APPENDIX G

QUEUING ANALYSES WORKSHEETS

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	543	1877	2011	1273	435	652	652
v/c Ratio	1.00	0.90	0.99	1.18	0.37	1.25	1.25
Control Delay	88.8	28.4	56.4	109.9	30.9	160.6	160.6
Queue Delay	0.0	11.7	6.9	0.0	0.0	0.0	0.0
Total Delay	88.8	40.2	63.3	109.9	30.9	160.6	160.6
Queue Length 50th (ft)	219	628	599	~905	129	~657	~657
Queue Length 95th (ft)	#337	757	m556	m#812	175	#903	#903
Internal Link Dist (ft)		655	1237			1367	
Turn Bay Length (ft)	465			200	460		360
Base Capacity (vph)	544	2094	2034	1083	1173	523	523
Starvation Cap Reductn	0	235	0	0	0	0	0
Spillback Cap Reductn	0	0	56	0	7	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	1.01	1.02	1.18	0.37	1.25	1.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	859	1866	1457	921	652	543	544
v/c Ratio	0.87	0.78	0.81	1.07	0.74	1.33	1.33
Control Delay	49.8	16.4	29.1	59.9	46.5	199.7	200.7
Queue Delay	0.0	2.2	0.0	0.0	0.2	0.0	0.0
Total Delay	49.8	18.6	29.1	59.9	46.7	199.7	200.7
Queue Length 50th (ft)	324	475	409	~661	239	~562	~564
Queue Length 95th (ft)	363	574	m424	m#634	306	#795	#796
Internal Link Dist (ft)		655	1237			856	
Turn Bay Length (ft)	465			200	460		360
Base Capacity (vph)	1402	2389	1791	857	887	408	408
Starvation Cap Reductn	0	368	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	17	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.92	0.81	1.07	0.75	1.33	1.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

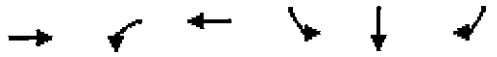
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1076	793	985	526	526	163
v/c Ratio	0.75	0.91	0.40	1.34	1.40	0.36
Control Delay	17.8	58.2	8.0	207.1	230.7	12.3
Queue Delay	4.2	0.0	0.5	104.0	107.2	0.0
Total Delay	22.0	58.2	8.5	311.0	337.9	12.3
Queue Length 50th (ft)	403	302	149	~560	~598	18
Queue Length 95th (ft)	490	#402	184	#787	#836	81
Internal Link Dist (ft)	214		490		1733	
Turn Bay Length (ft)		295		460		
Base Capacity (vph)	1440	915	2477	392	376	453
Starvation Cap Reductn	283	0	936	0	0	0
Spillback Cap Reductn	162	0	86	58	55	3
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.87	0.64	1.57	1.64	0.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1402	652	696	635	635	196
v/c Ratio	0.83	1.34	0.30	1.37	1.43	0.38
Control Delay	22.1	207.1	9.1	216.7	241.5	13.4
Queue Delay	46.1	0.0	0.0	136.8	143.8	0.1
Total Delay	68.2	207.1	9.1	353.4	385.3	13.6
Queue Length 50th (ft)	575	~339	111	~685	~732	34
Queue Length 95th (ft)	661	#457	141	#924	#982	102
Internal Link Dist (ft)	134		490		859	
Turn Bay Length (ft)		295		460		
Base Capacity (vph)	1680	486	2330	462	443	515
Starvation Cap Reductn	401	0	0	0	0	0
Spillback Cap Reductn	205	0	107	84	81	38
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.10	1.34	0.31	1.68	1.75	0.41

Intersection Summary

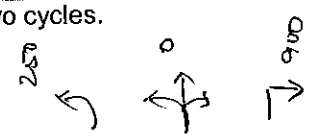
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	130	1617	1507	1335	241	481	528
v/c Ratio	0.57	0.82	0.62	0.58	0.85	0.85	0.89
Control Delay	78.1	33.1	15.0	2.2	85.1	28.0	59.0
Queue Delay	0.0	48.1	83.4	2.2	0.0	40.2	24.7
Total Delay	78.1	81.2	98.4	4.4	85.1	68.2	83.7
Queue Length 50th (ft)	64	669	417	22	240	105	491
Queue Length 95th (ft)	102	#945	502	49	#349	#287	603
Internal Link Dist (ft)		490	171			487	
Turn Bay Length (ft)	130			230	400		540
Base Capacity (vph)	229	1969	2419	2289	325	589	663
Starvation Cap Reductn	0	501	1142	775	0	0	0
Spillback Cap Reductn	0	497	0	0	0	139	147
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	1.10	1.18	0.88	0.74	1.07	1.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Storage: 400 750 1080

Calculated storage: 775 0 1455

Queues: 350 290 610

Calculated Queues: 410 0 840 (20% ← = 60, 80% → = 150

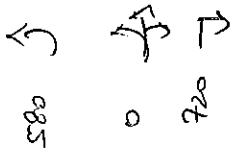
Queues
25: Carmel Valley Road & I-5 NB Ramps

8/26/2009

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	109	2074	717	1148	323	307	783
v/c Ratio	0.53	0.93	0.31	0.52	0.92	0.96	0.84
Control Delay	78.2	34.6	12.0	1.4	88.5	99.7	55.7
Queue Delay	0.0	87.1	12.3	1.8	0.0	0.0	9.0
Total Delay	78.2	121.6	24.3	3.2	88.5	99.7	64.7
Queue Length 50th (ft)	54	927	154	0	327	347	382
Queue Length 95th (ft)	88	#1212	189	25	#515	#567	456
Internal Link Dist (ft)		490	171			676	
Turn Bay Length (ft)	130			230	400		540
Base Capacity (vph)	206	2225	2303	2214	359	325	999
Starvation Cap Reductn	0	491	1564	852	0	0	0
Spillback Cap Reductn	0	466	0	0	0	0	188
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	1.20	0.97	0.84	0.90	0.94	0.97

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



580 0 720

Calculated Storage: (from AM pk) 775 0 1455

Queues: 520 570 460

Calculated Queues: $\boxed{780}$ 0 $\boxed{770}$

(45% ↰ 260
55% ↱ 310

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	967	1704	358	435	1179	1241	707
v/c Ratio	0.73	0.87	0.56	0.95	0.61	0.91	0.66
Control Delay	35.8	40.5	27.5	81.6	20.2	46.6	33.8
Queue Delay	673.9	0.0	0.0	0.0	2.0	0.0	0.0
Total Delay	709.7	40.5	27.5	81.6	22.2	46.6	33.8
Queue Length 50th (ft)	327	443	177	186	266	475	251
Queue Length 95th (ft)	405	510	275	m#276	313	#613	326
Internal Link Dist (ft)		770			277	355	
Turn Bay Length (ft)	430			180			
Base Capacity (vph)	1316	1949	645	458	1946	1357	1073
Starvation Cap Reductn	0	0	0	0	579	0	0
Spillback Cap Reductn	1065	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	3.85	0.87	0.56	0.95	0.86	0.91	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	326	800	267	543	1348	1817	554
v/c Ratio	0.57	0.94	0.76	0.78	0.50	0.97	0.36
Control Delay	50.5	69.5	43.3	37.7	8.8	42.9	14.7
Queue Delay	0.0	0.0	0.0	0.3	20.6	11.3	0.0
Total Delay	50.5	69.5	43.3	38.0	29.4	54.2	14.7
Queue Length 50th (ft)	121	227	121	232	308	688	110
Queue Length 95th (ft)	170	#310	#244	m166	m243	#957	172
Internal Link Dist (ft)		645			283	355	
Turn Bay Length (ft)	230			180			
Base Capacity (vph)	572	848	352	973	2713	1875	1521
Starvation Cap Reductn	0	0	0	92	1399	0	0
Spillback Cap Reductn	0	0	0	0	0	96	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.94	0.76	0.62	1.03	1.02	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	722	1439	408	984	176	2033
v/c Ratio	0.80	0.80	0.50	0.73	0.80	1.08
Control Delay	13.3	12.0	9.6	43.8	70.4	85.7
Queue Delay	0.6	0.2	0.0	0.0	0.0	149.1
Total Delay	13.9	12.1	9.6	43.8	70.4	234.9
Queue Length 50th (ft)	225	241	76	192	146	~638
Queue Length 95th (ft)	m253	m272	m86	233	m177	#738
Internal Link Dist (ft)		710		1486		277
Turn Bay Length (ft)					210	
Base Capacity (vph)	912	1799	817	1354	236	1880
Starvation Cap Reductn	24	40	0	0	0	446
Spillback Cap Reductn	34	34	0	6	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.82	0.50	0.73	0.75	1.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	836	1662	324	2520	445	1699
v/c Ratio	2.15	2.15	0.85	2.05dr	1.16	0.48
Control Delay	542.5	541.3	40.8	44.5	139.5	7.6
Queue Delay	155.3	71.0	0.0	0.1	80.5	0.6
Total Delay	697.8	612.3	40.8	44.6	220.0	8.2
Queue Length 50th (ft)	~1141	~1200	220	538	~422	131
Queue Length 95th (ft)	m#1126	m#1183	m218	#641	m#473	m156
Internal Link Dist (ft)		60		1486		283
Turn Bay Length (ft)						
Base Capacity (vph)	389	774	379	2597	384	3517
Starvation Cap Reductn	0	0	0	0	53	1299
Spillback Cap Reductn	54	53	0	3	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.50	2.31	0.85	0.97	1.34	0.77

