
Actuated g/C Ratio	0.08	0.36		0.09	0.37		0.04	0.31		0.07	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)	136	1254		166	1237		62	544		117	589	
v/s Ratio Prot	c0.24	0.30		0.07	c0.35		0.04	c0.33		c0.22	c0.31	
v/s Ratio Perm												
v/c Ratio	3.18	0.84		0.75	0.93		1.00	1.06		3.35	0.93	
Uniform Delay, d1	41.9	26.9		40.1	27.3		43.8	31.4		42.4	29.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1001.7	5.4		16.6	11.9		114.3	56.6		1079.2	21.5	
Delay (s)	1043.6	32.2		56.7	39.2		158.1	88.1		1121.6	50.5	
Level of Service	F	C		E	D		F	F		F	D	
Approach Delay (s)		325.1			40.7			94.6			483.8	
Approach LOS		F			D			F			F	

Intersection Summary

HCM Average Control Delay	236.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	127.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	320	10	10	10	10	10	40	350	30	10	160	300
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	330	10	10	10	10	10	41	361	31	10	165	309

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	351	31	433	485
Volume Left (vph)	330	10	41	10
Volume Right (vph)	10	10	31	309
Hadj (s)	0.20	-0.10	0.01	-0.34
Departure Headway (s)	6.8	7.7	6.2	5.8
Degree Utilization, x	0.66	0.07	0.75	0.78
Capacity (veh/h)	496	383	558	595
Control Delay (s)	22.2	11.3	25.3	26.4
Approach Delay (s)	22.2	11.3	25.3	26.4
Approach LOS	C	B	D	D

Intersection Summary			
Delay		24.5	
HCM Level of Service		C	
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)		15	

Appendix C-2: Freeway Operations

Cumulative No Project Conditions

Cumulative Plus Preferred Alternative Conditions

**HCM 2000
Basic Freeway Segments
Capacity Analysis**

Jurisdiction Sacramento Co. Agency or Company Caltrans
 Analysis Year Cumulative No Project Date 10/4/2010
 Analyst F&P Project Description Elverta Specific Plan

General Information				Flow Rate Calculation													Speed Calculation		Results	
Freeway/ Direction	From/To	Analysis Time Period	Volume (vph)	PHF	Lanes	HOV Lane? HOV Lane Volume	Terrain	Truck/ Bus %	RV %	E _T	E _R	f _{HV}	f _p	Flow Rate v _p (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	Level of Service		
1	SR 99 SB	Sankey Road to Riego Road	AM	4,670	0.97	2	No	Level	7%	0%	1.5	1.2	0.966	1.00	2,491	65.0	-	-	F	
2	SR 99 SB	Riego Road to Elverta Road	AM	4,990	0.97	2	No	Level	7%	0%	1.5	1.2	0.966	1.00	2,662	65.0	-	-	F	
3	SR 99 SB	Elverta Road to Elkhorn Blvd	AM	4,740	0.97	2	No	Level	7%	0%	1.5	1.2	0.966	1.00	2,529	65.0	-	-	F	
4	SR 99 SB	Elkhorn Blvd to I-5	AM	5,650	0.97	3	Yes 904	Level	7%	0%	1.5	1.2	0.966	1.00	2,532	65.0	-	-	F	
5	SR 99 NB	I-5 to Elkhorn Blvd	AM	3,200	0.97	3	Yes 864	Level	23%	0%	1.5	1.2	0.897	1.00	1,343	65.0	60.5	22.2	C	
6	SR 99 NB	Elkhorn Blvd to Elverta Road	AM	2,800	0.97	2	No	Level	23%	0%	1.5	1.2	0.897	1.00	1,609	65.0	60.5	26.6	D	
7	SR 99 NB	Elverta Road to Riego Road	AM	2,370	0.97	2	No	Level	23%	0%	1.5	1.2	0.897	1.00	1,362	65.0	60.5	22.5	C	
8	SR 99 NB	Riego Road to Sankey Road	AM	1,730	0.97	2	No	Level	23%	0%	1.5	1.2	0.897	1.00	994	65.0	60.5	16.4	B	
1	SR 99 SB	Sankey Road to Riego Road	PM	2,440	0.97	2	No	Level	5%	0%	1.5	1.2	0.976	1.00	1,289	65.0	60.5	21.3	C	
2	SR 99 SB	Riego Road to Elverta Road	PM	3,190	0.97	2	No	Level	5%	0%	1.5	1.2	0.976	1.00	1,685	65.0	60.4	27.9	D	
3	SR 99 SB	Elverta Road to Elkhorn Blvd	PM	3,320	0.97	2	No	Level	5%	0%	1.5	1.2	0.976	1.00	1,754	65.0	60.3	29.1	D	
4	SR 99 SB	Elkhorn Blvd to I-5	PM	3,940	0.97	3	Yes 630	Level	5%	0%	1.5	1.2	0.976	1.00	1,749	65.0	60.3	29.0	D	
5	SR 99 NB	I-5 to Elkhorn Blvd	PM	5,940	0.97	3	Yes 1604	Level	13%	0%	1.5	1.2	0.939	1.00	2,380	65.0	-	-	F	
6	SR 99 NB	Elkhorn Blvd to Elverta Road	PM	4,880	0.97	2	No	Level	13%	0%	1.5	1.2	0.939	1.00	2,679	65.0	-	-	F	
7	SR 99 NB	Elverta Road to Riego Road	PM	5,130	0.97	2	No	Level	13%	0%	1.5	1.2	0.939	1.00	2,816	65.0	-	-	F	
8	SR 99 NB	Riego Road to Sankey Road	PM	4,390	0.97	2	No	Level	13%	0%	1.5	1.2	0.939	1.00	2,410	65.0	-	-	F	

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

Jurisdiction Sacramento Co. Agency or Company Caltrans
 Analysis Year Cumulative No Project Date 40455.00
 Analyst F&P Project Description Elverta Specific Plan

General Information				Freeway Data			Freeway Volume Adjustment							Effective	
Freeway/ Direction	On-ramp	Analysis Time Period	Lanes	S _{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	E _T	E _R	f _{HV}	f _P	Flow Rate v _p (pcph)	Flow Rate v _p (pcph)
M-1	SR-99 SB Elverta Road Loop On	AM	2	65.0	4,340	0.97	Level	7%	0%	1.5	1.20	0.966	1.00	4,631	4,631
M-2	SR 99 SB Elverta Road Slip On	AM	2	65.0	4,710	0.97	Level	7%	0%	1.5	1.20	0.966	1.00	5,026	5,026
M-3	SR 99 NB Elverta Road Loop On	AM	2	65.0	2,140	0.97	Level	23.0%	0.0%	1.5	1.20	0.90	1.00	2,460	2,460
M-4	SR 99 NB Elverta Road Slip On	AM	2	65.0	2,290	0.97	Level	23.0%	0.0%	1.5	1.20	0.90	1.00	2,632	2,632
M-1	SR-99 SB Elverta Road Loop On	PM	2	65.0	2,900	0.97	Level	5.0%	0.0%	1.5	1.20	0.98	1.00	3,064	3,064
M-2	SR 99 SB Elverta Road Slip On	PM	2	65.0	3,170	0.97	Level	5.0%	0.0%	1.5	1.20	0.98	1.00	3,350	3,350
M-3	SR 99 NB Elverta Road Loop On	PM	2	65.0	4,410	0.97	Level	13.0%	0.0%	1.5	1.20	0.94	1.00	4,842	4,842
M-4	SR 99 NB Elverta Road Slip On	PM	2	65.0	5,080	0.97	Level	13.0%	0.0%	1.5	1.20	0.94	1.00	5,578	5,578

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

General Information			On-Ramp Data						On-Ramp Volume Adjustment										
Freeway/ Direction	On-ramp		Type	Lanes	S _{FR} (mph)	V _R (vph)	Accel Lane (ft)			PHF	Terrain	Truck/ Bus %		RV %	E _T	E _R	f _{HV}	f _P	Flow Rate v _p (pcph)
							L _{A1}	L _{A2}	L _{Aeff}										
M-1	SR-99 SB	Elverta Road Loop On	Right	1	25.0	370	250		250	0.97	Level	7%	0%	1.5	1.2	0.966	1.00		395
M-2	SR 99 SB	Elverta Road Slip On	Right	1	45.0	30	250		250	0.97	Level	7%	0%	1.5	1.2	0.966	1.00		32
M-3	SR 99 NB	Elverta Road Loop On	Right	1	25.0	150	250		250	0.97	Level	23.0%	0.0%	1.5	1.2	0.90	1.00		172
M-4	SR 99 NB	Elverta Road Slip On	Right	1	45.0	80	250		250	0.97	Level	23.0%	0.0%	1.5	1.2	0.90	1.00		92
M-1	SR-99 SB	Elverta Road Loop On	Right	1	25.0	270	250		250	0.97	Level	5.0%	0.0%	1.5	1.2	0.98	1.00		285
M-2	SR 99 SB	Elverta Road Slip On	Right	1	45.0	150	250		250	0.97	Level	5.0%	0.0%	1.5	1.2	0.98	1.00		159
M-3	SR 99 NB	Elverta Road Loop On	Right	1	25.0	670	250		250	0.97	Level	13.0%	0.0%	1.5	1.2	0.94	1.00		736
M-4	SR 99 NB	Elverta Road Slip On	Right	1	45.0	50	250		250	0.97	Level	13.0%	0.0%	1.5	1.2	0.94	1.00		55

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

General Information

v₁₂ Estimation

	Freeway/ Direction	On-ramp	L _{EQ}		P _{FM} Equations			P _{FM}	v ₁₂ (pcph)
			25-2	25-3	1	2	3		
M-1	SR-99 SB	Elverta Road Loop On			0.585			1.000	4,631
M-2	SR 99 SB	Elverta Road Slip On			0.585			1.000	5,026
M-3	SR 99 NB	Elverta Road Loop On			0.585			1.000	2,460
M-4	SR 99 NB	Elverta Road Slip On			0.585			1.000	2,632
M-1	SR-99 SB	Elverta Road Loop On			0.585			1.000	3,064
M-2	SR 99 SB	Elverta Road Slip On			0.585			1.000	3,350
M-3	SR 99 NB	Elverta Road Loop On			0.585			1.000	4,842
M-4	SR 99 NB	Elverta Road Slip On			0.585			1.000	5,578

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

General Information

Capacity Checks

Freeway/ Direction			On-ramp			V_{FI} (pcph)	Max V_{FI} (pcph)	LOS F?	V_{FO} (pcph)	Max V_{FO} (pcph)	LOS F?	V_3, V_{av34} (pcphpl)	V_3, V_{av34} > 2,700?	V_3, V_{av34} > 1.5* $V_{12}/2$?	V_{12a} (pcph)	V_{R12a} (pcph)	Max V_{R12a} (pcph)	LOS F?
M-1	SR-99 SB	Elverta Road Loop On	4,631	4,700	No	5,026	4,700	Yes	0	No	No	4,631	5,026	4,600	Yes			
M-2	SR 99 SB	Elverta Road Slip On	5,026	4,700	Yes	5,058	4,700	Yes	0	No	No	5,026	5,058	4,600	Yes			
M-3	SR 99 NB	Elverta Road Loop On	2,460	4,800	No	2,632	4,800	No	0	No	No	2,460	2,632	4,600	No			
M-4	SR 99 NB	Elverta Road Slip On	2,632	4,800	No	2,724	4,800	No	0	No	No	2,632	2,724	4,600	No			
M-1	SR-99 SB	Elverta Road Loop On	3,064	4,800	No	3,350	4,800	No	0	No	No	3,064	3,350	4,600	No			
M-2	SR 99 SB	Elverta Road Slip On	3,350	4,800	No	3,508	4,800	No	0	No	No	3,350	3,508	4,600	No			
M-3	SR 99 NB	Elverta Road Loop On	4,842	4,800	Yes	5,578	4,800	Yes	0	No	No	4,842	5,578	4,600	Yes			
M-4	SR 99 NB	Elverta Road Slip On	5,578	4,800	Yes	5,632	4,800	Yes	0	No	No	5,578	5,632	4,600	Yes			

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

General Information			Results				Speed Estimation			
Freeway/ Direction	On-ramp	v_R (pcph)	Max v_R (pcph)	LOS F?	Density, D (pcplpm)	Level of Service	Int. Var. M_s	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
M-1	SR-99 SB Elverta Road Loop On	395	1,900	No	-	F	-	-	-	-
M-2	SR 99 SB Elverta Road Slip On	32	2,100	No	-	F	-	-	-	-
M-3	SR 99 NB Elverta Road Loop On	172	1,900	No	24.4	C	0.363	56.7	0.0	56.7
M-4	SR 99 NB Elverta Road Slip On	92	2,100	No	25.1	C	0.358	56.8	0.0	56.8
M-1	SR-99 SB Elverta Road Loop On	285	1,900	No	29.9	D	0.420	55.3	0.0	55.3
M-2	SR 99 SB Elverta Road Slip On	159	2,100	No	31.2	D	0.429	55.1	0.0	55.1
M-3	SR 99 NB Elverta Road Loop On	736	1,900	No	-	F	1.340	34.2	0.0	34.2
M-4	SR 99 NB Elverta Road Slip On	55	2,100	No	-	F	1.388	33.1	0.0	33.1

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

Jurisdiction Sacramento Co. Agency or Company Caltrans
 Analysis Year Cumulative No Project Date 10/4/2010
 Analyst F&P Project Description Elverta Specific Plan

General Information			Freeway Data				Freeway Volume Adjustment							Effective	
Freeway/ Direction	Off-ramp	Analysis Time Period	Lanes	S _{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	E _T	E _R	f _{HV}	f _P	Flow Rate v _p (pcph)	Flow Rate v _p (pcph)
D-1	SR 99 SB Elverta Road Off Ramp	AM	2	65.0	4,990	0.97	Level	7%	0%	1.5	1.20	0.966	1.00	5,324	5,324
D-2	SR 99 NB Elverta Road Off Ramp	AM	2	65.0	2,800	0.97	Level	23.0%	0.0%	1.5	1.200	0.897	1.00	3,219	3,219
D-3	SR 99 SB Elverta Road Off Ramp	PM	2	65.0	3,190	0.97	Level	5.0%	0.0%	1.5	1.200	0.976	1.00	3,371	3,371
D-4	SR 99 NB Elverta Road Off Ramp	PM	2	65.0	4,880	0.97	Level	13.0%	0.0%	1.5	1.200	0.939	1.00	5,358	5,358

**HCM 2000
Diverge Ramp Junctions
Capacity Analysis**

General Information			Off-Ramp Data						Off-Ramp Volume Adjustment									
Freeway/ Direction	Off-ramp		Type	Lanes	S _{FR} (mph)	V _R (vph)	Decel Lane (ft)			PHF	Terrain	Truck/ Bus %	RV %	E _T	E _R	f _{HV}	f _P	Flow Rate v _p (pcph)
							L _{D1}	L _{D2}	L _{Deff}									
D-1	SR 99 SB	Elverta Road Off Ramp	Right	1	45.0	650	150		150	0.97	Level	7%	0%	1.5	1.2	0.966	1.00	694
D-2	SR 99 NB	Elverta Road Off Ramp	Right	1	45.0	660	150		150	0.97	Level	23.0%	0.0%	1.5	1.2	0.897	1.00	759
D-3	SR 99 SB	Elverta Road Off Ramp	Right	1	45.0	290	150		150	0.97	Level	5.0%	0.0%	1.5	1.2	0.976	1.00	306
D-4	SR 99 NB	Elverta Road Off Ramp	Right	1	45.0	470	150		150	0.97	Level	13.0%	0.0%	1.5	1.2	0.939	1.00	516

**HCM 2000
Diverge Ramp Junctions
Capacity Analysis**

General Information			v_{12} Estimation					P_{FD}	V_{12} (pcph)
Freeway/ Direction	Off-ramp	L_{EQ}	P_{FD} Equations						
		25-13	25-14	5	6	7			
D-1	SR 99 SB Elverta Road Off Ramp			0.595			1.000	5,324	
D-2	SR 99 NB Elverta Road Off Ramp			0.645			1.000	3,219	
D-3	SR 99 SB Elverta Road Off Ramp			0.662			1.000	3,371	
D-4	SR 99 NB Elverta Road Off Ramp			0.602			1.000	5,358	

**HCM 2000
Diverge Ramp Junctions
Capacity Analysis**

General Information

Capacity Checks

General Information			Capacity Checks											
Freeway/ Direction	Off-ramp		V_{FI} (pcph)	Max V_{FI} (pcph)	LOS F?	V_3, V_{av34} (pcphpl)	V_3, V_{av34} > 2,700?	V_3, V_{av34} > $1.5 \cdot V_{12}/2$?	V_{12a} (pcph)	Max V_{12} (pcph)	LOS F?	V_{FO} (pcph)	Max V_{FO} (pcph)	LOS F?
D-1	SR 99 SB	Elverta Road Off Ramp	5,324	4,700	Yes	0	No	No	5,324	4,400	Yes	4,631	4,700	No
D-2	SR 99 NB	Elverta Road Off Ramp	3,219	4,800	No	0	No	No	3,219	4,400	No	2,460	4,800	No
D-3	SR 99 SB	Elverta Road Off Ramp	3,371	4,800	No	0	No	No	3,371	4,400	No	3,064	4,800	No
D-4	SR 99 NB	Elverta Road Off Ramp	5,358	4,800	Yes	0	No	No	5,358	4,400	Yes	4,842	4,800	Yes

**HCM 2000
Diverge Ramp Junctions
Capacity Analysis**

<i>General Information</i>					<i>Results</i>		<i>Speed Estimation</i>				
Freeway/ Direction		Off-ramp	v_R (pcph)	Max v_R (pcph)	LOS F?	Density, D (pcplpm)	Level of Service	Int. Var. D_s	Inf. Area S_R (mph)	Out Lns. S_o (mph)	All vehs. S (mph)
D-1	SR 99 SB	Elverta Road Off Ramp	694	2,100	No	-	F	-	-	-	-
D-2	SR 99 NB	Elverta Road Off Ramp	759	2,100	No	30.6	D	0.366	56.6	0.0	56.6
D-3	SR 99 SB	Elverta Road Off Ramp	306	2,100	No	31.9	D	0.326	57.5	0.0	57.5
D-4	SR 99 NB	Elverta Road Off Ramp	516	2,100	No	-	F	0.344	57.1	0.0	57.1

**HCM 2000
Basic Freeway Segments
Capacity Analysis**

Jurisdiction Sacramento County Agency or Company Caltrans
 Analysis Year Cumulative Plus Pref. Alt. Date 10/4/2010
 Analyst F&P Project Description Elverta Specific Plan

General Information			Flow Rate Calculation														Speed Calculation		Results	
Freeway/ Direction	From/To	Analysis Time Period	Volume (vph)	PHF	Lanes	HOV Lane? HOV Lane?	HOV Lane Volume	Terrain	Truck/ Bus %	RV %	E _T	E _R	f _{HV}	f _P	Flow Rate v _p (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	Level of Service	
1	SR 99 SB	Sankey Road to Riego Road	AM	4,630	0.97	2	No	Level	7%	0%	1.5	1.2	0.966	1.00	2,470	65.0	-	-	F	
2	SR 99 SB	Riego Road to Elverta Road	AM	5,010	0.97	2	No	Level	7%	0%	1.5	1.2	0.966	1.00	2,673	65.0	-	-	F	
3	SR 99 SB	Elverta Road to Elkhorn Blvd	AM	4,550	0.97	2	No	Level	7%	0%	1.5	1.2	0.966	1.00	2,427	65.0	-	-	F	
4	SR 99 SB	Elkhorn Blvd to I-5	AM	5,460	0.97	3	Yes	Level	7%	0%	1.5	1.2	0.966	1.00	2,447	65.0	-	-	F	
5	SR 99 NB	I-5 to Elkhorn Blvd	AM	2,930	0.97	3	Yes	Level	23%	0%	1.5	1.2	0.897	1.00	1,229	65.0	60.5	20.3	C	
6	SR 99 NB	Elkhorn Blvd to Elverta Road	AM	2,530	0.97	2	No	Level	23%	0%	1.5	1.2	0.897	1.00	1,454	65.0	60.5	24.0	C	
7	SR 99 NB	Elverta Road to Riego Road	AM	2,320	0.97	2	No	Level	23%	0%	1.5	1.2	0.897	1.00	1,333	65.0	60.5	22.0	C	
8	SR 99 NB	Riego Road to Sankey Road	AM	1,720	0.97	2	No	Level	23%	0%	1.5	1.2	0.897	1.00	989	65.0	60.5	16.3	B	
1	SR 99 SB	Sankey Road to Riego Road	PM	2,410	0.97	2	No	Level	5%	0%	1.5	1.2	0.976	1.00	1,273	65.0	60.5	21.0	C	
2	SR 99 SB	Riego Road to Elverta Road	PM	3,170	0.97	2	No	Level	5%	0%	1.5	1.2	0.976	1.00	1,675	65.0	60.5	27.7	D	
3	SR 99 SB	Elverta Road to Elkhorn Blvd	PM	3,360	0.97	2	No	Level	5%	0%	1.5	1.2	0.976	1.00	1,775	65.0	60.2	29.5	D	
4	SR 99 SB	Elkhorn Blvd to I-5	PM	3,970	0.97	3	Yes	Level	5%	0%	1.5	1.2	0.976	1.00	1,762	65.0	60.3	29.2	D	
5	SR 99 NB	I-5 to Elkhorn Blvd	PM	6,100	0.97	3	Yes	Level	13%	0%	1.5	1.2	0.939	1.00	2,445	65.0	-	-	F	
6	SR 99 NB	Elkhorn Blvd to Elverta Road	PM	4,980	0.97	2	No	Level	13%	0%	1.5	1.2	0.939	1.00	2,734	65.0	-	-	F	
7	SR 99 NB	Elverta Road to Riego Road	PM	5,160	0.97	2	No	Level	13%	0%	1.5	1.2	0.939	1.00	2,833	65.0	-	-	F	
8	SR 99 NB	Riego Road to Sankey Road	PM	4,320	0.97	2	No	Level	13%	0%	1.5	1.2	0.939	1.00	2,372	65.0	-	-	F	

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

Jurisdiction Sacramento County Agency or Company Caltrans
 Analysis Year Cumulative Plus Pref. Alt. Date 40455.00
 Analyst F&P Project Description Elverta Specific Plan

General Information				Freeway Data			Freeway Volume Adjustment							Effective	
Freeway/ Direction	On-ramp	Analysis Time Period	Lanes	S _{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	E _T	E _R	f _{HV}	f _P	Flow Rate v _p (pcph)	Flow Rate v _p (pcph)
M-1	SR-99 SB Elverta Road Loop On	AM	2	65.0	4,150	0.97	Level	7%	0%	1.5	1.20	0.966	1.00	4,428	4,428
M-2	SR 99 SB Elverta Road Slip On	AM	2	65.0	4,520	0.97	Level	7%	0%	1.5	1.20	0.966	1.00	4,823	4,823
M-3	SR 99 NB Elverta Road Loop On	AM	2	65.0	1,930	0.97	Level	23.0%	0.0%	1.5	1.20	0.90	1.00	2,219	2,219
M-4	SR 99 NB Elverta Road Slip On	AM	2	65.0	2,080	0.97	Level	23.0%	0.0%	1.5	1.20	0.90	1.00	2,391	2,391
M-1	SR-99 SB Elverta Road Loop On	PM	2	65.0	2,890	0.97	Level	5.0%	0.0%	1.5	1.20	0.98	1.00	3,054	3,054
M-2	SR 99 SB Elverta Road Slip On	PM	2	65.0	3,230	0.97	Level	5.0%	0.0%	1.5	1.20	0.98	1.00	3,413	3,413
M-3	SR 99 NB Elverta Road Loop On	PM	2	65.0	4,440	0.97	Level	13.0%	0.0%	1.5	1.20	0.94	1.00	4,875	4,875
M-4	SR 99 NB Elverta Road Slip On	PM	2	65.0	5,110	0.97	Level	13.0%	0.0%	1.5	1.20	0.94	1.00	5,610	5,610

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

General Information			On-Ramp Data						On-Ramp Volume Adjustment											
Freeway/ Direction	On-ramp		Type	Lanes	S _{FR} (mph)	V _R (vph)	Accel Lane (ft)			PHF	Terrain	Truck/ Bus %		RV %	E _T	E _R	f _{HV}	f _P	Flow Rate v _p (pcph)	
							L _{A1}	L _{A2}	L _{Aeff}											
M-1	SR-99 SB	Elverta Road Loop On	Right	1	25.0	370	250		250	0.97	Level	7%	0%	1.5	1.2	0.966	1.00		395	
M-2	SR 99 SB	Elverta Road Slip On	Right	1	45.0	30	250		250	0.97	Level	7%	0%	1.5	1.2	0.966	1.00		32	
M-3	SR 99 NB	Elverta Road Loop On	Right	1	25.0	150	250		250	0.97	Level	23.0%	0.0%	1.5	1.2	0.90	1.00		172	
M-4	SR 99 NB	Elverta Road Slip On	Right	1	45.0	240	250		250	0.97	Level	23.0%	0.0%	1.5	1.2	0.90	1.00		276	
M-1	SR-99 SB	Elverta Road Loop On	Right	1	25.0	340	250		250	0.97	Level	5.0%	0.0%	1.5	1.2	0.98	1.00		359	
M-2	SR 99 SB	Elverta Road Slip On	Right	1	45.0	130	250		250	0.97	Level	5.0%	0.0%	1.5	1.2	0.98	1.00		137	
M-3	SR 99 NB	Elverta Road Loop On	Right	1	25.0	670	250		250	0.97	Level	13.0%	0.0%	1.5	1.2	0.94	1.00		736	
M-4	SR 99 NB	Elverta Road Slip On	Right	1	45.0	50	250		250	0.97	Level	13.0%	0.0%	1.5	1.2	0.94	1.00		55	

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

General Information

v₁₂ Estimation

	Freeway/ Direction	On-ramp	L _{EQ}		P _{FM} Equations			P _{FM}	v ₁₂ (pcph)
			25-2	25-3	1	2	3		
M-1	SR-99 SB	Elverta Road Loop On			0.585			1.000	4,428
M-2	SR 99 SB	Elverta Road Slip On			0.585			1.000	4,823
M-3	SR 99 NB	Elverta Road Loop On			0.585			1.000	2,219
M-4	SR 99 NB	Elverta Road Slip On			0.585			1.000	2,391
M-1	SR-99 SB	Elverta Road Loop On			0.585			1.000	3,054
M-2	SR 99 SB	Elverta Road Slip On			0.585			1.000	3,413
M-3	SR 99 NB	Elverta Road Loop On			0.585			1.000	4,875
M-4	SR 99 NB	Elverta Road Slip On			0.585			1.000	5,610

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

General Information

Capacity Checks

Freeway/ Direction			On-ramp			V_{FI} (pcph)	Max V_{FI} (pcph)	LOS F?	V_{FO} (pcph)	Max V_{FO} (pcph)	LOS F?	V_3, V_{av34} (pcphpl)	V_3, V_{av34} > 2,700?	V_3, V_{av34} > 1.5* $v_{12}/2$?	V_{12a} (pcph)	V_{R12a} (pcph)	Max V_{R12a} (pcph)	LOS F?
M-1	SR-99 SB	Elverta Road Loop On	4,428	4,700	No	4,823	4,700	Yes	0	No	No	4,428	4,823	4,600	Yes			
M-2	SR 99 SB	Elverta Road Slip On	4,823	4,700	Yes	4,855	4,700	Yes	0	No	No	4,823	4,855	4,600	Yes			
M-3	SR 99 NB	Elverta Road Loop On	2,219	4,800	No	2,391	4,800	No	0	No	No	2,219	2,391	4,600	No			
M-4	SR 99 NB	Elverta Road Slip On	2,391	4,800	No	2,667	4,800	No	0	No	No	2,391	2,667	4,600	No			
M-1	SR-99 SB	Elverta Road Loop On	3,054	4,800	No	3,413	4,800	No	0	No	No	3,054	3,413	4,600	No			
M-2	SR 99 SB	Elverta Road Slip On	3,413	4,800	No	3,551	4,800	No	0	No	No	3,413	3,551	4,600	No			
M-3	SR 99 NB	Elverta Road Loop On	4,875	4,800	Yes	5,610	4,800	Yes	0	No	No	4,875	5,610	4,600	Yes			
M-4	SR 99 NB	Elverta Road Slip On	5,610	4,800	Yes	5,665	4,800	Yes	0	No	No	5,610	5,665	4,600	Yes			

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

General Information			Results				Speed Estimation			
Freeway/ Direction	On-ramp	v_R (pcph)	Max v_R (pcph)	LOS F?	Density, D (pcplpm)	Level of Service	Int. Var. M_s	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
M-1	SR-99 SB Elverta Road Loop On	395	1,900	No	-	F	-	-	-	-
M-2	SR 99 SB Elverta Road Slip On	32	2,100	No	-	F	-	-	-	-
M-3	SR 99 NB Elverta Road Loop On	172	1,900	No	22.5	C	0.351	56.9	0.0	56.9
M-4	SR 99 NB Elverta Road Slip On	276	2,100	No	24.6	C	0.355	56.8	0.0	56.8
M-1	SR-99 SB Elverta Road Loop On	359	1,900	No	30.4	D	0.427	55.2	0.0	55.2
M-2	SR 99 SB Elverta Road Slip On	137	2,100	No	31.5	D	0.434	55.0	0.0	55.0
M-3	SR 99 NB Elverta Road Loop On	736	1,900	No	-	F	1.374	33.4	0.0	33.4
M-4	SR 99 NB Elverta Road Slip On	55	2,100	No	-	F	1.424	32.2	0.0	32.2

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

Jurisdiction Sacramento County Agency or Company Caltrans
 Analysis Year Cumulative Plus Pref. Alt. Date 10/4/2010
 Analyst F&P Project Description Elverta Specific Plan

General Information				Freeway Data			Freeway Volume Adjustment							Effective	
Freeway/ Direction	Off-ramp	Analysis Time Period	Lanes	S _{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	E _T	E _R	f _{HV}	f _P	Flow Rate v _p (pcph)	Flow Rate v _p (pcph)
D-1	SR 99 SB Elverta Road Off Ramp	AM	2	65.0	5,010	0.97	Level	7%	0%	1.5	1.20	0.966	1.00	5,346	5,346
D-2	SR 99 NB Elverta Road Off Ramp	AM	2	65.0	2,530	0.97	Level	23.0%	0.0%	1.5	1.200	0.897	1.00	2,908	2,908
D-3	SR 99 SB Elverta Road Off Ramp	PM	2	65.0	3,170	0.97	Level	5.0%	0.0%	1.5	1.200	0.976	1.00	3,350	3,350
D-4	SR 99 NB Elverta Road Off Ramp	PM	2	65.0	4,980	0.97	Level	13.0%	0.0%	1.5	1.200	0.939	1.00	5,468	5,468

**HCM 2000
Diverge Ramp Junctions
Capacity Analysis**

General Information			Off-Ramp Data						Off-Ramp Volume Adjustment										
Freeway/ Direction	Off-ramp		Type	Lanes	S _{FR} (mph)	V _R (vph)	Decel Lane (ft)			PHF	Terrain	Truck/ Bus %		RV %	E _T	E _R	f _{HV}	f _P	Flow Rate v _p (pcph)
D-1	SR 99 SB	Elverta Road Off Ramp	Right	1	45.0	860	150		150	0.97	Level	7%	0%	1.5	1.2	0.966	1.00	918	
D-2	SR 99 NB	Elverta Road Off Ramp	Right	1	45.0	600	150		150	0.97	Level	23.0%	0.0%	1.5	1.2	0.897	1.00	690	
D-3	SR 99 SB	Elverta Road Off Ramp	Right	1	45.0	280	150		150	0.97	Level	5.0%	0.0%	1.5	1.2	0.976	1.00	296	
D-4	SR 99 NB	Elverta Road Off Ramp	Right	1	45.0	540	150		150	0.97	Level	13.0%	0.0%	1.5	1.2	0.939	1.00	593	

**HCM 2000
Diverge Ramp Junctions
Capacity Analysis**

<i>General Information</i>			<i>v₁₂ Estimation</i>						
Freeway/ Direction	Off-ramp		L _{EQ}		P _{FD} Equations			V ₁₂ (pcph)	
			25-13	25-14	5	6	7		
D-1	SR 99 SB	Elverta Road Off Ramp			0.584			1.000	5,346
D-2	SR 99 NB	Elverta Road Off Ramp			0.656			1.000	2,908
D-3	SR 99 SB	Elverta Road Off Ramp			0.663			1.000	3,350
D-4	SR 99 NB	Elverta Road Off Ramp			0.596			1.000	5,468

**HCM 2000
Diverge Ramp Junctions
Capacity Analysis**

General Information

Capacity Checks

General Information			Capacity Checks											
Freeway/ Direction	Off-ramp		V_{FI} (pcph)	Max V_{FI} (pcph)	LOS F?	V_3, V_{av34} (pcphpl)	V_3, V_{av34} > 2,700?	V_3, V_{av34} > $1.5 \cdot V_{12}/2$?	V_{12a} (pcph)	Max V_{12} (pcph)	LOS F?	V_{FO} (pcph)	Max V_{FO} (pcph)	LOS F?
D-1	SR 99 SB	Elverta Road Off Ramp	5,346	4,700	Yes	0	No	No	5,346	4,400	Yes	4,428	4,700	No
D-2	SR 99 NB	Elverta Road Off Ramp	2,908	4,800	No	0	No	No	2,908	4,400	No	2,219	4,800	No
D-3	SR 99 SB	Elverta Road Off Ramp	3,350	4,800	No	0	No	No	3,350	4,400	No	3,054	4,800	No
D-4	SR 99 NB	Elverta Road Off Ramp	5,468	4,800	Yes	0	No	No	5,468	4,400	Yes	4,875	4,800	Yes

**HCM 2000
Diverge Ramp Junctions
Capacity Analysis**

<i>General Information</i>					<i>Results</i>		<i>Speed Estimation</i>				
Freeway/ Direction		Off-ramp	v_R (pcph)	Max v_R (pcph)	LOS F?	Density, D (pcplpm)	Level of Service	Int. Var. D_s	Inf. Area S_R (mph)	Out Lns. S_o (mph)	All vehs. S (mph)
D-1	SR 99 SB	Elverta Road Off Ramp	918	2,100	No	-	F	-	-	-	-
D-2	SR 99 NB	Elverta Road Off Ramp	690	2,100	No	27.9	C	0.360	56.7	0.0	56.7
D-3	SR 99 SB	Elverta Road Off Ramp	296	2,100	No	31.7	D	0.325	57.5	0.0	57.5
D-4	SR 99 NB	Elverta Road Off Ramp	593	2,100	No	-	F	0.351	56.9	0.0	56.9

Appendix C-3: Peak Hour Signal Warrant Analysis

Cumulative No Project Conditions

Cumulative Plus Preferred Alternative Conditions

Cumulative Plus Approved Specific Plan Conditions

Cumulative Plus Minimal Impact Conditions

Cumulative Plus No Federal Action Conditions



Sheet No **2** of **2**

Major Street **Elverta Road**
 Minor Street **E. Levee Road**

Project **Elverta Specific Plan EIS**
 Scenario **Cumulative No Project**
 Peak Hour **PM**

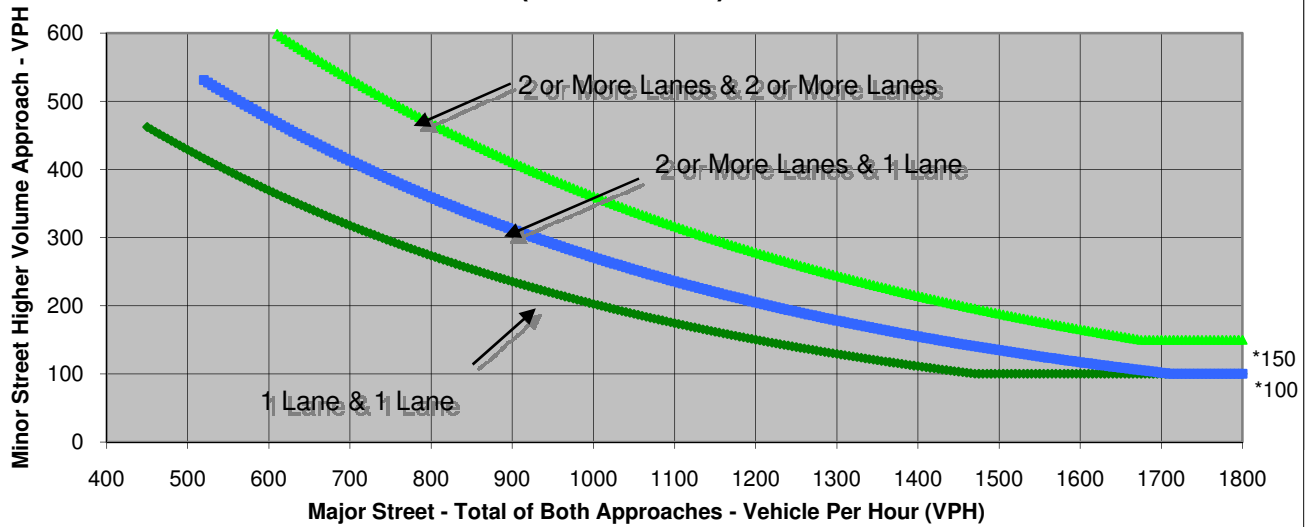
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	10	50	120
Through	140	40	1,230	580
Right	120	10	20	170
Total	270	60	1,300	870

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Elverta Road	Minor Street E. Levee Road	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,170	270	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elkhorn Boulevard
 Minor Street E. Levee Road

