LINSCOTT
LAW &
GREENSPAN
engineers

TECHNICAL APPENDICES

FORRESTER CREEK INDUSTRIAL PARK

El Cajon, California
March 5, 2009

LLG Ref. 3-05-1602

**Linscott, Law &
Greenspan, Engineers**
4542 Ruffner Street
Suite 100
San Diego, CA 92111
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APPENDIX A

INTERSECTION AND SEGMENT COUNT SHEETS

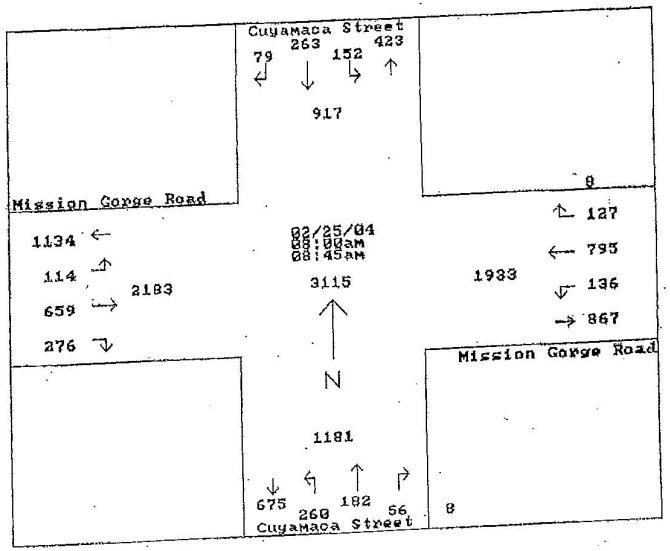
Weather : Clear & Dry
Counted by : B.D. & S.Mockler
Board # : D1-1424 & D1-2279
Location: Cuyamaca St & Mission Gorge Rd

Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 fax (619) 390-8427

Study Name: 04067040
Site Code : 00067040
Start Date: 02/25/04
Page : 2

Group 1

Start Time	Cuyamaca Street Southbound Left	Thru	Right	Peds	Mission Gorge Road Westbound Left	Thru	Right	Peds	Cuyamaca Street Northbound Left	Thru	Right	Peds	Mission Gorge Road Eastbound Left	Thru	Right	Peds	Intvl. Total



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Counted by : B.D. & S. Mockler
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Traffic Data Service Southwest
9773 Maine Avenue
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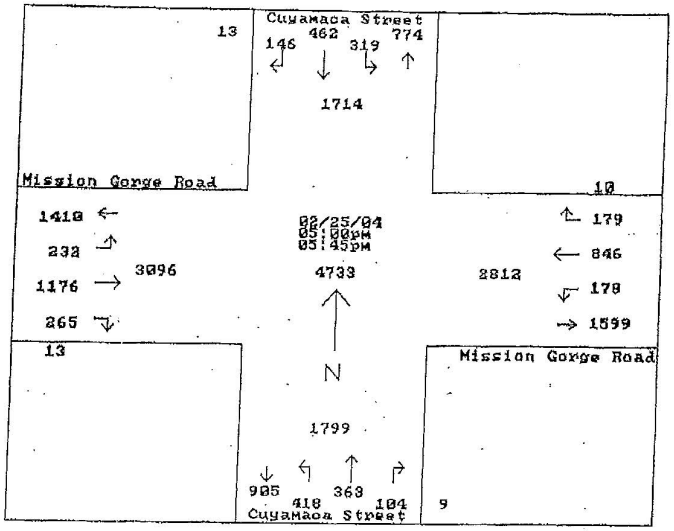
Study Name: 04067041
Site Code : 00067041
Start Date: 02/25/04
Page : 2

Group 1

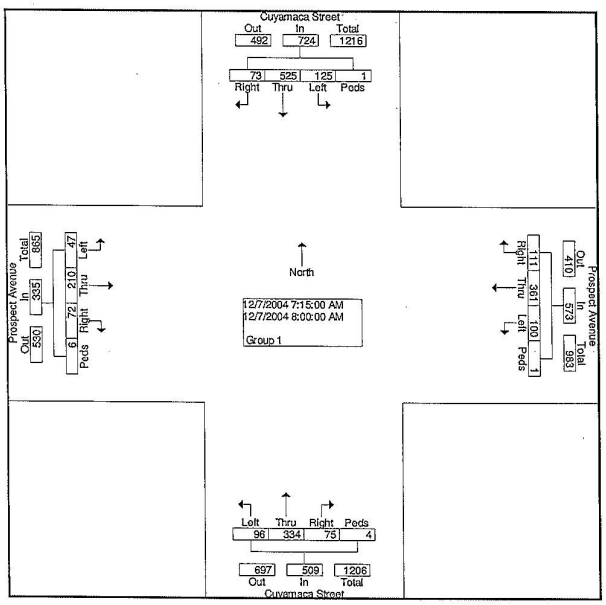
Start Time	Cuyamaca Street Southbound Left	Thru	Right	Peds	Mission Gorge Road Westbound Left	Thru	Right	Peds	Cuyamaca Street Northbound Left	Thru	Right	Peds	Mission Gorge Road Eastbound Left	Thru	Right	Peds	Intvl. Total