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	59	154	174	239	737	413	598	385	505	258	489
v/c Ratio	0.36	0.14	0.29	0.73	1.01	1.00	0.75	0.45	0.98	0.51	0.94
Control Delay	58.1	31.8	6.2	59.0	71.2	89.9	74.3	5.4	86.2	51.8	58.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	31.8	6.2	59.0	71.2	89.9	74.3	5.4	86.2	51.8	58.9
Queue Length 50th (ft)	44	46	0	174	~569	339	256	39	203	98	285
Queue Length 95th (ft)	88	75	54	257	#834	m#423	m283	m37	#314	143	#499
Internal Link Dist (ft)		520			620		541			491	
Turn Bay Length (ft)	220			590		100		70	265		
Base Capacity (vph)	162	1085	606	384	731	413	796	891	515	501	520
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.14	0.29	0.62	1.01	1.00	0.75	0.43	0.98	0.51	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	109	326	177	89	410	435	1061	130	747	503	293
v/c Ratio	0.92	0.43	0.37	0.58	0.96	0.92	0.89	0.17	0.95	0.47	0.40
Control Delay	120.5	43.5	8.2	67.9	80.1	76.9	23.5	0.6	67.1	36.9	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	120.5	43.5	8.2	67.9	80.1	76.9	23.5	0.6	67.1	36.9	12.2
Queue Length 50th (ft)	86	117	0	67	306	305	245	1	293	173	60
Queue Length 95th (ft)	#200	165	60	122	#507	m340	m367	m0	#409	228	135
Internal Link Dist (ft)		520			620		541			491	
Turn Bay Length (ft)	220			590		100		70	265		
Base Capacity (vph)	118	751	475	177	428	516	1198	773	801	1063	740
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.43	0.37	0.50	0.96	0.84	0.89	0.17	0.93	0.47	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	519	518	347	473	290	380
v/c Ratio	0.95	0.95	0.47	0.31	0.66	0.18
Control Delay	67.7	67.3	6.0	20.7	36.1	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.7	67.3	6.0	20.7	36.1	18.4
Queue Length 50th (ft)	406	405	8	111	118	139
Queue Length 95th (ft)	#630	#629	76	162	m151	162
Internal Link Dist (ft)		1710		312		541
Turn Bay Length (ft)	390				345	
Base Capacity (vph)	560	560	749	1547	601	2151
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.93	0.46	0.31	0.48	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	770	769	121	201	688	82
v/c Ratio	0.93	0.93	0.15	0.29	0.89	0.05
Control Delay	47.2	47.0	3.8	21.5	44.0	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	47.0	3.8	21.5	44.0	14.8
Queue Length 50th (ft)	529	528	4	31	288	25
Queue Length 95th (ft)	#808	#807	33	68	#364	m44
Internal Link Dist (ft)		1710		312		541
Turn Bay Length (ft)	390				345	
Base Capacity (vph)	883	883	883	686	803	1564
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.87	0.14	0.29	0.86	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	185	474	739	1087	761	746
v/c Ratio	0.34	0.74	0.42	0.99	0.92	0.27
Control Delay	46.9	12.8	14.1	31.6	55.7	3.9
Queue Delay	0.0	0.4	0.3	15.0	0.0	0.0
Total Delay	46.9	13.2	14.4	46.6	55.7	3.9
Queue Length 50th (ft)	66	9	86	258	264	47
Queue Length 95th (ft)	102	120	128	#354	m#375	m124
Internal Link Dist (ft)			404			482
Turn Bay Length (ft)	400			120	170	
Base Capacity (vph)	544	639	1770	1100	830	2743
Starvation Cap Reductn	0	0	474	56	0	0
Spillback Cap Reductn	0	21	13	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.77	0.57	1.04	0.92	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	54	421	1228	543	489	843
v/c Ratio	0.09	0.75	0.63	0.45	0.80	0.31
Control Delay	40.2	17.7	24.3	3.2	53.9	9.8
Queue Delay	0.0	31.5	0.8	0.3	0.0	0.0
Total Delay	40.2	49.1	25.1	3.5	53.9	9.8
Queue Length 50th (ft)	19	48	250	53	194	175
Queue Length 95th (ft)	34	152	445	m58	m222	m221
Internal Link Dist (ft)			404			482
Turn Bay Length (ft)	400			120	170	
Base Capacity (vph)	830	649	1959	1318	690	2706
Starvation Cap Reductn	0	0	392	288	0	0
Spillback Cap Reductn	0	241	157	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	1.03	0.78	0.53	0.71	0.31

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	169	173	429	1489	196	583	348
v/c Ratio	0.70	0.71	0.72	0.76	0.22	0.84	0.12
Control Delay	63.9	64.8	11.7	25.2	9.9	55.3	4.4
Queue Delay	0.6	0.6	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	65.5	11.7	25.2	9.9	55.3	4.4
Queue Length 50th (ft)	131	134	0	466	45	201	36
Queue Length 95th (ft)	206	211	97	601	93	275	64
Internal Link Dist (ft)		2230		136			404
Turn Bay Length (ft)	660				100	360	
Base Capacity (vph)	294	295	631	1958	910	748	2794
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	18	18	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.62	0.68	0.76	0.22	0.78	0.12

Intersection Summary

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	572	602	734	652	76	507	391
v/c Ratio	0.82	0.86	0.84	0.61	0.15	0.81	0.21
Control Delay	41.1	44.3	24.2	40.5	18.2	51.6	5.5
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	41.1	44.3	24.2	40.9	18.2	51.6	5.5
Queue Length 50th (ft)	385	414	259	240	19	120	23
Queue Length 95th (ft)	518	558	429	318	60	180	33
Internal Link Dist (ft)		2230		136			404
Turn Bay Length (ft)	660				100	360	
Base Capacity (vph)	784	790	936	1070	509	658	1835
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	99	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.76	0.78	0.67	0.15	0.77	0.21