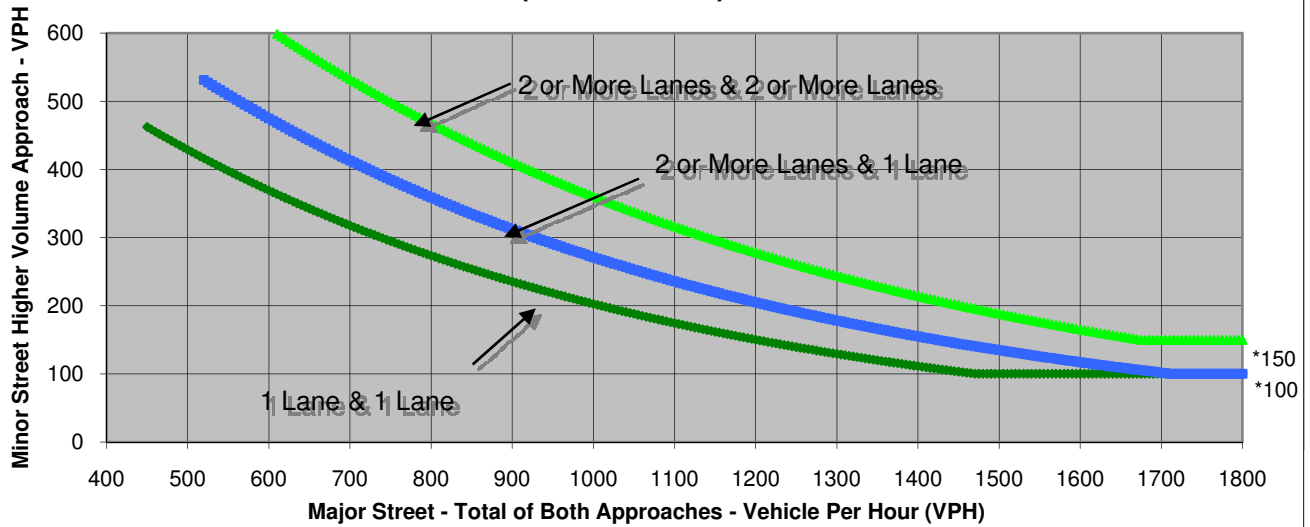
 Project Elverta Specific Plan EIS
 Scenario Cumulative No Project
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	60	90	0
Through	0	0	630	1,650
Right	0	260	0	30
Total	0	320	720	1,680

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Elkhorn Boulevard	Minor Street E. Levee Road	Warrant Met
Number of Approach Lanes	3	1	<u>YES</u>
Traffic Volume (VPH) *	2,400	320	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elkhorn Boulevard**
 Minor Street **E. Levee Road**

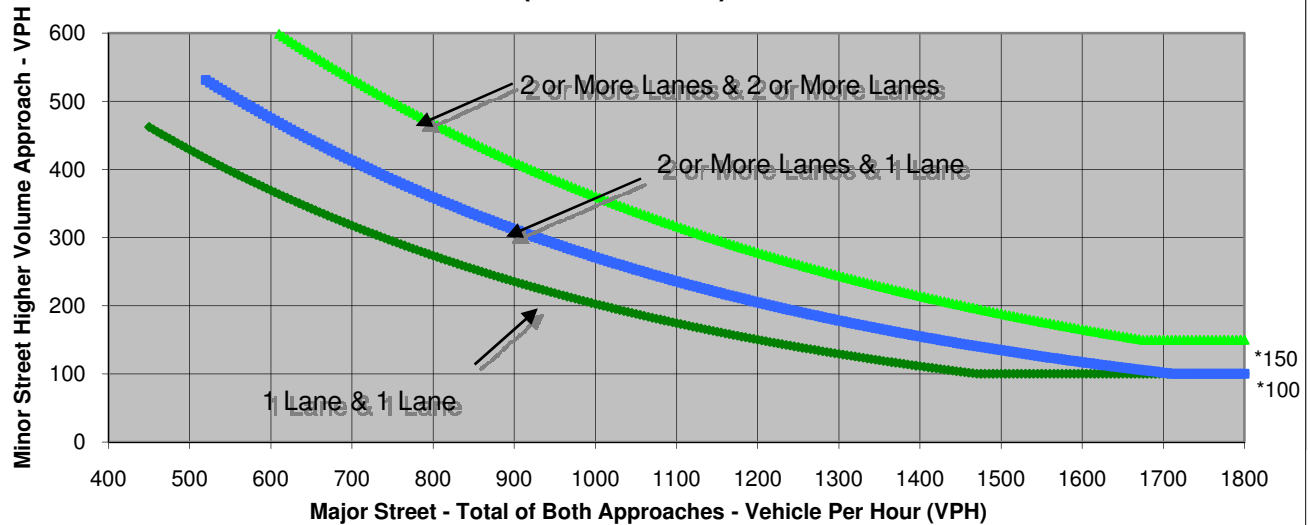
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative No Project**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	40	240	0
Through	0	0	1,860	830
Right	0	140	0	90
Total	0	180	2,100	920

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elkhorn Boulevard	E. Levee Road	
Number of Approach Lanes	3	1	YES
Traffic Volume (VPH) *	3,020	180	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street Sorento Road

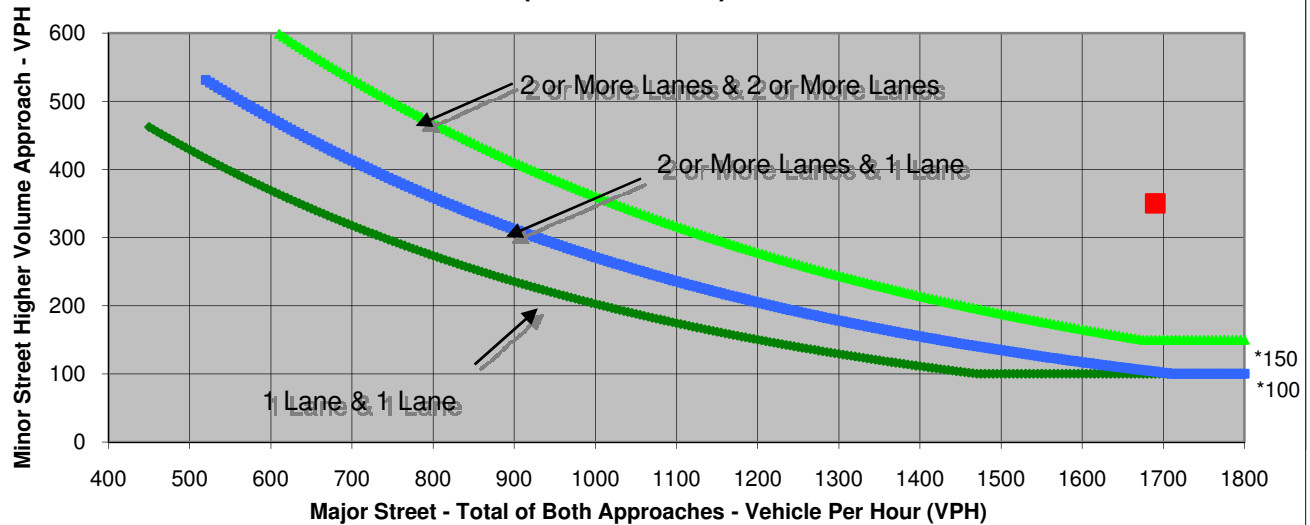
 Project Elverta Specific Plan EIS
 Scenario Cumulative No Project
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	10	170	10
Through	10	10	590	900
Right	10	330	10	10
Total	30	350	770	920

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	Sorento Road	
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	1,690	350	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **Sorento Road**

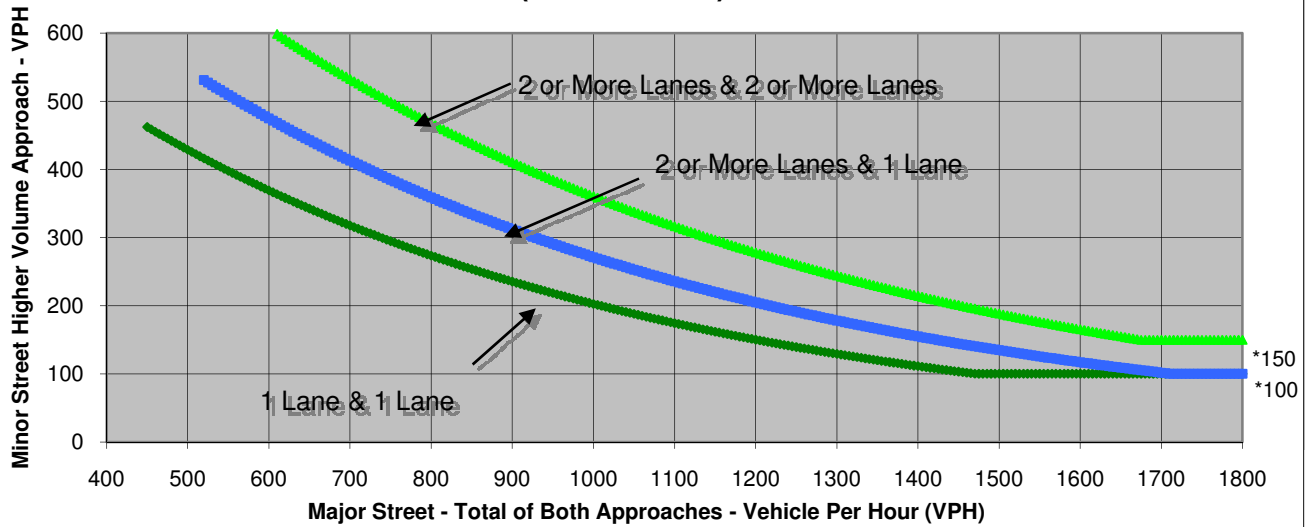
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative No Project**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	10	310	10
Through	10	10	1,040	900
Right	10	260	10	10
Total	30	280	1,360	920

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	Sorento Road	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,280	280	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street Elwyn Road

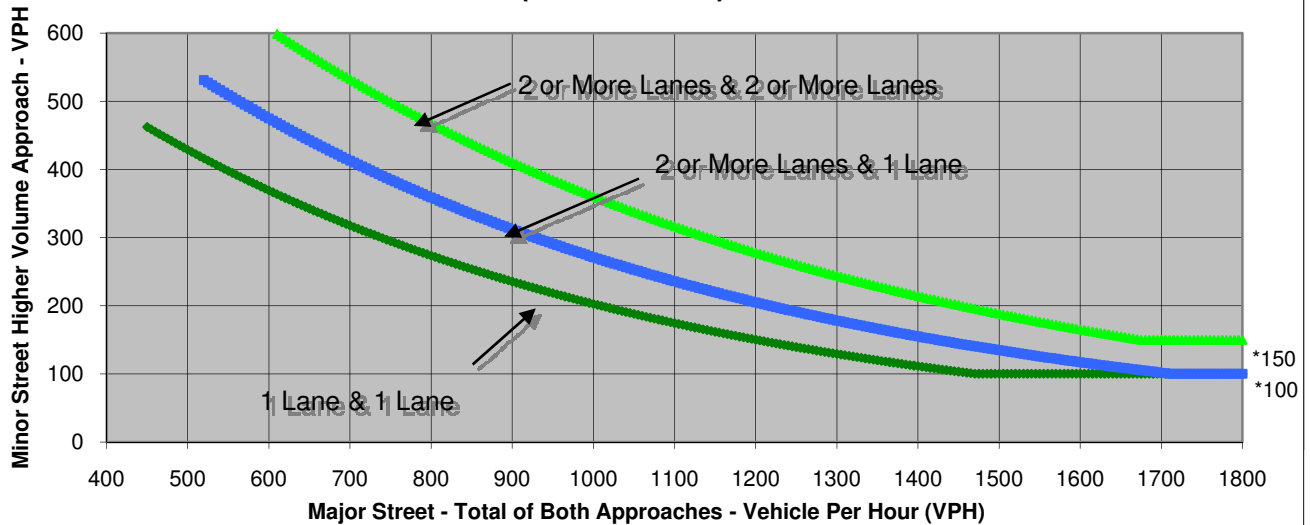
 Project Elverta Specific Plan EIS
 Scenario Cumulative No Project
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	20	360	10	180
Through	70	280	480	910
Right	20	80	60	300
Total	110	720	550	1,390

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Elverta Road	Elwyn Road	
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	1,940	720	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **Elwyn Road**

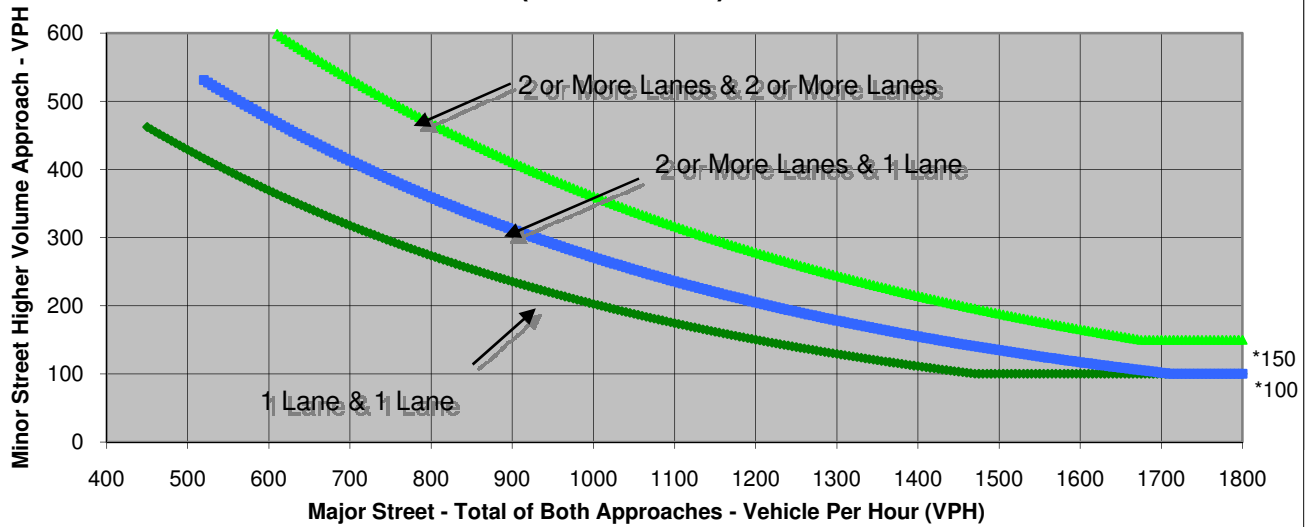
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative No Project**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	30	340	170	30
Through	180	70	920	530
Right	210	20	20	440
Total	420	430	1,110	1,000

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street Elwyn Road	<u>Warrant Met</u>
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	2,110	430	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **Rio Linda Blvd**

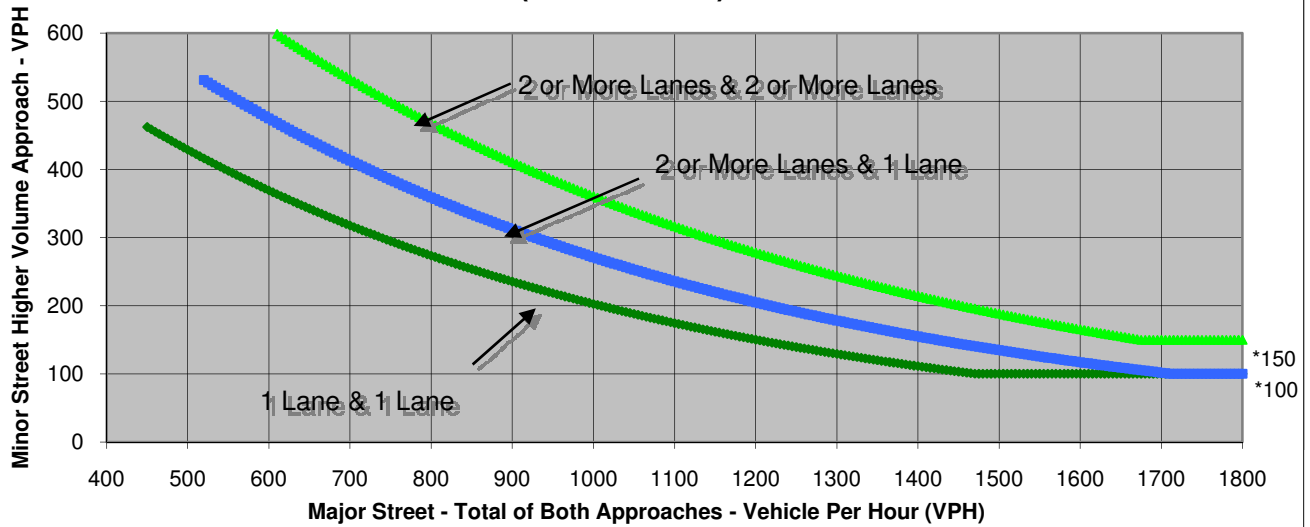
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative No Project**
 Peak Hour **AM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	170	0	0	60
Through	0	0	580	1,130
Right	30	0	250	0
Total	200	0	830	1,190

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street Rio Linda Blvd	Warrant Met
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,020	200	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **Rio Linda Blvd**

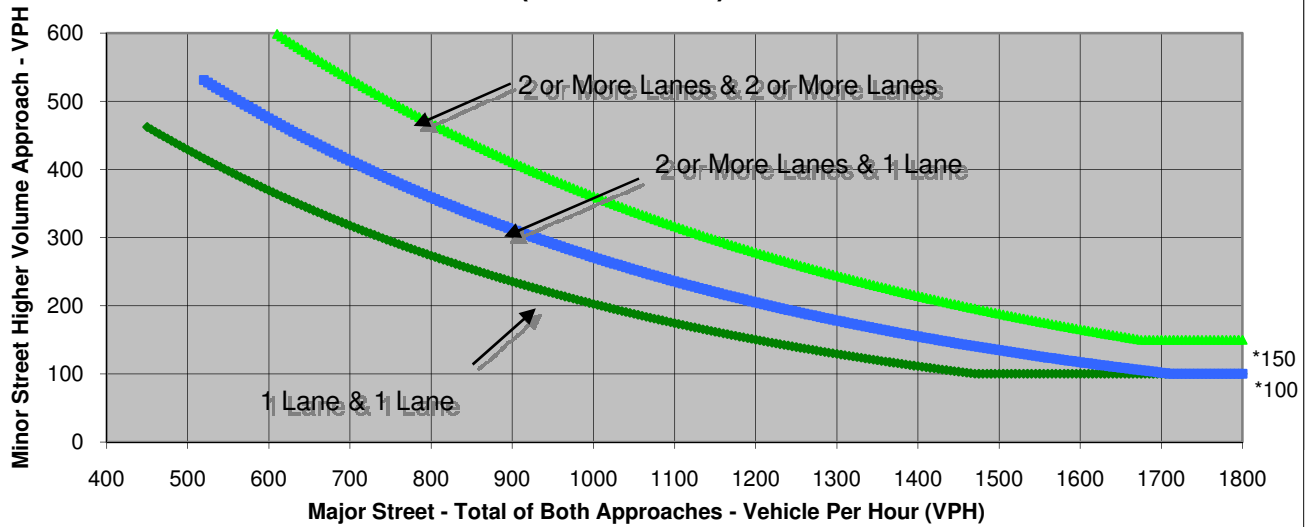
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative No Project**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	300	0	0	60
Through	0	0	1,170	650
Right	60	0	240	0
Total	360	0	1,410	710

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street Rio Linda Blvd	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,120	360	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street 9th Street

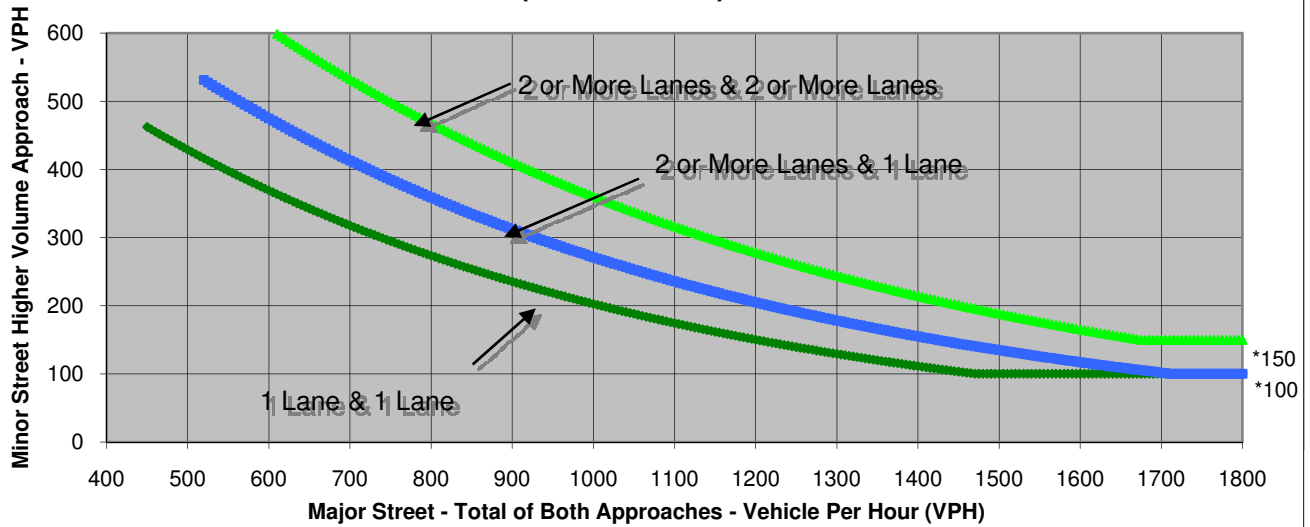
 Project Elverta Specific Plan EIS
 Scenario Cumulative No Project
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	0	0	270
Through	0	0	660	1,190
Right	80	0	10	0
Total	90	0	670	1,460

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	9th Street	
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	2,130	90	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **9th Street**

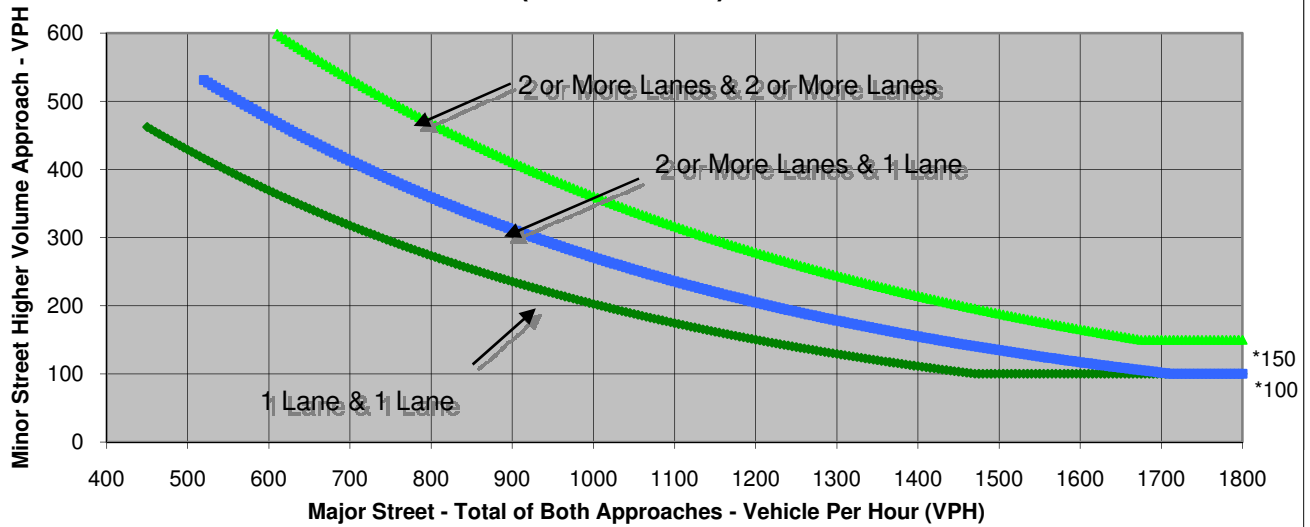
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative No Project**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	0	0	110
Through	0	0	1,250	770
Right	230	0	10	0
Total	240	0	1,260	880

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	9th Street	
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,140	240	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street Palladay Road

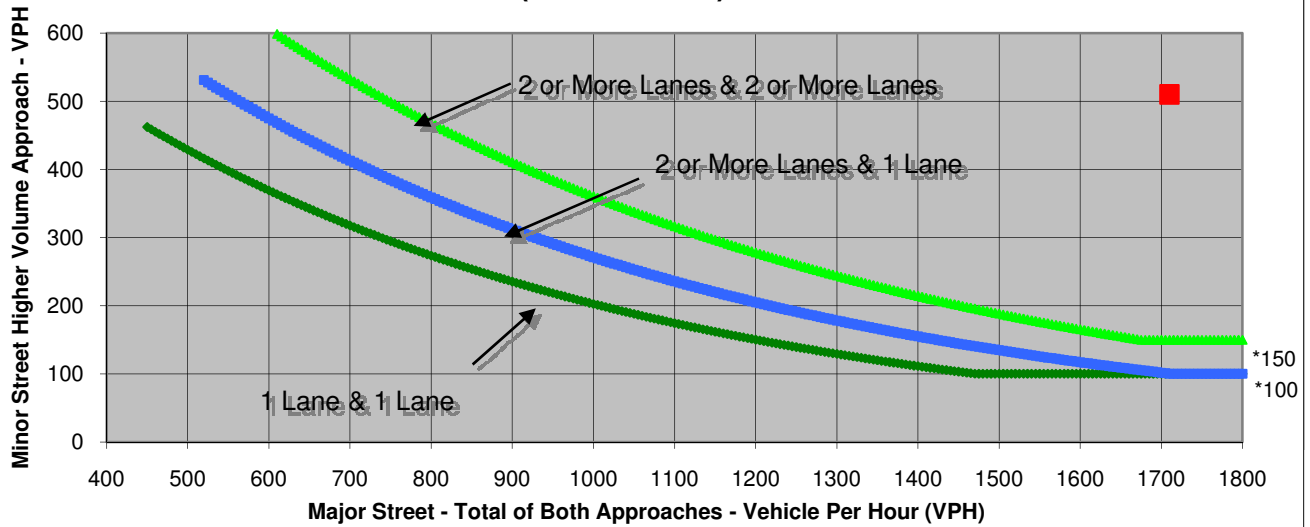
 Project Elverta Specific Plan EIS
 Scenario Cumulative No Project
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	10	0	0
Through	0	0	670	960
Right	0	500	70	10
Total	0	510	740	970

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Elverta Road	Palladay Road	
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	1,710	510	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street Palladay Road

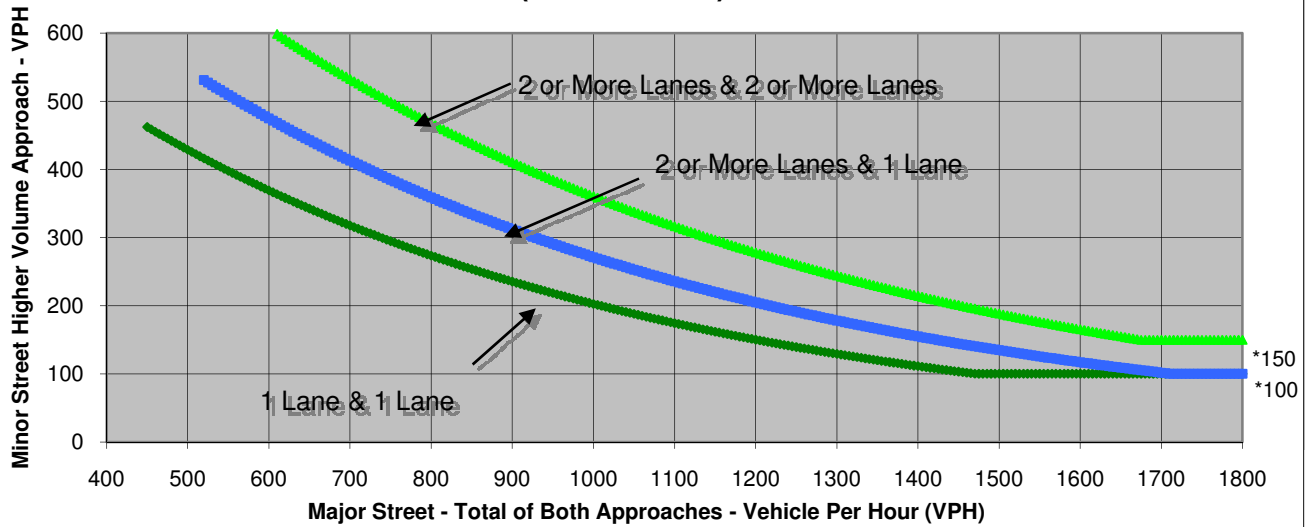
 Project Elverta Specific Plan EIS
 Scenario Cumulative No Project
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	10	440	0
Through	0	0	1,040	770
Right	0	120	0	10
Total	0	130	1,480	780

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	Palladay Road	
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,260	130	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street U Street

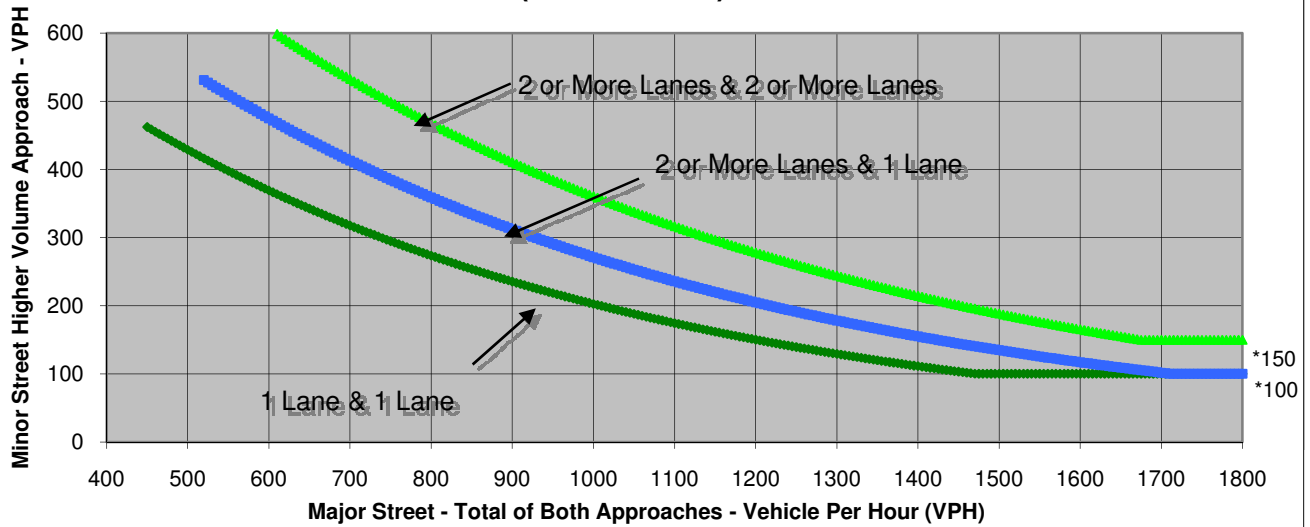
 Project Elverta Specific Plan EIS
 Scenario Cumulative No Project
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	20	10	10	230
Through	10	10	50	30
Right	190	10	110	10
Total	220	30	170	270

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	250	270	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Dry Creek Road**
 Minor Street **U Street**

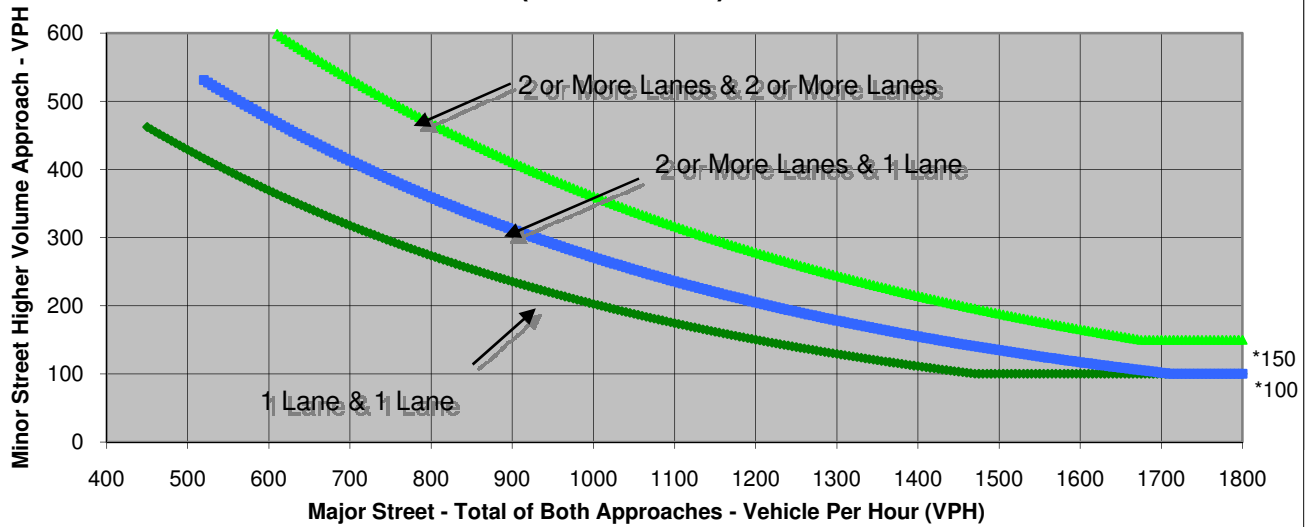
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative No Project**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	110	10	10	200
Through	10	10	40	50
Right	210	10	50	10
Total	330	30	100	260

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	360	260	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street Q Street

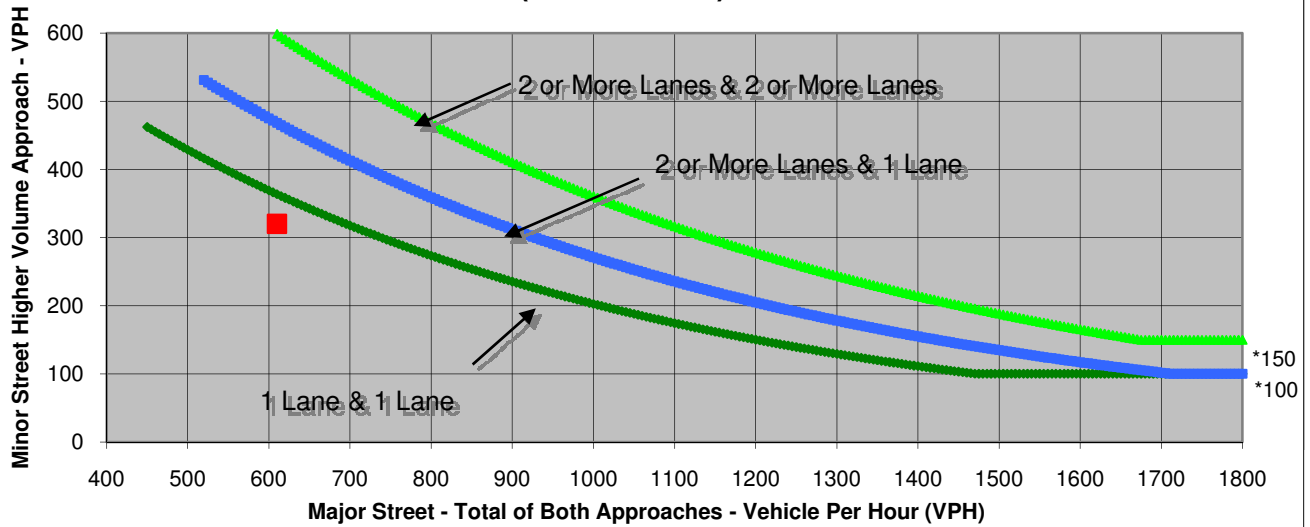
 Project Elverta Specific Plan EIS
 Scenario Cumulative No Project
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	50	20	20	210
Through	180	280	90	100
Right	30	50	60	10
Total	260	350	170	320

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	Q Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	610	320	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street Q Street

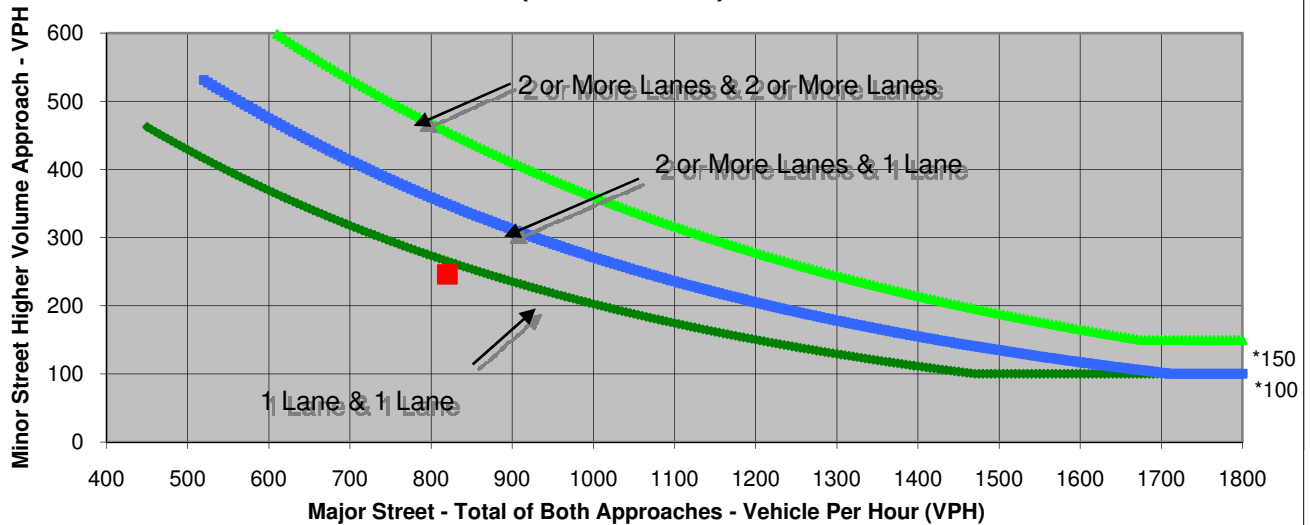
 Project Elverta Specific Plan EIS
 Scenario Cumulative No Project
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	70	10	30	80
Through	280	240	110	120
Right	210	10	50	46
Total	560	260	190	246

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	Q Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	820	246	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **16th Street**