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

2

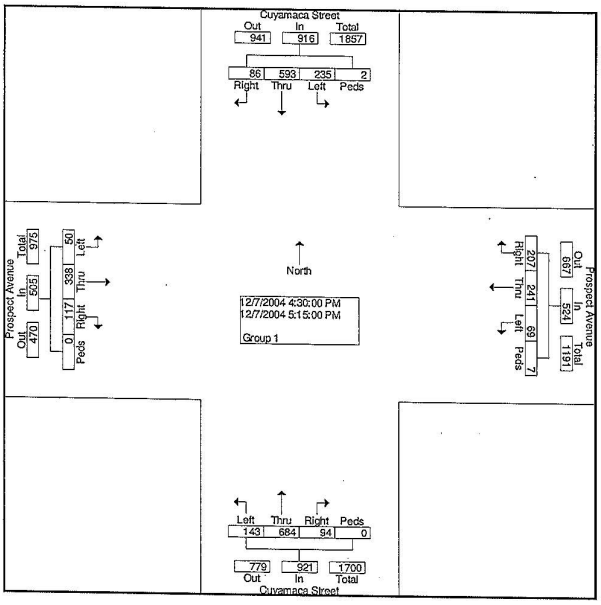
File Name : 04442020
Site Code : 00442020
Start Date : 12/7/2004
Page No : 2



Traffic Data Service Southwest
9773 Maine Avenue
Lakeside, CA 92040
(619) 390-8495 Fax (619) 390-8427

2

File Name : 04442021B
Site Code : 00442021
Start Date : 12/7/2004
Page No : 2



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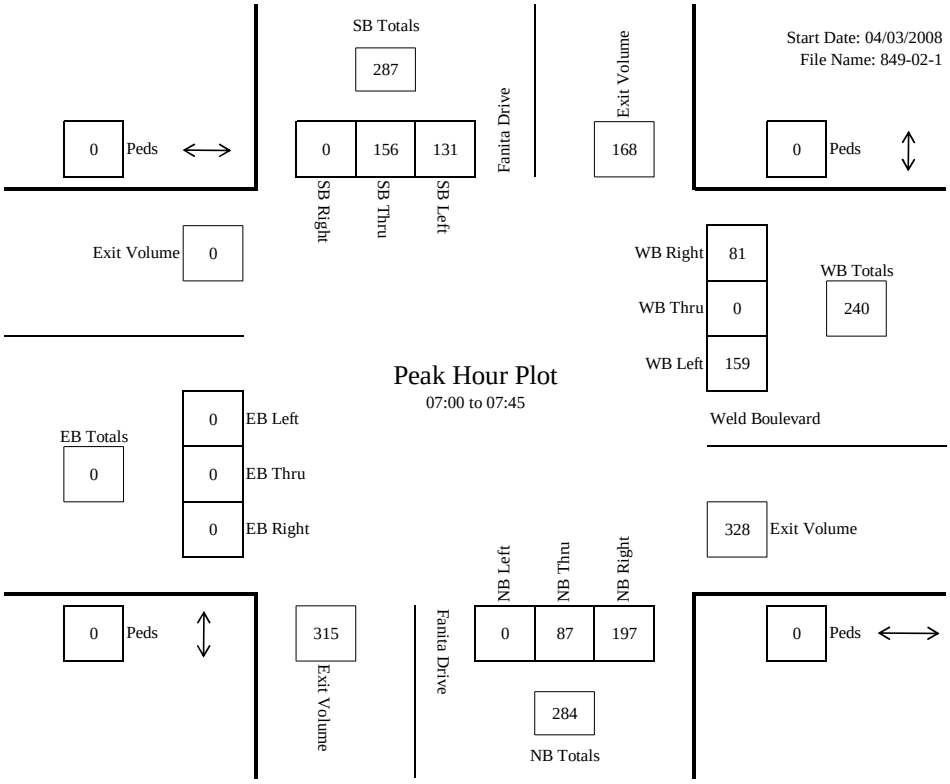