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	543	1877	2011	1273	435	652	652
v/c Ratio	1.00	0.90	0.99	1.18	0.37	1.25	1.25
Control Delay	88.8	28.4	56.4	109.9	30.9	160.6	160.6
Queue Delay	0.0	11.7	6.9	0.0	0.0	0.0	0.0
Total Delay	88.8	40.2	63.3	109.9	30.9	160.6	160.6
Queue Length 50th (ft)	219	628	599	~905	129	~657	~657
Queue Length 95th (ft)	#337	757	m556	m#812	175	#903	#903
Internal Link Dist (ft)		655	1237			1367	
Turn Bay Length (ft)	465			200	460		360
Base Capacity (vph)	544	2094	2034	1083	1173	523	523
Starvation Cap Reductn	0	235	0	0	0	0	0
Spillback Cap Reductn	0	0	56	0	7	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	1.01	1.02	1.18	0.37	1.25	1.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	859	1866	1457	921	652	543	544
v/c Ratio	0.87	0.78	0.81	1.07	0.74	1.33	1.33
Control Delay	49.8	16.4	29.1	59.9	46.5	199.7	200.7
Queue Delay	0.0	2.2	0.0	0.0	0.2	0.0	0.0
Total Delay	49.8	18.6	29.1	59.9	46.7	199.7	200.7
Queue Length 50th (ft)	324	475	409	~661	239	~562	~564
Queue Length 95th (ft)	363	574	m424	m#634	306	#795	#796
Internal Link Dist (ft)		655	1237			856	
Turn Bay Length (ft)	465			200	460		360
Base Capacity (vph)	1402	2389	1791	857	887	408	408
Starvation Cap Reductn	0	368	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	17	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.92	0.81	1.07	0.75	1.33	1.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1076	793	985	1052	81	82
v/c Ratio	0.75	0.91	0.40	1.31	0.17	0.17
Control Delay	17.8	58.2	8.0	187.4	0.7	0.8
Queue Delay	8.3	0.0	0.5	134.5	0.0	0.0
Total Delay	26.0	58.2	8.5	321.9	0.7	0.8
Queue Length 50th (ft)	403	302	149	~541	0	0
Queue Length 95th (ft)	490	#402	184	#672	0	0
Internal Link Dist (ft)	214		490		1733	
Turn Bay Length (ft)		295		460		
Base Capacity (vph)	1440	915	2477	801	483	483
Starvation Cap Reductn	283	0	936	0	0	0
Spillback Cap Reductn	331	0	75	149	3	3
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.87	0.64	1.61	0.17	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1402	652	696	1270	98	98
v/c Ratio	0.83	1.34	0.30	1.35	0.16	0.16
Control Delay	22.1	207.1	9.1	198.0	0.6	0.6
Queue Delay	46.1	0.0	0.0	170.6	0.0	0.0
Total Delay	68.2	207.1	9.1	368.6	0.6	0.6
Queue Length 50th (ft)	575	~339	111	~662	0	0
Queue Length 95th (ft)	661	#457	141	#797	0	0
Internal Link Dist (ft)	134		490		859	
Turn Bay Length (ft)		295		460		
Base Capacity (vph)	1680	486	2330	944	614	614
Starvation Cap Reductn	401	0	0	0	0	0
Spillback Cap Reductn	355	0	96	208	7	7
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.10	1.34	0.31	1.73	0.16	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	130	1617	1507	1335	230	438	1604
v/c Ratio	0.57	1.28	0.61	0.57	0.89	1.00	0.94
Control Delay	78.1	172.0	13.1	1.4	95.8	67.7	40.5
Queue Delay	0.0	196.6	85.8	2.0	0.0	131.3	94.3
Total Delay	78.1	368.6	98.9	3.4	95.8	199.0	134.7
Queue Length 50th (ft)	64	~1071	374	0	235	~227	744
Queue Length 95th (ft)	102	#1210	434	21	#402	#502	#901
Internal Link Dist (ft)		490	171			487	
Turn Bay Length (ft)	130			230	400		540
Base Capacity (vph)	229	1263	2477	2351	258	437	1730
Starvation Cap Reductn	0	163	1206	820	0	0	0
Spillback Cap Reductn	0	322	0	0	0	108	407
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	1.72	1.19	0.87	0.89	1.33	1.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

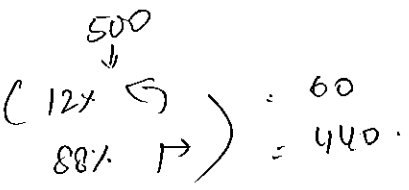
Volume: 250 1080

Storage: 400 750 1080 (50/50 split of 750)

Calculated storage: 775 0 1455

Calculated Queues: 410 500 1800

Adjusted Queues: 470 0 2240



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	109	2074	717	1148	473	547	1548
v/c Ratio	0.53	1.22	0.34	0.54	1.08	1.28	1.15
Control Delay	78.2	139.9	15.6	1.7	118.1	181.0	112.8
Queue Delay	0.0	143.0	30.8	1.9	0.0	150.4	130.5
Total Delay	78.2	282.9	46.4	3.6	118.1	331.4	243.3
Queue Length 50th (ft)	54	~1307	177	0	~543	~718	~975
Queue Length 95th (ft)	88	#1438	217	29	#777	#993	#1123
Internal Link Dist (ft)		490	171			676	
Turn Bay Length (ft)	130			230	400		540
Base Capacity (vph)	206	1699	2123	2131	437	427	1348
Starvation Cap Reductn	0	304	1435	778	0	0	0
Spillback Cap Reductn	0	352	0	0	0	89	274
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	1.54	1.04	0.85	1.08	1.62	1.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Volume: 580 1782

Calculated Storage: 775 1455

Calculated Queues: 780 990 8250

Adj Queues: 1030 0 2990

990
(25% → 250
75% ↱ 740

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	512	2159	358	435	1179	1241	707
v/c Ratio	0.93	0.94	0.56	0.95	0.61	0.91	0.66
Control Delay	61.3	45.5	27.5	87.6	17.3	46.6	33.8
Queue Delay	664.8	72.9	0.0	0.0	1.2	0.0	0.0
Total Delay	726.1	118.3	27.5	87.6	18.6	46.6	33.8
Queue Length 50th (ft)	464	493	177	186	226	475	251
Queue Length 95th (ft)	#734	#564	275	#285	276	#613	326
Internal Link Dist (ft)		770			277	355	
Turn Bay Length (ft)	430			180			
Base Capacity (vph)	549	2290	645	458	1946	1357	1073
Starvation Cap Reductn	0	0	0	0	507	0	0
Spillback Cap Reductn	419	437	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	3.94	1.17	0.56	0.95	0.82	0.91	0.66

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	216	910	267	543	1348	1817	554
v/c Ratio	0.90	0.91	0.76	0.78	0.50	0.97	0.36
Control Delay	87.6	62.9	43.3	45.6	8.6	42.5	14.7
Queue Delay	0.0	0.0	0.0	0.3	32.8	0.0	0.0
Total Delay	87.6	62.9	43.3	45.9	41.4	42.5	14.7
Queue Length 50th (ft)	204	216	121	226	228	688	110
Queue Length 95th (ft)	#385	#280	#244	m221	m211	#957	172
Internal Link Dist (ft)		645			283	355	
Turn Bay Length (ft)	230			180			
Base Capacity (vph)	239	1000	352	973	2713	1878	1524
Starvation Cap Reductn	0	0	0	92	1441	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.91	0.76	0.62	1.06	0.97	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	765	2417	408	984	176	2033
v/c Ratio	0.89	0.89	0.26	0.95dr	0.80	1.09
Control Delay	16.5	12.6	7.3	47.4	64.7	87.1
Queue Delay	2.4	1.6	0.0	0.0	0.0	123.2
Total Delay	18.8	14.2	7.3	47.4	64.7	210.3
Queue Length 50th (ft)	322	341	29	203	146	~639
Queue Length 95th (ft)	m363	m383	m33	245	m158	m#730
Internal Link Dist (ft)		612		1486		313
Turn Bay Length (ft)					210	
Base Capacity (vph)	862	2713	1580	1296	236	1865
Starvation Cap Reductn	37	154	0	0	0	379
Spillback Cap Reductn	11	12	0	2	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.94	0.26	0.76	0.75	1.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	870	2784	324	2520	445	1699
v/c Ratio	1.40	1.42	0.28	2.83dr	1.51	0.64
Control Delay	210.0	217.3	21.5	183.7	278.1	20.1
Queue Delay	31.8	0.0	0.0	0.0	0.0	2.2
Total Delay	241.8	217.3	21.5	183.7	278.1	22.3
Queue Length 50th (ft)	~1047	~1126	64	~738	~495	231
Queue Length 95th (ft)	m#1030	m#1105	m58	#812	m#529	m268
Internal Link Dist (ft)		612		1486		289
Turn Bay Length (ft)						
Base Capacity (vph)	621	1962	1152	1903	295	2670
Starvation Cap Reductn	0	0	0	0	0	791
Spillback Cap Reductn	30	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.47	1.42	0.28	1.32	1.51	0.90