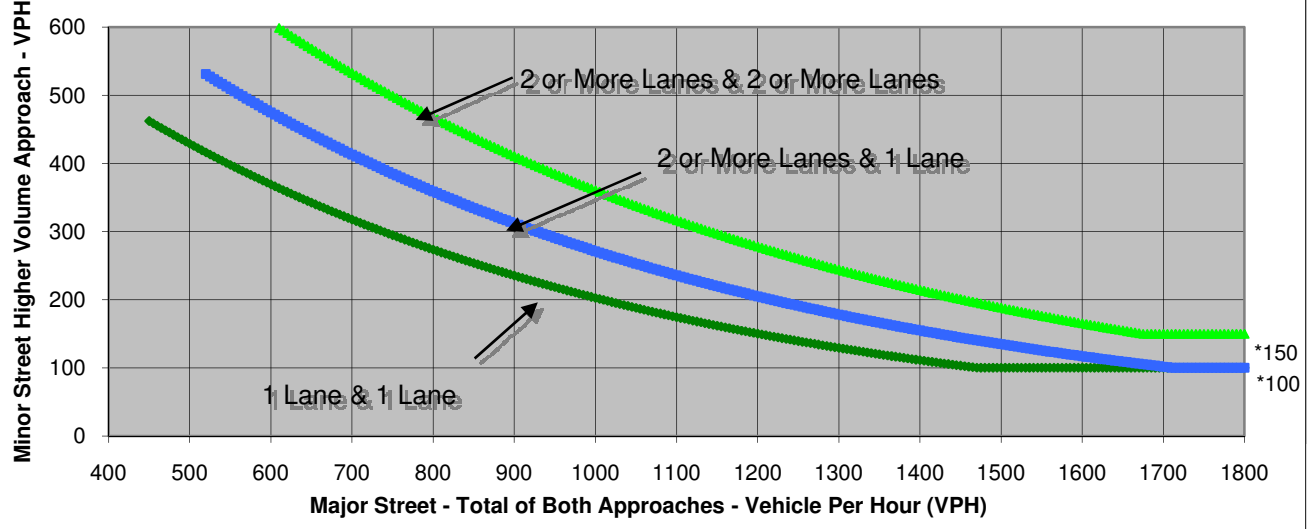
Project **Elverta Specific Plan EIS**
 Scenario **Cumulative No Project**
 Peak Hour **AM**

Turn Movement Volumes				
	NB	SB	EB	WB
Left	20	330	70	150
Through	210	420	590	840
Right	60	90	30	90
Total	290	840	690	1,080

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.
 Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street 16th Street	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	1,770	840	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **16th Street**

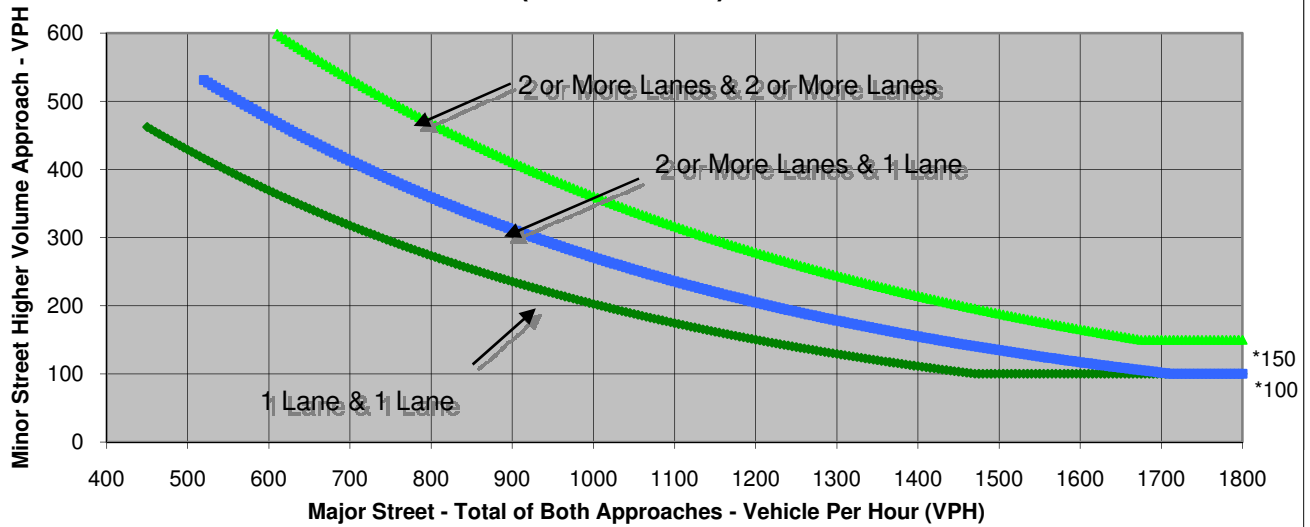
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative No Project**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	30	280	90	90
Through	380	220	920	670
Right	140	80	30	350
Total	550	580	1,040	1,110

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street 16th Street	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,150	580	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street 16th Street
 Minor Street U Street

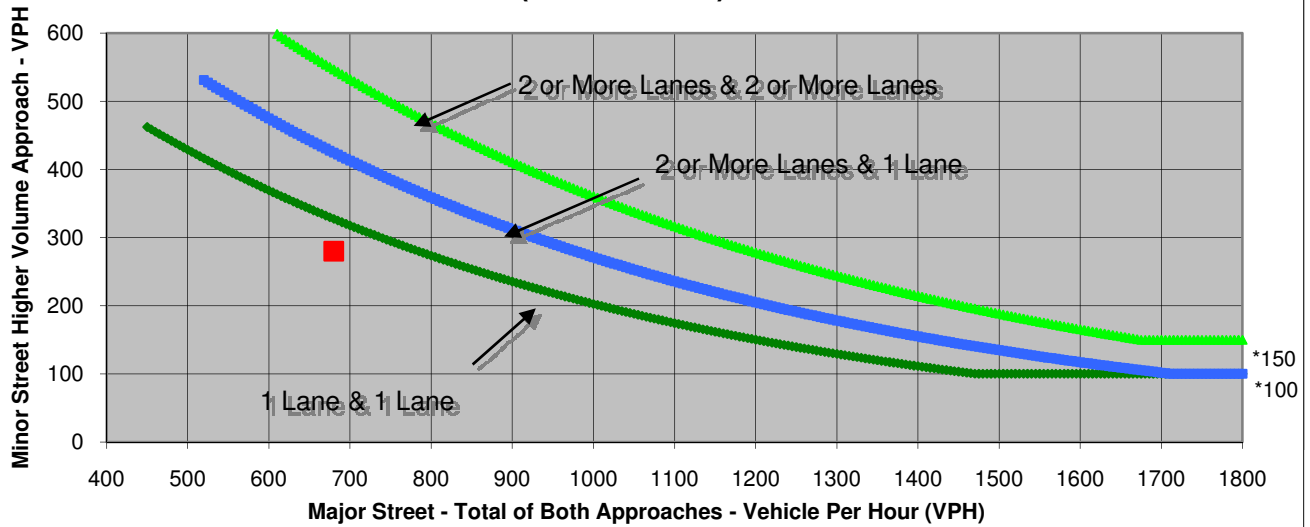
 Project Elverta Specific Plan EIS
 Scenario Cumulative No Project
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	10	230	30
Through	50	290	10	10
Right	10	310	40	10
Total	70	610	280	50

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	680	280	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **16th Street**
 Minor Street **U Street**

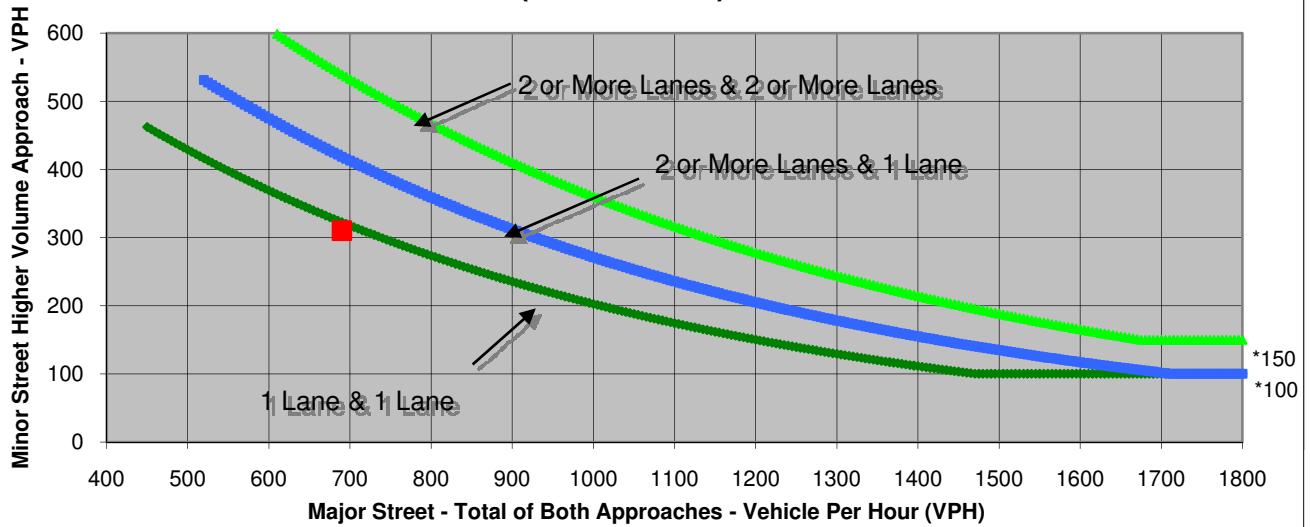
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative No Project**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	30	10	290	10
Through	270	110	10	10
Right	30	240	10	10
Total	330	360	310	30

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	690	310	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **16th Street**
 Minor Street **Q Street**

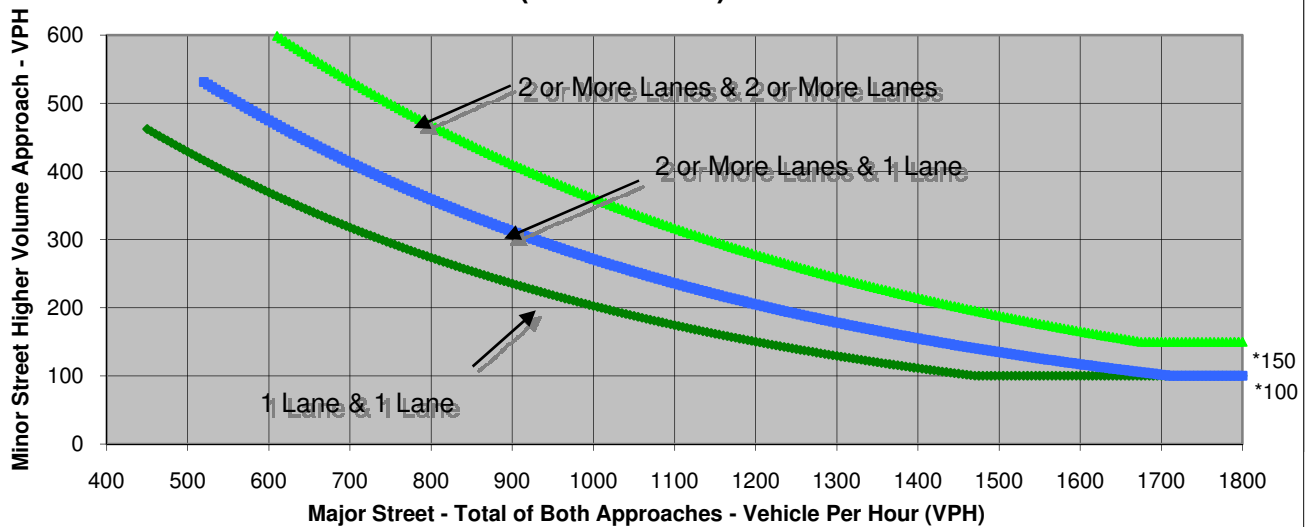
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative No Project**
 Peak Hour **AM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	100	20	0
Through	0	0	140	70
Right	0	260	0	40
Total	0	360	160	110

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	Q Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	270	360	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street 16th Street
 Minor Street Q Street

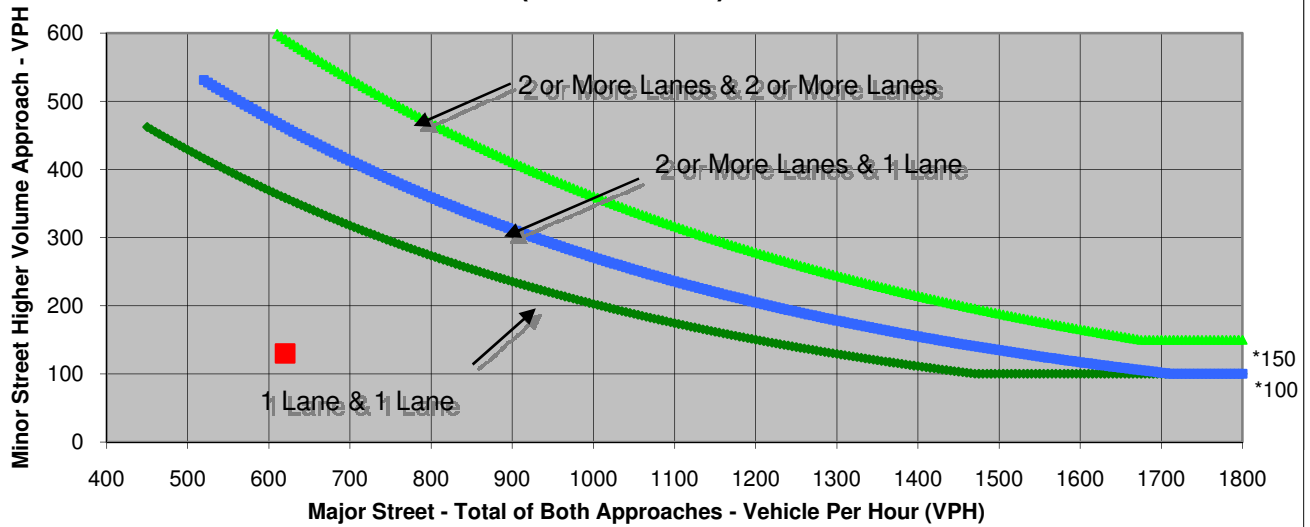
 Project Elverta Specific Plan EIS
 Scenario Cumulative No Project
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	60	230	0
Through	0	0	130	160
Right	0	70	0	100
Total	0	130	360	260

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	16th Street	Q Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	620	130	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 1 of 2

Major Street Elverta Road
 Minor Street E. Levee Road

Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour AM

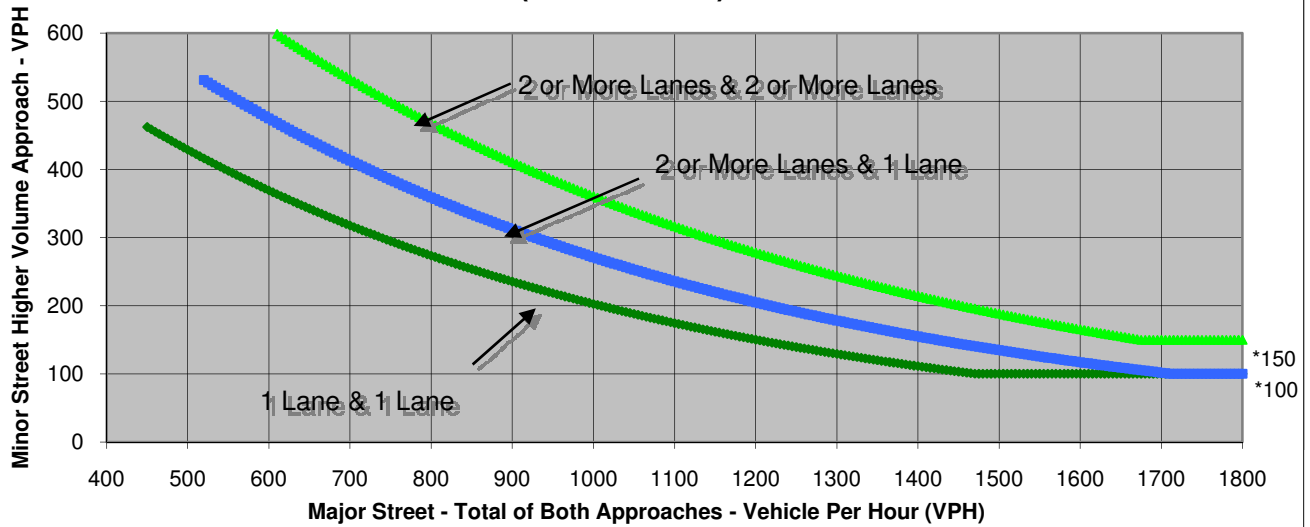
Turn Movement Volumes

	NB	SB	EB	WB
Left	20	140	10	120
Through	20	150	550	1,280
Right	90	40	10	10
Total	130	330	570	1,410

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street E. Levee Road	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	1,980	330	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No 2 of 2

Major Street Elverta Road
 Minor Street E. Levee Road

Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour PM

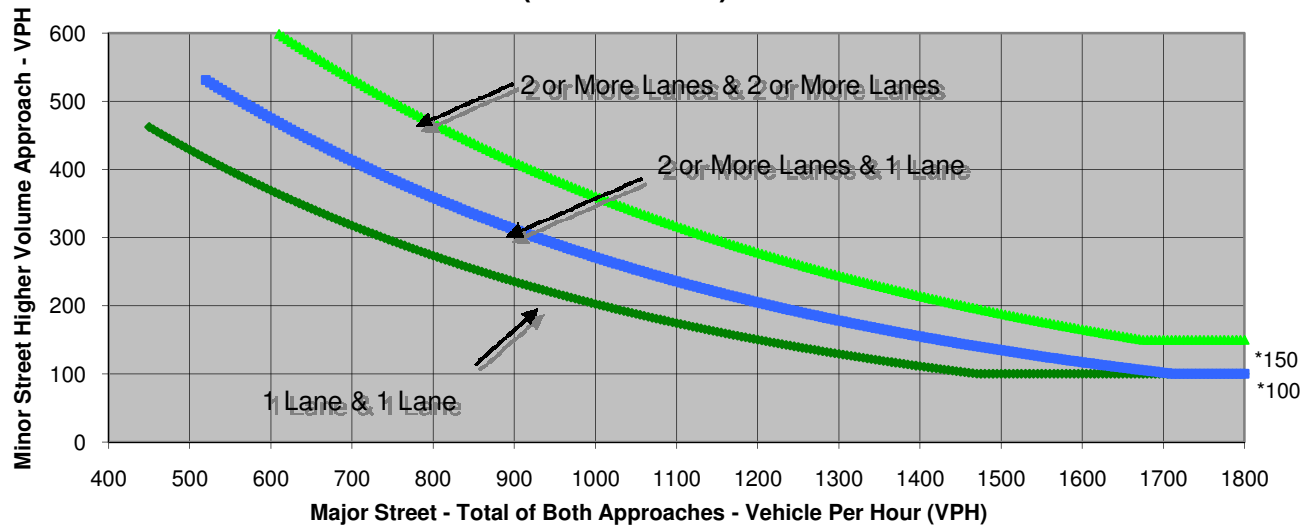
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	10	60	130
Through	130	40	1,410	690
Right	140	10	20	130
Total	280	60	1,490	950

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Major Street Elkhorn Boulevard
 Minor Street E. Levee Road

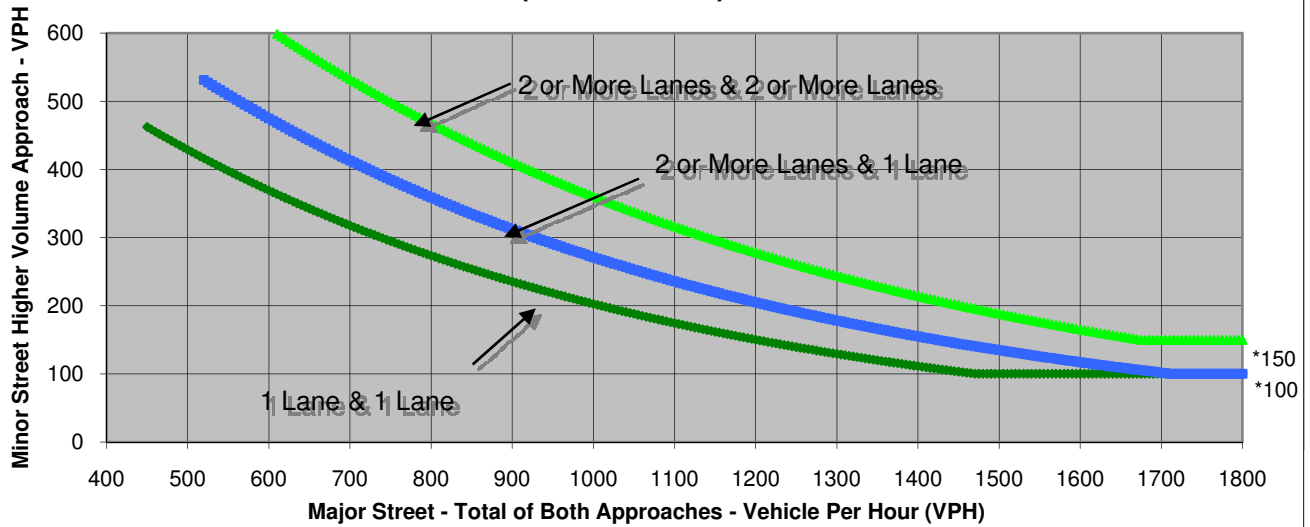
 Project Elverta Specific Plan EIS
 Scenario Cumulative No Project
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	70	90	0
Through	0	0	600	1,850
Right	0	260	0	30
Total	0	330	690	1,880

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elkhorn Boulevard	E. Levee Road	
Number of Approach Lanes	3	1	<u>YES</u>
Traffic Volume (VPH) *	2,570	330	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elkhorn Boulevard
 Minor Street E. Levee Road

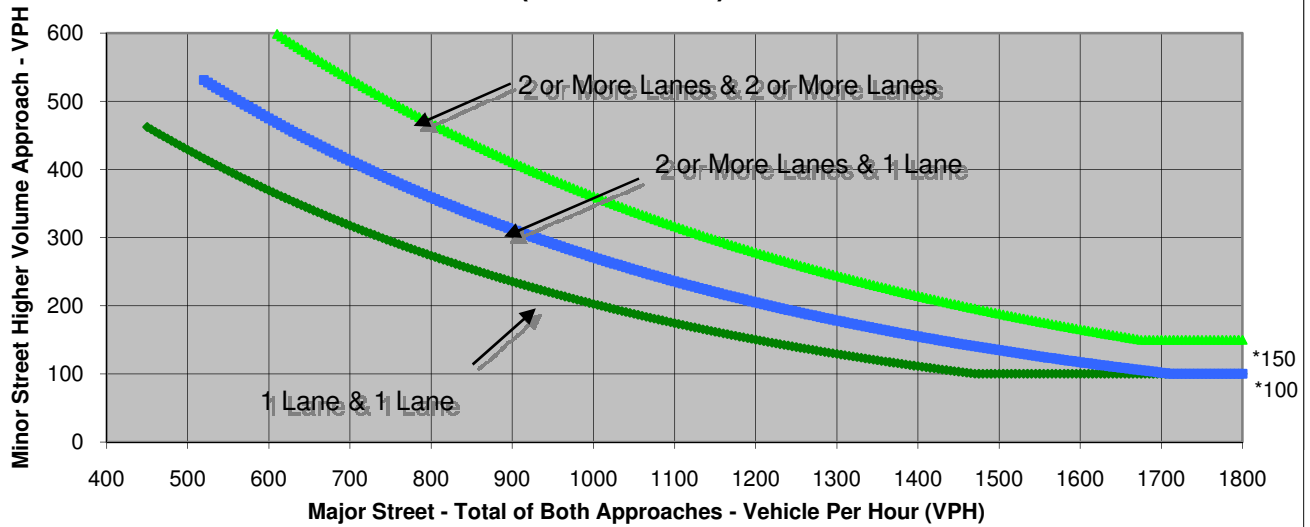
 Project Elverta Specific Plan EIS
 Scenario Cumulative No Project
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	40	250	0
Through	0	0	1,990	810
Right	0	150	0	90
Total	0	190	2,240	900

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elkhorn Boulevard	E. Levee Road	
Number of Approach Lanes	3	1	<u>YES</u>
Traffic Volume (VPH) *	3,140	190	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street Sorento Road

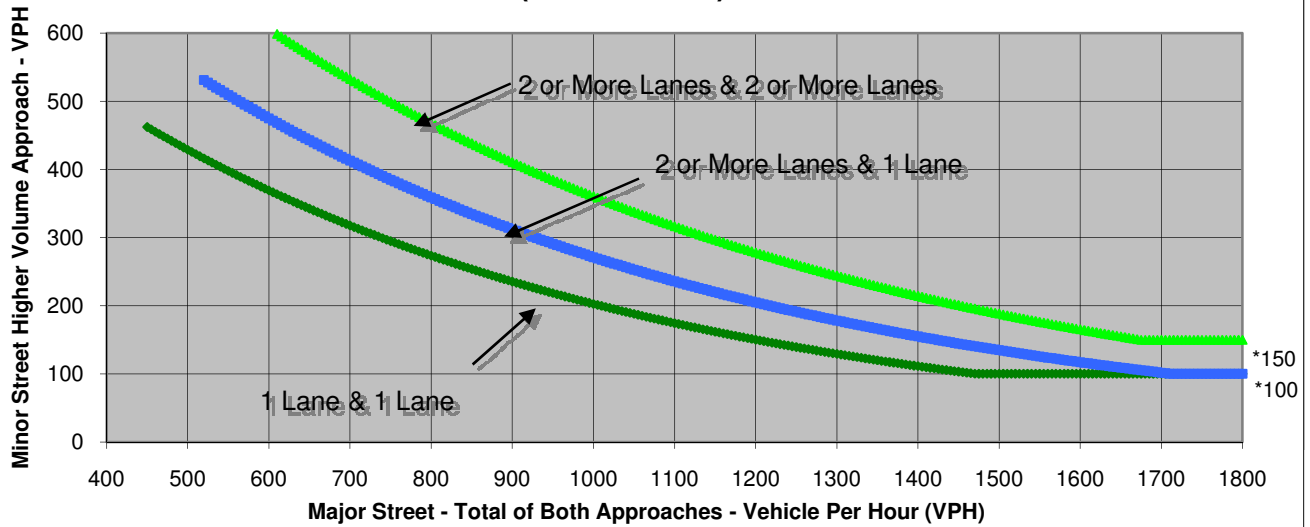
 Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	20	170	10
Through	10	10	600	1,100
Right	10	300	10	10
Total	30	330	780	1,120

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	Sorento Road	
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	1,900	330	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **Sorento Road**

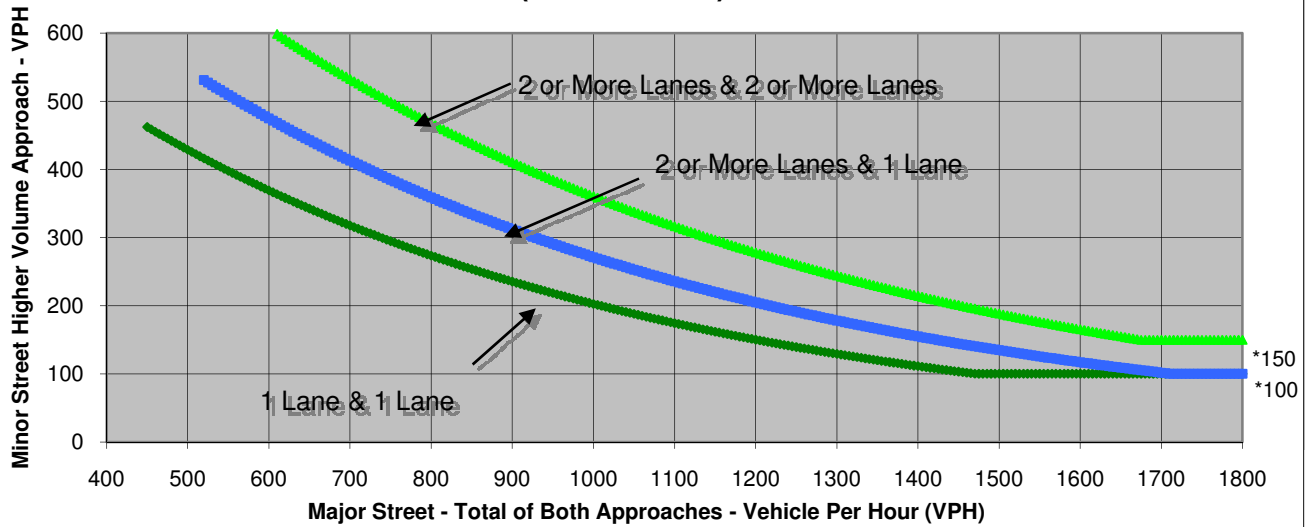
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative Plus Preferred Alt**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	10	330	10
Through	10	10	1,220	690
Right	10	250	10	10
Total	30	270	1,560	710

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	Sorento Road	
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,270	270	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street Elwyn Road

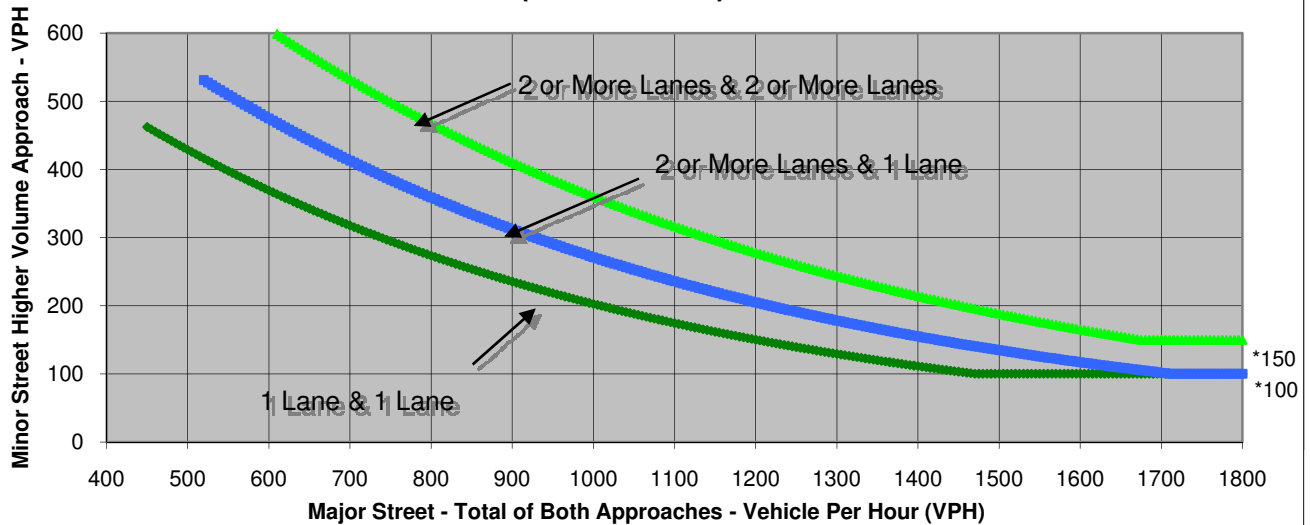
 Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	20	330	10	160
Through	70	270	520	1,140
Right	20	70	50	350
Total	110	670	580	1,650

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	Elwyn Road	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,230	670	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **Elwyn Road**

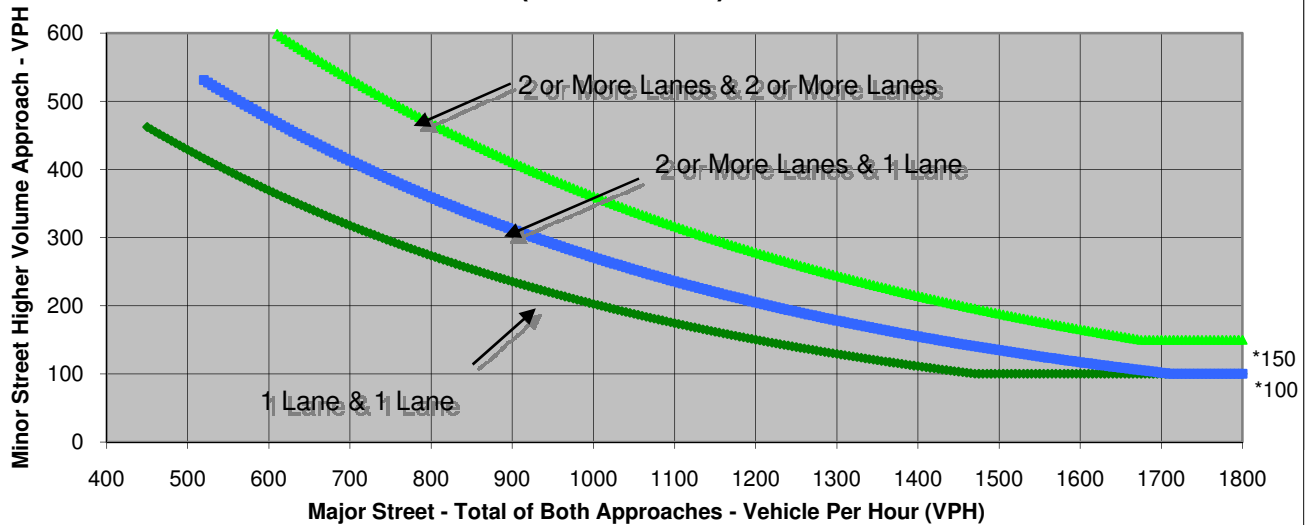
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative Plus Preferred Alt**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	50	380	160	30
Through	230	80	1,150	620
Right	190	20	20	370
Total	470	480	1,330	1,020

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Elverta Road	Elwyn Road	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	2,350	480	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street Rio Linda Blvd

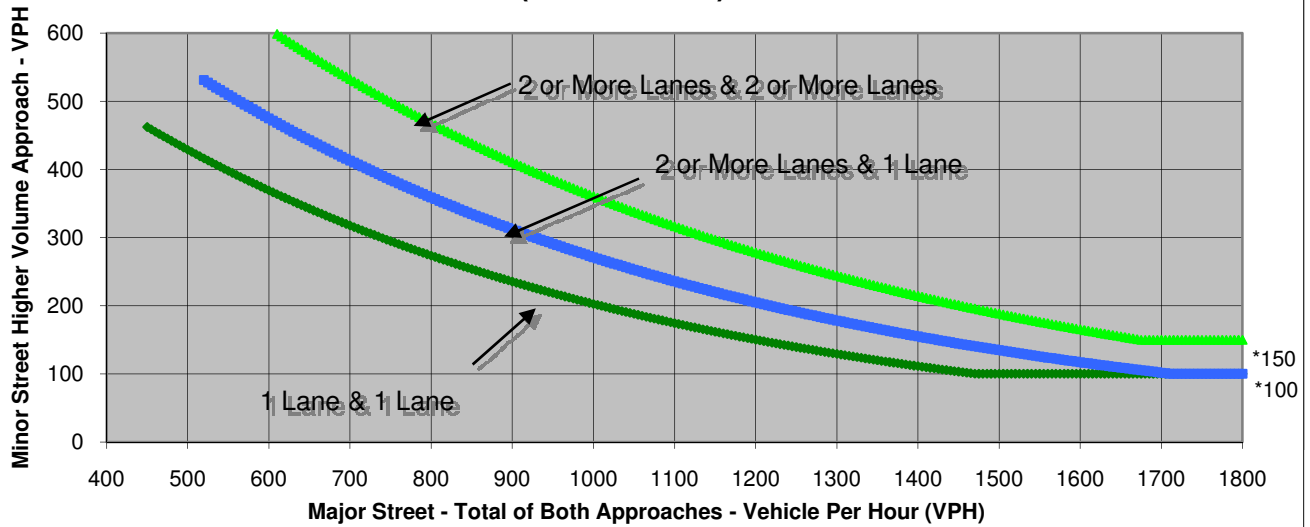
 Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	180	0	0	100
Through	0	0	710	1,440
Right	40	0	160	0
Total	220	0	870	1,540

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street Rio Linda Blvd	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,410	220	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street Rio Linda Blvd

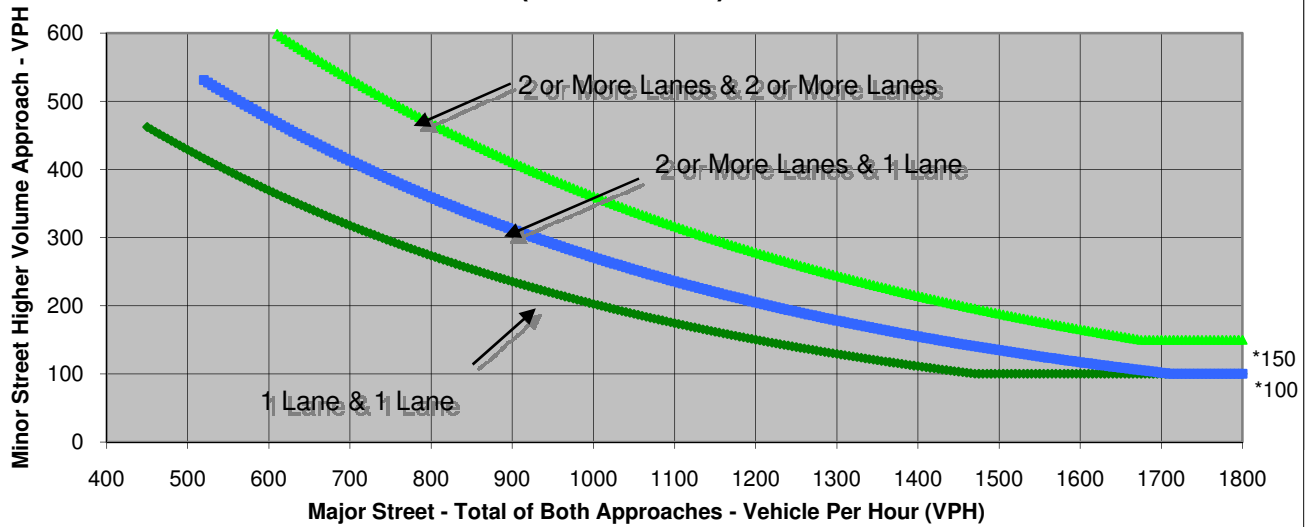
 Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	180	0	0	70
Through	0	0	1,440	810
Right	100	0	230	0
Total	280	0	1,670	880

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street Rio Linda Blvd	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,550	280	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street 9th Street