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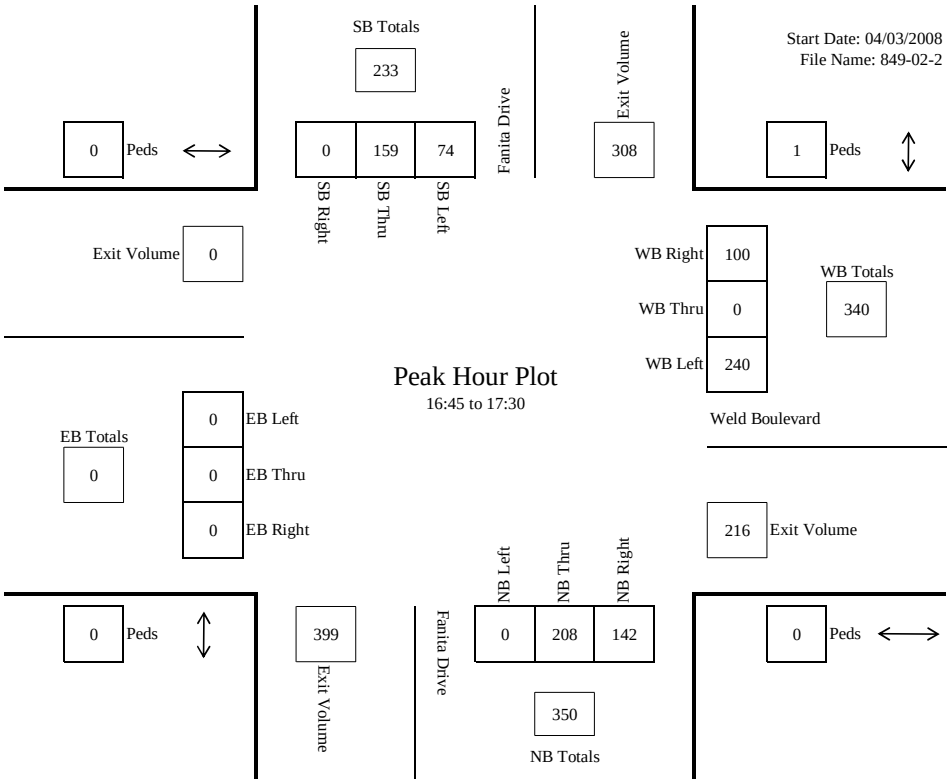

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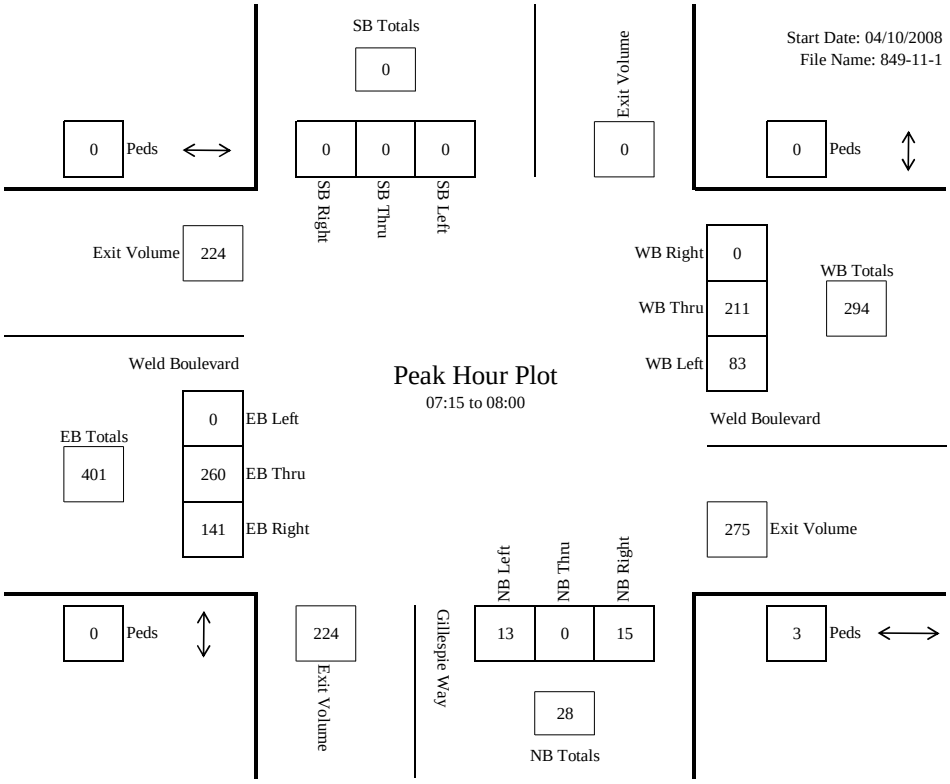