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	59	154	174	308	603	270	304	452	385	505	258	489
v/c Ratio	0.35	0.20	0.36	0.75	0.92	0.37	0.84	0.53	0.40	0.82	0.34	0.75
Control Delay	56.7	38.2	7.5	54.8	56.3	4.8	68.4	69.6	3.2	59.5	44.4	33.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.7	38.2	7.5	54.8	56.3	4.8	68.4	69.6	3.2	59.5	44.4	33.2
Queue Length 50th (ft)	43	51	0	219	434	6	244	192	18	191	95	245
Queue Length 95th (ft)	87	77	55	313	540	56	m#332	m238	m46	#278	143	#455
Internal Link Dist (ft)		520			620			541			491	
Turn Bay Length (ft)	220			590			100		70	265		
Base Capacity (vph)	177	914	538	472	792	821	375	852	999	633	763	659
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.17	0.32	0.65	0.76	0.33	0.81	0.53	0.39	0.80	0.34	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	109	326	177	166	297	267	337	802	130	747	503	293
v/c Ratio	0.71	0.64	0.46	0.72	0.84	0.58	0.83	0.66	0.16	0.88	0.39	0.34
Control Delay	77.9	54.4	10.9	67.0	68.1	17.1	79.6	16.3	0.6	55.9	31.9	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.9	54.4	10.9	67.0	68.1	17.1	79.6	16.3	0.6	55.9	31.9	7.9
Queue Length 50th (ft)	83	124	0	125	221	44	279	53	0	280	156	35
Queue Length 95th (ft)	#164	178	64	194	#322	128	m311	m242	m0	354	228	106
Internal Link Dist (ft)		520			620			541			491	
Turn Bay Length (ft)	220			590		120	100		70	265		
Base Capacity (vph)	162	528	387	295	404	500	502	1216	876	915	1277	878
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.62	0.46	0.56	0.74	0.53	0.67	0.66	0.15	0.82	0.39	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	392	391	261	473	290	449
v/c Ratio	0.84	0.84	0.42	0.28	0.67	0.19
Control Delay	56.9	56.7	5.5	18.3	37.1	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	56.7	5.5	18.3	37.1	15.0
Queue Length 50th (ft)	296	295	0	101	90	126
Queue Length 95th (ft)	400	398	58	164	m129	m181
Internal Link Dist (ft)		1710		312		541
Turn Bay Length (ft)	390				345	
Base Capacity (vph)	560	560	702	1718	601	2323
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.70	0.37	0.28	0.48	0.19

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	592	591	92	201	688	159
v/c Ratio	0.90	0.90	0.14	0.21	0.84	0.08
Control Delay	50.7	50.5	4.1	17.5	37.0	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	50.5	4.1	17.5	37.0	13.7
Queue Length 50th (ft)	438	437	0	27	227	44
Queue Length 95th (ft)	547	546	29	62	m#352	m66
Internal Link Dist (ft)		1710		312		541
Turn Bay Length (ft)	390				345	
Base Capacity (vph)	784	784	788	953	839	1914
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.75	0.12	0.21	0.82	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	185	474	875	1291	761	746
v/c Ratio	0.40	0.88	0.42	1.09	1.21	0.26
Control Delay	50.6	30.7	9.1	59.9	144.6	3.2
Queue Delay	0.0	1.9	0.5	21.5	0.0	0.0
Total Delay	50.6	32.6	9.6	81.4	144.6	3.2
Queue Length 50th (ft)	68	73	75	~655	~356	41
Queue Length 95th (ft)	105	#269	m94	m#622	m#461	m116
Internal Link Dist (ft)			404			482
Turn Bay Length (ft)	400			120	170	
Base Capacity (vph)	458	537	2064	1188	629	2831
Starvation Cap Reductn	0	0	710	53	0	0
Spillback Cap Reductn	0	16	151	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.91	0.65	1.14	1.21	0.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	54	421	1383	775	489	843
v/c Ratio	0.07	0.70	0.77	0.64	0.82	0.33
Control Delay	36.7	16.8	41.4	8.5	57.3	13.0
Queue Delay	0.0	43.6	4.9	0.9	0.0	0.0
Total Delay	36.7	60.3	46.3	9.4	57.3	13.0
Queue Length 50th (ft)	17	59	583	158	194	206
Queue Length 95th (ft)	34	177	m563	m156	m223	m223
Internal Link Dist (ft)			404			482
Turn Bay Length (ft)	400			120	170	
Base Capacity (vph)	801	621	1800	1235	658	2534
Starvation Cap Reductn	0	0	348	211	0	0
Spillback Cap Reductn	0	227	307	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	1.07	0.95	0.76	0.74	0.33

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	339	343	429	1489	196	583	348
v/c Ratio	0.79	0.80	0.59	0.97	0.27	0.80	0.14
Control Delay	54.8	55.3	6.5	51.6	17.6	50.9	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	55.3	6.5	51.6	17.6	50.9	7.0
Queue Length 50th (ft)	257	262	0	~687	70	207	48
Queue Length 95th (ft)	337	341	72	#826	129	#318	77
Internal Link Dist (ft)		2230		136			404
Turn Bay Length (ft)	660				100	360	
Base Capacity (vph)	560	562	814	1534	721	728	2403
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.61	0.53	0.97	0.27	0.80	0.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	758	800	734	652	76	507	391
v/c Ratio	1.08	1.14	0.82	0.53	0.13	1.11	0.21
Control Delay	93.0	111.7	21.6	33.0	11.7	121.1	4.2
Queue Delay	27.8	30.3	0.0	33.9	0.0	0.0	0.0
Total Delay	120.8	142.0	21.6	66.9	11.7	121.1	4.2
Queue Length 50th (ft)	~691	~760	236	210	13	~211	13
Queue Length 95th (ft)	#941	#1014	431	269	47	#324	20
Internal Link Dist (ft)		2230		136			404
Turn Bay Length (ft)	660				100	360	
Base Capacity (vph)	700	704	899	1239	587	458	1828
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	41	41	0	618	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.15	1.21	0.82	1.05	0.13	1.11	0.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	543	1630	2011	870	435	652	652
v/c Ratio	0.92	0.81	1.10	0.99	0.35	1.15	1.15
Control Delay	70.2	25.1	94.3	51.5	28.5	122.5	122.5
Queue Delay	0.0	2.0	13.8	0.0	0.0	0.0	0.0
Total Delay	70.2	27.0	108.2	51.5	28.5	122.5	122.5
Queue Length 50th (ft)	214	508	~658	459	124	~616	~616
Queue Length 95th (ft)	#313	612	#758	m#621	168	#862	#862
Internal Link Dist (ft)		673	1237			457	
Turn Bay Length (ft)	470			190	460		360
Base Capacity (vph)	601	2005	1834	875	1259	565	565
Starvation Cap Reductn	0	228	0	0	0	0	0
Spillback Cap Reductn	0	0	52	0	11	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.92	1.13	0.99	0.35	1.15	1.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