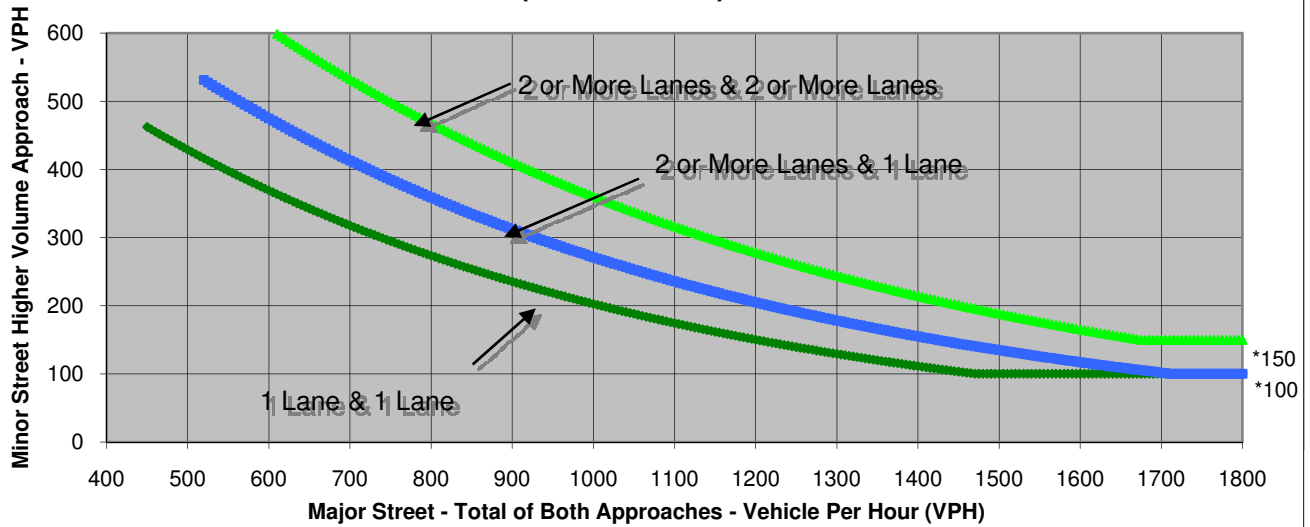
 Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	0	0	330
Through	0	0	680	1,160
Right	90	0	60	0
Total	100	0	740	1,490

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,230	100	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street 9th Street

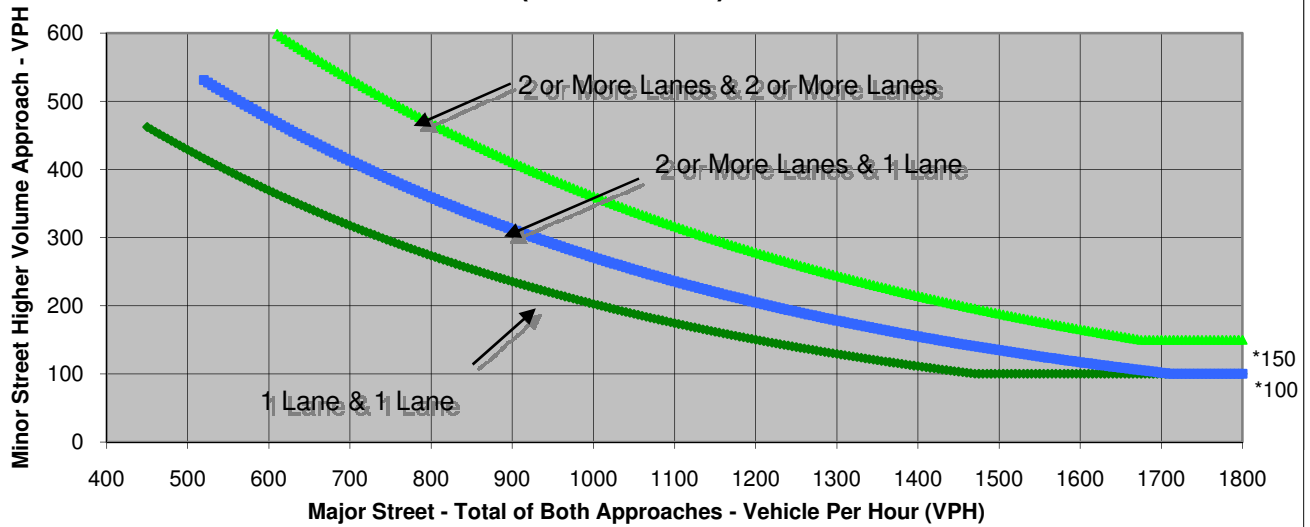
 Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	60	0	0	110
Through	0	0	1,280	830
Right	260	0	40	0
Total	320	0	1,320	940

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,260	320	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Dry Creek Road**
 Minor Street **U Street**

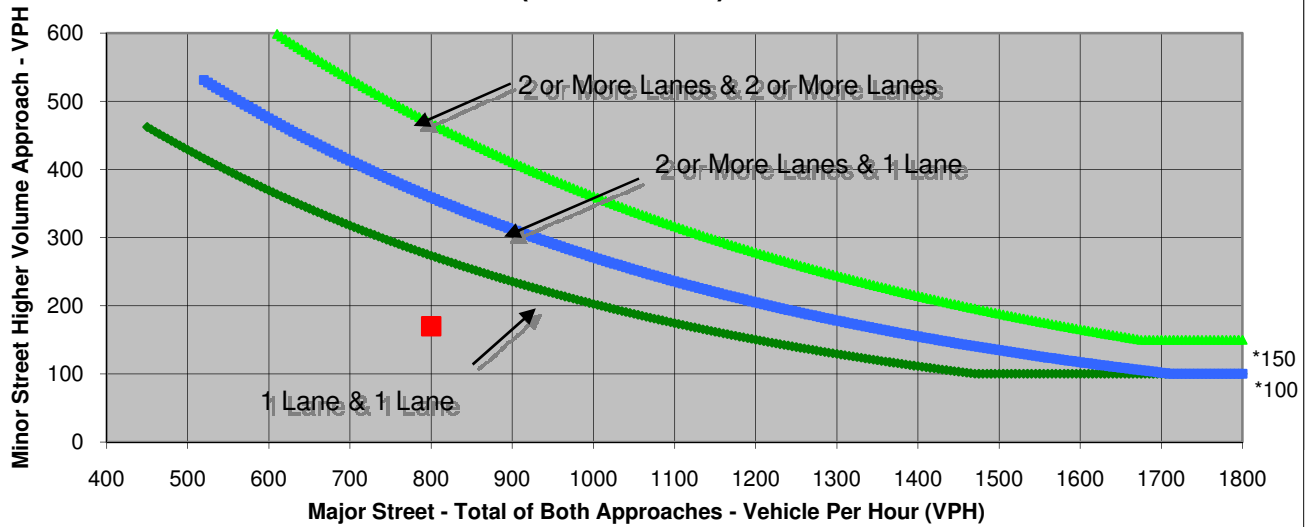
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative Plus Preferred Alt**
 Peak Hour **AM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	20	10	10	20
Through	190	410	50	50
Right	110	60	110	10
Total	320	480	170	80

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	800	170	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Dry Creek Road**
 Minor Street **U Street**

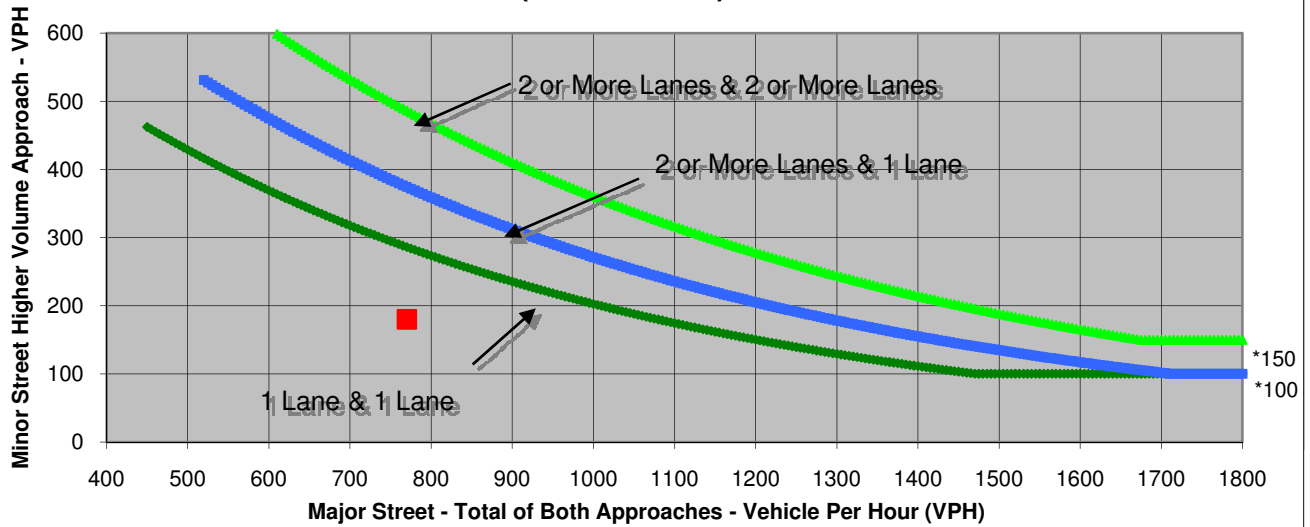
 Project **Elverta Specific Plan EIS**
 Scenario **Cumulative Plus Preferred Alt**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	110	10	40	100
Through	390	220	60	70
Right	30	10	50	10
Total	530	240	150	180

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	770	180	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street Q Street

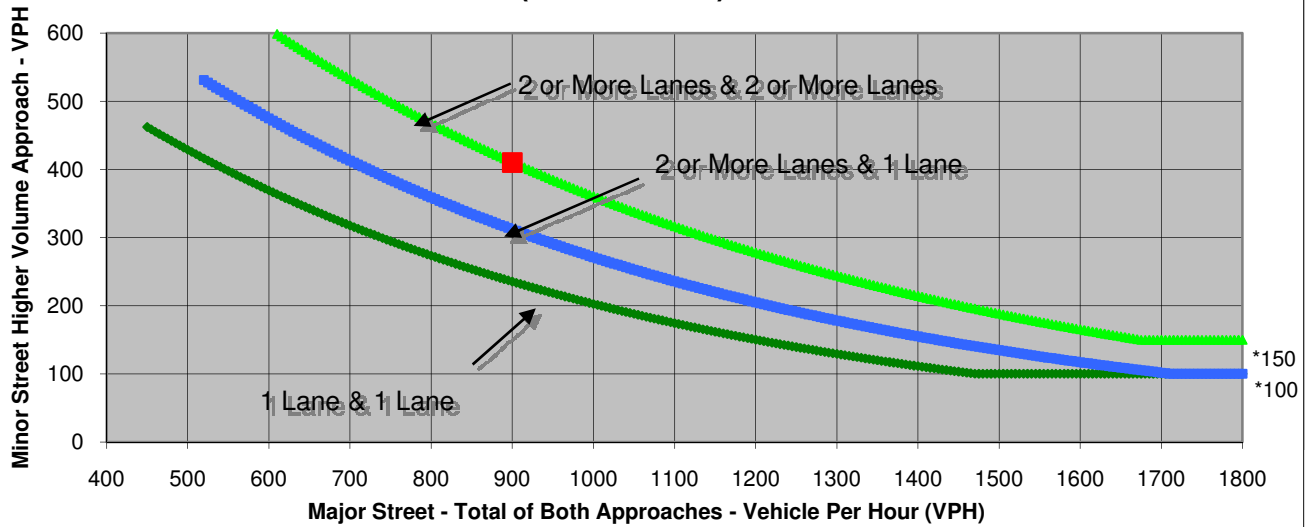
 Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	50	20	30	200
Through	270	380	110	200
Right	60	120	60	10
Total	380	520	200	410

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	Q Street	
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	900	410	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street Q Street

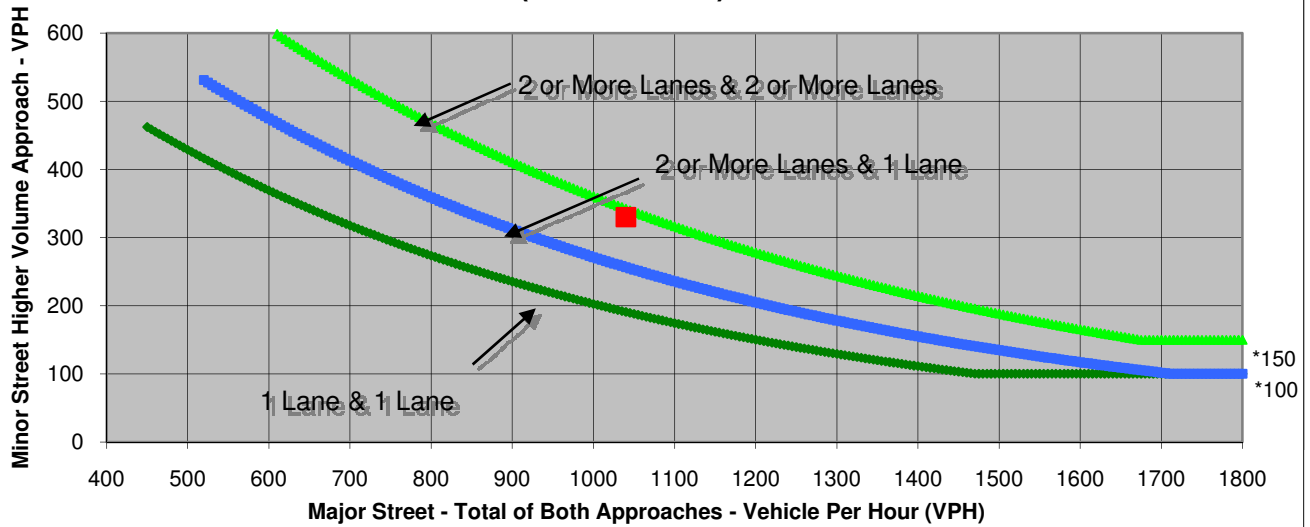
 Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	90	10	150	120
Through	350	330	130	140
Right	210	50	50	20
Total	650	390	330	280

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	Q Street	
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	1,040	330	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street 16th Street
 Minor Street U Street

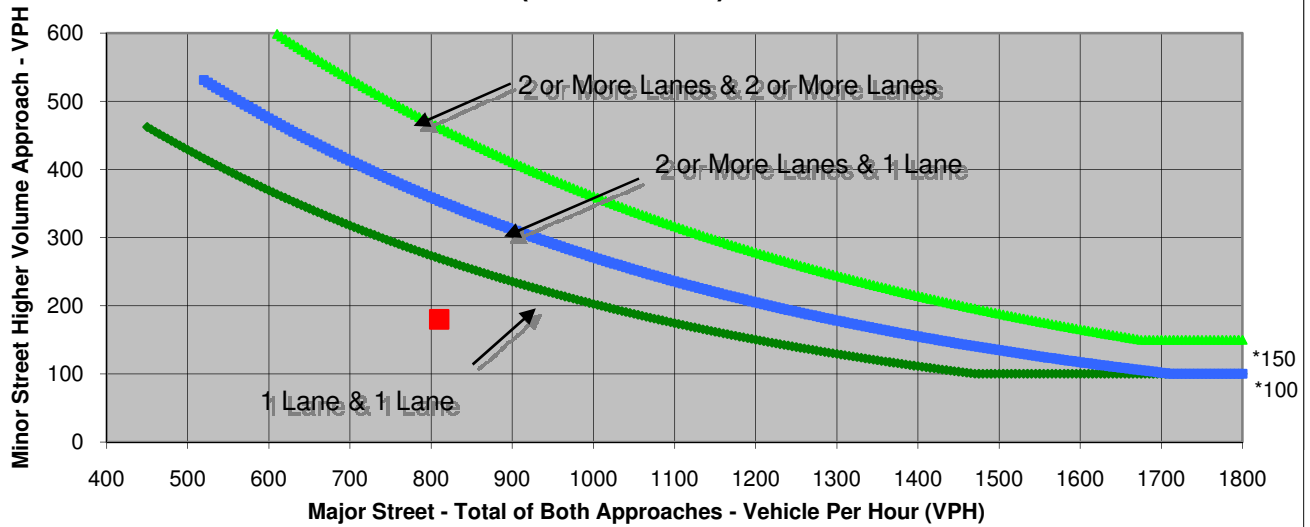
 Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	10	140	30
Through	80	600	10	10
Right	10	100	30	20
Total	100	710	180	60

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	810	180	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street 16th Street
 Minor Street U Street

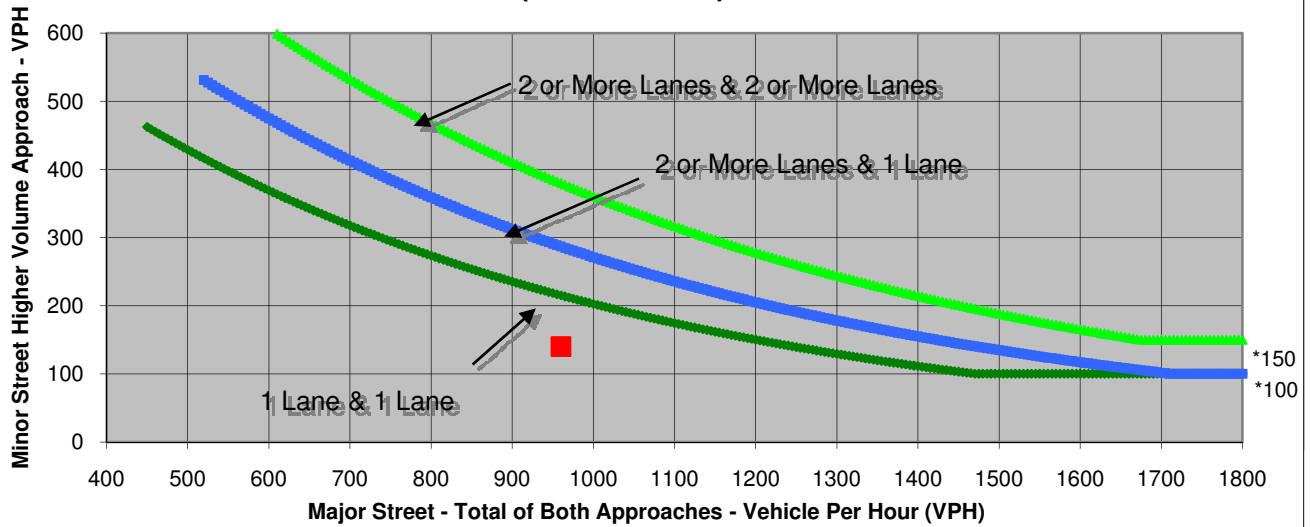
 Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	40	30	120	20
Through	500	200	10	10
Right	30	160	10	10
Total	570	390	140	40

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	960	140	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street 16th Street
 Minor Street Q Street

Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour AM

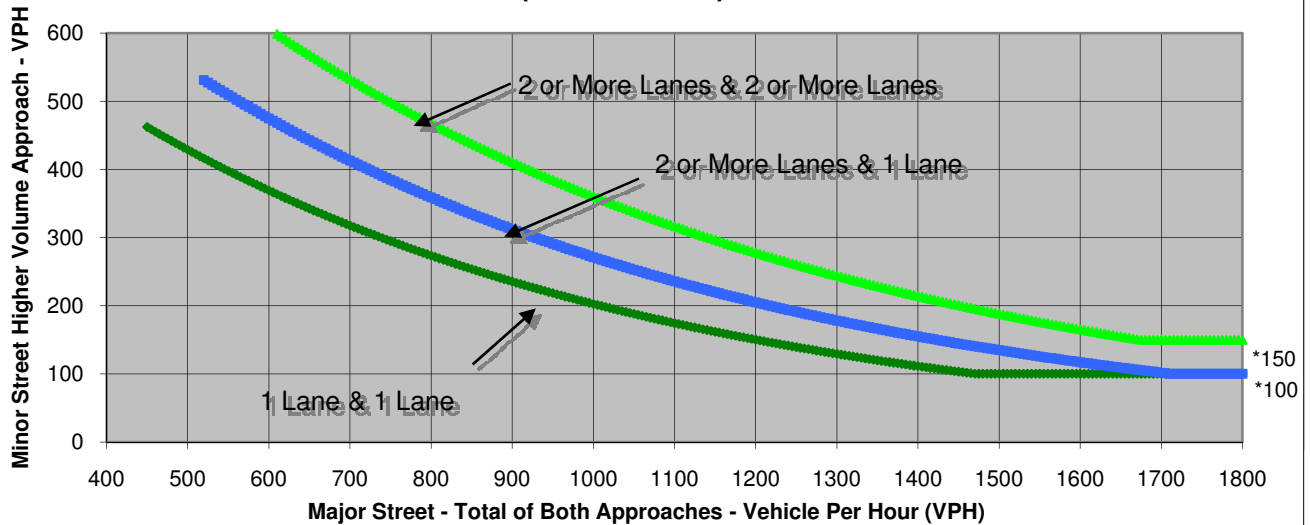
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	300	50	0
Through	0	0	150	70
Right	0	360	0	50
Total	0	660	200	120

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	16th Street	Q Street	
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	320	660	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street 16th Street
 Minor Street Q Street

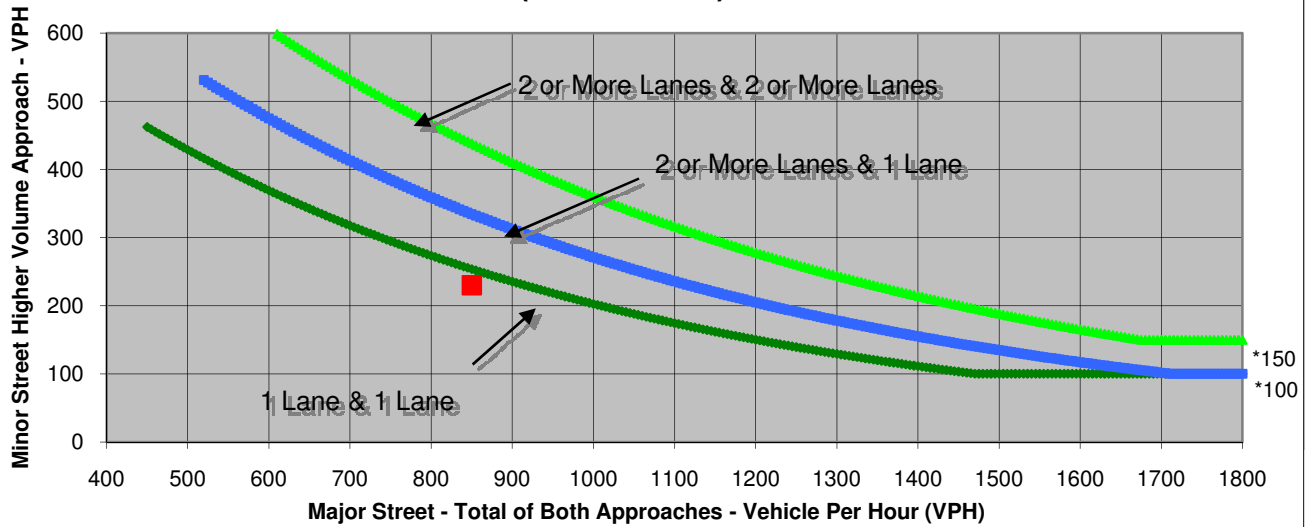
 Project Elverta Specific Plan EIS
 Scenario Cumulative Plus Preferred Alt
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	90	270	0
Through	0	0	130	150
Right	0	140	0	300
Total	0	230	400	450

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	16th Street	Q Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	850	230	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street 9th Street

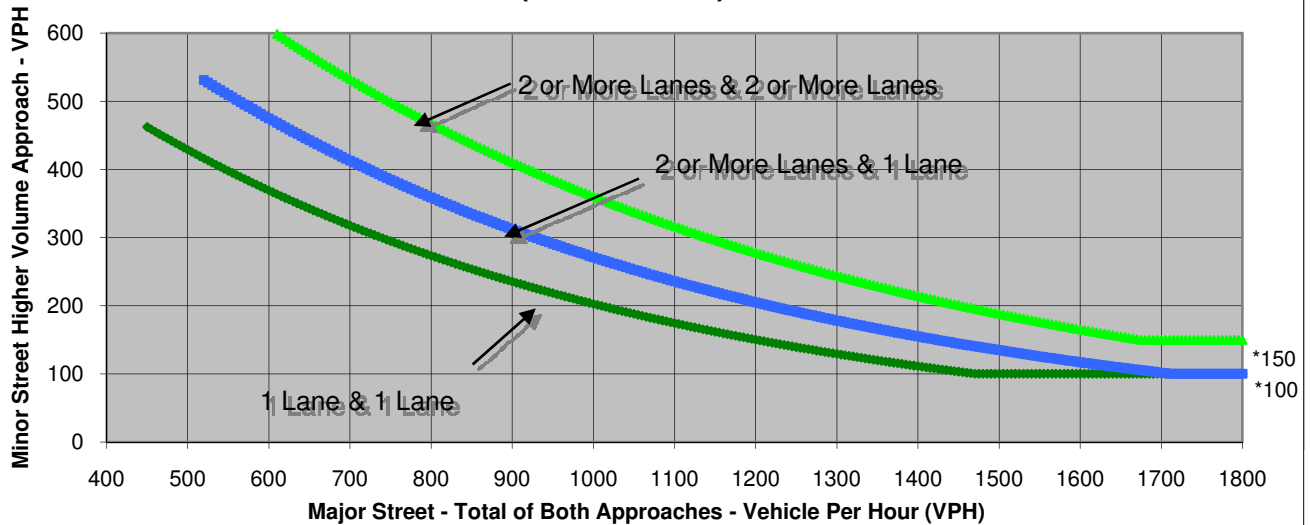
 Project Elverta Specific Plan
 Scenario Cumulative Plus Approved SP
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	0	0	320
Through	0	0	680	1,170
Right	80	0	70	0
Total	90	0	750	1,490

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	2,240	90	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **9th Street**

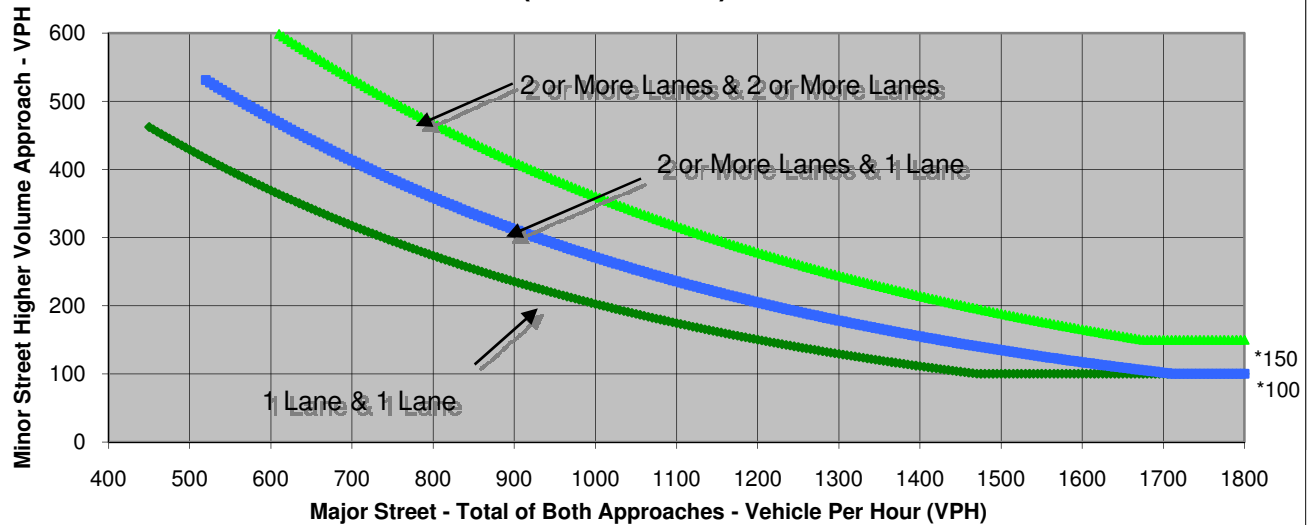
 Project **Elverta Specific Plan**
 Scenario **Cumulative Plus Approved SP**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	70	0	0	110
Through	0	0	1,290	820
Right	250	0	40	0
Total	320	0	1,330	930

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	Warrant Met
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,260	320	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Dry Creek Road**
 Minor Street **U Street**

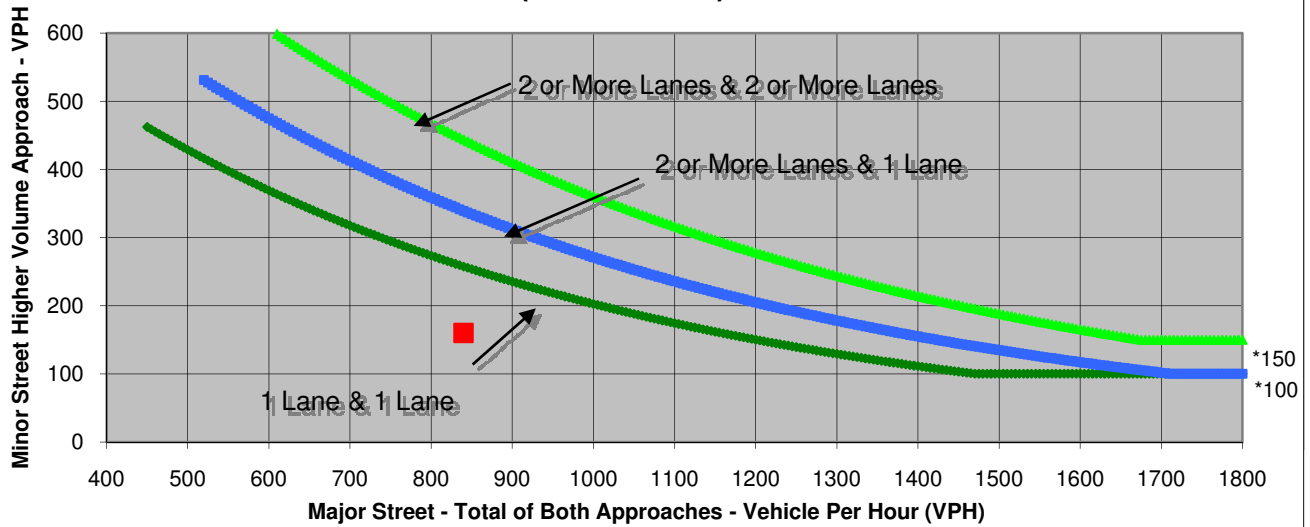
 Project **Elverta Specific Plan**
 Scenario **Cumulative Plus Approved SP**
 Peak Hour **AM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	20	10	10	20
Through	190	460	50	60
Right	110	50	100	10
Total	320	520	160	90

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Dry Creek Road	Minor Street U Street	Warrant Met
Number of Approach Lanes	1	1	NO
Traffic Volume (VPH) *	840	160	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street U Street

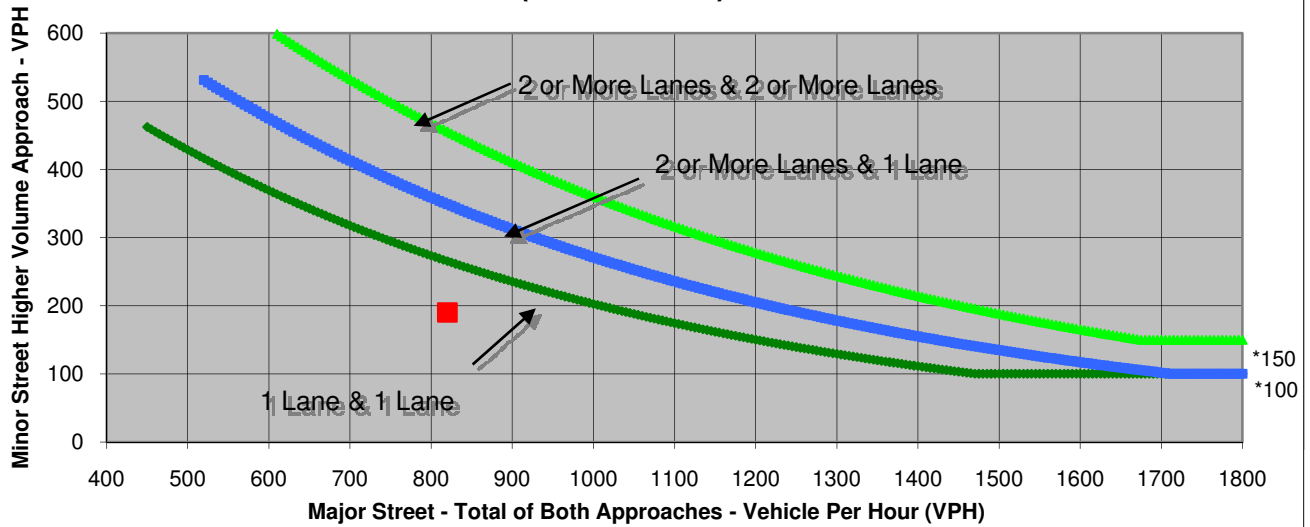
 Project Elverta Specific Plan
 Scenario Cumulative Plus Approved SP
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	120	10	40	110
Through	410	240	60	70
Right	30	10	60	10
Total	560	260	160	190

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	820	190	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street 16th Street
Minor Street U Street

Project Elverta Specific Plan
Scenario Cumulative Plus Approved SP
Peak Hour AM

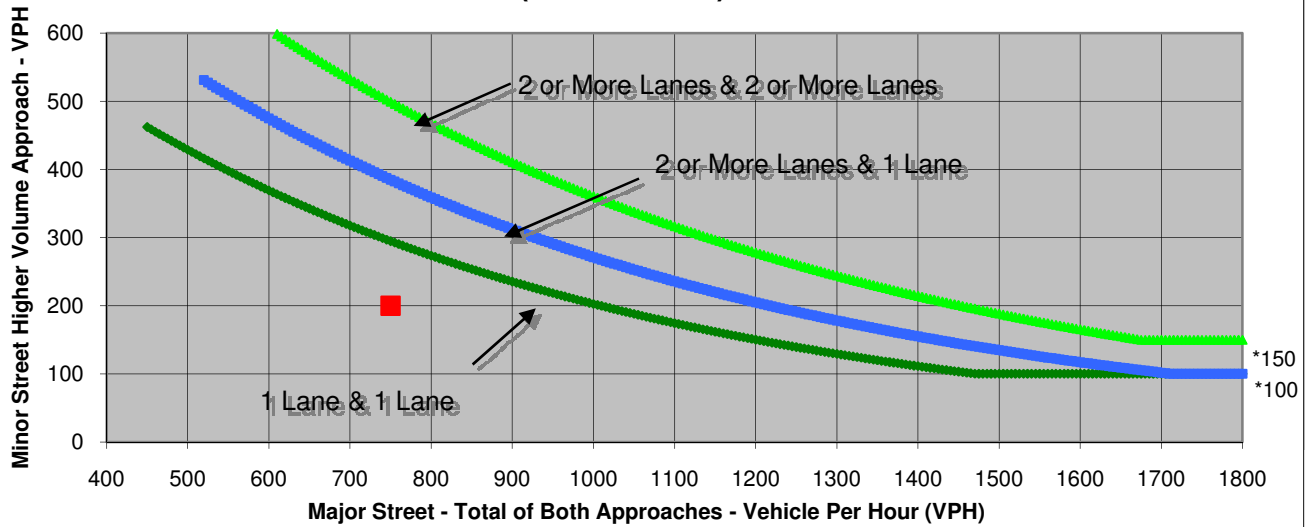
Turn Movement Volumes

	NB	SB	EB	WB
Left	20	10	150	30
Through	70	560	10	10
Right	10	80	40	10
Total	100	650	200	50

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	750	200	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street 16th Street
 Minor Street U Street

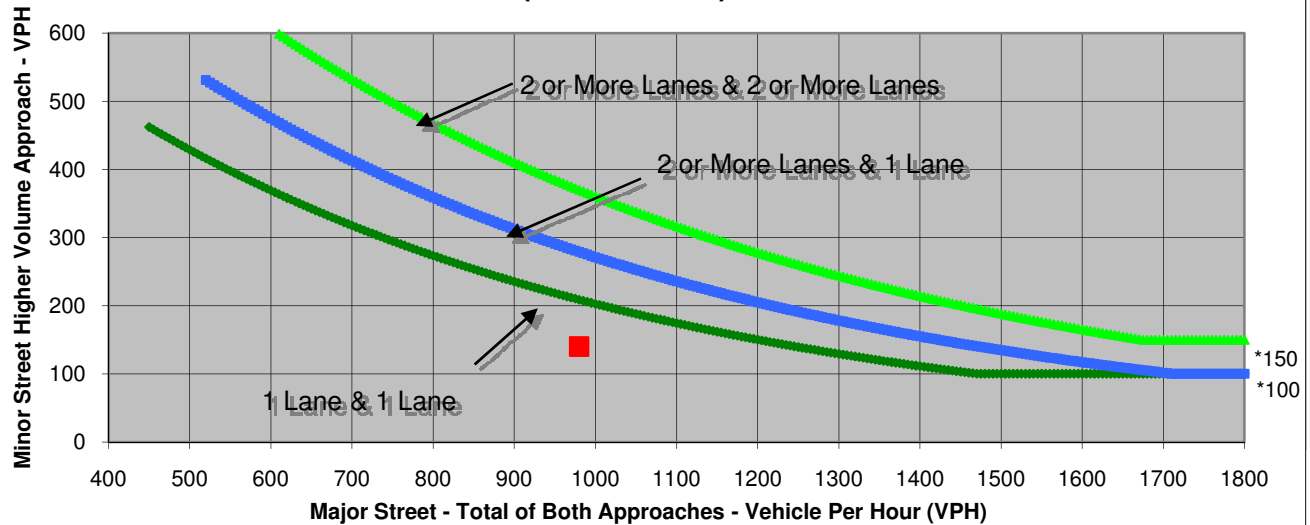
 Project Elverta Specific Plan
 Scenario Cumulative Plus Approved SP
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	50	30	120	20
Through	520	190	10	10
Right	30	160	10	10
Total	600	380	140	40

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	980	140	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **9th Street**