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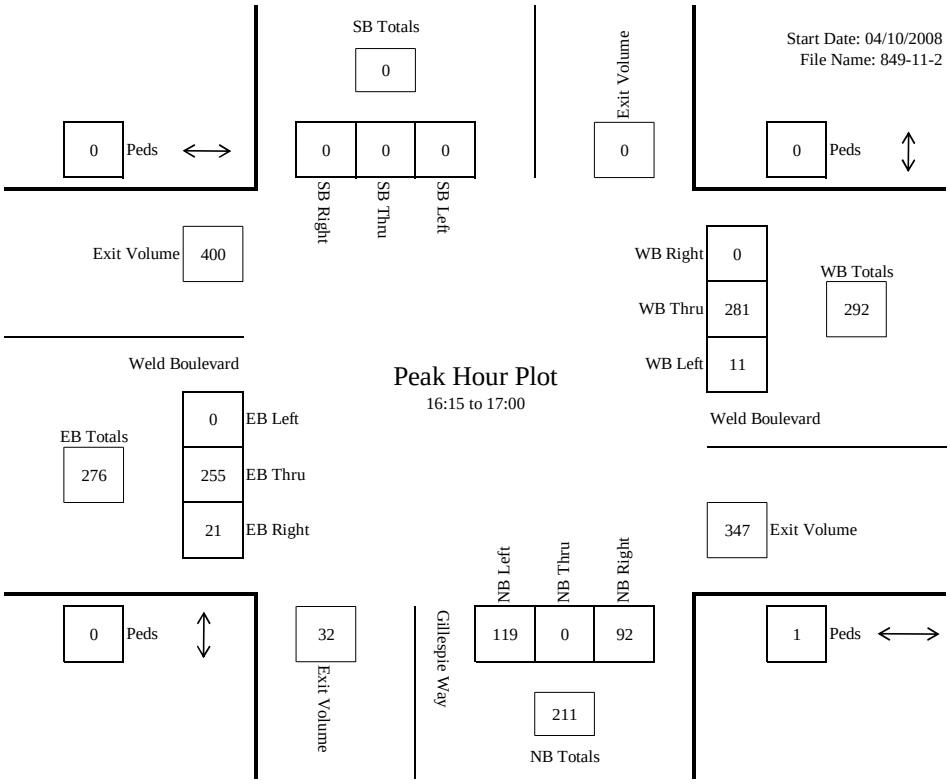

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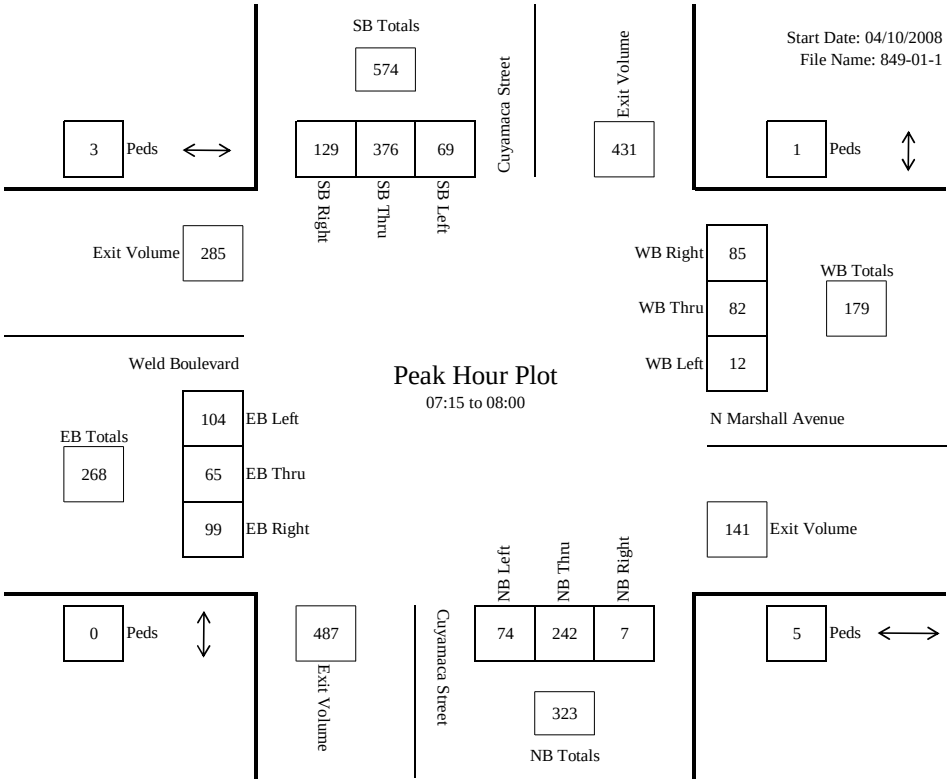
4542 Ruffner Street, Suite 100, San Diego, CA 92111