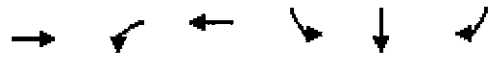
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	859	1522	1457	652	652	543	544
v/c Ratio	0.86	0.65	0.86	0.81	0.69	1.21	1.21
Control Delay	49.3	14.0	41.1	27.5	43.4	148.6	149.4
Queue Delay	0.0	0.7	0.0	0.0	0.1	0.0	0.0
Total Delay	49.3	14.6	41.1	27.5	43.5	148.6	149.4
Queue Length 50th (ft)	323	342	410	226	233	~511	~513
Queue Length 95th (ft)	361	412	m#562	m#516	299	#745	#746
Internal Link Dist (ft)		673	1237			457	
Turn Bay Length (ft)	470			190	460		360
Base Capacity (vph)	1345	2330	1698	803	944	449	449
Starvation Cap Reductn	0	419	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	13	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.80	0.86	0.81	0.70	1.21	1.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1076	1203	985	413	81	82
v/c Ratio	0.83	0.91	0.35	0.85	0.20	0.21
Control Delay	20.2	45.5	4.0	67.4	1.1	1.2
Queue Delay	0.1	0.1	0.4	0.0	0.1	0.1
Total Delay	20.3	45.6	4.4	67.4	1.2	1.3
Queue Length 50th (ft)	81	450	94	162	0	0
Queue Length 95th (ft)	#242	462	116	#243	0	0
Internal Link Dist (ft)	134		490		859	
Turn Bay Length (ft)		245		460		
Base Capacity (vph)	1299	2060	2802	486	398	398
Starvation Cap Reductn	9	173	1163	0	0	0
Spillback Cap Reductn	0	0	542	0	32	32
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.64	0.60	0.85	0.22	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1402	1086	696	379	98	98
v/c Ratio	0.83	1.31	0.26	0.63	0.18	0.18
Control Delay	23.8	184.8	4.6	51.2	0.7	0.7
Queue Delay	43.9	0.0	0.0	0.0	0.0	0.0
Total Delay	67.7	184.8	4.7	51.2	0.8	0.8
Queue Length 50th (ft)	577	~557	73	141	0	0
Queue Length 95th (ft)	661	#689	92	194	0	0
Internal Link Dist (ft)	134		490		859	
Turn Bay Length (ft)		295		460		
Base Capacity (vph)	1680	830	2684	601	537	537
Starvation Cap Reductn	395	0	0	0	0	0
Spillback Cap Reductn	0	0	263	0	24	24
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.09	1.31	0.29	0.63	0.19	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	130	978	1916	293	243	464	1565
v/c Ratio	0.71	0.90	0.78	0.15	0.82	0.77	0.85
Control Delay	90.6	60.5	19.8	3.2	80.3	15.7	26.1
Queue Delay	0.0	58.7	111.9	0.9	0.1	8.4	2.0
Total Delay	90.6	119.2	131.7	4.0	80.4	24.2	28.1
Queue Length 50th (ft)	65	479	627	15	243	27	639
Queue Length 95th (ft)	#113	#854	847	38	332	176	441
Internal Link Dist (ft)		490	171			676	
Turn Bay Length (ft)	130			230	400		540
Base Capacity (vph)	183	1091	2442	1984	381	647	2219
Starvation Cap Reductn	0	0	905	1395	0	0	0
Spillback Cap Reductn	0	224	143	0	5	147	479
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	1.13	1.25	0.50	0.65	0.93	0.90

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Calculated storage

250 1040

775 0 1455

Queue: 330 180 880

Adj Queue: 350 0 1040

180

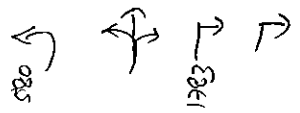
(↰ 12% = 20
↱ 88% = 160)

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	109	1184	1151	457	420	443	1705
v/c Ratio	0.53	1.34	0.59	0.27	0.81	0.93	0.85
Control Delay	78.2	202.5	25.3	4.5	59.5	71.9	21.1
Queue Delay	0.0	185.4	110.7	1.0	0.0	82.1	25.9
Total Delay	78.2	387.9	136.0	5.5	59.5	153.9	47.0
Queue Length 50th (ft)	54	~799	401	23	387	439	620
Queue Length 95th (ft)	88	#1139	507	57	505	#610	443
Internal Link Dist (ft)		490	171			676	
Turn Bay Length (ft)	130			230	400		590
Base Capacity (vph)	206	883	1948	1700	605	546	2180
Starvation Cap Reductn	0	0	1020	955	0	0	0
Spillback Cap Reductn	0	208	0	0	0	168	551
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	1.75	1.24	0.61	0.69	1.17	1.05

Intersection Summary

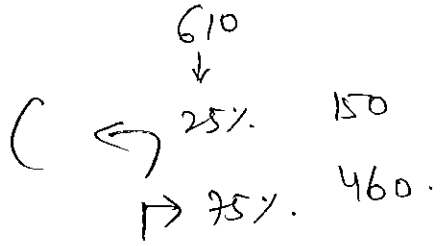
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Calculated Queues: 510 610 880

Adjusted Queues: 660 0 1340



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	484	1504	283	435	1179	1196	759
v/c Ratio	0.84	0.63	0.42	0.90	0.63	0.95	0.74
Control Delay	46.3	29.8	22.6	78.0	25.9	54.6	36.6
Queue Delay	0.5	0.0	0.0	0.0	1.4	0.0	0.0
Total Delay	46.8	29.8	22.6	78.0	27.3	54.6	36.6
Queue Length 50th (ft)	401	276	123	186	298	482	275
Queue Length 95th (ft)	#627	318	199	#272	342	#638	359
Internal Link Dist (ft)		365			283	355	
Turn Bay Length (ft)	430			180			
Base Capacity (vph)	597	2452	689	491	1874	1257	1029
Starvation Cap Reductn	0	0	0	0	463	0	0
Spillback Cap Reductn	12	17	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.62	0.41	0.89	0.84	0.95	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	163	645	217	543	1348	1753	615
v/c Ratio	0.80	0.76	0.67	0.86	0.48	0.86	0.38
Control Delay	78.3	56.2	33.9	57.6	5.7	27.5	14.1
Queue Delay	9.9	0.5	0.0	0.0	2.3	0.3	0.0
Total Delay	88.2	56.7	33.9	57.6	8.0	27.8	14.1
Queue Length 50th (ft)	153	150	74	232	159	584	135
Queue Length 95th (ft)	#295	188	162	m239	m175	703	178
Internal Link Dist (ft)		645			283	355	
Turn Bay Length (ft)	430			180			
Base Capacity (vph)	203	845	323	658	2802	2031	1613
Starvation Cap Reductn	0	0	0	0	1269	0	0
Spillback Cap Reductn	23	32	0	0	0	40	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.79	0.67	0.83	0.88	0.88	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	612	1931	408	984	130	2033
v/c Ratio	0.75	0.75	0.27	0.63	0.66	1.01
Control Delay	12.9	10.4	6.8	39.6	63.7	60.3
Queue Delay	0.4	0.2	0.0	0.0	0.0	80.9
Total Delay	13.2	10.6	6.8	39.6	63.7	141.2
Queue Length 50th (ft)	189	203	25	187	108	~612
Queue Length 95th (ft)	m298	210	m32	231	m130	m#687
Internal Link Dist (ft)		612		1486		328
Turn Bay Length (ft)						
Base Capacity (vph)	837	2620	1533	1572	236	2006
Starvation Cap Reductn	32	135	0	0	0	323
Spillback Cap Reductn	34	35	0	6	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.78	0.27	0.63	0.55	1.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	665	2098	324	2520	380	1699
v/c Ratio	0.92	0.92	0.24	3.59dr	1.23	0.73
Control Delay	26.9	19.7	7.7	352.0	163.2	35.6
Queue Delay	0.1	0.5	0.0	0.0	0.0	16.1
Total Delay	27.0	20.2	7.7	352.0	163.2	51.6
Queue Length 50th (ft)	488	518	33	~840	~375	366
Queue Length 95th (ft)	m#731	549	m43	#914	m#487	422
Internal Link Dist (ft)		612		1486		328
Turn Bay Length (ft)						
Base Capacity (vph)	723	2271	1330	1474	310	2331
Starvation Cap Reductn	1	30	0	0	0	661
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.94	0.24	1.71	1.23	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

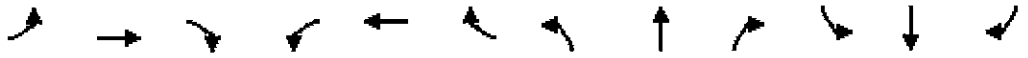
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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

Queues

30: Valley Center Drive & Carmel Creek Road 8/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	59	154	174	308	603	240	304	452	359	377	239	541
v/c Ratio	0.33	0.19	0.35	0.79	0.91	0.34	0.84	0.47	0.36	0.77	0.33	0.84
Control Delay	56.0	36.8	7.1	58.1	55.1	4.5	70.7	63.7	2.1	61.0	44.7	39.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.0	36.8	7.1	58.1	55.1	4.5	70.7	63.7	2.1	61.0	44.7	39.8
Queue Length 50th (ft)	43	50	0	224	435	4	244	181	10	143	88	301
Queue Length 95th (ft)	87	76	54	313	532	51	m#344	m228	m30	#222	133	#547
Internal Link Dist (ft)		520			620			541			491	
Turn Bay Length (ft)	220			590			100		70	265		
Base Capacity (vph)	177	944	550	472	807	817	371	953	1049	500	733	647
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.16	0.32	0.65	0.75	0.29	0.82	0.47	0.34	0.75	0.33	0.84