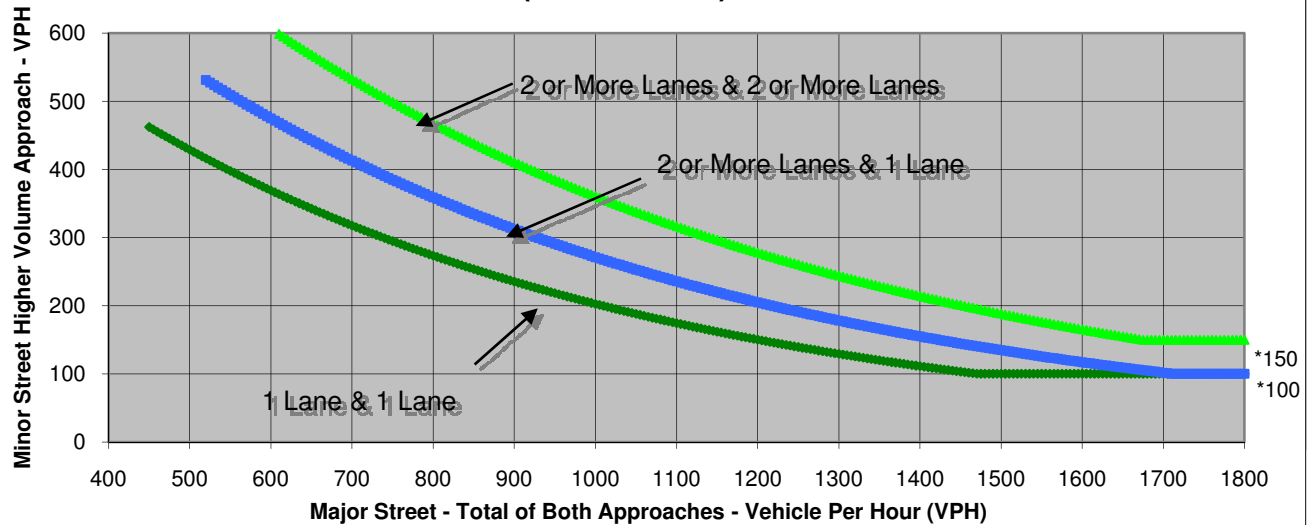
 Project **Elverta Specific Plan**
 Scenario **Cumulative Plus Minimal Impact**
 Peak Hour **AM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	0	0	340
Through	0	0	670	1,200
Right	90	0	50	0
Total	100	0	720	1,540

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	Warrant Met
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,260	100	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **9th Street**

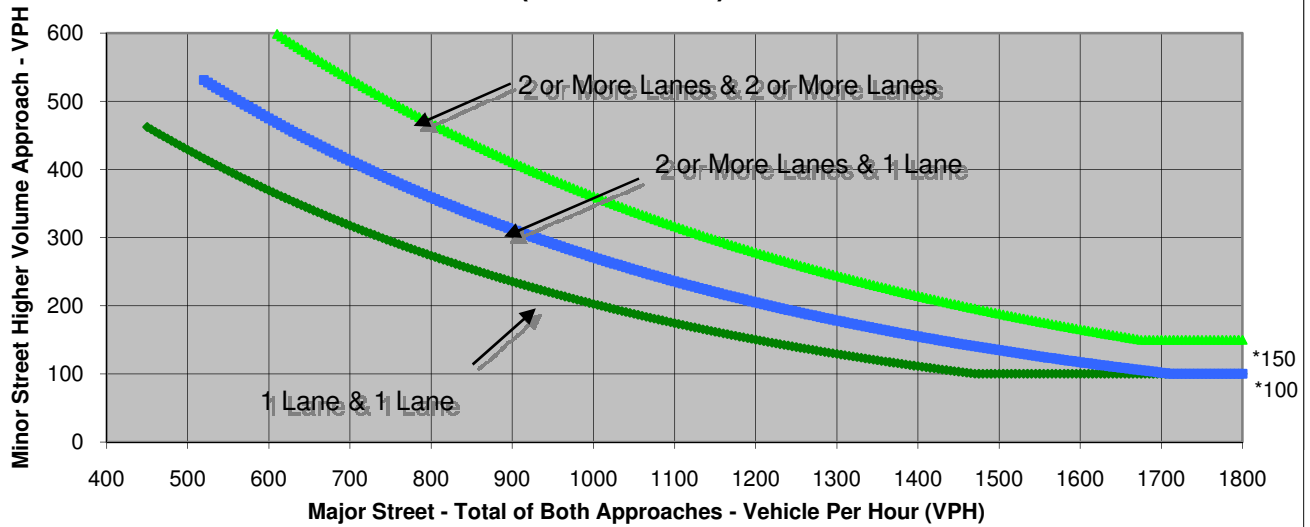
 Project **Elverta Specific Plan**
 Scenario **Cumulative Plus Minimal Impact**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	50	0	0	110
Through	0	0	1,320	820
Right	270	0	30	0
Total	320	0	1,350	930

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,280	320	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street U Street

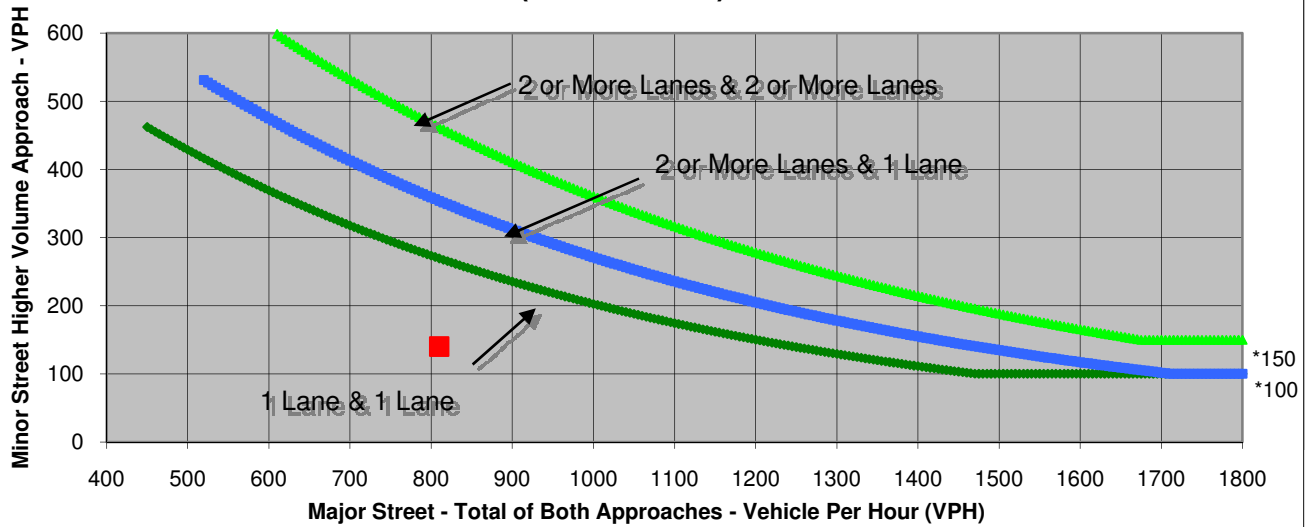
 Project Elverta Specific Plan
 Scenario Cumulative Plus Minimal Impact
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	20	10	10	20
Through	180	440	50	50
Right	120	40	80	10
Total	320	490	140	80

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	810	140	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street U Street

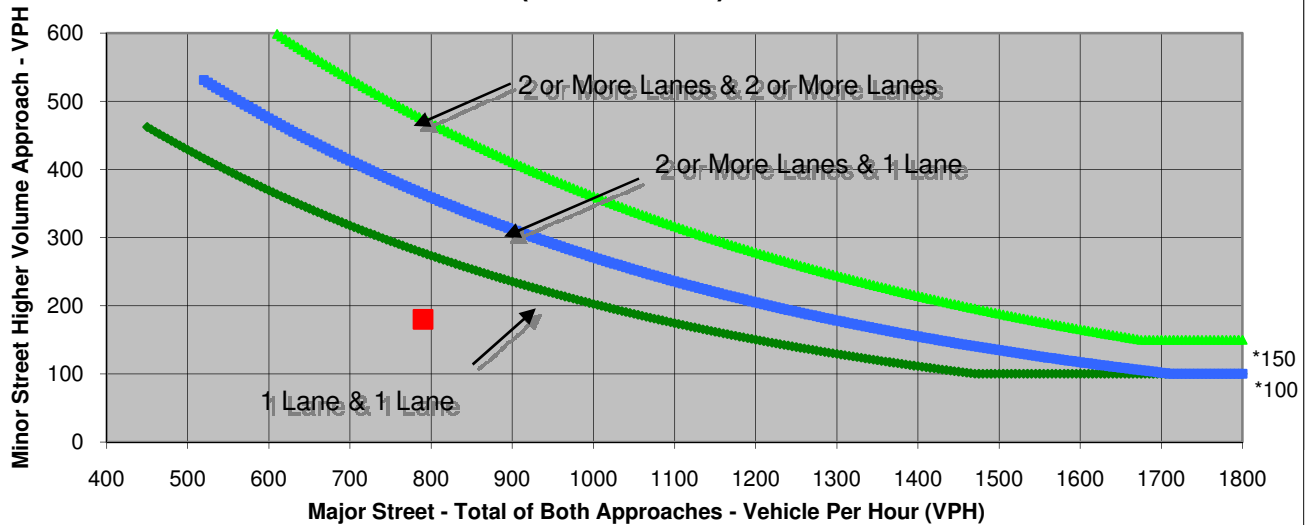
 Project Elverta Specific Plan
 Scenario Cumulative Plus Minimal Impact
 Peak Hour PM
Turn Movement Volumes

	NB	SB	EB	WB
Left	90	10	30	100
Through	400	240	50	70
Right	40	10	40	10
Total	530	260	120	180

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	790	180	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **16th Street**
 Minor Street **U Street**

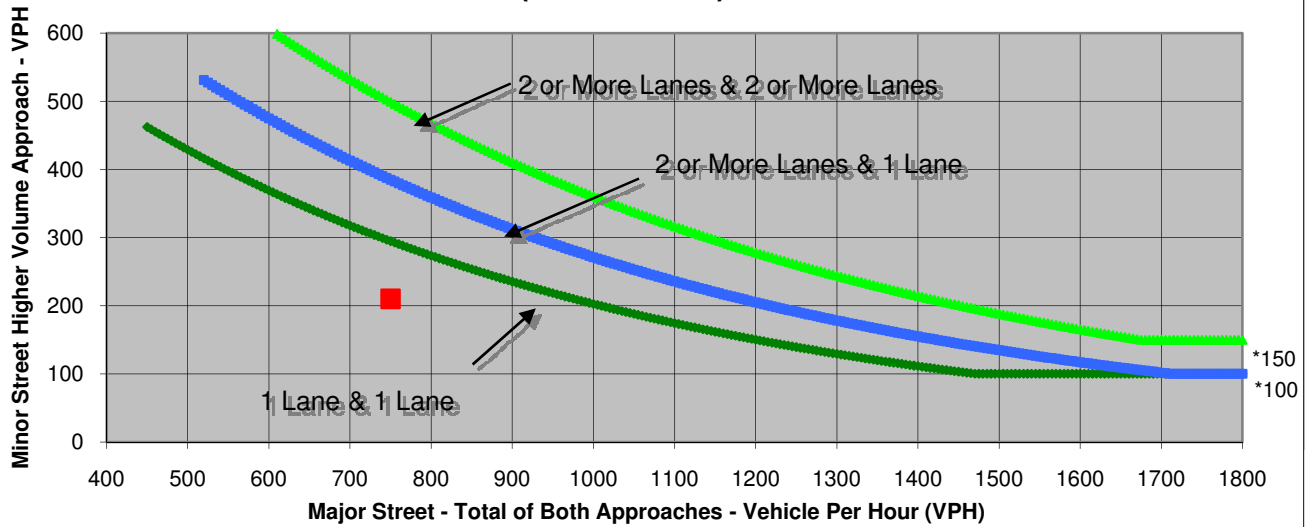
 Project **Elverta Specific Plan**
 Scenario **Cumulative Plus Minimal Impact**
 Peak Hour **AM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	10	160	30
Through	70	560	10	10
Right	10	90	40	10
Total	90	660	210	50

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	750	210	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **16th Street**
 Minor Street **U Street**

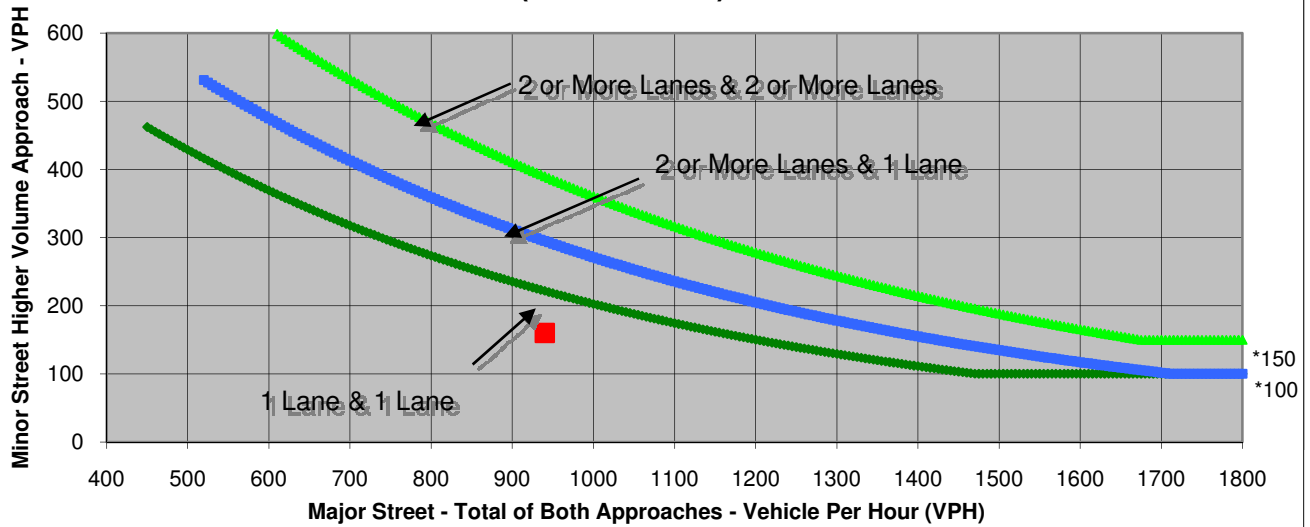
 Project **Elverta Specific Plan**
 Scenario **Cumulative Plus Minimal Impact**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	50	30	140	20
Through	480	190	10	10
Right	30	160	10	10
Total	560	380	160	40

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	940	160	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Elverta Road
 Minor Street 9th Street

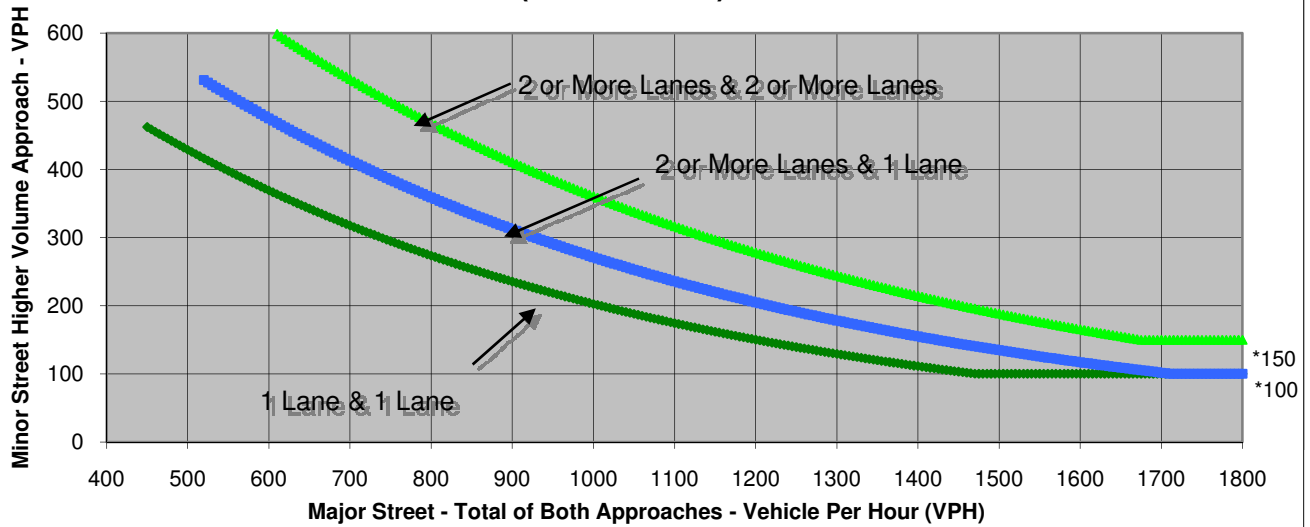
 Project Elverta Specific Plan
 Scenario Cumulative Plus No Federal Action
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	0	0	240
Through	0	0	690	1,190
Right	70	0	10	0
Total	80	0	700	1,430

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	<u>Warrant Met</u>
Number of Approach Lanes	2	1	<u>NO</u>
Traffic Volume (VPH) *	2,130	80	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Elverta Road**
 Minor Street **9th Street**

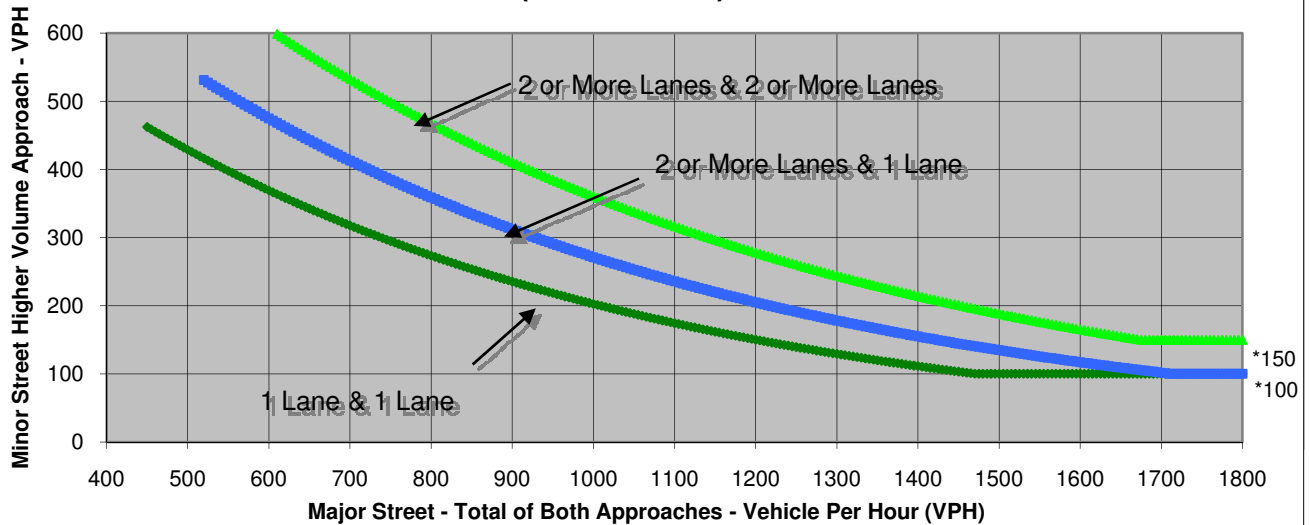
 Project **Elverta Specific Plan**
 Scenario **Cumulative Plus No Federal Action**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	0	0	80
Through	0	0	1,210	830
Right	260	0	10	0
Total	270	0	1,220	910

Major Street Direction

	North/South
x	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Elverta Road	Minor Street 9th Street	Warrant Met
Number of Approach Lanes	2	1	<u>YES</u>
Traffic Volume (VPH) *	2,130	270	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street Dry Creek Road
 Minor Street U Street

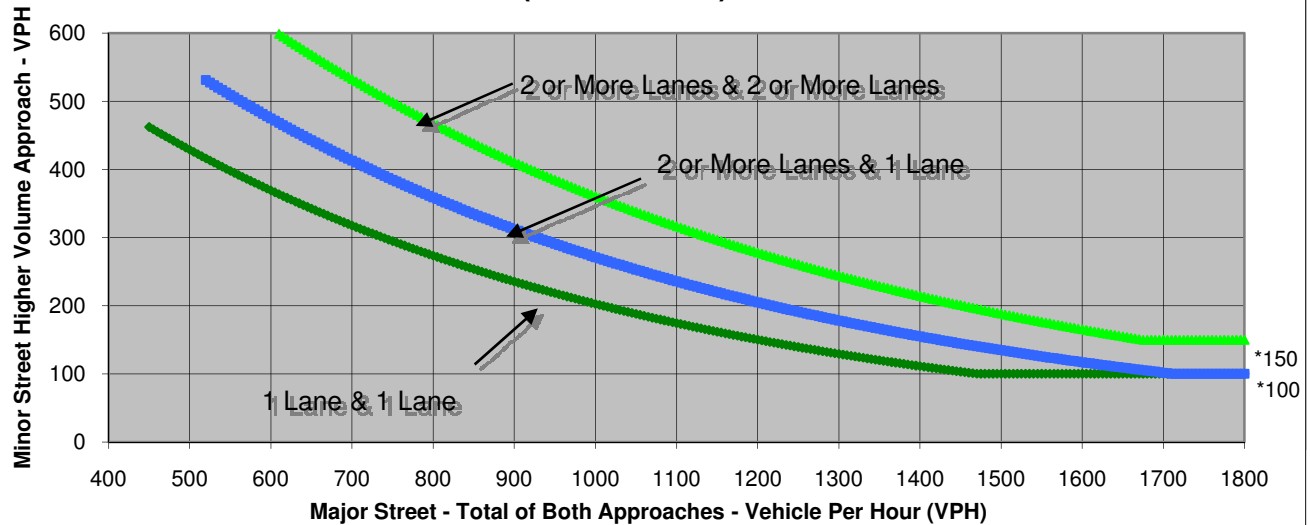
 Project Elverta Specific Plan
 Scenario Cumulative Plus No Federal Action
 Peak Hour AM
Turn Movement Volumes

	NB	SB	EB	WB
Left	20	10	10	260
Through	10	10	60	30
Right	180	10	90	10
Total	210	30	160	300

Major Street Direction

<u>x</u>	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	240	300	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **Dry Creek Road**
 Minor Street **U Street**

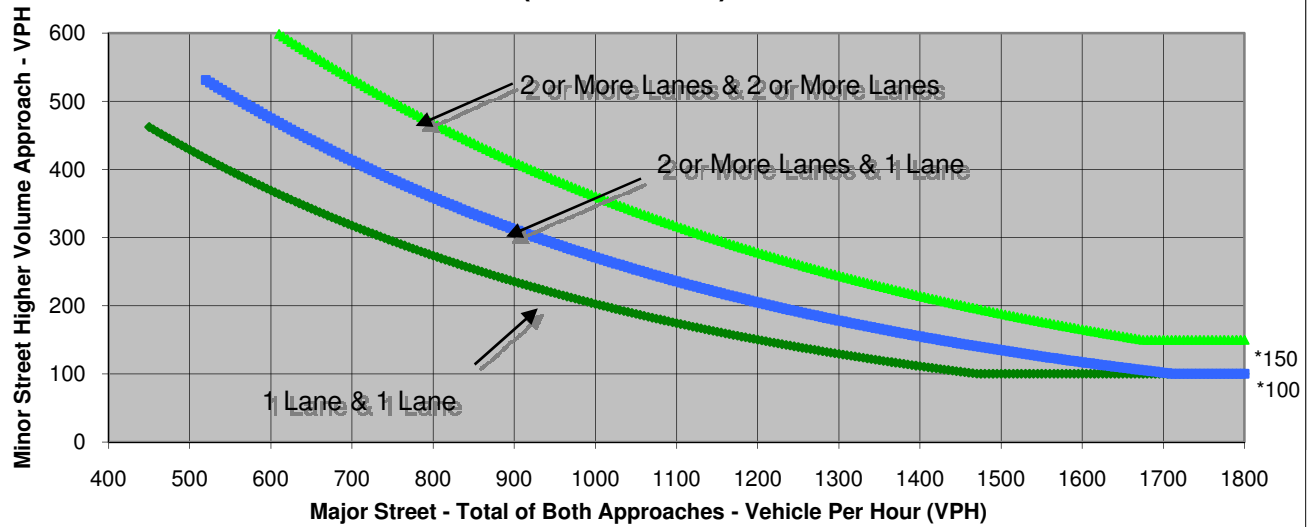
 Project **Elverta Specific Plan**
 Scenario **Cumulative Plus No Federal Action**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	80	10	10	230
Through	10	10	40	60
Right	220	10	40	10
Total	310	30	90	300

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Dry Creek Road	U Street	
Number of Approach Lanes	1	1	<u>NO</u>
Traffic Volume (VPH) *	340	300	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Sheet No **1** of **2**

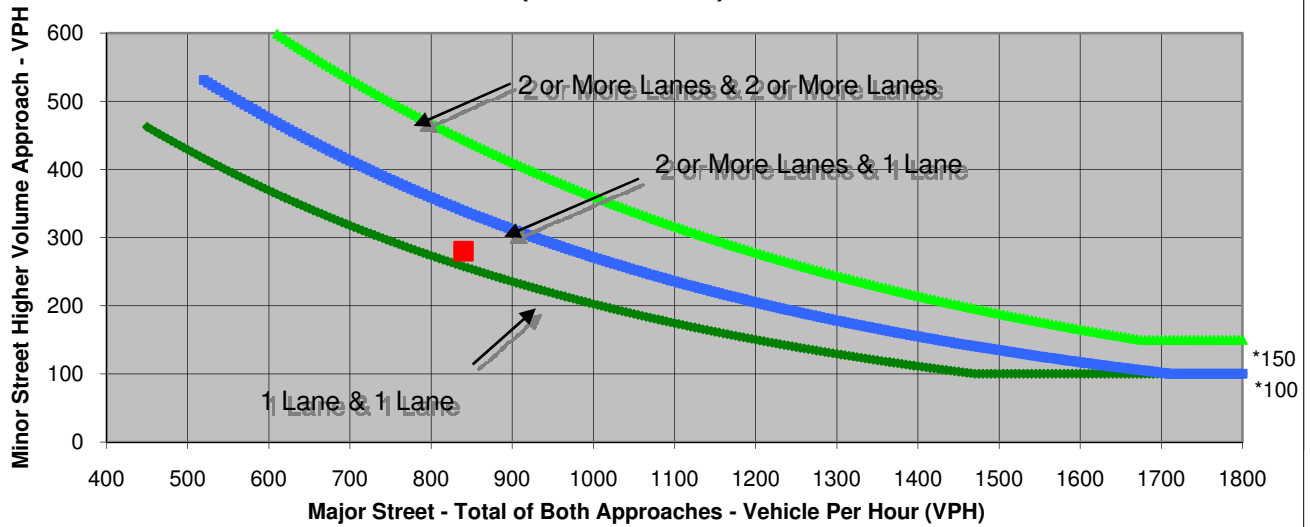
Major Street **16th Street**
 Minor Street **U Street**

Project **Elverta Specific Plan**
 Scenario **Cumulative Plus No Federal Action**
 Peak Hour **AM**

Turn Movement Volumes	NB	SB	EB	WB
Left	10	10	230	30
Through	70	390	10	10
Right	10	350	40	10
Total	90	750	280	50

Major Street Direction
x North/South
 East/West

**Figure 4C-3
 Warrant 3, Peak Hour
 (Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.
 Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2006

	Major Street	Minor Street	<u>Warrant Met</u>
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	840	280	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street **16th Street**
 Minor Street **U Street**

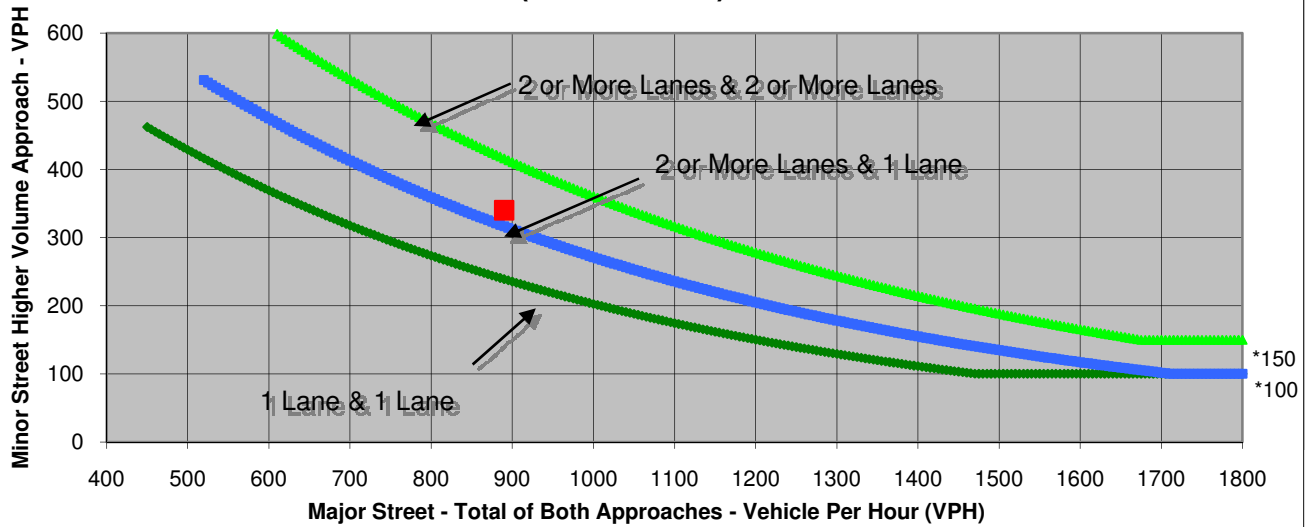
 Project **Elverta Specific Plan**
 Scenario **Cumulative Plus No Federal Action**
 Peak Hour **PM**
Turn Movement Volumes

	NB	SB	EB	WB
Left	40	10	320	10
Through	350	160	10	10
Right	30	300	10	10
Total	420	470	340	30

Major Street Direction

x	North/South
	East/West

**Figure 4C-3
Warrant 3, Peak Hour
(Urban Areas)**



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	16th Street	U Street	
Number of Approach Lanes	1	1	<u>YES</u>
Traffic Volume (VPH) *	890	340	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

Appendix D
Existing and Cumulative Mitigations

Appendix D-1: Existing Plus Project Mitigation

Existing Plus Preferred Alternative Conditions

Existing Plus Approved Specific Plan Conditions

Existing Plus Minimal Impact Conditions

Existing Plus No Federal Action Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	↻
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1861			1863	1770	1583
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1861			1863	1770	1583
Volume (vph)	116	1	0	952	7	299
Peak-hour factor, PHF	0.79	0.79	0.84	0.84	0.92	0.92
Adj. Flow (vph)	147	1	0	1133	8	325
RTOR Reduction (vph)	0	0	0	0	0	276
Lane Group Flow (vph)	148	0	0	1133	8	49
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	40.7			40.7	8.6	8.6
Effective Green, g (s)	40.7			40.7	8.6	8.6
Actuated g/C Ratio	0.71			0.71	0.15	0.15
Clearance Time (s)	4.0			4.0	4.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1322			1323	266	238
v/s Ratio Prot	0.08			c0.61	0.00	
v/s Ratio Perm						c0.03
v/c Ratio	0.11			0.86	0.03	0.20
Uniform Delay, d1	2.6			6.1	20.8	21.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.0			5.7	0.0	0.4
Delay (s)	2.6			11.8	20.8	21.8
Level of Service	A			B	C	C
Approach Delay (s)	2.6			11.8	21.8	
Approach LOS	A			B	C	

Intersection Summary

HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.1%	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	↖	↕		↖	↕		↖	↕		↖	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1444	3432		1770	3503		1770	1689		1770	1833	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1444	3432		1770	3503		1770	1689		1770	1833	
Volume (vph)	4	284	4	106	1102	4	1	13	21	3	35	4
Peak-hour factor, PHF	0.87	0.87	0.87	0.93	0.93	0.93	0.75	0.75	0.75	0.83	0.83	0.83
Adj. Flow (vph)	5	326	5	114	1185	4	1	17	28	4	42	5
RTOR Reduction (vph)	0	1	0	0	0	0	0	26	0	0	5	0
Lane Group Flow (vph)	5	330	0	114	1189	0	1	19	0	4	42	0
Heavy Vehicles (%)	25%	5%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	0.5	21.1		2.9	23.5		0.4	2.9		0.5	3.0	
Effective Green, g (s)	0.5	21.1		2.9	23.5		0.4	2.9		0.5	3.0	
Actuated g/C Ratio	0.01	0.49		0.07	0.54		0.01	0.07		0.01	0.07	
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)	17	1669		118	1897		16	113		20	127	
v/s Ratio Prot	0.00	0.10		c0.06	c0.34		0.00	0.01		c0.00	c0.02	
v/s Ratio Perm												
v/c Ratio	0.29	0.20		0.97	0.63		0.06	0.17		0.20	0.33	
Uniform Delay, d1	21.3	6.3		20.2	6.9		21.3	19.1		21.3	19.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.4	0.1		71.5	0.7		1.6	0.7		4.9	1.6	
Delay (s)	30.7	6.4		91.7	7.6		23.0	19.8		26.1	20.8	
Level of Service	C	A		F	A		C	B		C	C	
Approach Delay (s)		6.8			14.9			19.9			21.2	
Approach LOS		A			B			B			C	

Intersection Summary

HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.3%	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		 			 							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	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	1.00		1.00	1.00			0.88		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1770	3470		1444	3524			1389		1770	1582	
Flt Permitted	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (perm)	1770	3470		1444	3524			1389		1770	1582	
Volume (vph)	4	303	1	3	1162	34	0	1	5	9	1	50
Peak-hour factor, PHF	0.91	0.91	0.91	0.93	0.93	0.93	0.63	0.63	0.63	0.85	0.85	0.85
Adj. Flow (vph)	4	333	1	3	1249	37	0	2	8	11	1	59
RTOR Reduction (vph)	0	0	0	0	2	0	0	8	0	0	50	0
Lane Group Flow (vph)	4	334	0	3	1284	0	0	2	0	11	10	0
Heavy Vehicles (%)	2%	4%	2%	25%	2%	2%	2%	2%	25%	2%	25%	2%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	0.3	22.8		0.3	22.8			1.7		0.3	6.0	
Effective Green, g (s)	0.3	22.8		0.3	22.8			1.7		0.3	6.0	
Actuated g/C Ratio	0.01	0.55		0.01	0.55			0.04		0.01	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)	13	1925		11	1955			57		13	231	
v/s Ratio Prot	c0.00	0.10		0.00	c0.36			0.00		c0.01	c0.01	
v/s Ratio Perm												
v/c Ratio	0.31	0.17		0.27	0.66			0.04		0.85	0.04	
Uniform Delay, d1	20.3	4.5		20.3	6.4			18.9		20.4	15.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	13.0	0.0		13.0	0.8			0.3		166.4	0.1	
Delay (s)	33.3	4.6		33.3	7.2			19.2		186.8	15.2	
Level of Service	C	A		C	A			B		F	B	
Approach Delay (s)		4.9			7.3			19.2			41.7	
Approach LOS		A			A			B			D	
Intersection Summary												
HCM Average Control Delay			8.3			HCM Level of Service				A		
HCM Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			41.1			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			47.0%			ICU Level of Service				A		
Analysis Period (min)			15									
c	Critical Lane Group											

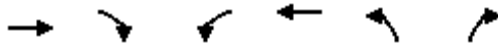


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.96		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1480	3420		1770	3483		1770	1685		1752	1628	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1480	3420		1770	3483		1770	1685		1752	1628	
Volume (vph)	9	299	7	5	1117	102	16	27	9	109	25	64
Peak-hour factor, PHF	0.87	0.87	0.87	0.93	0.93	0.93	0.81	0.81	0.81	0.86	0.86	0.86
Adj. Flow (vph)	10	344	8	5	1201	110	20	33	11	127	29	74
RTOR Reduction (vph)	0	1	0	0	4	0	0	10	0	0	60	0
Lane Group Flow (vph)	10	351	0	5	1307	0	20	34	0	127	43	0
Heavy Vehicles (%)	22%	5%	14%	2%	2%	6%	2%	4%	22%	3%	2%	5%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	0.9	37.8		0.8	37.7		1.0	5.4		8.1	12.5	
Effective Green, g (s)	0.9	37.8		0.8	37.7		1.0	5.4		8.1	12.5	
Actuated g/C Ratio	0.01	0.56		0.01	0.55		0.01	0.08		0.12	0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	20	1898		21	1928		26	134		208	299	
v/s Ratio Prot	c0.01	0.10		0.00	c0.38		0.01	c0.02		c0.07	0.03	
v/s Ratio Perm												
v/c Ratio	0.50	0.18		0.24	0.68		0.77	0.25		0.61	0.14	
Uniform Delay, d1	33.4	7.5		33.3	10.9		33.4	29.5		28.5	23.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.3	0.0		5.8	1.0		80.9	1.0		5.2	0.2	
Delay (s)	51.7	7.6		39.1	11.8		114.4	30.5		33.7	23.5	
Level of Service	D	A		D	B		F	C		C	C	
Approach Delay (s)		8.8			11.9			56.7			29.2	
Approach LOS		A			B			E			C	

Intersection Summary

HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3322		1687	3539	1736	1509
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3322		1687	3539	1736	1509
Volume (vph)	355	82	59	1164	49	28
Peak-hour factor, PHF	0.89	0.89	0.93	0.93	0.71	0.71
Adj. Flow (vph)	399	92	63	1252	69	39
RTOR Reduction (vph)	25	0	0	0	0	33
Lane Group Flow (vph)	466	0	63	1252	69	6
Heavy Vehicles (%)	6%	4%	7%	2%	4%	7%
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	15.0		2.3	21.3	4.9	4.9
Effective Green, g (s)	15.0		2.3	21.3	4.9	4.9
Actuated g/C Ratio	0.44		0.07	0.62	0.14	0.14
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)	1457		113	2204	249	216
v/s Ratio Prot	0.14		0.04	c0.35	c0.04	
v/s Ratio Perm						0.00
v/c Ratio	0.32		0.56	0.57	0.28	0.03
Uniform Delay, d1	6.3		15.5	3.8	13.1	12.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1		5.8	0.3	0.6	0.0
Delay (s)	6.4		21.3	4.1	13.7	12.6
Level of Service	A		C	A	B	B
Approach Delay (s)	6.4			4.9	13.3	
Approach LOS	A			A	B	