Start Date: 04/10/2008
File Name: 849-01-1



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4542 Ruffner Street, Suite 100, San Diego, CA 92111

Start Date: 04/10/2008
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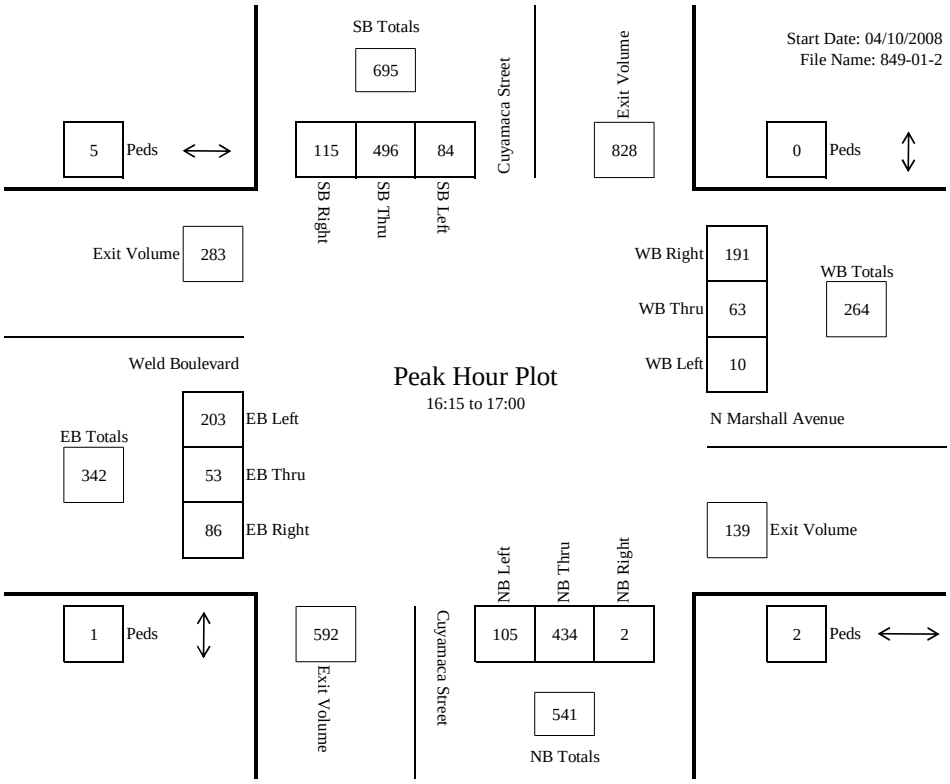

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4542 Ruffner Street, Suite 100, San Diego, CA 92111