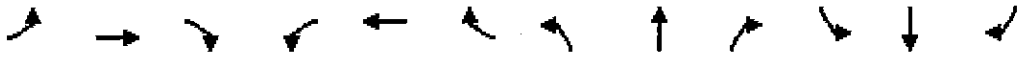
Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

30: Valley Center Drive & Carmel Creek Road 8/26/2009



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	109	326	177	166	297	248	337	802	102	607	478	354
v/c Ratio	0.61	0.57	0.44	0.72	0.83	0.49	0.83	0.62	0.12	0.85	0.39	0.41
Control Delay	65.9	50.2	9.7	67.0	66.5	8.3	79.2	17.2	0.2	58.3	33.7	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	50.2	9.7	67.0	66.5	8.3	79.2	17.2	0.2	58.3	33.7	10.5
Queue Length 50th (ft)	82	123	0	125	222	0	280	62	0	229	150	61
Queue Length 95th (ft)	140	168	61	194	314	67	m295	m238	m0	296	231	158
Internal Link Dist (ft)		520			620			541			491	
Turn Bay Length (ft)	210			590			100		70	265		
Base Capacity (vph)	221	657	438	295	420	549	502	1302	923	772	1224	905
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.50	0.40	0.56	0.71	0.45	0.67	0.62	0.11	0.79	0.39	0.39

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	392	391	261	474	272	449
v/c Ratio	0.84	0.84	0.41	0.27	0.67	0.19
Control Delay	56.2	56.0	5.4	17.1	40.2	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	56.0	5.4	17.1	40.2	13.5
Queue Length 50th (ft)	297	296	0	93	81	110
Queue Length 95th (ft)	388	387	56	161	m119	m176
Internal Link Dist (ft)		1330		312		541
Turn Bay Length (ft)	390				310	
Base Capacity (vph)	588	588	724	1736	601	2318
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.66	0.36	0.27	0.45	0.19

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	592	591	92	201	663	164
v/c Ratio	0.89	0.89	0.13	0.21	0.83	0.09
Control Delay	49.3	49.1	3.9	14.1	37.8	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	49.1	3.9	14.1	37.8	12.9
Queue Length 50th (ft)	441	440	0	19	215	43
Queue Length 95th (ft)	520	517	27	54	m304	m65
Internal Link Dist (ft)		1330		312		541
Turn Bay Length (ft)	390				345	
Base Capacity (vph)	826	826	825	965	834	1902
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.72	0.11	0.21	0.79	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	185	250	875	1317	837	609
v/c Ratio	0.40	0.58	0.46	1.19	1.04	0.22
Control Delay	50.6	11.8	13.7	103.2	82.0	3.6
Queue Delay	0.0	0.0	0.7	26.8	0.0	0.0
Total Delay	50.6	11.8	14.3	130.0	82.0	3.6
Queue Length 50th (ft)	68	0	133	~1241	~309	31
Queue Length 95th (ft)	105	77	m114	m#1459	m#467	m111
Internal Link Dist (ft)			404			482
Turn Bay Length (ft)	400			120	170	
Base Capacity (vph)	458	428	1887	1111	801	2831
Starvation Cap Reductn	0	0	605	54	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.58	0.68	1.25	1.04	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	54	272	1383	801	571	652
v/c Ratio	0.09	0.53	0.76	0.68	0.83	0.25
Control Delay	41.2	9.1	30.6	8.1	58.7	8.8
Queue Delay	0.0	0.8	6.9	1.5	0.0	0.0
Total Delay	41.2	9.9	37.5	9.7	58.7	8.8
Queue Length 50th (ft)	18	0	440	138	228	132
Queue Length 95th (ft)	36	75	m542	m187	m261	m152
Internal Link Dist (ft)			404			482
Turn Bay Length (ft)	400				150	
Base Capacity (vph)	629	512	1824	1170	801	2654
Starvation Cap Reductn	0	0	399	198	0	0
Spillback Cap Reductn	0	73	82	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.62	0.97	0.82	0.71	0.25

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

34: SR 56 Eastbound Ramps & Carmel Country Road 3/25/2009

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	352	351	435	1489	196	446	348
v/c Ratio	0.80	0.80	0.59	0.91	0.26	0.74	0.15
Control Delay	54.2	54.0	6.2	41.0	17.0	49.0	6.3
Queue Delay	0.0	0.0	0.0	14.9	0.0	0.0	0.0
Total Delay	54.3	54.1	6.2	55.9	17.0	49.0	6.3
Queue Length 50th (ft)	269	268	0	533	60	170	45
Queue Length 95th (ft)	337	336	68	#864	137	209	70
Internal Link Dist (ft)		2230		136			404
Turn Bay Length (ft)	660				100	360	
Base Capacity (vph)	602	602	846	1635	762	652	2375
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	4	4	0	174	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.59	0.51	1.02	0.26	0.68	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	773	813	734	652	76	315	391
v/c Ratio	0.90	0.95	0.76	0.69	0.17	0.74	0.26
Control Delay	42.4	48.8	18.4	44.5	18.3	52.9	10.3
Queue Delay	0.0	0.0	0.0	3.9	0.0	0.0	0.0
Total Delay	42.4	48.8	18.4	48.4	18.3	52.9	10.3
Queue Length 50th (ft)	544	595	252	245	19	75	29
Queue Length 95th (ft)	#827	#893	423	314	60	125	42
Internal Link Dist (ft)		2230		136			404
Turn Bay Length (ft)	660				100	360	
Base Capacity (vph)	869	873	974	948	456	458	1504
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	212	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.93	0.75	0.89	0.17	0.69	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	543	1877	2011	870	435	652	652
v/c Ratio	1.00	0.90	0.99	0.93	0.37	1.25	1.25
Control Delay	88.8	28.4	61.3	39.2	30.9	160.6	160.6
Queue Delay	0.0	11.7	7.7	0.0	0.0	0.0	0.0
Total Delay	88.8	40.2	69.0	39.2	30.9	160.6	160.6
Queue Length 50th (ft)	219	628	590	440	129	~657	~657
Queue Length 95th (ft)	#337	757	#694	m#570	175	#903	#903
Internal Link Dist (ft)		673	1237			457	
Turn Bay Length (ft)	470			190	460		360
Base Capacity (vph)	544	2094	2034	938	1173	523	523
Starvation Cap Reductn	0	235	0	0	0	0	0
Spillback Cap Reductn	0	0	61	0	8	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	1.01	1.02	0.93	0.37	1.25	1.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

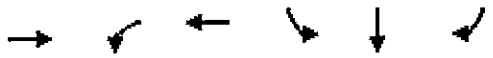
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	859	1866	1457	652	652	543	544
v/c Ratio	0.87	0.78	0.81	0.79	0.74	1.33	1.33
Control Delay	49.8	16.4	38.1	25.9	46.5	199.7	200.7
Queue Delay	0.0	2.2	0.0	0.0	0.1	0.0	0.0
Total Delay	49.8	18.6	38.1	25.9	46.6	199.7	200.7
Queue Length 50th (ft)	324	475	410	227	239	~562	~564
Queue Length 95th (ft)	363	574	m#534	m#493	306	#795	#796
Internal Link Dist (ft)		673	1237			457	
Turn Bay Length (ft)	470			190	460		360
Base Capacity (vph)	1402	2389	1791	824	887	408	408
Starvation Cap Reductn	0	368	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	11	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.92	0.81	0.79	0.74	1.33	1.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