Intersection Summary

HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	34.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.2%	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		↕			↕		↗	↘		↗	↘	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.91			1.00		1.00	0.98			1.00	
Flt Protected		1.00			0.96		0.95	1.00			1.00	
Satd. Flow (prot)		1689			1760		1626	1823			1859	
Flt Permitted		1.00			0.96		0.95	1.00			1.00	
Satd. Flow (perm)		1689			1760		1626	1823			1859	
Volume (vph)	2	19	45	80	18	1	18	173	29	0	607	7
Peak-hour factor, PHF	0.73	0.73	0.73	0.86	0.86	0.86	0.87	0.87	0.87	0.92	0.92	0.92
Adj. Flow (vph)	3	26	62	93	21	1	21	199	33	0	660	8
RTOR Reduction (vph)	0	57	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	34	0	0	115	0	21	228	0	0	668	0
Heavy Vehicles (%)	2%	2%	2%	2%	11%	2%	11%	2%	2%	2%	2%	2%
Turn Type	Split		Split				Prot		Prot			
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		5.4			6.7		1.3	48.3			43.0	
Effective Green, g (s)		5.4			6.7		1.3	48.3			43.0	
Actuated g/C Ratio		0.07			0.09		0.02	0.67			0.59	
Clearance Time (s)		4.0			4.0		4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		126			163		29	1216			1104	
v/s Ratio Prot		c0.02			c0.07		c0.01	0.13			c0.36	
v/s Ratio Perm												
v/c Ratio		0.27			0.71		0.72	0.19			0.60	
Uniform Delay, d1		31.6			31.9		35.4	4.6			9.3	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.1			13.0		61.8	0.1			0.9	
Delay (s)		32.8			44.9		97.2	4.7			10.3	
Level of Service		C			D		F	A			B	
Approach Delay (s)		32.8			44.9			12.3			10.3	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.1%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.98		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1678		1770	1803		1736	1778		1770	1856	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1678		1770	1803		1736	1778		1770	1856	
Volume (vph)	6	56	53	132	77	15	47	208	54	36	696	17
Peak-hour factor, PHF	0.85	0.85	0.85	0.88	0.88	0.88	0.87	0.87	0.87	0.92	0.92	0.92
Adj. Flow (vph)	7	66	62	150	88	17	54	239	62	39	757	18
RTOR Reduction (vph)	0	41	0	0	8	0	0	9	0	0	1	0
Lane Group Flow (vph)	7	87	0	150	97	0	54	292	0	39	774	0
Heavy Vehicles (%)	2%	6%	4%	2%	3%	2%	4%	4%	2%	2%	2%	2%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	0.7	9.7		9.5	18.5		3.2	45.1		3.4	45.3	
Effective Green, g (s)	0.7	9.7		9.5	18.5		3.2	45.1		3.4	45.3	
Actuated g/C Ratio	0.01	0.12		0.11	0.22		0.04	0.54		0.04	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)	15	194		201	399		66	958		72	1005	
v/s Ratio Prot	0.00	c0.05		c0.08	0.05		c0.03	0.16		0.02	c0.42	
v/s Ratio Perm												
v/c Ratio	0.47	0.45		0.75	0.24		0.82	0.31		0.54	0.77	
Uniform Delay, d1	41.3	34.5		35.9	26.8		40.0	10.7		39.4	15.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	21.2	1.7		14.0	0.3		52.2	0.2		8.1	3.7	
Delay (s)	62.5	36.2		49.9	27.2		92.1	10.8		47.5	18.8	
Level of Service	E	D		D	C		F	B		D	B	
Approach Delay (s)		37.5			40.5			23.2			20.2	
Approach LOS		D			D			C			C	
Intersection Summary												
HCM Average Control Delay			25.7			HCM Level of Service					C	
HCM Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			83.7			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			59.7%			ICU Level of Service				B		
Analysis Period (min)			15									
c	Critical Lane Group											

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1597	3471	1583	1656	3505	1583	1770	1743	1568	1444	1709	1900
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)	1597	3471	1583	1656	3505	1583	1770	1743	1568	1444	1709	1900
Volume (vph)	55	814	118	224	731	84	176	49	281	322	156	190
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	59	875	127	241	786	90	189	53	302	350	170	207
RTOR Reduction (vph)	0	0	86	0	0	55	0	0	238	0	41	0
Lane Group Flow (vph)	59	875	41	241	786	35	189	53	64	350	336	0
Heavy Vehicles (%)	13%	4%	2%	9%	3%	2%	2%	9%	3%	25%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	7.2	31.0	31.0	17.1	40.9	40.9	14.6	13.1	13.1	29.1	27.6	27.6
Effective Green, g (s)	7.2	31.0	31.0	17.1	40.9	40.9	14.6	13.1	13.1	29.1	27.6	27.6
Actuated g/C Ratio	0.07	0.29	0.29	0.16	0.38	0.38	0.14	0.12	0.12	0.27	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	108	1012	462	266	1349	609	243	215	193	395	444	444
v/s Ratio Prot	0.04	c0.25		c0.15	0.22		0.11	0.03		c0.24	c0.20	
v/s Ratio Perm			0.03			0.02			0.04			
v/c Ratio	0.55	0.86	0.09	0.91	0.58	0.06	0.78	0.25	0.33	0.89	0.76	0.76
Uniform Delay, d1	48.0	35.7	27.4	43.8	25.9	20.6	44.3	42.1	42.6	37.0	36.3	36.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	7.8	0.1	31.4	0.6	0.0	14.5	0.6	1.0	20.5	7.2	7.2
Delay (s)	53.5	43.5	27.5	75.2	26.6	20.6	58.7	42.7	43.6	57.5	43.5	43.5
Level of Service	D	D	C	E	C	C	E	D	D	E	D	D
Approach Delay (s)		42.1			36.6			48.8			50.2	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM Average Control Delay			43.1				HCM Level of Service				D	
HCM Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			106.3			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			77.8%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

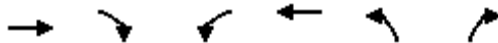


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3471	1583	1770	3539	1770	1524
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3471	1583	1770	3539	1770	1524
Volume (vph)	1539	236	170	837	66	51
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.76	0.76
Adj. Flow (vph)	1655	254	183	900	87	67
RTOR Reduction (vph)	0	97	0	0	0	63
Lane Group Flow (vph)	1655	157	183	900	87	4
Heavy Vehicles (%)	4%	2%	2%	2%	2%	6%
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases		2				3
Actuated Green, G (s)	51.1	51.1	12.3	68.4	5.8	5.8
Effective Green, g (s)	52.1	52.1	13.1	69.2	5.3	5.3
Actuated g/C Ratio	0.59	0.59	0.15	0.78	0.06	0.06
Clearance Time (s)	5.0	5.0	4.8	4.8	3.5	3.5
Vehicle Extension (s)	6.8	6.8	6.3	6.3	2.0	2.0
Lane Grp Cap (vph)	2050	935	263	2777	106	92
v/s Ratio Prot	c0.48		c0.10	0.25	c0.05	
v/s Ratio Perm		0.10				0.00
v/c Ratio	0.81	0.17	0.70	0.32	0.82	0.04
Uniform Delay, d1	14.1	8.2	35.7	2.7	41.0	39.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	0.3	11.9	0.2	36.3	0.1
Delay (s)	17.2	8.5	47.5	3.0	77.2	39.1
Level of Service	B	A	D	A	E	D
Approach Delay (s)	16.0			10.5	60.7	
Approach LOS	B			B	E	

Intersection Summary

HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	88.2	Sum of lost time (s)	17.7
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Volume (vph)	189	39	454	730	35	348
Peak-hour factor, PHF	0.93	0.93	0.97	0.97	0.87	0.87
Adj. Flow (vph)	203	42	468	753	40	400
RTOR Reduction (vph)	0	22	0	0	0	260
Lane Group Flow (vph)	203	20	468	753	40	140
Turn Type		Perm	Prot		pm+ov	
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	34.0	34.0	21.5	59.1	4.5	26.0
Effective Green, g (s)	36.0	36.0	21.1	61.1	4.8	25.9
Actuated g/C Ratio	0.49	0.49	0.29	0.83	0.06	0.35
Clearance Time (s)	6.0	6.0	3.6	6.0	4.3	3.6
Vehicle Extension (s)	2.0	2.0	1.0	2.0	1.0	1.0
Lane Grp Cap (vph)	908	771	505	1540	115	640
v/s Ratio Prot	0.11		c0.26	c0.40	c0.02	0.06
v/s Ratio Perm		0.01				0.03
v/c Ratio	0.22	0.03	0.93	0.49	0.35	0.22
Uniform Delay, d1	10.9	9.8	25.6	1.9	33.1	16.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	22.8	1.1	0.7	0.1
Delay (s)	11.5	9.9	48.5	3.0	33.7	16.9
Level of Service	B	A	D	A	C	B
Approach Delay (s)	11.2			20.4	18.5	
Approach LOS	B			C	B	

Intersection Summary

HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.4%	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	↖↗	↑↑	↖↗	↖↗	↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	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	3539	2787	3433	3539	1583	3433	5085	1583	3433	5085	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	3539	2787	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	442	198	964	429	409	348	403	463	84	110	991	350
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.93	0.93	0.93	0.95	0.95	0.95
Adj. Flow (vph)	475	213	1037	452	431	366	433	498	90	116	1043	368
RTOR Reduction (vph)	0	0	352	0	0	162	0	0	55	0	0	164
Lane Group Flow (vph)	475	213	685	452	431	204	433	498	35	116	1043	204
Turn Type	Prot		Perm		Prot		Perm		Prot		Perm	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	27.7	51.8	51.8	26.5	50.5	50.5	25.5	66.2	66.2	9.1	49.4	49.4
Effective Green, g (s)	29.2	53.4	53.4	28.0	52.2	52.2	27.0	67.7	67.7	10.6	51.3	51.3
Actuated g/C Ratio	0.17	0.30	0.30	0.16	0.30	0.30	0.15	0.39	0.39	0.06	0.29	0.29
Clearance Time (s)	5.5	5.6	5.6	5.5	5.7	5.7	5.5	5.5	5.5	5.5	5.9	5.9
Vehicle Extension (s)	1.0	5.0	5.0	1.0	5.9	5.9	1.0	5.4	5.4	1.0	5.4	5.4
Lane Grp Cap (vph)	571	1076	847	547	1051	470	528	1959	610	207	1485	462
v/s Ratio Prot	c0.14	0.06		0.13	0.12		c0.13	0.10		0.03	c0.21	
v/s Ratio Perm			c0.25			0.13			0.02			0.13
v/c Ratio	0.83	0.20	0.81	0.83	0.41	0.43	0.82	0.25	0.06	0.56	0.70	0.44
Uniform Delay, d1	70.9	45.3	56.4	71.5	49.4	49.8	72.0	36.8	33.9	80.3	55.4	50.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.6	0.2	6.5	9.4	0.7	1.8	9.4	0.2	0.1	2.1	2.1	1.6
Delay (s)	80.5	45.5	62.9	80.9	50.1	51.6	81.4	37.0	34.0	82.3	57.5	52.1
Level of Service	F	D	E	F	D	D	F	D	C	F	E	D
Approach Delay (s)		65.6			61.7			55.6			58.1	
Approach LOS		E			E			E			E	

Intersection Summary

HCM Average Control Delay	60.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	175.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	↻
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1854			1863	1770	1583
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1854			1863	1770	1583
Volume (vph)	94	3	0	410	19	1166
Peak-hour factor, PHF	0.84	0.84	0.88	0.88	0.90	0.90
Adj. Flow (vph)	112	4	0	466	21	1296
RTOR Reduction (vph)	1	0	0	0	0	277
Lane Group Flow (vph)	115	0	0	466	21	1019
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	30.8			30.8	66.4	66.4
Effective Green, g (s)	30.8			30.8	66.4	66.4
Actuated g/C Ratio	0.29			0.29	0.63	0.63
Clearance Time (s)	4.0			4.0	4.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	543			545	1117	999
v/s Ratio Prot	0.06			c0.25	0.01	
v/s Ratio Perm						c0.64
v/c Ratio	0.21			0.86	0.02	1.02
Uniform Delay, d1	28.0			35.1	7.2	19.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			12.4	0.0	33.5
Delay (s)	28.2			47.5	7.2	52.9
Level of Service	C			D	A	D
Approach Delay (s)	28.2			47.5	52.2	
Approach LOS	C			D	D	

Intersection Summary

HCM Average Control Delay	49.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	105.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1752	3438		1770	1691		1770	1841	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539		1752	3438		1770	1691		1770	1841	
Volume (vph)	22	1397	0	34	562	0	4	60	96	4	25	2
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.97	0.97	0.97	0.70	0.70	0.70
Adj. Flow (vph)	24	1502	0	37	611	0	4	62	99	6	36	3
RTOR Reduction (vph)	0	0	0	0	0	0	0	55	0	0	3	0
Lane Group Flow (vph)	24	1502	0	37	611	0	4	106	0	6	36	0
Heavy Vehicles (%)	2%	2%	2%	3%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	2.6	46.6		4.2	48.2		0.9	9.0		1.0	9.1	
Effective Green, g (s)	2.6	46.6		4.2	48.2		0.9	9.0		1.0	9.1	
Actuated g/C Ratio	0.03	0.61		0.05	0.63		0.01	0.12		0.01	0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	60	2147		96	2158		21	198		23	218	
v/s Ratio Prot	0.01	c0.42		c0.02	0.18		0.00	c0.06		c0.00	0.02	
v/s Ratio Perm												
v/c Ratio	0.40	0.70		0.39	0.28		0.19	0.54		0.26	0.17	
Uniform Delay, d1	36.3	10.3		35.1	6.5		37.6	31.9		37.5	30.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.3	1.0		2.6	0.1		4.4	2.8		6.0	0.4	
Delay (s)	40.7	11.3		37.6	6.5		42.0	34.7		43.5	30.8	
Level of Service	D	B		D	A		D	C		D	C	
Approach Delay (s)		11.8			8.3			34.9			32.5	
Approach LOS		B			A			C			C	

Intersection Summary

HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.3%	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	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.87		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1703	3537		1770	3486		1770	1572		1770	1489	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1703	3537		1770	3486		1770	1572		1770	1489	
Volume (vph)	33	1461	3	2	584	24	1	1	5	39	2	11
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.45	0.45	0.45	0.71	0.71	0.71
Adj. Flow (vph)	35	1571	3	2	635	26	2	2	11	55	3	15
RTOR Reduction (vph)	0	0	0	0	3	0	0	11	0	0	14	0
Lane Group Flow (vph)	35	1574	0	2	658	0	2	2	0	55	4	0
Heavy Vehicles (%)	6%	2%	25%	2%	3%	2%	2%	25%	2%	2%	25%	9%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	0.6	28.8		0.4	28.6		0.4	2.1		2.0	3.7	
Effective Green, g (s)	0.6	28.8		0.4	28.6		0.4	2.1		2.0	3.7	
Actuated g/C Ratio	0.01	0.58		0.01	0.58		0.01	0.04		0.04	0.08	
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)	21	2066		14	2022		14	67		72	112	
v/s Ratio Prot	c0.02	c0.45		0.00	0.19		0.00	0.00		c0.03	c0.00	
v/s Ratio Perm												
v/c Ratio	1.67	0.76		0.14	0.33		0.14	0.04		0.76	0.04	
Uniform Delay, d1	24.3	7.7		24.3	5.4		24.3	22.6		23.4	21.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	444.6	1.7		4.7	0.1		4.7	0.2		37.3	0.1	
Delay (s)	468.9	9.4		28.9	5.5		28.9	22.9		60.8	21.3	
Level of Service	F	A		C	A		C	C		E	C	
Approach Delay (s)		19.4			5.5			23.7			51.0	
Approach LOS		B			A			C			D	

Intersection Summary

HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

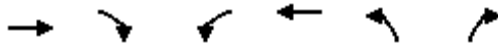


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.97		1.00	0.95		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3531		1770	3357		1770	1775		1770	1678	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3531		1770	3357		1770	1775		1770	1678	
Volume (vph)	157	1326	15	9	593	143	6	18	8	124	26	10
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.80	0.80	0.80	0.63	0.63	0.63
Adj. Flow (vph)	169	1426	16	10	645	155	8	22	10	197	41	16
RTOR Reduction (vph)	0	0	0	0	16	0	0	9	0	0	13	0
Lane Group Flow (vph)	169	1442	0	10	784	0	8	23	0	197	44	0
Heavy Vehicles (%)	2%	2%	7%	2%	5%	2%	2%	2%	2%	2%	4%	20%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	10.0	44.6		1.0	35.6		0.9	4.2		12.7	16.0	
Effective Green, g (s)	10.0	44.6		1.0	35.6		0.9	4.2		12.7	16.0	
Actuated g/C Ratio	0.13	0.57		0.01	0.45		0.01	0.05		0.16	0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	225	2006		23	1522		20	95		286	342	
v/s Ratio Prot	c0.10	c0.41		0.01	0.23		0.00	c0.01		c0.11	0.03	
v/s Ratio Perm												
v/c Ratio	0.75	0.72		0.43	0.52		0.40	0.24		0.69	0.13	
Uniform Delay, d1	33.0	12.4		38.5	15.3		38.5	35.6		31.0	25.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	13.2	1.3		12.6	0.3		12.6	1.3		6.8	0.2	
Delay (s)	46.2	13.6		51.1	15.6		51.1	36.9		37.8	25.7	
Level of Service	D	B		D	B		D	D		D	C	
Approach Delay (s)		17.0			16.0			39.8			35.1	
Approach LOS		B			B			D			D	

Intersection Summary

HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	78.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3508		1736	3505	1770	1509
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3508		1736	3505	1770	1509
Volume (vph)	1385	87	55	656	105	55
Peak-hour factor, PHF	0.97	0.97	0.92	0.92	0.91	0.91
Adj. Flow (vph)	1428	90	60	713	115	60
RTOR Reduction (vph)	5	0	0	0	0	50
Lane Group Flow (vph)	1513	0	60	713	115	10
Heavy Vehicles (%)	2%	2%	4%	3%	2%	7%
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	28.6		1.9	34.5	8.0	8.0
Effective Green, g (s)	28.6		1.9	34.5	8.0	8.0
Actuated g/C Ratio	0.57		0.04	0.68	0.16	0.16
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)	1987		65	2395	280	239
v/s Ratio Prot	c0.43		c0.03	0.20	c0.06	
v/s Ratio Perm						0.01
v/c Ratio	0.76		0.92	0.30	0.41	0.04
Uniform Delay, d1	8.3		24.2	3.2	19.1	18.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8		84.3	0.1	1.0	0.1
Delay (s)	10.1		108.6	3.3	20.1	18.1
Level of Service	B		F	A	C	B
Approach Delay (s)	10.1			11.4	19.4	
Approach LOS	B			B	B	

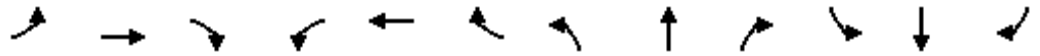
Intersection Summary

HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	50.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.2%	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		↕			↕		↗	↘		↗	↘	
Ideal Flow (vphpl)	1900	1900	1900	1900	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			1.00		1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1742			1797		1770	1827		1770	1858	
Flt Permitted		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1742			1797		1770	1827		1770	1858	
Volume (vph)	8	31	31	64	26	1	53	688	99	1	392	6
Peak-hour factor, PHF	0.84	0.84	0.84	0.90	0.90	0.90	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	10	37	37	71	29	1	58	748	108	1	451	7
RTOR Reduction (vph)	0	33	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	51	0	0	101	0	58	852	0	1	458	0
Turn Type	Split		Split				Prot		Prot			
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		8.2			9.5		4.7	52.1		0.7	48.1	
Effective Green, g (s)		8.2			9.5		4.7	52.1		0.7	48.1	
Actuated g/C Ratio		0.09			0.11		0.05	0.60		0.01	0.56	
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)		165			197		96	1100		14	1033	
v/s Ratio Prot		c0.03			c0.06		c0.03	c0.47		0.00	0.25	
v/s Ratio Perm												
v/c Ratio		0.31			0.51		0.60	0.77		0.07	0.44	
Uniform Delay, d1		36.5			36.3		40.0	12.8		42.6	11.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.1			2.2		10.3	3.5		2.2	0.3	
Delay (s)		37.6			38.6		50.3	16.3		44.7	11.6	
Level of Service		D			D		D	B		D	B	
Approach Delay (s)		37.6			38.6			18.4			11.7	
Approach LOS		D			D			B			B	
Intersection Summary												
HCM Average Control Delay			18.8				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			86.5				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			62.3%				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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.95		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1772		1770	1744		1752	1800		1770	1822	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1772		1770	1744		1752	1800		1770	1822	
Volume (vph)	18	90	44	105	89	46	63	786	164	21	463	10
Peak-hour factor, PHF	0.95	0.95	0.95	0.87	0.87	0.87	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	19	95	46	121	102	53	68	854	178	24	532	11
RTOR Reduction (vph)	0	20	0	0	21	0	0	8	0	0	1	0
Lane Group Flow (vph)	19	121	0	121	134	0	68	1024	0	24	542	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	6%	3%	3%	2%	2%	4%	2%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	1.5	13.3		6.0	17.8		6.7	50.4		1.5	45.2	
Effective Green, g (s)	1.5	13.3		6.0	17.8		6.7	50.4		1.5	45.2	
Actuated g/C Ratio	0.02	0.15		0.07	0.20		0.08	0.58		0.02	0.52	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	30	270		122	356		135	1040		30	944	
v/s Ratio Prot	0.01	0.07		c0.07	c0.08		c0.04	c0.57		0.01	0.30	
v/s Ratio Perm												
v/c Ratio	0.63	0.45		0.99	0.38		0.50	0.99		0.80	0.57	
Uniform Delay, d1	42.6	33.6		40.6	29.9		38.7	18.0		42.7	14.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	36.3	1.2		78.7	0.7		2.9	24.1		84.3	0.8	
Delay (s)	78.9	34.8		119.2	30.6		41.6	42.1		127.0	15.3	
Level of Service	E	C		F	C		D	D		F	B	
Approach Delay (s)		40.0			69.5			42.1			20.0	
Approach LOS		D			E			D			B	

Intersection Summary			
HCM Average Control Delay	39.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	87.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.6%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92	
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	1770	3539	1346	1770	1863	1524	1770	1603	
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	1770	3539	1346	1770	1863	1524	1770	1603	
Volume (vph)	222	1091	214	371	1001	376	172	182	332	213	114	135
Peak-hour factor, PHF	0.94	0.94	0.94	0.97	0.97	0.97	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	236	1161	228	382	1032	388	187	198	361	245	131	155
RTOR Reduction (vph)	0	0	123	0	0	232	0	0	253	0	35	0
Lane Group Flow (vph)	236	1161	105	382	1032	156	187	198	108	245	251	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	20%	2%	2%	6%	2%	17%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	18.6	37.0	37.0	24.0	42.4	42.4	13.0	28.0	28.0	15.0	30.0	
Effective Green, g (s)	18.6	37.0	37.0	24.0	42.4	42.4	13.0	28.0	28.0	15.0	30.0	
Actuated g/C Ratio	0.16	0.31	0.31	0.20	0.35	0.35	0.11	0.23	0.23	0.12	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)	274	1091	488	354	1250	476	192	435	356	221	401	
v/s Ratio Prot	0.13	c0.33		c0.22	0.29		0.11	0.11		c0.14	c0.16	
v/s Ratio Perm			0.07			0.12			0.07			
v/c Ratio	0.86	1.06	0.21	1.08	0.83	0.33	0.97	0.46	0.30	1.11	0.63	
Uniform Delay, d1	49.4	41.5	30.7	48.0	35.4	28.4	53.3	39.5	38.0	52.5	40.0	
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	23.1	46.0	0.2	70.6	4.6	0.4	57.0	3.4	2.2	92.7	7.2	
Delay (s)	72.5	87.5	31.0	118.6	40.0	28.8	110.3	42.9	40.1	145.2	47.2	
Level of Service	E	F	C	F	D	C	F	D	D	F	D	
Approach Delay (s)		77.4			54.3			58.4			92.4	
Approach LOS		E			D			E			F	
Intersection Summary												
HCM Average Control Delay			67.2				HCM Level of Service			E		
HCM Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)		12.0			
Intersection Capacity Utilization			87.8%				ICU Level of Service		E			
Analysis Period (min)			15									

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Volume (vph)	1430	144	84	1863	283	171
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.87	0.87
Adj. Flow (vph)	1538	155	90	2003	325	197
RTOR Reduction (vph)	0	65	0	0	0	156
Lane Group Flow (vph)	1538	90	90	2003	325	41
Turn Type		Perm	Prot		Perm	
Protected Phases	2		1	6	3	
Permitted Phases		2				3
Actuated Green, G (s)	46.4	46.4	5.6	57.0	19.2	19.2
Effective Green, g (s)	47.4	47.4	6.4	57.8	18.7	18.7
Actuated g/C Ratio	0.53	0.53	0.07	0.64	0.21	0.21
Clearance Time (s)	5.0	5.0	4.8	4.8	3.5	3.5
Vehicle Extension (s)	6.8	6.8	6.3	6.3	2.0	2.0
Lane Grp Cap (vph)	1860	832	126	2268	367	328
v/s Ratio Prot	0.43		0.05	c0.57	c0.18	
v/s Ratio Perm		0.06				0.03
v/c Ratio	0.83	0.11	0.71	0.88	0.89	0.12
Uniform Delay, d1	18.0	10.8	41.0	13.4	34.7	29.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.2	25.0	5.1	21.1	0.1
Delay (s)	21.8	11.0	66.0	18.5	55.8	29.2
Level of Service	C	B	E	B	E	C
Approach Delay (s)	20.8			20.5	45.8	
Approach LOS	C			C	D	

Intersection Summary

HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	13.7
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Volume (vph)	922	46	384	241	40	453
Peak-hour factor, PHF	0.96	0.96	0.92	0.92	0.87	0.87
Adj. Flow (vph)	960	48	417	262	46	521
RTOR Reduction (vph)	0	11	0	0	0	75
Lane Group Flow (vph)	960	37	417	262	46	446
Turn Type		Perm	Prot			pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	87.2	87.2	35.2	126.0	7.6	42.8
Effective Green, g (s)	89.2	89.2	34.8	128.0	7.9	42.7
Actuated g/C Ratio	0.62	0.62	0.24	0.89	0.05	0.30
Clearance Time (s)	6.0	6.0	3.6	6.0	4.3	3.6
Vehicle Extension (s)	2.0	2.0	1.0	2.0	1.0	1.0
Lane Grp Cap (vph)	1155	981	428	1657	97	514
v/s Ratio Prot	c0.52		c0.24	0.14	0.03	c0.21
v/s Ratio Perm		0.02				0.07
v/c Ratio	0.83	0.04	0.97	0.16	0.47	0.87
Uniform Delay, d1	21.4	10.6	54.1	1.0	66.0	47.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.0	0.1	36.4	0.2	1.3	13.9
Delay (s)	28.5	10.7	90.5	1.2	67.3	61.8
Level of Service	C	B	F	A	E	E
Approach Delay (s)	27.6			56.0	62.2	
Approach LOS	C			E	E	

Intersection Summary

HCM Average Control Delay	44.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	143.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.2%	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	↖↗	↑↑	↖↗	↖↗	↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	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	3539	2787	3433	3539	1583	3433	5085	1583	3433	5085	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	3539	2787	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	421	530	736	260	355	81	1341	500	272	136	404	367
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	453	570	791	283	386	88	1412	526	286	148	439	399
RTOR Reduction (vph)	0	0	468	0	0	73	0	0	131	0	0	166
Lane Group Flow (vph)	453	570	323	283	386	15	1412	526	155	148	439	233
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	27.7	41.8	41.8	18.1	32.1	32.1	85.1	107.8	107.8	11.5	33.8	33.8
Effective Green, g (s)	29.2	43.4	43.4	19.6	33.8	33.8	86.6	109.3	109.3	13.0	35.7	35.7
Actuated g/C Ratio	0.15	0.22	0.22	0.10	0.17	0.17	0.43	0.54	0.54	0.06	0.18	0.18
Clearance Time (s)	5.5	5.6	5.6	5.5	5.7	5.7	5.5	5.5	5.5	5.5	5.9	5.9
Vehicle Extension (s)	1.0	5.0	5.0	1.0	5.9	5.9	1.0	5.4	5.4	1.0	5.4	5.4
Lane Grp Cap (vph)	498	763	601	334	594	266	1477	2761	860	222	902	281
v/s Ratio Prot	c0.13	c0.16		0.08	0.11		c0.41	0.10		0.04	0.09	
v/s Ratio Perm			0.12			0.01			0.10			c0.15
v/c Ratio	0.91	0.75	0.54	0.85	0.65	0.06	0.96	0.19	0.18	0.67	0.49	0.83
Uniform Delay, d1	84.8	73.8	70.1	89.4	78.2	70.3	55.5	23.4	23.3	92.0	74.6	79.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.0	4.8	1.7	17.1	3.9	0.2	14.1	0.1	0.2	5.7	1.0	20.1
Delay (s)	104.8	78.6	71.8	106.4	82.2	70.6	69.6	23.5	23.6	97.8	75.5	100.0
Level of Service	F	E	E	F	F	E	E	C	C	F	E	F
Approach Delay (s)		82.2			89.9			52.8			88.8	
Approach LOS		F			F			D			F	

Intersection Summary

HCM Average Control Delay	73.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	201.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.5%	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		↕			↕		↗	↘		↗	↘	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.91			1.00		1.00	0.98			1.00	
Flt Protected		1.00			0.96		0.95	1.00			1.00	
Satd. Flow (prot)		1689			1759		1626	1824			1859	
Flt Permitted		1.00			0.96		0.95	1.00			1.00	
Satd. Flow (perm)		1689			1759		1626	1824			1859	
Volume (vph)	2	19	45	76	18	1	18	175	28	0	611	7
Peak-hour factor, PHF	0.73	0.73	0.73	0.86	0.86	0.86	0.87	0.87	0.87	0.92	0.92	0.92
Adj. Flow (vph)	3	26	62	88	21	1	21	201	32	0	664	8
RTOR Reduction (vph)	0	57	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	34	0	0	110	0	21	229	0	0	672	0
Heavy Vehicles (%)	2%	2%	2%	2%	11%	2%	11%	2%	2%	2%	2%	2%
Turn Type	Split		Split				Prot		Prot			
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		5.9			7.2		1.4	52.7			47.3	
Effective Green, g (s)		5.9			7.2		1.4	52.7			47.3	
Actuated g/C Ratio		0.08			0.09		0.02	0.68			0.61	
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)		128			163		29	1236			1130	
v/s Ratio Prot		c0.02			c0.06		c0.01	0.13			c0.36	
v/s Ratio Perm												
v/c Ratio		0.26			0.67		0.72	0.19			0.59	
Uniform Delay, d1		33.9			34.2		38.0	4.6			9.4	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.1			10.5		61.8	0.1			0.8	
Delay (s)		35.0			44.7		99.8	4.7			10.2	
Level of Service		D			D		F	A			B	
Approach Delay (s)		35.0			44.7			12.6			10.2	
Approach LOS		D			D			B			B	

Intersection Summary

HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	77.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.1%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92	
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)	1597	3471	1583	1656	3505	1583	1770	1743	1568	1444	1705	
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)	1597	3471	1583	1656	3505	1583	1770	1743	1568	1444	1705	
Volume (vph)	56	837	118	212	724	87	169	47	268	331	148	192
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	60	900	127	228	778	94	182	51	288	360	161	209
RTOR Reduction (vph)	0	0	83	0	0	58	0	0	222	0	44	0
Lane Group Flow (vph)	60	900	44	228	778	36	182	51	66	360	326	0
Heavy Vehicles (%)	13%	4%	2%	9%	3%	2%	2%	9%	3%	25%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	7.2	32.0	32.0	16.1	40.9	40.9	14.3	12.8	12.8	29.1	27.6	
Effective Green, g (s)	7.2	32.0	32.0	16.1	40.9	40.9	14.3	12.8	12.8	29.1	27.6	
Actuated g/C Ratio	0.07	0.30	0.30	0.15	0.39	0.39	0.13	0.12	0.12	0.27	0.26	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	108	1048	478	252	1352	611	239	210	189	396	444	
v/s Ratio Prot	0.04	c0.26		c0.14	0.22		0.10	0.03		c0.25	c0.19	
v/s Ratio Perm			0.03			0.02			0.04			
v/c Ratio	0.56	0.86	0.09	0.90	0.58	0.06	0.76	0.24	0.35	0.91	0.74	
Uniform Delay, d1	47.9	34.9	26.6	44.2	25.7	20.5	44.2	42.2	42.8	37.2	35.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.1	7.1	0.1	32.4	0.6	0.0	13.3	0.6	1.1	24.0	6.2	
Delay (s)	53.9	42.0	26.7	76.6	26.3	20.5	57.6	42.8	43.9	61.2	42.1	
Level of Service	D	D	C	E	C	C	E	D	D	E	D	
Approach Delay (s)		40.9			36.2			48.5			51.5	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM Average Control Delay			42.8				HCM Level of Service			D		
HCM Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			106.0				Sum of lost time (s)		12.0			
Intersection Capacity Utilization			77.1%				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		↕			↕		↗	↘		↗	↘	
Ideal Flow (vphpl)	1900	1900	1900	1900	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			1.00		1.00	0.98		1.00	1.00	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1741			1798		1770	1829		1770	1859	
Flt Permitted		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1741			1798		1770	1829		1770	1859	
Volume (vph)	7	31	31	61	26	1	53	692	94	1	396	6
Peak-hour factor, PHF	0.84	0.84	0.84	0.90	0.90	0.90	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	8	37	37	68	29	1	58	752	102	1	455	7
RTOR Reduction (vph)	0	34	0	0	1	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	48	0	0	97	0	58	850	0	1	462	0
Turn Type	Split		Split				Prot		Prot			
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		7.3			9.0		4.8	52.0		0.8	48.0	
Effective Green, g (s)		7.3			9.0		4.8	52.0		0.8	48.0	
Actuated g/C Ratio		0.09			0.11		0.06	0.61		0.01	0.56	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		149			190		100	1118		17	1049	
v/s Ratio Prot		c0.03			c0.05		c0.03	c0.46		0.00	0.25	
v/s Ratio Perm												
v/c Ratio		0.32			0.51		0.58	0.76		0.06	0.44	
Uniform Delay, d1		36.6			36.0		39.2	12.0		41.8	10.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.3			2.3		7.9	3.1		1.5	0.3	
Delay (s)		37.8			38.3		47.1	15.1		43.2	11.1	
Level of Service		D			D		D	B		D	B	
Approach Delay (s)		37.8			38.3			17.2			11.1	
Approach LOS		D			D			B			B	
Intersection Summary												
HCM Average Control Delay			17.8				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			85.1				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			62.2%				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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92	
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	1770	3539	1346	1770	1863	1524	1770	1603	
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	1770	3539	1346	1770	1863	1524	1770	1603	
Volume (vph)	224	1094	207	354	1023	386	170	173	315	219	109	136
Peak-hour factor, PHF	0.94	0.94	0.94	0.97	0.97	0.97	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	238	1164	220	365	1055	398	185	188	342	252	125	156
RTOR Reduction (vph)	0	0	118	0	0	233	0	0	246	0	37	0
Lane Group Flow (vph)	238	1164	102	365	1055	165	185	188	96	252	244	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	20%	2%	2%	6%	2%	17%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	18.7	37.0	37.0	23.0	41.3	41.3	15.2	28.0	28.0	16.0	28.8	
Effective Green, g (s)	18.7	37.0	37.0	23.0	41.3	41.3	15.2	28.0	28.0	16.0	28.8	
Actuated g/C Ratio	0.16	0.31	0.31	0.19	0.34	0.34	0.13	0.23	0.23	0.13	0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	276	1091	488	339	1218	463	224	435	356	236	385	
v/s Ratio Prot	0.13	c0.33		c0.21	0.30		0.10	0.10		c0.14	c0.15	
v/s Ratio Perm			0.06			0.12			0.06			
v/c Ratio	0.86	1.07	0.21	1.08	0.87	0.36	0.83	0.43	0.27	1.07	0.63	
Uniform Delay, d1	49.4	41.5	30.7	48.5	36.8	29.4	51.1	39.2	37.6	52.0	40.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	23.1	47.0	0.2	70.8	6.7	0.5	21.3	3.1	1.9	77.7	7.7	
Delay (s)	72.5	88.5	30.9	119.3	43.4	29.9	72.4	42.3	39.5	129.7	48.6	
Level of Service	E	F	C	F	D	C	E	D	D	F	D	
Approach Delay (s)		78.3			55.7			48.8			86.9	
Approach LOS		E			E			D			F	
Intersection Summary												
HCM Average Control Delay			66.0				HCM Level of Service			E		
HCM Volume to Capacity ratio			0.92									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			86.7%				ICU Level of Service			E		
Analysis Period (min)			15									

