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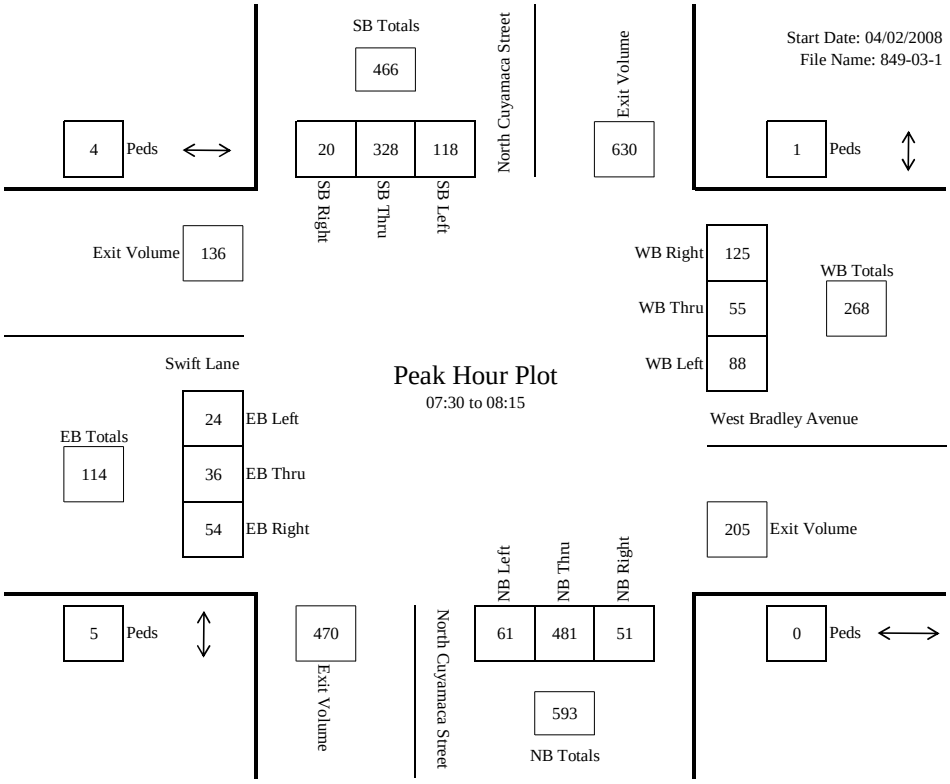

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4542 Ruffner Street, Suite 100, San Diego, CA 92111

Start Date: 04/02/2008
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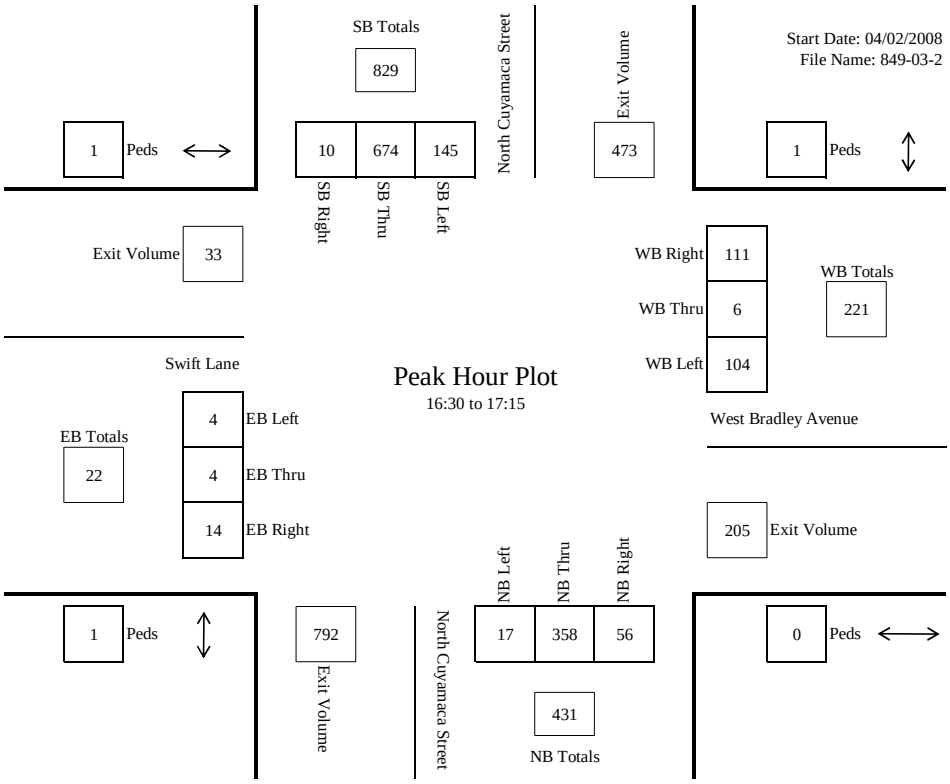