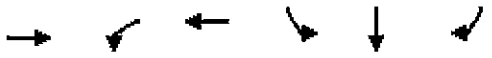


Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1076	1203	985	1052	81	82
v/c Ratio	1.12	0.89	0.40	1.31	0.17	0.17
Control Delay	88.5	42.0	8.0	187.4	0.7	0.8
Queue Delay	102.7	0.5	0.5	161.0	0.0	0.0
Total Delay	191.2	42.6	8.5	348.4	0.8	0.8
Queue Length 50th (ft)	~485	440	149	~541	0	0
Queue Length 95th (ft)	#722	453	184	#672	0	0
Internal Link Dist (ft)	134		490		859	
Turn Bay Length (ft)		245		460		
Base Capacity (vph)	962	1745	2477	801	483	483
Starvation Cap Reductn	12	197	936	0	0	0
Spillback Cap Reductn	166	0	423	172	20	20
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.35	0.78	0.64	1.67	0.17	0.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1402	1086	696	1270	98	98
v/c Ratio	0.83	2.23	0.30	1.35	0.16	0.16
Control Delay	22.1	587.3	9.1	198.0	0.6	0.6
Queue Delay	46.1	0.0	0.0	170.6	0.0	0.0
Total Delay	68.2	587.3	9.1	368.6	0.6	0.6
Queue Length 50th (ft)	575	~700	111	~662	0	0
Queue Length 95th (ft)	661	#832	141	#797	0	0
Internal Link Dist (ft)	134		490		859	
Turn Bay Length (ft)		295		460		
Base Capacity (vph)	1680	486	2330	944	614	614
Starvation Cap Reductn	401	0	0	0	0	0
Spillback Cap Reductn	355	0	96	208	7	7
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.10	2.23	0.31	1.73	0.16	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

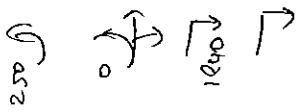
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	130	1617	1916	293	230	438	1604
v/c Ratio	0.52	1.28	0.78	0.15	0.89	1.00	0.94
Control Delay	74.7	172.0	18.3	1.9	95.8	67.7	40.5
Queue Delay	0.0	177.4	119.3	1.0	0.0	112.3	75.9
Total Delay	74.7	349.4	137.6	3.0	95.8	180.0	116.4
Queue Length 50th (ft)	64	~1071	611	9	235	~227	744
Queue Length 95th (ft)	101	#1210	706	26	#402	#502	#901
Internal Link Dist (ft)		490	171			676	
Turn Bay Length (ft)	130			230	400		540
Base Capacity (vph)	252	1263	2454	2003	258	437	1730
Starvation Cap Reductn	0	163	937	1449	0	0	0
Spillback Cap Reductn	0	298	147	0	0	97	360
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	1.68	1.26	0.53	0.89	1.29	1.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Calculated Queue: 410 506 1800

Adjusted Queue: 470 0 2240

500

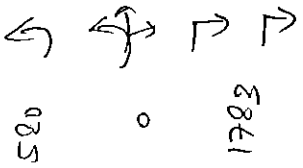
(↰ 12% : 60
↱ 88% : 440)

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	109	2074	1151	457	473	547	1548
v/c Ratio	0.53	1.22	0.54	0.25	1.08	1.28	1.15
Control Delay	78.2	139.9	19.0	1.4	118.1	181.0	112.8
Queue Delay	0.0	184.3	114.9	1.2	0.0	193.7	170.1
Total Delay	78.2	324.3	133.9	2.6	118.1	374.6	282.9
Queue Length 50th (ft)	54	~1307	336	0	~543	~718	~975
Queue Length 95th (ft)	88	#1438	396	24	#777	#993	#1123
Internal Link Dist (ft)		490	171			676	
Turn Bay Length (ft)	130			230	400		590
Base Capacity (vph)	206	1699	2123	1855	437	427	1348
Starvation Cap Reductn	0	304	1202	1135	0	0	0
Spillback Cap Reductn	0	428	0	0	0	108	336
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	1.63	1.25	0.63	1.08	1.71	1.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

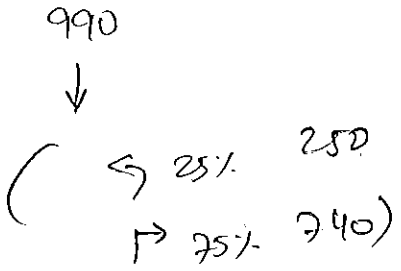
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Calculated Queues: 780 990 2250

1030 0 2990

Adjusted Queues:



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	484	1504	283	435	1179	1241	759
v/c Ratio	0.84	0.63	0.42	0.89	0.63	0.99	0.74
Control Delay	46.3	29.8	22.6	77.0	23.3	62.6	36.8
Queue Delay	469.7	0.6	0.0	0.0	1.8	0.0	0.0
Total Delay	516.0	30.3	22.6	77.0	25.1	62.6	36.8
Queue Length 50th (ft)	401	276	123	186	275	~540	275
Queue Length 95th (ft)	#627	318	199	#273	321	#676	359
Internal Link Dist (ft)		365			283	355	
Turn Bay Length (ft)	430			180			
Base Capacity (vph)	597	2452	689	491	1874	1252	1025
Starvation Cap Reductn	0	0	0	0	497	0	0
Spillback Cap Reductn	360	497	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	2.04	0.77	0.41	0.89	0.86	0.99	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	163	645	217	543	1348	1817	615
v/c Ratio	0.80	0.76	0.67	0.86	0.48	0.89	0.38
Control Delay	78.3	56.2	33.9	57.6	5.7	29.8	14.1
Queue Delay	9.9	0.5	0.0	0.0	2.3	2.6	0.0
Total Delay	88.2	56.7	33.9	57.6	8.0	32.4	14.1
Queue Length 50th (ft)	153	150	74	233	158	627	135
Queue Length 95th (ft)	#295	188	162	m239	m174	756	178
Internal Link Dist (ft)		645			283	355	
Turn Bay Length (ft)	430			180			
Base Capacity (vph)	203	845	323	658	2802	2031	1613
Starvation Cap Reductn	0	0	0	0	1270	0	0
Spillback Cap Reductn	23	32	0	0	0	127	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.79	0.67	0.83	0.88	0.95	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	765	2417	408	984	176	2033
v/c Ratio	0.89	0.89	0.26	0.95dr	0.80	1.09
Control Delay	16.5	12.6	7.3	47.4	64.7	87.1
Queue Delay	2.4	1.6	0.0	0.0	0.0	123.2
Total Delay	18.8	14.2	7.3	47.4	64.7	210.3
Queue Length 50th (ft)	322	341	29	203	146	~639
Queue Length 95th (ft)	m363	m383	m33	245	m158	m#730
Internal Link Dist (ft)		612		1486		313
Turn Bay Length (ft)					210	
Base Capacity (vph)	862	2713	1580	1296	236	1865
Starvation Cap Reductn	37	154	0	0	0	379
Spillback Cap Reductn	11	12	0	2	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.94	0.26	0.76	0.75	1.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	870	2784	324	2520	445	1699
v/c Ratio	1.40	1.42	0.28	2.83dr	1.51	0.64
Control Delay	210.0	217.3	21.5	183.7	278.1	20.1
Queue Delay	31.8	0.0	0.0	0.0	0.0	2.2
Total Delay	241.8	217.3	21.5	183.7	278.1	22.3
Queue Length 50th (ft)	~1047	~1126	64	~738	~495	231
Queue Length 95th (ft)	m#1030	m#1105	m58	#812	m#529	m268
Internal Link Dist (ft)		612		1486		289
Turn Bay Length (ft)						
Base Capacity (vph)	621	1962	1152	1903	295	2670
Starvation Cap Reductn	0	0	0	0	0	791
Spillback Cap Reductn	30	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.47	1.42	0.28	1.32	1.51	0.90

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	59	154	174	308	603	270	304	452	359	377	258	541
v/c Ratio	0.28	0.17	0.33	0.79	0.92	0.37	0.87	0.50	0.37	0.80	0.37	0.83
Control Delay	51.5	35.0	6.8	58.1	56.0	5.3	75.6	65.1	2.1	64.0	46.2	39.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.5	35.0	6.8	58.1	56.0	5.3	75.6	65.1	2.1	64.0	46.2	39.8
Queue Length 50th (ft)	42	48	0	224	431	10	245	182	11	143	98	312
Queue Length 95th (ft)	85	76	54	313	557	62	m#344	m228	m31	#222	143	#537
Internal Link Dist (ft)		520			620			541			491	
Turn Bay Length (ft)	220			590			100		70	265		
Base Capacity (vph)	221	947	551	472	761	794	358	908	1034	481	693	658
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.16	0.32	0.65	0.79	0.34	0.85	0.50	0.35	0.78	0.37	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	109	326	177	166	297	267	337	802	102	607	503	354
v/c Ratio	0.63	0.45	0.38	1.12	0.84	0.52	0.82	0.60	0.13	0.88	0.41	0.41
Control Delay	67.6	43.0	7.7	160.1	68.1	8.5	78.1	14.9	0.6	62.0	33.7	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.6	43.0	7.7	160.1	68.1	8.5	78.1	14.9	0.6	62.0	33.7	10.2
Queue Length 50th (ft)	82	114	0	~149	221	0	279	62	0	234	160	59
Queue Length 95th (ft)	142	154	56	#291	#322	70	m295	m144	m2	#358	243	157
Internal Link Dist (ft)		520			620			541			491	
Turn Bay Length (ft)	210			590			100		70	265		
Base Capacity (vph)	207	885	529	148	404	552	531	1340	810	690	1230	898
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.37	0.33	1.12	0.74	0.48	0.63	0.60	0.13	0.88	0.41	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	392	391	261	474	290	449
v/c Ratio	0.84	0.84	0.41	0.28	0.69	0.19
Control Delay	56.2	56.0	5.4	17.5	39.1	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	56.0	5.4	17.5	39.1	13.9
Queue Length 50th (ft)	297	296	0	94	87	113
Queue Length 95th (ft)	388	387	56	163	m127	m179
Internal Link Dist (ft)		1330		312		541
Turn Bay Length (ft)	390				310	
Base Capacity (vph)	588	588	724	1717	601	2318
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.66	0.36	0.28	0.48	0.19