c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.91			1.00		1.00	0.98			1.00	
Flt Protected		1.00			0.96		0.95	1.00			1.00	
Satd. Flow (prot)		1689			1759		1626	1826			1861	
Flt Permitted		1.00			0.96		0.95	1.00			1.00	
Satd. Flow (perm)		1689			1759		1626	1826			1861	
Volume (vph)	2	19	45	75	18	1	18	172	26	0	583	5
Peak-hour factor, PHF	0.73	0.73	0.73	0.86	0.86	0.86	0.87	0.87	0.87	0.92	0.92	0.92
Adj. Flow (vph)	3	26	62	87	21	1	21	198	30	0	634	5
RTOR Reduction (vph)	0	57	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	34	0	0	109	0	21	225	0	0	639	0
Heavy Vehicles (%)	2%	2%	2%	2%	11%	2%	11%	2%	2%	2%	2%	2%
Turn Type	Split		Split				Prot		Prot			
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		5.8			7.0		1.4	50.1			44.7	
Effective Green, g (s)		5.8			7.0		1.4	50.1			44.7	
Actuated g/C Ratio		0.08			0.09		0.02	0.67			0.60	
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)		131			164		30	1221			1111	
v/s Ratio Prot		c0.02			c0.06		c0.01	0.12			c0.34	
v/s Ratio Perm												
v/c Ratio		0.26			0.66		0.70	0.18			0.57	
Uniform Delay, d1		32.5			32.8		36.5	4.7			9.3	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.0			9.7		52.7	0.1			0.7	
Delay (s)		33.6			42.5		89.3	4.8			10.0	
Level of Service		C			D		F	A			A	
Approach Delay (s)		33.6			42.5			11.9			10.0	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	49.5%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1597	3471	1583	1656	3505	1583	1770	1743	1568	1444	1704	1704
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)	1597	3471	1583	1656	3505	1583	1770	1743	1568	1444	1704	1704
Volume (vph)	59	784	103	211	742	96	159	43	252	346	151	199
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	63	843	111	227	798	103	171	46	271	376	164	216
RTOR Reduction (vph)	0	0	78	0	0	63	0	0	229	0	43	0
Lane Group Flow (vph)	63	843	33	227	798	40	171	46	42	376	337	0
Heavy Vehicles (%)	13%	4%	2%	9%	3%	2%	2%	9%	3%	25%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	5.5	30.0	30.0	16.1	40.6	40.6	14.7	12.4	12.4	31.2	28.9	28.9
Effective Green, g (s)	5.5	30.0	30.0	16.1	40.6	40.6	14.7	12.4	12.4	31.2	28.9	28.9
Actuated g/C Ratio	0.05	0.28	0.28	0.15	0.38	0.38	0.14	0.12	0.12	0.30	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	83	985	449	252	1346	608	246	204	184	426	466	466
v/s Ratio Prot	0.04	c0.24		c0.14	0.23		0.10	0.03		c0.26	c0.20	
v/s Ratio Perm			0.02			0.02			0.03			
v/c Ratio	0.76	0.86	0.07	0.90	0.59	0.07	0.70	0.23	0.23	0.88	0.72	0.72
Uniform Delay, d1	49.4	35.8	27.7	44.0	26.0	20.6	43.4	42.3	42.3	35.5	34.8	34.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	32.1	7.4	0.1	31.8	0.7	0.0	8.2	0.6	0.6	18.9	5.5	5.5
Delay (s)	81.6	43.2	27.8	75.8	26.7	20.6	51.6	42.9	42.9	54.4	40.3	40.3
Level of Service	F	D	C	E	C	C	D	D	D	D	D	D
Approach Delay (s)		43.9			36.0			46.0			47.3	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM Average Control Delay			42.3				HCM Level of Service				D	
HCM Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			105.7				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			75.6%				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		↕			↕		↗	↘		↗	↘	
Ideal Flow (vphpl)	1900	1900	1900	1900	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			1.00		1.00	0.98		1.00	1.00	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1740			1799		1770	1828		1770	1859	
Flt Permitted		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1740			1799		1770	1828		1770	1859	
Volume (vph)	6	31	31	56	26	1	53	641	90	1	365	5
Peak-hour factor, PHF	0.84	0.84	0.84	0.90	0.90	0.90	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	7	37	37	62	29	1	58	697	98	1	420	6
RTOR Reduction (vph)	0	34	0	0	1	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	47	0	0	91	0	58	791	0	1	426	0
Turn Type	Split		Split			Prot		Prot				
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		8.2			9.3		4.7	52.5		0.7	48.5	
Effective Green, g (s)		8.2			9.3		4.7	52.5		0.7	48.5	
Actuated g/C Ratio		0.09			0.11		0.05	0.61		0.01	0.56	
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)		165			193		96	1107		14	1040	
v/s Ratio Prot		c0.03			c0.05		c0.03	c0.43		0.00	0.23	
v/s Ratio Perm												
v/c Ratio		0.29			0.47		0.60	0.71		0.07	0.41	
Uniform Delay, d1		36.5			36.4		40.1	11.9		42.7	10.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0			1.8		10.3	2.2		2.2	0.3	
Delay (s)		37.5			38.2		50.4	14.1		44.8	11.2	
Level of Service		D			D		D	B		D	B	
Approach Delay (s)		37.5			38.2		16.6				11.3	
Approach LOS		D			D		B				B	
Intersection Summary												
HCM Average Control Delay			17.5				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			86.7				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			61.9%				ICU Level of Service				B	
Analysis Period (min)			15									
c Critical Lane Group												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91	
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	1770	3539	1346	1770	1863	1524	1770	1602	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1346	1770	1863	1524	1770	1602	
Volume (vph)	220	1072	190	329	949	382	149	164	301	214	96	130
Peak-hour factor, PHF	0.94	0.94	0.94	0.97	0.97	0.97	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	234	1140	202	339	978	394	162	178	327	246	110	149
RTOR Reduction (vph)	0	0	111	0	0	248	0	0	252	0	41	0
Lane Group Flow (vph)	234	1140	91	339	978	146	162	178	75	246	218	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	20%	2%	2%	6%	2%	17%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	18.6	38.0	38.0	23.0	42.4	42.4	13.4	27.0	27.0	16.0	29.6	
Effective Green, g (s)	18.6	38.0	38.0	23.0	42.4	42.4	13.4	27.0	27.0	16.0	29.6	
Actuated g/C Ratio	0.16	0.32	0.32	0.19	0.35	0.35	0.11	0.22	0.22	0.13	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)	274	1121	501	339	1250	476	198	419	343	236	395	
v/s Ratio Prot	0.13	c0.32		c0.19	0.28		0.09	0.10		c0.14	c0.14	
v/s Ratio Perm			0.06			0.11			0.05			
v/c Ratio	0.85	1.02	0.18	1.00	0.78	0.31	0.82	0.42	0.22	1.04	0.55	
Uniform Delay, d1	49.4	41.0	29.7	48.5	34.7	28.1	52.1	39.8	37.9	52.0	39.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	21.9	31.2	0.2	48.9	3.3	0.4	22.4	3.1	1.5	70.1	5.5	
Delay (s)	71.3	72.2	29.9	97.4	37.9	28.5	74.5	43.0	39.4	122.1	44.9	
Level of Service	E	E	C	F	D	C	E	D	D	F	D	
Approach Delay (s)		66.6			47.5			48.9			82.5	
Approach LOS		E			D			D			F	
Intersection Summary												
HCM Average Control Delay			58.4				HCM Level of Service			E		
HCM Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)		16.0			
Intersection Capacity Utilization			82.5%				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	  	 			 	 				 		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.94	0.95	1.00	1.00	0.95	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4505	3471	1583	1656	3505	2787	1770	1743	1568	2801	1863	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)	4505	3471	1583	1656	3505	2787	1770	1743	1568	2801	1863	1583
Volume (vph)	182	331	105	71	424	254	76	160	111	1005	605	697
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	196	356	113	76	456	273	82	172	119	1092	658	758
RTOR Reduction (vph)	0	0	93	0	0	224	0	0	98	0	0	114
Lane Group Flow (vph)	196	356	20	76	456	49	82	172	21	1092	658	644
Heavy Vehicles (%)	13%	4%	2%	9%	3%	2%	2%	9%	3%	25%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.1	17.5	17.5	5.1	17.5	17.5	6.2	16.8	16.8	41.5	52.1	52.1
Effective Green, g (s)	5.1	17.5	17.5	5.1	17.5	17.5	6.2	16.8	16.8	41.5	52.1	52.1
Actuated g/C Ratio	0.05	0.18	0.18	0.05	0.18	0.18	0.06	0.17	0.17	0.43	0.54	0.54
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	237	627	286	87	633	503	113	302	272	1200	1002	851
v/s Ratio Prot	0.04	0.10		c0.05	c0.13		0.05	0.10		c0.39	0.35	
v/s Ratio Perm			0.01			0.02			0.01			c0.41
v/c Ratio	0.83	0.57	0.07	0.87	0.72	0.10	0.73	0.57	0.08	0.91	0.66	0.76
Uniform Delay, d1	45.5	36.2	33.0	45.6	37.4	33.1	44.5	36.7	33.5	26.0	16.0	17.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.5	1.2	0.1	56.7	4.0	0.1	20.5	2.5	0.1	10.3	1.6	3.9
Delay (s)	65.9	37.4	33.1	102.3	41.4	33.2	65.0	39.2	33.7	36.3	17.6	21.3
Level of Service	E	D	C	F	D	C	E	D	C	D	B	C
Approach Delay (s)		45.1			44.4			43.1			26.9	
Approach LOS		D			D			D			C	
Intersection Summary												
HCM Average Control Delay			34.3				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			96.9				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			69.1%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	1695		1770	1685		1770	1701		1770	1863	1482
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	1695		1770	1685		1770	1701		1770	1863	1482
Volume (vph)	148	2	3	6	3	5	1	77	7	5	289	499
Peak-hour factor, PHF	0.88	0.88	0.88	0.67	0.67	0.67	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	168	2	3	9	4	7	1	84	8	6	332	574
RTOR Reduction (vph)	0	2	0	0	7	0	0	6	0	0	0	256
Lane Group Flow (vph)	168	3	0	9	4	0	1	86	0	6	332	318
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	11%	2%	2%	2%	9%
Turn Type	Prot			Prot			Prot			Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	10.5	11.7		0.4	1.6		0.4	11.8		0.4	11.8	22.3
Effective Green, g (s)	10.5	11.7		0.4	1.6		0.4	11.8		0.4	11.8	22.3
Actuated g/C Ratio	0.26	0.29		0.01	0.04		0.01	0.29		0.01	0.29	0.55
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)	456	492		18	67		18	498		18	545	967
v/s Ratio Prot	c0.10	0.00		0.01	c0.00		0.00	0.05		c0.00	c0.18	c0.09
v/s Ratio Perm												0.13
v/c Ratio	0.37	0.01		0.50	0.06		0.06	0.17		0.33	0.61	0.33
Uniform Delay, d1	12.2	10.2		19.9	18.6		19.8	10.6		19.8	12.3	4.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0		20.2	0.4		1.3	0.2		10.6	1.9	0.2
Delay (s)	12.7	10.2		40.0	19.0		21.1	10.8		30.4	14.2	5.1
Level of Service	B	B		D	B		C	B		C	B	A
Approach Delay (s)		12.6			28.5			10.9			8.6	
Approach LOS		B			C			B			A	

Intersection Summary

HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	40.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.6%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.94	0.95	1.00	1.00	0.95	0.88	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4990	3539	1583	1770	3539	2369	1770	1863	1524	3433	1624	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)	4990	3539	1583	1770	3539	2369	1770	1863	1524	3433	1624	1583
Volume (vph)	728	601	107	142	383	1050	119	627	114	567	347	401
Peak-hour factor, PHF	0.94	0.94	0.94	0.97	0.97	0.97	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	774	639	114	146	395	1082	129	682	124	652	399	461
RTOR Reduction (vph)	0	0	88	0	0	64	0	0	53	0	0	77
Lane Group Flow (vph)	774	639	26	146	395	1018	129	682	71	652	399	384
Heavy Vehicles (%)	2%	2%	2%	2%	2%	20%	2%	2%	6%	2%	17%	2%
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.0	24.0	24.0	10.0	18.0	37.0	12.2	37.0	37.0	19.0	43.8	59.8
Effective Green, g (s)	16.0	24.0	24.0	10.0	18.0	37.0	12.2	37.0	37.0	19.0	43.8	59.8
Actuated g/C Ratio	0.15	0.23	0.23	0.09	0.17	0.35	0.12	0.35	0.35	0.18	0.41	0.56
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	753	801	358	167	601	916	204	650	532	615	671	953
v/s Ratio Prot	c0.16	0.18		0.08	0.11	c0.20	0.07	c0.37		0.19	0.25	0.06
v/s Ratio Perm			0.02			0.23			0.05			0.18
v/c Ratio	1.03	0.80	0.07	0.87	0.66	1.11	0.63	1.05	0.13	1.06	0.59	0.40
Uniform Delay, d1	45.0	38.7	32.2	47.4	41.1	34.5	44.8	34.5	23.6	43.5	24.2	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.1	5.6	0.1	36.2	2.6	65.3	6.3	48.9	0.1	53.3	1.4	0.3
Delay (s)	85.1	44.3	32.3	83.6	43.7	99.8	51.0	83.4	23.7	96.8	25.6	13.3
Level of Service	F	D	C	F	D	F	D	F	C	F	C	B
Approach Delay (s)		64.1			84.7			71.0			52.6	
Approach LOS		E			F			E			D	

Intersection Summary		
HCM Average Control Delay	68.1	HCM Level of Service E
HCM Volume to Capacity ratio	1.07	
Actuated Cycle Length (s)	106.0	Sum of lost time (s) 12.0
Intersection Capacity Utilization	93.6%	ICU Level of Service F
Analysis Period (min)	15	

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1736	1583		1770	1480		1770	1856		1770	1863	1553
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1736	1583		1770	1480		1770	1856		1770	1863	1553
Volume (vph)	536	5	5	7	2	4	2	300	8	8	181	311
Peak-hour factor, PHF	0.87	0.87	0.87	0.75	0.75	0.75	0.87	0.87	0.87	0.92	0.92	0.92
Adj. Flow (vph)	616	6	6	9	3	5	2	345	9	9	197	338
RTOR Reduction (vph)	0	3	0	0	5	0	0	1	0	0	0	101
Lane Group Flow (vph)	616	9	0	9	3	0	2	353	0	9	197	237
Heavy Vehicles (%)	4%	2%	20%	2%	2%	25%	2%	2%	2%	2%	2%	4%
Turn Type	Prot			Prot			Prot			Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Actuated Green, G (s)	27.1	28.6		0.5	2.0		0.5	16.1		0.5	16.1	43.2
Effective Green, g (s)	27.1	28.6		0.5	2.0		0.5	16.1		0.5	16.1	43.2
Actuated g/C Ratio	0.44	0.46		0.01	0.03		0.01	0.26		0.01	0.26	0.70
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)	762	734		14	48		14	484		14	486	1188
v/s Ratio Prot	c0.35	0.01		0.01	c0.00		0.00	c0.19		c0.01	0.11	0.09
v/s Ratio Perm												0.06
v/c Ratio	0.81	0.01		0.64	0.07		0.14	0.73		0.64	0.41	0.20
Uniform Delay, d1	15.0	8.9		30.5	28.9		30.4	20.8		30.5	18.8	3.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.3	0.0		71.2	0.6		4.7	5.5		71.2	0.6	0.1
Delay (s)	21.4	8.9		101.7	29.5		35.0	26.3		101.7	19.4	3.3
Level of Service	C	A		F	C		D	C		F	B	A
Approach Delay (s)		21.1			67.7			26.3			10.8	
Approach LOS		C			E			C			B	

Intersection Summary

HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 2000
Basic Freeway Segments
Capacity Analysis

Jurisdiction Sacramento County Agency or Company Caltrans
 Analysis Year Existing Plus Pref. Alt. with Mitigation Date 10/4/2010
 Analyst F&P Project Description Elverta Specific Plan

General Information			Flow Rate Calculation											Speed Calculation		Results		
Freeway/ Direction	From/To	Analysis Time Period	Volume (vph)	PHF	Lanes	Terrain	Truck/ Bus %	RV %	E _T	E _R	f _{HV}	f _P	Flow Rate v _P (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	Level of Service	
1	SR-99 SB	Sankey Road to Riego Road	AM	1,874	0.92	2	Level	7%	0%	1.5	1.2	0.966	1.00	1,054	65.0	60.5	17.4	B
2	SR 99 SB	Riego Road to Elverta Road	AM	2,420	0.92	2	Level	7%	0%	1.5	1.2	0.966	1.00	1,361	65.0	60.5	22.5	C
3	SR 99 SB	Elverta Road to Elkhorn Blvd	AM	3,399	0.92	2	Level	7%	0%	1.5	1.2	0.966	1.00	1,912	65.0	59.3	32.2	D
4	SR 99 SB	Elkhorn Blvd to I-5	AM	4,240	0.92	3	Level	7%	0%	1.5	1.2	0.966	1.00	1,590	65.0	62.0	25.6	C
5	SR 99 NB	I-5 to Elkhorn Blvd	AM	1,327	0.92	3	Level	23%	0%	1.5	1.2	0.897	1.00	536	65.0	62.0	8.6	A
6	SR 99 NB	Elkhorn Blvd to Elverta Road	AM	1,131	0.92	2	Level	23%	0%	1.5	1.2	0.897	1.00	685	65.0	60.5	11.3	B
7	SR 99 NB	Elverta Road to Riego Road	AM	902	0.92	2	Level	23%	0%	1.5	1.2	0.897	1.00	547	65.0	60.5	9.0	A
8	SR 99 NB	Riego Road to Sankey Road	AM	745	0.92	2	Level	23%	0%	1.5	1.2	0.897	1.00	451	65.0	60.5	7.5	A
1	SR-99 SB	Sankey Road to Riego Road	PM	1,090	0.92	2	Level	5%	0%	1.5	1.2	0.976	1.00	607	65.0	60.5	10.0	A
2	SR 99 SB	Riego Road to Elverta Road	PM	1,239	0.92	2	Level	5%	0%	1.5	1.2	0.976	1.00	690	65.0	60.5	11.4	B
3	SR 99 SB	Elverta Road to Elkhorn Blvd	PM	1,722	0.92	2	Level	5%	0%	1.5	1.2	0.976	1.00	959	65.0	60.5	15.9	B
4	SR 99 SB	Elkhorn Blvd to I-5	PM	2,052	0.92	3	Level	5%	0%	1.5	1.2	0.976	1.00	762	65.0	62.0	12.3	B
5	SR 99 NB	I-5 to Elkhorn Blvd	PM	4,728	0.92	3	Level	13%	0%	1.5	1.2	0.939	1.00	1,824	65.0	61.2	29.8	D
6	SR 99 NB	Elkhorn Blvd to Elverta Road	PM	3,664	0.92	2	Level	13%	0%	1.5	1.2	0.939	1.00	2,121	65.0	56.2	37.7	E
7	SR 99 NB	Elverta Road to Riego Road	PM	2,514	0.92	2	Level	13%	0%	1.5	1.2	0.939	1.00	1,455	65.0	60.5	24.1	C
8	SR 99 NB	Riego Road to Sankey Road	PM	1,991	0.92	2	Level	13%	0%	1.5	1.2	0.939	1.00	1,152	65.0	60.5	19.0	C

Appendix C-2: Cumulative Plus Project Mitigation

Cumulative Plus Preferred Alternative Conditions

Cumulative Plus Approved Specific Plan Conditions

Cumulative Plus Minimal Impact Conditions

Cumulative Plus No Federal Action Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↘↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	1.00	0.95
Frt	0.98			1.00	0.98	0.85
Flt Protected	1.00			1.00	0.96	1.00
Satd. Flow (prot)	4976			5085	1744	1504
Flt Permitted	1.00			1.00	0.96	1.00
Satd. Flow (perm)	4976			5085	1744	1504
Volume (vph)	780	130	0	2050	390	520
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	804	134	0	2113	402	536
RTOR Reduction (vph)	27	0	0	0	10	85
Lane Group Flow (vph)	911	0	0	2113	471	372
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	34.4			34.4	22.6	22.6
Effective Green, g (s)	34.4			34.4	22.6	22.6
Actuated g/C Ratio	0.53			0.53	0.35	0.35
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)	2633			2691	606	523
v/s Ratio Prot	0.18			c0.42	c0.27	
v/s Ratio Perm						0.25
v/c Ratio	0.35			0.79	0.78	0.71
Uniform Delay, d1	8.8			12.3	19.0	18.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			1.6	6.2	4.5
Delay (s)	8.9			13.9	25.2	22.9
Level of Service	A			B	C	C
Approach Delay (s)	8.9			13.9	24.1	
Approach LOS	A			B	C	

Intersection Summary

HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
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	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.88		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3530		1770	3535		1770	1635		1770	1804	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3530		1770	3535		1770	1635		1770	1804	
Volume (vph)	10	550	10	120	1280	10	20	20	90	140	150	40
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	567	10	124	1320	10	21	21	93	144	155	41
RTOR Reduction (vph)	0	1	0	0	1	0	0	80	0	0	11	0
Lane Group Flow (vph)	10	576	0	124	1329	0	21	34	0	144	185	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	0.5	23.4		6.9	29.8		0.6	8.9		6.7	15.0	
Effective Green, g (s)	0.5	23.4		6.9	29.8		0.6	8.9		6.7	15.0	
Actuated g/C Ratio	0.01	0.38		0.11	0.48		0.01	0.14		0.11	0.24	
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)	14	1334		197	1702		17	235		192	437	
v/s Ratio Prot	0.01	0.16		c0.07	c0.38		0.01	0.02		c0.08	c0.10	
v/s Ratio Perm												
v/c Ratio	0.71	0.43		0.63	0.78		1.24	0.15		0.75	0.42	
Uniform Delay, d1	30.6	14.3		26.3	13.3		30.6	23.2		26.8	19.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	100.1	0.2		6.2	2.4		301.3	0.3		15.1	0.7	
Delay (s)	130.7	14.5		32.4	15.7		331.9	23.5		41.9	20.5	
Level of Service	F	B		C	B		F	C		D	C	
Approach Delay (s)		16.5			17.2			71.4			29.5	
Approach LOS		B			B			E			C	

Intersection Summary

HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	61.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑↑↑	↑↑↑		↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5073		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	5073		1770	1583
Volume (vph)	90	600	1850	30	70	260
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	93	619	1907	31	72	268
RTOR Reduction (vph)	0	0	1	0	0	115
Lane Group Flow (vph)	93	619	1937	0	72	153
Turn Type	Prot			custom		
Protected Phases	7	4	8			
Permitted Phases					6	6
Actuated Green, G (s)	5.2	39.3	30.1		12.1	12.1
Effective Green, g (s)	5.2	39.3	30.1		12.1	12.1
Actuated g/C Ratio	0.09	0.66	0.51		0.20	0.20
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	155	3364	2571		361	322
v/s Ratio Prot	c0.05	0.12	c0.38			
v/s Ratio Perm					0.04	c0.10
v/c Ratio	0.60	0.18	0.75		0.20	0.47
Uniform Delay, d1	26.1	3.9	11.7		19.6	20.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.1	0.0	1.3		0.3	1.1
Delay (s)	32.2	3.9	13.0		19.9	21.9
Level of Service	C	A	B		B	C
Approach Delay (s)		7.6	13.0		21.5	
Approach LOS		A	B		C	

Intersection Summary

HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.2%	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	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3531		1770	3535		1770	1723		1770	1592	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3531		1770	3535		1770	1723		1770	1592	
Volume (vph)	170	600	10	10	1100	10	10	10	10	20	10	300
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	175	619	10	10	1134	10	10	10	10	21	10	309
RTOR Reduction (vph)	0	1	0	0	1	0	0	9	0	0	237	0
Lane Group Flow (vph)	175	628	0	10	1143	0	10	11	0	21	82	0
Turn Type	Prot		Prot		Prot		Prot		Prot			
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	7.0	34.7		0.5	28.2		0.5	7.3		0.5	7.3	
Effective Green, g (s)	7.0	34.7		0.5	28.2		0.5	7.3		0.5	7.3	
Actuated g/C Ratio	0.12	0.59		0.01	0.48		0.01	0.12		0.01	0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	210	2077		15	1690		15	213		15	197	
v/s Ratio Prot	c0.10	0.18		0.01	c0.32		0.01	0.01		c0.01	c0.05	
v/s Ratio Perm												
v/c Ratio	0.83	0.30		0.67	0.68		0.67	0.05		1.40	0.41	
Uniform Delay, d1	25.4	6.1		29.2	11.9		29.2	22.8		29.2	23.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	23.7	0.1		75.9	1.1		75.9	0.1		379.3	1.4	
Delay (s)	49.1	6.2		105.0	13.0		105.0	22.9		408.6	25.3	
Level of Service	D	A		F	B		F	C		F	C	
Approach Delay (s)		15.5			13.8			50.3			49.0	
Approach LOS		B			B			D			D	

Intersection Summary

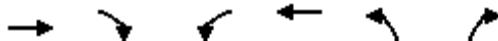
HCM Average Control Delay	20.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.96		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3492		1770	3414		1770	1779		1770	1805	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3492		1770	3414		1770	1779		1770	1805	
Volume (vph)	10	520	50	160	1140	350	20	70	30	330	270	70
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	536	52	165	1175	361	21	72	31	340	278	72
RTOR Reduction (vph)	0	6	0	0	24	0	0	16	0	0	9	0
Lane Group Flow (vph)	10	582	0	165	1512	0	21	87	0	340	341	0
Turn Type	Prot		Prot		Prot		Prot		Prot			
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	0.7	35.0		13.1	47.4		1.9	13.4		21.2	32.7	
Effective Green, g (s)	0.7	35.0		13.1	47.4		1.9	13.4		21.2	32.7	
Actuated g/C Ratio	0.01	0.35		0.13	0.48		0.02	0.14		0.21	0.33	
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)	13	1238		235	1640		34	242		380	598	
v/s Ratio Prot	0.01	0.17		c0.09	c0.44		0.01	0.05		c0.19	c0.19	
v/s Ratio Perm												
v/c Ratio	0.77	0.47		0.70	0.92		0.62	0.36		0.89	0.57	
Uniform Delay, d1	48.9	24.7		40.9	23.9		48.0	38.8		37.7	27.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	128.6	0.3		9.1	9.0		29.0	0.9		22.5	1.3	
Delay (s)	177.6	25.0		50.1	32.9		77.0	39.7		60.2	28.5	
Level of Service	F	C		D	C		E	D		E	C	
Approach Delay (s)		27.5			34.6			46.0			44.1	
Approach LOS		C			C			D			D	

Intersection Summary

HCM Average Control Delay	35.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	98.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3442		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3442		1770	3539	1770	1583
Volume (vph)	710	160	100	1440	180	40
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	732	165	103	1485	186	41
RTOR Reduction (vph)	24	0	0	0	0	34
Lane Group Flow (vph)	873	0	103	1485	186	7
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	22.5		4.6	31.1	8.4	8.4
Effective Green, g (s)	22.5		4.6	31.1	8.4	8.4
Actuated g/C Ratio	0.47		0.10	0.65	0.18	0.18
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1630		171	2317	313	280
v/s Ratio Prot	0.25		0.06	c0.42	c0.11	
v/s Ratio Perm						0.00
v/c Ratio	0.54		0.60	0.64	0.59	0.03
Uniform Delay, d1	8.8		20.6	4.9	18.0	16.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3		5.9	0.6	3.0	0.0
Delay (s)	9.2		26.4	5.5	21.0	16.2
Level of Service	A		C	A	C	B
Approach Delay (s)	9.2			6.9	20.1	
Approach LOS	A			A	C	

Intersection Summary

HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	47.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3496		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3496		1770	3539	1770	1583
Volume (vph)	680	60	330	1160	10	90
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	701	62	340	1196	10	93
RTOR Reduction (vph)	9	0	0	0	0	83
Lane Group Flow (vph)	754	0	340	1196	10	10
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	15.3		13.3	32.6	4.8	4.8
Effective Green, g (s)	15.3		13.3	32.6	4.8	4.8
Actuated g/C Ratio	0.34		0.29	0.72	0.11	0.11
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)	1178		519	2541	187	167
v/s Ratio Prot	c0.22		c0.19	0.34	0.01	
v/s Ratio Perm						c0.01
v/c Ratio	0.64		0.66	0.47	0.05	0.06
Uniform Delay, d1	12.7		14.0	2.7	18.3	18.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2		3.0	0.1	0.1	0.1
Delay (s)	13.9		17.0	2.9	18.4	18.4
Level of Service	B		B	A	B	B
Approach Delay (s)	13.9			6.0	18.4	
Approach LOS	B			A	B	

Intersection Summary

HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	45.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.3%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.99		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1764		1770	1850		1770	1812		1770	1796	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1764		1770	1850		1770	1812		1770	1796	
Volume (vph)	30	110	60	200	200	10	50	270	60	20	380	120
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	31	113	62	206	206	10	52	278	62	21	392	124
RTOR Reduction (vph)	0	32	0	0	3	0	0	11	0	0	16	0
Lane Group Flow (vph)	31	143	0	206	213	0	52	329	0	21	500	0
Turn Type	Prot		Prot		Prot		Prot		Prot			
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	1.6	8.0		10.4	16.8		1.9	20.5		0.6	19.2	
Effective Green, g (s)	1.6	8.0		10.4	16.8		1.9	20.5		0.6	19.2	
Actuated g/C Ratio	0.03	0.14		0.19	0.30		0.03	0.37		0.01	0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	51	254		332	560		61	669		19	621	
v/s Ratio Prot	0.02	c0.08		c0.12	0.12		c0.03	0.18		0.01	c0.28	
v/s Ratio Perm												
v/c Ratio	0.61	0.56		0.62	0.38		0.85	0.49		1.11	0.80	
Uniform Delay, d1	26.6	22.1		20.7	15.3		26.7	13.5		27.4	16.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.8	2.9		3.6	0.4		65.3	0.6		242.0	7.5	
Delay (s)	45.4	25.0		24.3	15.7		92.0	14.1		269.5	23.9	
Level of Service	D	C		C	B		F	B		F	C	
Approach Delay (s)		28.1			19.9			24.4			33.5	
Approach LOS		C			B			C			C	

Intersection Summary

HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3444		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3444		1770	3539	1770	1583
Volume (vph)	1510	330	300	1360	80	240
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1557	340	309	1402	82	247
RTOR Reduction (vph)	11	0	0	0	0	233
Lane Group Flow (vph)	1886	0	309	1402	82	14
Turn Type			Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases						3
Actuated Green, G (s)	84.7		27.1	116.8	8.4	8.4
Effective Green, g (s)	85.7		27.9	117.6	7.9	7.9
Actuated g/C Ratio	0.61		0.20	0.84	0.06	0.06
Clearance Time (s)	5.0		4.8	4.8	3.5	3.5
Vehicle Extension (s)	6.8		6.3	6.3	2.0	2.0
Lane Grp Cap (vph)	2117		354	2986	100	90
v/s Ratio Prot	c0.55		c0.17	0.40	c0.05	
v/s Ratio Perm						0.01
v/c Ratio	0.89		0.87	0.47	0.82	0.16
Uniform Delay, d1	22.9		54.0	2.8	65.0	62.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9		22.9	0.4	37.0	0.3
Delay (s)	28.8		76.9	3.2	102.1	62.9
Level of Service	C		E	A	F	E
Approach Delay (s)	28.8			16.5	72.6	
Approach LOS	C			B	E	

Intersection Summary

HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	139.4	Sum of lost time (s)	17.9
Intersection Capacity Utilization	83.3%	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	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	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	5085	1583	3433	5085	1583	3433	5085	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	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	580	220	930	430	440	350	910	1290	90	120	1890	520
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	598	227	959	443	454	361	938	1330	93	124	1948	536
RTOR Reduction (vph)	0	0	2	0	0	11	0	0	46	0	0	190
Lane Group Flow (vph)	598	227	957	443	454	350	938	1330	47	124	1948	346
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8	1	5	2		1		6
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.7	23.8	51.4	17.7	22.7	30.4	27.6	66.6	66.6	7.7	46.3	46.3
Effective Green, g (s)	20.2	25.4	54.5	19.2	24.4	33.6	29.1	68.1	68.1	9.2	48.2	48.2
Actuated g/C Ratio	0.15	0.18	0.40	0.14	0.18	0.24	0.21	0.49	0.49	0.07	0.35	0.35
Clearance Time (s)	5.5	5.6	5.5	5.5	5.7	5.5	5.5	5.5	5.5	5.5	5.9	5.9
Vehicle Extension (s)	1.0	5.0	1.0	1.0	5.9	1.0	1.0	5.4	5.4	1.0	5.4	5.4
Lane Grp Cap (vph)	503	937	672	478	900	432	724	2511	782	229	1777	553
v/s Ratio Prot	c0.17	0.04	c0.30	0.13	0.09	0.05	0.27	0.26		0.04	c0.38	
v/s Ratio Perm			0.30			0.17			0.03			0.22
v/c Ratio	1.19	0.24	1.42	0.93	0.50	0.81	1.30	0.53	0.06	0.54	1.10	0.63
Uniform Delay, d1	58.9	48.0	41.7	58.7	51.3	49.1	54.4	23.9	18.2	62.3	44.9	37.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	103.5	0.3	199.6	23.7	1.2	10.1	143.1	0.4	0.1	1.4	52.8	3.4
Delay (s)	162.3	48.3	241.3	82.4	52.5	59.3	197.5	24.4	18.3	63.7	97.6	40.7
Level of Service	F	D	F	F	D	E	F	C	B	E	F	D
Approach Delay (s)		190.3			65.0			92.9			84.3	
Approach LOS		F			E			F			F	

Intersection Summary

HCM Average Control Delay	107.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	137.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	116.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↘↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	1.00	0.95
Frt	0.98			1.00	0.90	0.85
Flt Protected	1.00			1.00	0.98	1.00
Satd. Flow (prot)	5002			5085	1646	1504
Flt Permitted	1.00			1.00	0.98	1.00
Satd. Flow (perm)	5002			5085	1646	1504
Volume (vph)	1140	140	0	1050	290	1390
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1175	144	0	1082	299	1433
RTOR Reduction (vph)	19	0	0	0	1	1
Lane Group Flow (vph)	1300	0	0	1082	935	795
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	21.7			21.7	46.1	46.1
Effective Green, g (s)	21.7			21.7	46.1	46.1
Actuated g/C Ratio	0.29			0.29	0.61	0.61
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)	1432			1456	1001	915
v/s Ratio Prot	c0.26			0.21	c0.57	
v/s Ratio Perm						0.53
v/c Ratio	0.91			0.74	0.93	0.87
Uniform Delay, d1	26.1			24.5	13.5	12.3
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	8.6			2.1	15.0	8.8
Delay (s)	34.7			26.6	28.5	21.1
Level of Service	C			C	C	C
Approach Delay (s)	34.7			26.6	25.1	
Approach LOS	C			C	C	

Intersection Summary

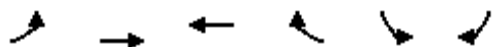
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	75.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.92		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3532		1770	3455		1770	1718		1770	1808	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3532		1770	3455		1770	1718		1770	1808	
Volume (vph)	60	1410	20	130	690	130	10	130	140	10	40	10
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	62	1454	21	134	711	134	10	134	144	10	41	10
RTOR Reduction (vph)	0	1	0	0	14	0	0	47	0	0	8	0
Lane Group Flow (vph)	62	1474	0	134	831	0	10	231	0	10	43	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	4.3	37.5		8.1	41.3		0.6	14.0		0.6	14.0	
Effective Green, g (s)	4.3	37.5		8.1	41.3		0.6	14.0		0.6	14.0	
Actuated g/C Ratio	0.06	0.49		0.11	0.54		0.01	0.18		0.01	0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	100	1738		188	1873		14	316		14	332	
v/s Ratio Prot	0.04	c0.42		c0.08	c0.24		c0.01	c0.13		0.01	0.02	
v/s Ratio Perm												
v/c Ratio	0.62	0.85		0.71	0.44		0.71	0.73		0.71	0.13	
Uniform Delay, d1	35.2	16.9		32.9	10.5		37.7	29.3		37.7	26.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.9	4.1		12.0	0.2		100.1	8.5		100.1	0.2	
Delay (s)	46.1	20.9		45.0	10.7		137.8	37.8		137.8	26.2	
Level of Service	D	C		D	B		F	D		F	C	
Approach Delay (s)		21.9			15.4			41.3			44.5	
Approach LOS		C			B			D			D	

Intersection Summary

HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	76.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5009		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	5085	5009		1770	1583
Volume (vph)	250	1990	810	90	40	150
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	258	2052	835	93	41	155
RTOR Reduction (vph)	0	0	13	0	0	131
Lane Group Flow (vph)	258	2052	915	0	41	24
Turn Type	Prot			custom		
Protected Phases	7	4	8			
Permitted Phases					6	6
Actuated Green, G (s)	9.4	31.7	18.3		7.4	7.4
Effective Green, g (s)	9.4	31.7	18.3		7.4	7.4
Actuated g/C Ratio	0.20	0.67	0.39		0.16	0.16
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)	353	3422	1946		278	249
v/s Ratio Prot	c0.15	c0.40	0.18			
v/s Ratio Perm					c0.02	0.02
v/c Ratio	0.73	0.60	0.47		0.15	0.10
Uniform Delay, d1	17.7	4.2	10.8		17.1	17.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	7.6	0.3	0.2		0.2	0.2
Delay (s)	25.2	4.5	11.0		17.4	17.2
Level of Service	C	A	B		B	B
Approach Delay (s)		6.8	11.0		17.2	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay		8.5	HCM Level of Service A
HCM Volume to Capacity ratio		0.52	
Actuated Cycle Length (s)		47.1	Sum of lost time (s) 8.0
Intersection Capacity Utilization		48.4%	ICU Level of Service A
Analysis Period (min)		15	
c Critical Lane Group			