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Start Date: 04/02/2008
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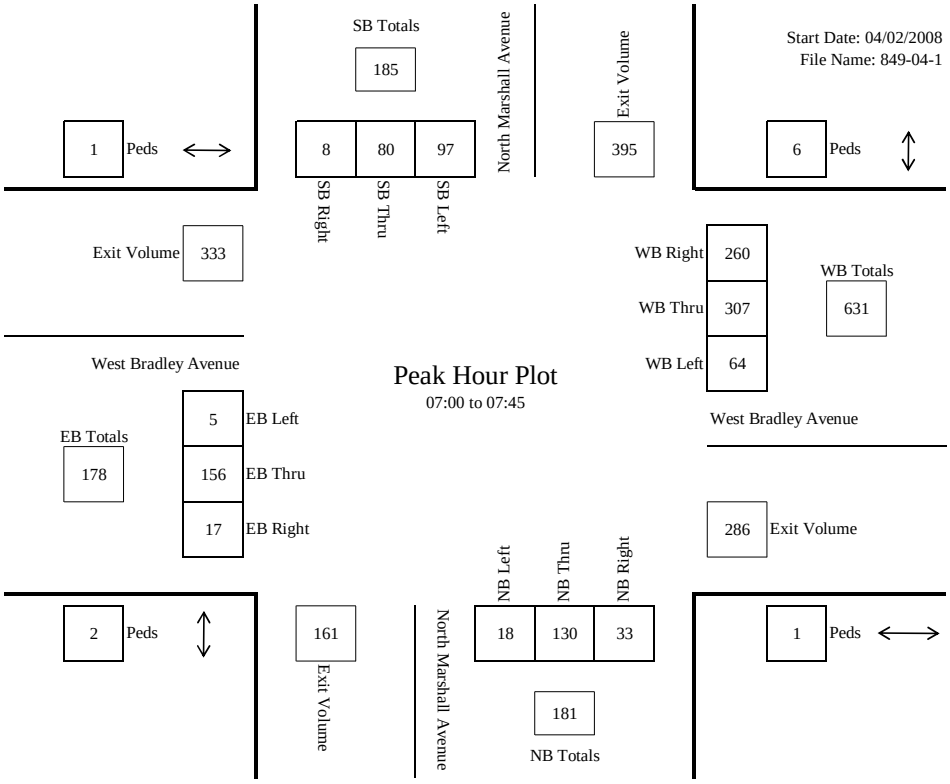

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4542 Ruffner Street, Suite 100, San Diego, CA 92111

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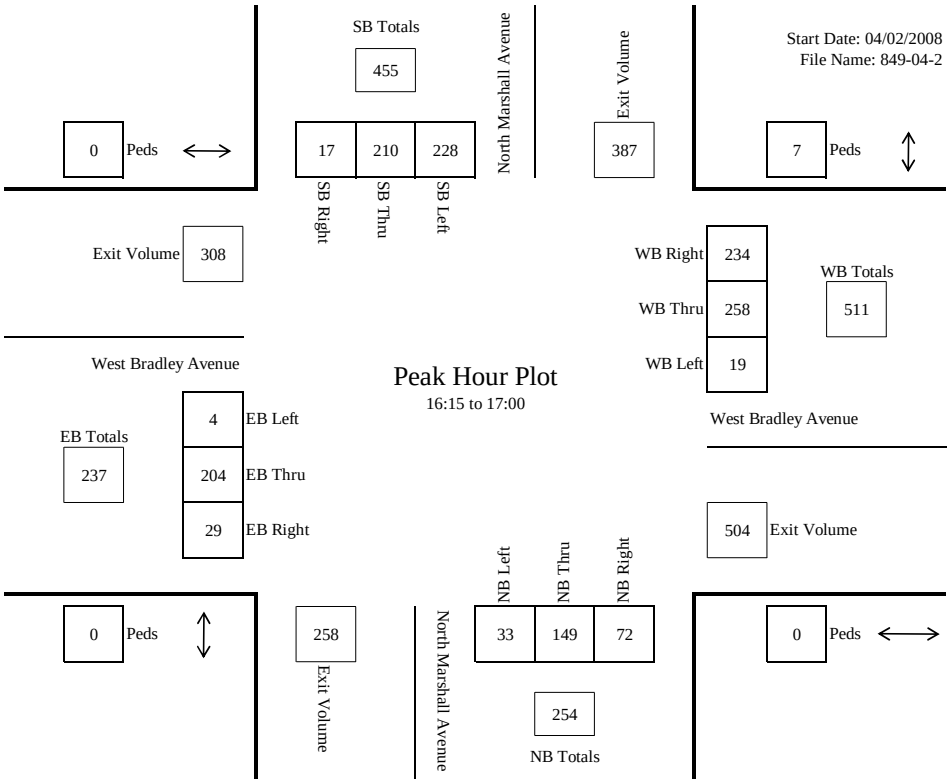