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	592	591	92	201	688	159
v/c Ratio	0.89	0.89	0.13	0.21	0.84	0.08
Control Delay	49.3	49.1	3.9	14.2	37.6	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	49.1	3.9	14.2	37.6	12.8
Queue Length 50th (ft)	441	440	0	20	226	42
Queue Length 95th (ft)	520	517	27	54	m#337	m65
Internal Link Dist (ft)		1330		312		541
Turn Bay Length (ft)	390				345	
Base Capacity (vph)	826	826	825	949	837	1902
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.72	0.11	0.21	0.82	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	185	250	875	1317	837	746
v/c Ratio	0.40	0.58	0.46	1.19	1.04	0.26
Control Delay	50.6	11.8	12.9	102.5	82.8	3.8
Queue Delay	0.0	0.0	0.7	26.8	0.0	0.0
Total Delay	50.6	11.8	13.5	129.3	82.8	3.8
Queue Length 50th (ft)	68	0	93	~649	~345	41
Queue Length 95th (ft)	105	77	m107	m#738	m#467	m133
Internal Link Dist (ft)			404			482
Turn Bay Length (ft)	400			120	170	
Base Capacity (vph)	458	428	1887	1111	801	2831
Starvation Cap Reductn	0	0	605	54	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.58	0.68	1.25	1.04	0.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	54	272	1383	801	571	843
v/c Ratio	0.09	0.53	0.76	0.68	0.83	0.32
Control Delay	41.2	9.1	30.2	8.1	58.8	9.0
Queue Delay	0.0	0.8	6.8	1.5	0.0	0.0
Total Delay	41.2	9.9	37.1	9.6	58.8	9.0
Queue Length 50th (ft)	18	0	440	138	227	167
Queue Length 95th (ft)	36	75	m542	m187	m263	m191
Internal Link Dist (ft)			404			482
Turn Bay Length (ft)	400				150	
Base Capacity (vph)	629	512	1825	1170	801	2654
Starvation Cap Reductn	0	0	399	198	0	0
Spillback Cap Reductn	0	73	82	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.62	0.97	0.82	0.71	0.32

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	352	351	435	1489	196	583	348
v/c Ratio	0.80	0.80	0.59	0.99	0.28	0.80	0.15
Control Delay	54.2	54.0	6.2	56.2	18.8	49.4	6.3
Queue Delay	0.0	0.0	0.0	0.9	0.0	0.0	0.0
Total Delay	54.3	54.1	6.2	57.2	18.8	49.4	6.3
Queue Length 50th (ft)	269	268	0	~675	71	205	45
Queue Length 95th (ft)	337	336	68	#864	137	#344	65
Internal Link Dist (ft)		2230		136			404
Turn Bay Length (ft)	660				100	360	
Base Capacity (vph)	602	602	846	1506	707	731	2375
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	4	4	0	7	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.59	0.51	0.99	0.28	0.80	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	773	813	734	652	76	507	391
v/c Ratio	0.90	0.95	0.76	0.74	0.18	1.04	0.26
Control Delay	42.4	48.8	18.4	47.2	18.5	95.9	11.0
Queue Delay	0.0	0.0	0.0	11.3	0.0	0.0	0.0
Total Delay	42.4	48.8	18.4	58.5	18.5	95.9	11.0
Queue Length 50th (ft)	544	595	252	245	19	~227	32
Queue Length 95th (ft)	#827	#893	423	314	60	#324	45
Internal Link Dist (ft)		2230		136			404
Turn Bay Length (ft)	660				100	360	
Base Capacity (vph)	869	873	974	885	429	487	1504
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	212	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.93	0.75	0.97	0.18	1.04	0.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	130	1617	1916	293	136	136	2000
v/c Ratio	0.52	0.92	0.74	0.14	0.72	0.72	1.20
Control Delay	74.7	56.1	14.5	1.7	83.8	83.8	123.3
Queue Delay	0.0	102.0	84.7	0.9	0.0	0.0	137.5
Total Delay	74.7	158.1	99.2	2.6	83.8	83.8	260.8
Queue Length 50th (ft)	64	554	520	8	136	136	~1344
Queue Length 95th (ft)	101	622	706	26	208	208	#1489
Internal Link Dist (ft)		490	171			676	
Turn Bay Length (ft)	130			230	400		540
Base Capacity (vph)	252	1763	2596	2106	258	258	1673
Starvation Cap Reductn	0	261	979	1515	0	0	0
Spillback Cap Reductn	0	447	116	0	0	0	342
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	1.23	1.18	0.50	0.53	0.53	1.50

Intersection Summary

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95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	109	2074	1151	457	315	315	1938
v/c Ratio	0.53	0.85	0.50	0.23	0.88	0.88	1.49
Control Delay	78.2	38.5	15.6	1.3	80.9	80.9	254.7
Queue Delay	0.0	69.8	59.5	0.9	0.0	0.0	206.2
Total Delay	78.2	108.3	75.2	2.2	80.9	80.9	460.8
Queue Length 50th (ft)	54	641	302	0	313	313	~1490
Queue Length 95th (ft)	88	708	396	24	418	418	#1638
Internal Link Dist (ft)		490	171			676	
Turn Bay Length (ft)	130			230	400		590
Base Capacity (vph)	206	2441	2286	1962	437	437	1303
Starvation Cap Reductn	0	614	1261	1193	0	0	0
Spillback Cap Reductn	0	642	0	0	0	0	307
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	1.15	1.12	0.59	0.72	0.72	1.95

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	978	2204	408	984	176	2033
v/c Ratio	0.50	0.81	0.53	0.95dr	0.80	1.09
Control Delay	8.4	12.8	9.9	47.4	70.5	88.7
Queue Delay	0.0	0.4	0.0	0.0	0.0	93.4
Total Delay	8.4	13.2	9.9	47.4	70.5	182.1
Queue Length 50th (ft)	96	336	95	203	147	~638
Queue Length 95th (ft)	122	343	m138	245	m170	m#687
Internal Link Dist (ft)		600		1486		333
Turn Bay Length (ft)						
Base Capacity (vph)	1945	2723	772	1296	236	1865
Starvation Cap Reductn	0	147	0	0	0	303
Spillback Cap Reductn	22	0	0	2	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.86	0.53	0.76	0.75	1.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	870	2784	324	2520	445	1699
v/c Ratio	0.45	1.02	0.42	5.47dr	1.51	0.91
Control Delay	7.7	36.7	8.3	733.1	276.0	54.0
Queue Delay	0.0	9.9	0.0	0.0	0.0	88.3
Total Delay	7.7	46.6	8.3	733.1	276.0	142.3
Queue Length 50th (ft)	82	~889	65	~962	~495	442
Queue Length 95th (ft)	m114	#972	m96	#1036	m#597	493
Internal Link Dist (ft)		600		1486		333
Turn Bay Length (ft)						
Base Capacity (vph)	1945	2723	773	979	295	1865
Starvation Cap Reductn	0	69	0	0	0	446
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	1.05	0.42	2.57	1.51	1.20

Intersection Summary

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95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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