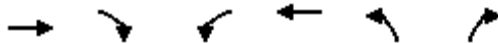
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.93		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3535		1770	3532		1770	1723		1770	1594	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3535		1770	3532		1770	1723		1770	1594	
Volume (vph)	330	1220	10	10	690	10	10	10	10	10	10	250
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	340	1258	10	10	711	10	10	10	10	10	10	258
RTOR Reduction (vph)	0	0	0	0	1	0	0	9	0	0	228	0
Lane Group Flow (vph)	340	1268	0	10	720	0	10	11	0	10	40	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	15.1	34.4		0.5	19.8		0.5	6.8		0.5	6.8	
Effective Green, g (s)	15.1	34.4		0.5	19.8		0.5	6.8		0.5	6.8	
Actuated g/C Ratio	0.26	0.59		0.01	0.34		0.01	0.12		0.01	0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	459	2089		15	1202		15	201		15	186	
v/s Ratio Prot	c0.19	c0.36		0.01	0.20		c0.01	0.01		0.01	c0.03	
v/s Ratio Perm												
v/c Ratio	0.74	0.61		0.67	0.60		0.67	0.06		0.67	0.22	
Uniform Delay, d1	19.8	7.6		28.8	15.9		28.8	22.8		28.8	23.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.3	0.5		75.9	0.8		75.9	0.1		75.9	0.6	
Delay (s)	26.1	8.1		104.6	16.7		104.6	23.0		104.6	23.9	
Level of Service	C	A		F	B		F	C		F	C	
Approach Delay (s)		11.9			17.9			50.2			26.8	
Approach LOS		B			B			D			C	
Intersection Summary												
HCM Average Control Delay			15.6			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			58.2			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			63.7%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.94		1.00	0.93		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3530		1770	3341		1770	1736		1770	1806	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3530		1770	3341		1770	1736		1770	1806	
Volume (vph)	160	1150	20	30	620	370	50	230	190	380	80	20
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	165	1186	21	31	639	381	52	237	196	392	82	21
RTOR Reduction (vph)	0	1	0	0	79	0	0	27	0	0	8	0
Lane Group Flow (vph)	165	1206	0	31	941	0	52	406	0	392	95	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	11.0	41.2		2.4	32.6		6.2	27.5		25.0	46.3	
Effective Green, g (s)	11.0	41.2		2.4	32.6		6.2	27.5		25.0	46.3	
Actuated g/C Ratio	0.10	0.37		0.02	0.29		0.06	0.25		0.22	0.41	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	174	1297		38	972		98	426		395	746	
v/s Ratio Prot	c0.09	c0.34		0.02	0.28		0.03	c0.23		c0.22	0.05	
v/s Ratio Perm												
v/c Ratio	0.95	0.93		0.82	0.97		0.53	0.95		0.99	0.13	
Uniform Delay, d1	50.3	34.1		54.6	39.2		51.5	41.7		43.5	20.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	52.6	11.7		76.1	21.3		5.4	31.5		43.1	0.1	
Delay (s)	102.9	45.7		130.7	60.5		57.0	73.2		86.5	20.5	
Level of Service	F	D		F	E		E	E		F	C	
Approach Delay (s)		52.6			62.6			71.5			72.8	
Approach LOS		D			E			E			E	

Intersection Summary

HCM Average Control Delay	61.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	112.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3466		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3466		1770	3539	1770	1583
Volume (vph)	1440	230	70	810	180	100
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1485	237	72	835	186	103
RTOR Reduction (vph)	14	0	0	0	0	87
Lane Group Flow (vph)	1708	0	72	835	186	16
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	36.5		2.8	43.3	9.7	9.7
Effective Green, g (s)	36.5		2.8	43.3	9.7	9.7
Actuated g/C Ratio	0.60		0.05	0.71	0.16	0.16
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)	2074		81	2512	281	252
v/s Ratio Prot	c0.49		c0.04	0.24	c0.11	
v/s Ratio Perm						0.01
v/c Ratio	0.82		0.89	0.33	0.66	0.06
Uniform Delay, d1	9.7		28.9	3.4	24.1	21.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8		63.4	0.1	5.8	0.1
Delay (s)	12.5		92.3	3.4	29.9	21.9
Level of Service	B		F	A	C	C
Approach Delay (s)	12.5			10.5	27.0	
Approach LOS	B			B	C	

Intersection Summary

HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3523		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3523		1770	3539	1770	1583
Volume (vph)	1280	40	110	830	60	290
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1320	41	113	856	62	299
RTOR Reduction (vph)	3	0	0	0	0	150
Lane Group Flow (vph)	1358	0	113	856	62	149
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	25.6		3.5	33.1	8.1	8.1
Effective Green, g (s)	25.6		3.5	33.1	8.1	8.1
Actuated g/C Ratio	0.52		0.07	0.67	0.16	0.16
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)	1833		126	2381	291	261
v/s Ratio Prot	c0.39		c0.06	0.24	0.04	
v/s Ratio Perm						c0.09
v/c Ratio	0.74		0.90	0.36	0.21	0.57
Uniform Delay, d1	9.2		22.7	3.5	17.8	19.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7		49.5	0.1	0.4	3.0
Delay (s)	10.9		72.2	3.6	18.2	22.0
Level of Service	B		E	A	B	C
Approach Delay (s)	10.9			11.6	21.3	
Approach LOS	B			B	C	

Intersection Summary

HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	49.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.94		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1785		1770	1827		1770	1758		1770	1826	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1785		1770	1827		1770	1758		1770	1826	
Volume (vph)	150	130	50	120	140	20	90	350	210	10	330	50
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	155	134	52	124	144	21	93	361	216	10	340	52
RTOR Reduction (vph)	0	22	0	0	9	0	0	27	0	0	7	0
Lane Group Flow (vph)	155	164	0	124	156	0	93	550	0	10	385	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.5	8.5		4.8	7.8		4.1	24.2		0.6	20.7	
Effective Green, g (s)	5.5	8.5		4.8	7.8		4.1	24.2		0.6	20.7	
Actuated g/C Ratio	0.10	0.16		0.09	0.14		0.08	0.45		0.01	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)	180	280		157	263		134	786		20	699	
v/s Ratio Prot	c0.09	c0.09		0.07	0.09		c0.05	c0.31		0.01	0.21	
v/s Ratio Perm												
v/c Ratio	0.86	0.59		0.79	0.59		0.69	0.70		0.50	0.55	
Uniform Delay, d1	23.9	21.2		24.2	21.7		24.4	12.0		26.6	13.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.9	3.1		22.7	3.6		14.4	2.7		18.3	0.9	
Delay (s)	55.8	24.3		46.8	25.3		38.8	14.8		44.9	14.0	
Level of Service	E	C		D	C		D	B		D	B	
Approach Delay (s)		38.6			34.5			18.1			14.8	
Approach LOS		D			C			B			B	

Intersection Summary

HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3487		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3487		1770	3539	1770	1583
Volume (vph)	1560	170	290	1590	410	300
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1608	175	299	1639	423	309
RTOR Reduction (vph)	5	0	0	0	0	189
Lane Group Flow (vph)	1778	0	299	1639	423	120
Turn Type			Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases						3
Actuated Green, G (s)	66.7		22.2	93.9	31.6	31.6
Effective Green, g (s)	67.7		23.0	94.7	31.1	31.1
Actuated g/C Ratio	0.48		0.16	0.68	0.22	0.22
Clearance Time (s)	5.0		4.8	4.8	3.5	3.5
Vehicle Extension (s)	6.8		6.3	6.3	2.0	2.0
Lane Grp Cap (vph)	1690		291	2399	394	352
v/s Ratio Prot	c0.51		c0.17	0.46	c0.24	
v/s Ratio Perm						0.08
v/c Ratio	1.05		1.03	0.68	1.07	0.34
Uniform Delay, d1	36.0		58.3	13.5	54.3	45.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	37.0		60.0	1.3	66.4	0.2
Delay (s)	73.0		118.4	14.8	120.7	45.9
Level of Service	E		F	B	F	D
Approach Delay (s)	73.0			30.8	89.1	
Approach LOS	E			C	F	

Intersection Summary

HCM Average Control Delay	57.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	139.7	Sum of lost time (s)	17.9
Intersection Capacity Utilization	97.3%	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	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	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	5085	1583	3433	5085	1583	3433	5085	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	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	530	500	960	270	360	90	1170	1420	280	140	1330	440
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	546	515	990	278	371	93	1206	1464	289	144	1371	454
RTOR Reduction (vph)	0	0	10	0	0	8	0	0	128	0	0	205
Lane Group Flow (vph)	546	515	980	278	371	85	1206	1464	161	144	1371	249
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8	1	5	2		1		6
Permitted Phases			4			8			2			6
Actuated Green, G (s)	17.5	24.9	63.5	13.9	21.2	29.6	38.6	67.2	67.2	8.4	36.6	36.6
Effective Green, g (s)	19.0	26.5	66.6	15.4	22.9	32.8	40.1	68.7	68.7	9.9	38.5	38.5
Actuated g/C Ratio	0.14	0.19	0.49	0.11	0.17	0.24	0.29	0.50	0.50	0.07	0.28	0.28
Clearance Time (s)	5.5	5.6	5.5	5.5	5.7	5.5	5.5	5.5	5.5	5.5	5.9	5.9
Vehicle Extension (s)	1.0	5.0	1.0	1.0	5.9	1.0	1.0	5.4	5.4	1.0	5.4	5.4
Lane Grp Cap (vph)	478	987	819	387	853	427	1009	2559	797	249	1434	446
v/s Ratio Prot	c0.16	0.10	c0.35	0.08	0.07	0.01	0.35	0.29		0.04	c0.27	
v/s Ratio Perm			0.27			0.04			0.10			0.16
v/c Ratio	1.14	0.52	1.20	0.72	0.43	0.20	1.20	0.57	0.20	0.58	0.96	0.56
Uniform Delay, d1	58.8	49.3	35.0	58.5	51.0	41.4	48.2	23.6	18.7	61.3	48.2	41.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	86.4	1.0	100.4	5.2	1.0	0.1	97.7	0.5	0.3	2.0	14.9	2.9
Delay (s)	145.2	50.3	135.4	63.7	52.0	41.5	145.9	24.2	19.0	63.3	63.1	44.6
Level of Service	F	D	F	E	D	D	F	C	B	E	E	D
Approach Delay (s)		116.6			55.0			73.3			58.8	
Approach LOS		F			E			E			E	

Intersection Summary

HCM Average Control Delay	79.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	136.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3490		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3490		1770	3539	1770	1583
Volume (vph)	680	70	320	1170	10	80
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	701	72	330	1206	10	82
RTOR Reduction (vph)	12	0	0	0	0	74
Lane Group Flow (vph)	761	0	330	1206	10	8
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	14.6		12.5	31.1	4.4	4.4
Effective Green, g (s)	14.6		12.5	31.1	4.4	4.4
Actuated g/C Ratio	0.34		0.29	0.71	0.10	0.10
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)	1171		509	2530	179	160
v/s Ratio Prot	c0.22		c0.19	0.34	c0.01	
v/s Ratio Perm						0.01
v/c Ratio	0.65		0.65	0.48	0.06	0.05
Uniform Delay, d1	12.3		13.6	2.7	17.7	17.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3		2.8	0.1	0.1	0.1
Delay (s)	13.5		16.4	2.8	17.8	17.8
Level of Service	B		B	A	B	B
Approach Delay (s)	13.5			5.7	17.8	
Approach LOS	B			A	B	
Intersection Summary						
HCM Average Control Delay			8.7		HCM Level of Service	A
HCM Volume to Capacity ratio			0.57			
Actuated Cycle Length (s)			43.5		Sum of lost time (s)	12.0
Intersection Capacity Utilization			52.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3523		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3523		1770	3539	1770	1583
Volume (vph)	1290	40	110	820	70	250
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1330	41	113	845	72	258
RTOR Reduction (vph)	3	0	0	0	0	162
Lane Group Flow (vph)	1368	0	113	845	72	96
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	24.2		3.5	31.7	6.8	6.8
Effective Green, g (s)	24.2		3.5	31.7	6.8	6.8
Actuated g/C Ratio	0.52		0.08	0.68	0.15	0.15
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)	1833		133	2413	259	231
v/s Ratio Prot	c0.39		c0.06	0.24	0.04	
v/s Ratio Perm						c0.06
v/c Ratio	0.75		0.85	0.35	0.28	0.41
Uniform Delay, d1	8.7		21.2	3.1	17.7	18.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7		36.8	0.1	0.6	1.2
Delay (s)	10.4		58.1	3.2	18.3	19.3
Level of Service	B		E	A	B	B
Approach Delay (s)	10.4			9.7	19.0	
Approach LOS	B			A	B	
Intersection Summary						
HCM Average Control Delay			11.2		HCM Level of Service	B
HCM Volume to Capacity ratio			0.69			
Actuated Cycle Length (s)			46.5		Sum of lost time (s)	12.0
Intersection Capacity Utilization			59.1%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3502		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3502		1770	3539	1770	1583
Volume (vph)	670	50	340	1200	10	90
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	691	52	351	1237	10	93
RTOR Reduction (vph)	9	0	0	0	0	84
Lane Group Flow (vph)	734	0	351	1237	10	9
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	14.2		12.9	31.1	4.4	4.4
Effective Green, g (s)	14.2		12.9	31.1	4.4	4.4
Actuated g/C Ratio	0.33		0.30	0.71	0.10	0.10
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)	1143		525	2530	179	160
v/s Ratio Prot	c0.21		c0.20	0.35	0.01	
v/s Ratio Perm						c0.01
v/c Ratio	0.64		0.67	0.49	0.06	0.06
Uniform Delay, d1	12.5		13.4	2.7	17.7	17.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2		3.2	0.1	0.1	0.2
Delay (s)	13.7		16.6	2.9	17.8	17.8
Level of Service	B		B	A	B	B
Approach Delay (s)	13.7			5.9	17.8	
Approach LOS	B			A	B	
Intersection Summary						
HCM Average Control Delay			8.8		HCM Level of Service	A
HCM Volume to Capacity ratio			0.57			
Actuated Cycle Length (s)			43.5		Sum of lost time (s)	12.0
Intersection Capacity Utilization			52.3%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3527		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3527		1770	3539	1770	1583
Volume (vph)	1320	30	110	820	50	270
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1361	31	113	845	52	278
RTOR Reduction (vph)	2	0	0	0	0	160
Lane Group Flow (vph)	1390	0	113	845	52	118
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	24.7		3.5	32.2	7.1	7.1
Effective Green, g (s)	24.7		3.5	32.2	7.1	7.1
Actuated g/C Ratio	0.52		0.07	0.68	0.15	0.15
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)	1842		131	2409	266	238
v/s Ratio Prot	c0.39		c0.06	0.24	0.03	
v/s Ratio Perm						c0.07
v/c Ratio	0.75		0.86	0.35	0.20	0.50
Uniform Delay, d1	8.9		21.7	3.2	17.6	18.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8		40.5	0.1	0.4	1.6
Delay (s)	10.7		62.1	3.3	18.0	20.1
Level of Service	B		E	A	B	C
Approach Delay (s)	10.7			10.2	19.8	
Approach LOS	B			B	B	

Intersection Summary


























HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3532		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3532		1770	3539	1770	1583
Volume (vph)	690	10	240	1190	10	70
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	711	10	247	1227	10	72
RTOR Reduction (vph)	1	0	0	0	0	59
Lane Group Flow (vph)	720	0	247	1227	10	13
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	14.7		8.6	27.3	7.8	7.8
Effective Green, g (s)	14.7		8.6	27.3	7.8	7.8
Actuated g/C Ratio	0.34		0.20	0.63	0.18	0.18
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1205		353	2242	320	286
v/s Ratio Prot	0.20		c0.14	c0.35	0.01	
v/s Ratio Perm						c0.01
v/c Ratio	0.60		0.70	0.55	0.03	0.05
Uniform Delay, d1	11.8		16.0	4.4	14.5	14.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		6.0	0.3	0.0	0.1
Delay (s)	12.6		22.0	4.7	14.6	14.6
Level of Service	B		C	A	B	B
Approach Delay (s)	12.6			7.6	14.6	
Approach LOS	B			A	B	

Intersection Summary

HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	43.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.0%	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		 			 			 			 		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	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	1.00	0.85	1.00	0.95		1.00	0.93		
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00		
Satd. Flow (prot)	1770	3495		1770	3539	1583	1770	1776		1770	1728		
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00		
Satd. Flow (perm)	1770	3495		1770	3539	1583	1770	1776		1770	1728		
Volume (vph)	190	660	60	160	860	290	40	220	100	520	480	450	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Adj. Flow (vph)	196	680	62	165	887	299	41	227	103	536	495	464	
RTOR Reduction (vph)	0	5	0	0	0	195	0	12	0	0	26	0	
Lane Group Flow (vph)	196	737	0	165	887	104	41	318	0	536	933	0	
Turn Type	Prot			Prot		Perm	Prot			Prot			
Protected Phases	7	4		3	8		5	2		1	6		
Permitted Phases	8												
Actuated Green, G (s)	14.0	31.0		13.0	30.0	30.0	3.2	29.3		39.9	66.0		
Effective Green, g (s)	14.0	31.0		13.0	30.0	30.0	3.2	29.3		39.9	66.0		
Actuated g/C Ratio	0.11	0.24		0.10	0.23	0.23	0.02	0.23		0.31	0.51		
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)	192	839		178	822	368	44	403		547	883		
v/s Ratio Prot	c0.11	0.21		0.09	c0.25		0.02	0.18		c0.30	c0.54		
v/s Ratio Perm	0.07												
v/c Ratio	1.02	0.88		0.93	1.08	0.28	0.93	0.79		0.98	1.06		
Uniform Delay, d1	57.6	47.3		57.6	49.6	40.8	62.9	47.0		44.3	31.6		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00		
Incremental Delay, d2	70.5	10.3		46.4	54.9	0.4	109.0	9.8		32.9	46.4		
Delay (s)	128.1	57.6		104.0	104.5	41.2	171.9	56.9		77.2	78.0		
Level of Service	F	E		F	F	D	F	E		E	E		
Approach Delay (s)		72.3			90.5			69.6			77.7		
Approach LOS		E			F			E			E		
Intersection Summary													
HCM Average Control Delay			79.9	HCM Level of Service				E					
HCM Volume to Capacity ratio	1.07												
Actuated Cycle Length (s)				129.2	Sum of lost time (s)				16.0				
Intersection Capacity Utilization			103.7%	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		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	230	10	40	30	10	10	10	70	10	10	390	350
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	237	10	41	31	10	10	10	72	10	10	402	361
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	289	52	93	412	361							
Volume Left (vph)	237	31	10	10	0							
Volume Right (vph)	41	10	10	0	361							
Hadj (s)	0.11	0.03	-0.01	0.05	-0.67							
Departure Headway (s)	5.9	6.4	6.0	5.8	5.0							
Degree Utilization, x	0.47	0.09	0.15	0.66	0.51							
Capacity (veh/h)	582	509	557	611	700							
Control Delay (s)	14.1	10.0	10.1	18.0	11.9							
Approach Delay (s)	14.1	10.0	10.1	15.1								
Approach LOS	B	B	B	C								
Intersection Summary												
Delay			14.3									
HCM Level of Service			B									
Intersection Capacity Utilization			50.5%	ICU Level of Service	A							
Analysis Period (min)			15									



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3535		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3535		1770	3539	1770	1583
Volume (vph)	1210	10	80	830	10	260
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1247	10	82	856	10	268
RTOR Reduction (vph)	1	0	0	0	0	155
Lane Group Flow (vph)	1256	0	82	856	10	113
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	21.1		2.4	27.5	9.0	9.0
Effective Green, g (s)	21.1		2.4	27.5	9.0	9.0
Actuated g/C Ratio	0.47		0.05	0.62	0.20	0.20
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1676		95	2187	358	320
v/s Ratio Prot	c0.36		c0.05	0.24	0.01	
v/s Ratio Perm						c0.07
v/c Ratio	0.75		0.86	0.39	0.03	0.35
Uniform Delay, d1	9.5		20.9	4.3	14.2	15.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9		50.8	0.1	0.0	0.7
Delay (s)	11.4		71.7	4.4	14.3	15.9
Level of Service	B		E	A	B	B
Approach Delay (s)	11.4			10.3	15.9	
Approach LOS	B			B	B	

Intersection Summary

HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	44.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.5%	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	↖	↕		↖	↕	↖	↖	↖		↖	↖	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	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	1.00	0.85	1.00	0.95		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3513		1770	3539	1583	1770	1771		1770	1743	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3513		1770	3539	1583	1770	1771		1770	1743	
Volume (vph)	420	980	50	120	720	540	60	390	190	380	320	240
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	433	1010	52	124	742	557	62	402	196	392	330	247
RTOR Reduction (vph)	0	3	0	0	0	306	0	13	0	0	20	0
Lane Group Flow (vph)	433	1059	0	124	742	251	62	585	0	392	557	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8											
Actuated Green, G (s)	27.0	41.0		10.0	24.0	24.0	5.6	39.8		24.0	58.2	
Effective Green, g (s)	27.0	41.0		10.0	24.0	24.0	5.6	39.8		24.0	58.2	
Actuated g/C Ratio	0.21	0.31		0.08	0.18	0.18	0.04	0.30		0.18	0.44	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	365	1101		135	649	290	76	539		325	776	
v/s Ratio Prot	c0.24	0.30		0.07	c0.21		0.04	c0.33		c0.22	0.32	
v/s Ratio Perm	0.16											
v/c Ratio	1.19	0.96		0.92	1.14	0.86	0.82	1.08		1.21	0.72	
Uniform Delay, d1	51.9	44.1		60.0	53.4	51.8	62.1	45.5		53.4	29.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	108.2	18.6		52.8	81.9	22.5	46.7	63.8		118.2	3.2	
Delay (s)	160.1	62.7		112.8	135.3	74.3	108.8	109.3		171.6	32.8	
Level of Service	F	E		F	F	E	F	F		F	C	
Approach Delay (s)	90.9			109.5				109.2			88.9	
Approach LOS	F			F				F			F	

Intersection Summary

HCM Average Control Delay	99.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	109.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕ ↗	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	320	10	10	10	10	10	40	350	30	10	160	300
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	330	10	10	10	10	10	41	361	31	10	165	309
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	351	31	433	175	309							
Volume Left (vph)	330	10	41	10	0							
Volume Right (vph)	10	10	31	0	309							
Hadj (s)	0.20	-0.10	0.01	0.06	-0.67							
Departure Headway (s)	6.6	7.4	6.1	6.7	5.9							
Degree Utilization, x	0.64	0.06	0.74	0.33	0.51							
Capacity (veh/h)	513	404	569	516	581							
Control Delay (s)	20.6	10.9	24.4	11.7	13.8							
Approach Delay (s)	20.6	10.9	24.4	13.0								
Approach LOS	C	B	C	B								
Intersection Summary												
Delay			18.8									
HCM Level of Service			C									
Intersection Capacity Utilization			67.0%	ICU Level of Service	C							
Analysis Period (min)			15									

HCM 2000
Basic Freeway Segments
Capacity Analysis

Jurisdiction Sacramento County Agency or Company Caltrans
 Analysis Year C+ Pref Alt with Mitigation Date 10/4/2010
 Analyst F&P Project Description Elverta Specific Plan

General Information			Flow Rate Calculation													Speed Calculation		Results		
Freeway/ Direction	From/To	Analysis Time Period	Volume (vph)	PHF	Lanes	HOV Lane? HOV Lane?	Volume	Terrain	Truck/ Bus %	RV %	E _T	E _R	f _{HV}	f _p	Flow Rate v _p (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	Level of Service	
1	SR-99 SB	Sankey Road to Riego Road	AM	4,630	0.97	3	No		Level	7%	0%	1.5	1.2	0.966	1.00	1,647	65.0	61.9	26.6	D
2	SR 99 SB	Riego Road to Elverta Road	AM	5,010	0.97	3	No		Level	7%	0%	1.5	1.2	0.966	1.00	1,782	65.0	61.5	29.0	D
3	SR 99 SB	Elverta Road to Elkhorn Blvd	AM	4,550	0.97	3	No		Level	7%	0%	1.5	1.2	0.966	1.00	1,618	65.0	62.0	26.1	D
4	SR 99 SB	Elkhorn Blvd to I-5	AM	5,460	0.97	4	Yes	874	Level	7%	0%	1.5	1.2	0.966	1.00	1,631	65.0	62.0	26.3	D
5	SR 99 NB	I-5 to Elkhorn Blvd	AM	2,930	0.97	4	Yes	791	Level	23%	0%	1.5	1.2	0.897	1.00	820	65.0	62.0	13.2	B
6	SR 99 NB	Elkhorn Blvd to Elverta Road	AM	2,530	0.97	3	No		Level	23%	0%	1.5	1.2	0.897	1.00	969	65.0	62.0	15.6	B
7	SR 99 NB	Elverta Road to Riego Road	AM	2,320	0.97	3	No		Level	23%	0%	1.5	1.2	0.897	1.00	889	65.0	62.0	14.3	B
8	SR 99 NB	Riego Road to Sankey Road	AM	1,720	0.97	3	No		Level	23%	0%	1.5	1.2	0.897	1.00	659	65.0	62.0	10.6	A
1	SR-99 SB	Sankey Road to Riego Road	PM	2,410	0.97	3	No		Level	5%	0%	1.5	1.2	0.976	1.00	849	65.0	62.0	13.7	B
2	SR 99 SB	Riego Road to Elverta Road	PM	3,170	0.97	3	No		Level	5%	0%	1.5	1.2	0.976	1.00	1,117	65.0	62.0	18.0	C
3	SR 99 SB	Elverta Road to Elkhorn Blvd	PM	3,360	0.97	3	No		Level	5%	0%	1.5	1.2	0.976	1.00	1,184	65.0	62.0	19.1	C
4	SR 99 SB	Elkhorn Blvd to I-5	PM	3,970	0.97	4	Yes	635	Level	5%	0%	1.5	1.2	0.976	1.00	1,175	65.0	62.0	18.9	C
5	SR 99 NB	I-5 to Elkhorn Blvd	PM	6,100	0.97	4	Yes	1647	Level	13%	0%	1.5	1.2	0.939	1.00	1,630	65.0	62.0	26.3	D
6	SR 99 NB	Elkhorn Blvd to Elverta Road	PM	4,980	0.97	3	No		Level	13%	0%	1.5	1.2	0.939	1.00	1,823	65.0	61.3	29.8	D
7	SR 99 NB	Elverta Road to Riego Road	PM	5,160	0.97	3	No		Level	13%	0%	1.5	1.2	0.939	1.00	1,888	65.0	60.7	31.1	D
8	SR 99 NB	Riego Road to Sankey Road	PM	4,320	0.97	3	No		Level	13%	0%	1.5	1.2	0.939	1.00	1,581	65.0	62.0	25.5	C

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

Jurisdiction Sacramento County Agency or Company Caltrans
 Analysis Year C+ Pref Alt with Mitigation Date 40455.00
 Analyst F&P Project Description Elverta Specific Plan

General Information

Freeway Data

Freeway Volume Adjustment

Effective

General Information				Freeway Data				Freeway Volume Adjustment							Effective	
Freeway/ Direction	On-ramp	Analysis Time Period	Lanes	S _{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	E _T	E _R	f _{HV}	f _P	Flow Rate V _p (pcph)	Flow Rate V _p (pcph)	
M-1	SR-99 SB Elverta Road Loop On	AM	3	65.0	4,150	0.97	Level	7%	0%	1.5	1.20	0.966	1.00	4,428	4,428	
M-2	SR 99 SB Elverta Road Slip On	AM	3	65.0	4,520	0.97	Level	7%	0%	1.5	1.20	0.966	1.00	4,823	4,823	
M-3	SR 99 NB Elverta Road Loop On	AM	3	65.0	1,930	0.97	Level	23.0%	0.0%	1.5	1.20	0.90	1.00	2,219	2,219	
M-4	SR 99 NB Elverta Road Slip On	AM	3	65.0	2,080	0.97	Level	23.0%	0.0%	1.5	1.20	0.90	1.00	2,391	2,391	
M-1	SR-99 SB Elverta Road Loop On	PM	3	65.0	2,890	0.97	Level	5.0%	0.0%	1.5	1.20	0.98	1.00	3,054	3,054	
M-2	SR 99 SB Elverta Road Slip On	PM	3	65.0	3,230	0.97	Level	5.0%	0.0%	1.5	1.20	0.98	1.00	3,413	3,413	
M-3	SR 99 NB Elverta Road Loop On	PM	3	65.0	4,440	0.97	Level	13.0%	0.0%	1.5	1.20	0.94	1.00	4,875	4,875	
M-4	SR 99 NB Elverta Road Slip On	PM	3	65.0	5,110	0.97	Level	13.0%	0.0%	1.5	1.20	0.94	1.00	5,610	5,610	

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

General Information			On-Ramp Data						On-Ramp Volume Adjustment										
Freeway/ Direction	On-ramp		Type	Lanes	S _{FR} (mph)	V _R (vph)	Accel Lane (ft)			PHF	Terrain	Truck/ Bus %		RV %	E _T	E _R	f _{HV}	f _P	Flow Rate v _p (pcph)
							L _{A1}	L _{A2}	L _{Aeff}										
M-1	SR-99 SB	Elverta Road Loop On	Right	1	25.0	370	250		250	0.97	Level	7%	0%	1.5	1.2	0.966	1.00		395
M-2	SR 99 SB	Elverta Road Slip On	Right	1	45.0	30	250		250	0.97	Level	7%	0%	1.5	1.2	0.966	1.00		32
M-3	SR 99 NB	Elverta Road Loop On	Right	1	25.0	150	250		250	0.97	Level	23.0%	0.0%	1.5	1.2	0.90	1.00		172
M-4	SR 99 NB	Elverta Road Slip On	Right	1	45.0	240	250		250	0.97	Level	23.0%	0.0%	1.5	1.2	0.90	1.00		276
M-1	SR-99 SB	Elverta Road Loop On	Right	1	25.0	340	250		250	0.97	Level	5.0%	0.0%	1.5	1.2	0.98	1.00		359
M-2	SR 99 SB	Elverta Road Slip On	Right	1	45.0	130	250		250	0.97	Level	5.0%	0.0%	1.5	1.2	0.98	1.00		137
M-3	SR 99 NB	Elverta Road Loop On	Right	1	25.0	670	250		250	0.97	Level	13.0%	0.0%	1.5	1.2	0.94	1.00		736
M-4	SR 99 NB	Elverta Road Slip On	Right	1	45.0	50	250		250	0.97	Level	13.0%	0.0%	1.5	1.2	0.94	1.00		55

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

General Information

v₁₂ Estimation

	Freeway/ Direction	On-ramp	L _{EQ}		P _{FM} Equations			P _{FM}	v ₁₂ (pcph)
			25-2	25-3	1	2	3		
M-1	SR-99 SB	Elverta Road Loop On			0.585			0.585	2,588
M-2	SR 99 SB	Elverta Road Slip On			0.585			0.585	2,819
M-3	SR 99 NB	Elverta Road Loop On			0.585			0.585	1,297
M-4	SR 99 NB	Elverta Road Slip On			0.585			0.585	1,397
M-1	SR-99 SB	Elverta Road Loop On			0.585			0.585	1,785
M-2	SR 99 SB	Elverta Road Slip On			0.585			0.585	1,995
M-3	SR 99 NB	Elverta Road Loop On			0.585			0.585	2,849
M-4	SR 99 NB	Elverta Road Slip On			0.585			0.585	3,279

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

General Information

Capacity Checks

Freeway/ Direction			On-ramp			V_{FI} (pcph)	Max V_{FI} (pcph)	LOS F?	V_{FO} (pcph)	Max V_{FO} (pcph)	LOS F?	V_3, V_{av34} (pcphpl)	V_3, V_{av34} > 2,700?	V_3, V_{av34} > 1.5* $v_{12}/2$?	V_{12a} (pcph)	V_{R12a} (pcph)	Max V_{R12a} (pcph)	LOS F?
M-1	SR-99 SB	Elverta Road Loop On	4,428	7,050	No	4,823	7,050	No	1,840	No	No	2,588	2,983	4,600	No			
M-2	SR 99 SB	Elverta Road Slip On	4,823	7,050	No	4,855	7,050	No	2,004	No	No	2,819	2,851	4,600	No			
M-3	SR 99 NB	Elverta Road Loop On	2,219	7,200	No	2,391	7,200	No	922	No	No	1,297	1,469	4,600	No			
M-4	SR 99 NB	Elverta Road Slip On	2,391	7,200	No	2,667	7,200	No	993	No	No	1,397	1,673	4,600	No			
M-1	SR-99 SB	Elverta Road Loop On	3,054	7,200	No	3,413	7,200	No	1,269	No	No	1,785	2,144	4,600	No			
M-2	SR 99 SB	Elverta Road Slip On	3,413	7,200	No	3,551	7,200	No	1,418	No	No	1,995	2,132	4,600	No			
M-3	SR 99 NB	Elverta Road Loop On	4,875	7,200	No	5,610	7,200	No	2,025	No	No	2,849	3,585	4,600	No			
M-4	SR 99 NB	Elverta Road Slip On	5,610	7,200	No	5,665	7,200	No	2,331	No	No	3,279	3,334	4,600	No			

**HCM 2000
Merge Ramp Junctions
Capacity Analysis**

General Information			Results				Speed Estimation			
Freeway/ Direction	On-ramp	v_R (pcph)	Max v_R (pcph)	LOS F?	Density, D (pcplpm)	Level of Service	Int. Var. M_s	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
M-1	SR-99 SB Elverta Road Loop On	395	1,900	No	27.0	C	0.386	56.1	60.2	57.6
M-2	SR 99 SB Elverta Road Slip On	32	2,100	No	26.1	C	0.366	56.6	59.6	57.8
M-3	SR 99 NB Elverta Road Loop On	172	1,900	No	15.3	B	0.325	57.5	63.5	59.7
M-4	SR 99 NB Elverta Road Slip On	276	2,100	No	16.8	B	0.319	57.7	63.2	59.6
M-1	SR-99 SB Elverta Road Loop On	359	1,900	No	20.5	C	0.342	57.1	62.2	58.9
M-2	SR 99 SB Elverta Road Slip On	137	2,100	No	20.5	C	0.331	57.4	61.7	59.0
M-3	SR 99 NB Elverta Road Loop On	736	1,900	No	31.5	D	0.449	54.7	59.5	56.3
M-4	SR 99 NB Elverta Road Slip On	55	2,100	No	29.9	D	0.408	55.6	58.3	56.7

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

Jurisdiction Sacramento County Agency or Company Caltrans
 Analysis Year C+ Pref Alt with Mitigation Date 10/4/2010
 Analyst F&P Project Description Elverta Specific Plan

General Information				Freeway Data				Freeway Volume Adjustment							Effective	
Freeway/ Direction	Off-ramp	Analysis Time Period	Lanes	S _{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	E _T	E _R	f _{HV}	f _P	Flow Rate v _p (pcph)	Flow Rate v _p (pcph)	
D-1	SR 99 SB Elverta Road Off Ramp	AM	3	65.0	5,010	0.97	Level	7%	0%	1.5	1.20	0.966	1.00	5,346	5,346	
D-2	SR 99 NB Elverta Road Off Ramp	AM	3	65.0	2,530	0.97	Level	23.0%	0.0%	1.5	1.200	0.897	1.00	2,908	2,908	
D-3	SR 99 SB Elverta Road Off Ramp	PM	3	65.0	3,170	0.97	Level	5.0%	0.0%	1.5	1.200	0.976	1.00	3,350	3,350	
D-4	SR 99 NB Elverta Road Off Ramp	PM	3	65.0	4,980	0.97	Level	13.0%	0.0%	1.5	1.200	0.939	1.00	5,468	5,468	

**HCM 2000
Diverge Ramp Junctions
Capacity Analysis**

General Information			Off-Ramp Data						Off-Ramp Volume Adjustment									
Freeway/ Direction	Off-ramp		Type	Lanes	S _{FR} (mph)	V _R (vph)	Decel Lane (ft)			PHF	Terrain	Truck/ Bus %	RV %	E _T	E _R	f _{HV}	f _P	Flow Rate v _p (pcph)
							L _{D1}	L _{D2}	L _{Deff}									
D-1	SR 99 SB	Elverta Road Off Ramp	Right	1	45.0	860	150		150	0.97	Level	7%	0%	1.5	1.2	0.966	1.00	918
D-2	SR 99 NB	Elverta Road Off Ramp	Right	1	45.0	600	150		150	0.97	Level	23.0%	0.0%	1.5	1.2	0.897	1.00	690
D-3	SR 99 SB	Elverta Road Off Ramp	Right	1	45.0	280	150		150	0.97	Level	5.0%	0.0%	1.5	1.2	0.976	1.00	296
D-4	SR 99 NB	Elverta Road Off Ramp	Right	1	45.0	540	150		150	0.97	Level	13.0%	0.0%	1.5	1.2	0.939	1.00	593

**HCM 2000
Diverge Ramp Junctions
Capacity Analysis**

<i>General Information</i>			<i>v₁₂ Estimation</i>						
Freeway/ Direction	Off-ramp		L _{EQ}		P _{FD} Equations			V ₁₂ (pcph)	
			25-13	25-14	5	6	7		
D-1	SR 99 SB	Elverta Road Off Ramp			0.584			0.584	3,504
D-2	SR 99 NB	Elverta Road Off Ramp			0.656			0.656	2,144
D-3	SR 99 SB	Elverta Road Off Ramp			0.663			0.663	2,320
D-4	SR 99 NB	Elverta Road Off Ramp			0.596			0.596	3,498

**HCM 2000
Diverge Ramp Junctions
Capacity Analysis**

General Information			Capacity Checks											
Freeway/ Direction	Off-ramp		v_{FI} (pcph)	Max v_{FI} (pcph)	LOS F?	v_3, v_{av34} (pcphpl)	v_3, v_{av34} > 2,700?	v_3, v_{av34} > $1.5 \cdot v_{12}/2$?	v_{12a} (pcph)	Max v_{12} (pcph)	LOS F?	v_{FO} (pcph)	Max v_{FO} (pcph)	LOS F?
D-1	SR 99 SB	Elverta Road Off Ramp	5,346	7,050	No	1,841	No	No	3,504	4,400	No	4,428	7,050	No
D-2	SR 99 NB	Elverta Road Off Ramp	2,908	7,200	No	764	No	No	2,144	4,400	No	2,219	7,200	No
D-3	SR 99 SB	Elverta Road Off Ramp	3,350	7,200	No	1,030	No	No	2,320	4,400	No	3,054	7,200	No
D-4	SR 99 NB	Elverta Road Off Ramp	5,468	7,200	No	1,969	No	No	3,498	4,400	No	4,875	7,200	No

**HCM 2000
Diverge Ramp Junctions
Capacity Analysis**

<i>General Information</i>			<i>Results</i>				<i>Speed Estimation</i>			
Freeway/ Direction	Off-ramp	v_R (pcph)	Max v_R (pcph)	LOS F?	Density, D (pcplpm)	Level of Service	Int. Var. D_s	Inf. Area S_R (mph)	Out Lns. S_o (mph)	All vehs. S (mph)
D-1	SR 99 SB Elverta Road Off Ramp	918	2,100	No	33.0	D	0.381	56.2	68.0	59.8
D-2	SR 99 NB Elverta Road Off Ramp	690	2,100	No	21.3	C	0.360	56.7	71.3	59.9
D-3	SR 99 SB Elverta Road Off Ramp	296	2,100	No	22.8	C	0.325	57.5	71.2	61.1
D-4	SR 99 NB Elverta Road Off Ramp	593	2,100	No	33.0	D	0.351	56.9	67.5	60.3