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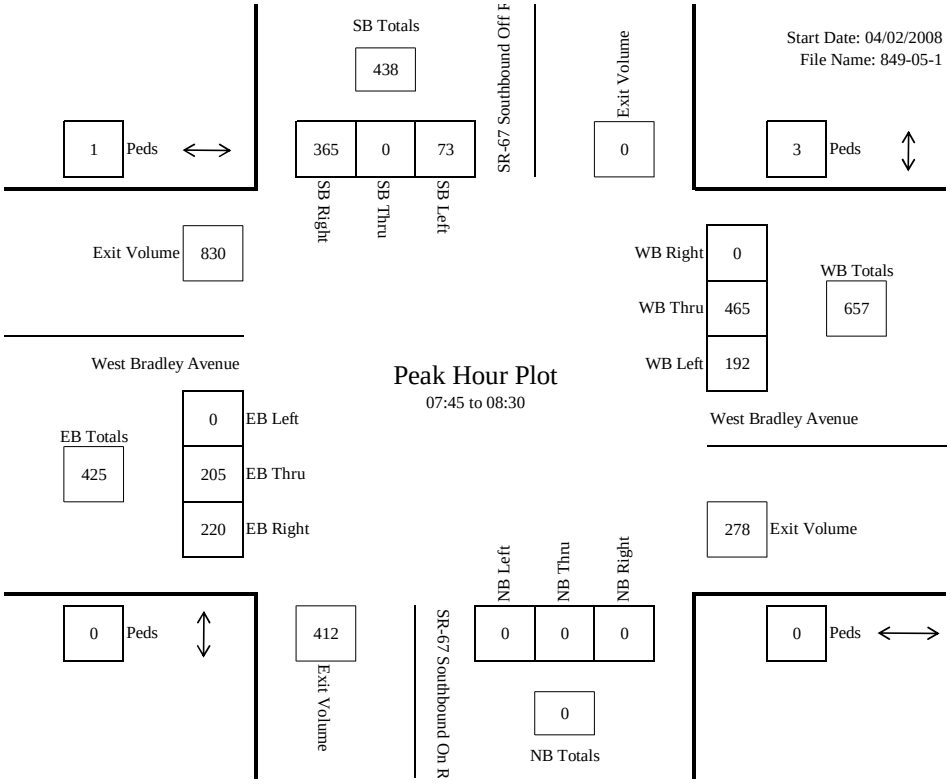

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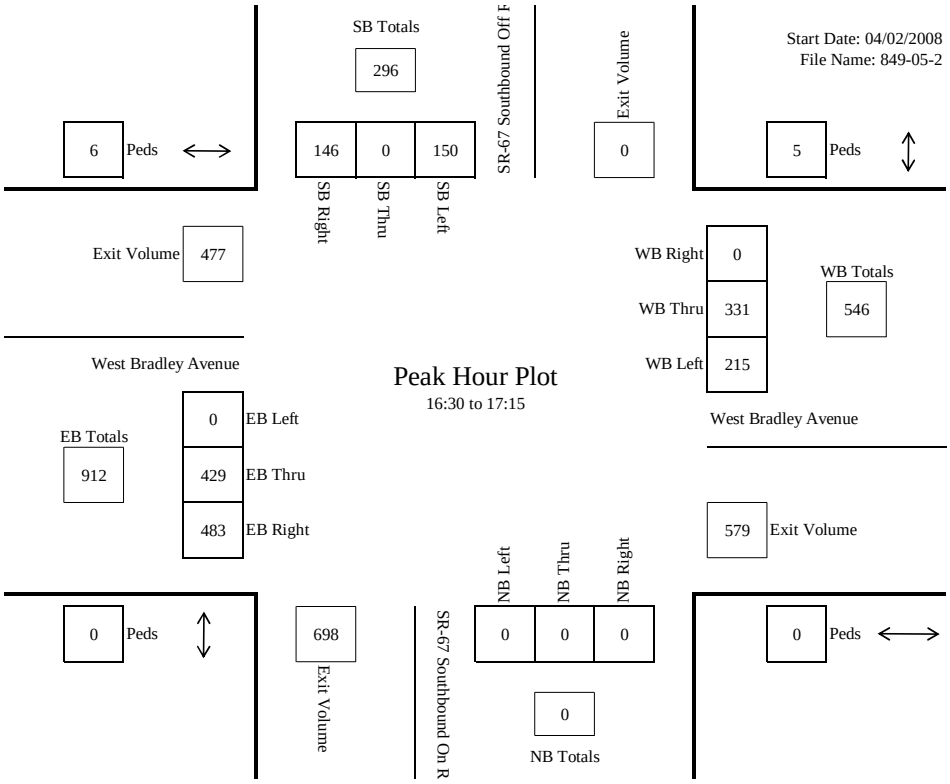

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Start Date: 04/02/2008
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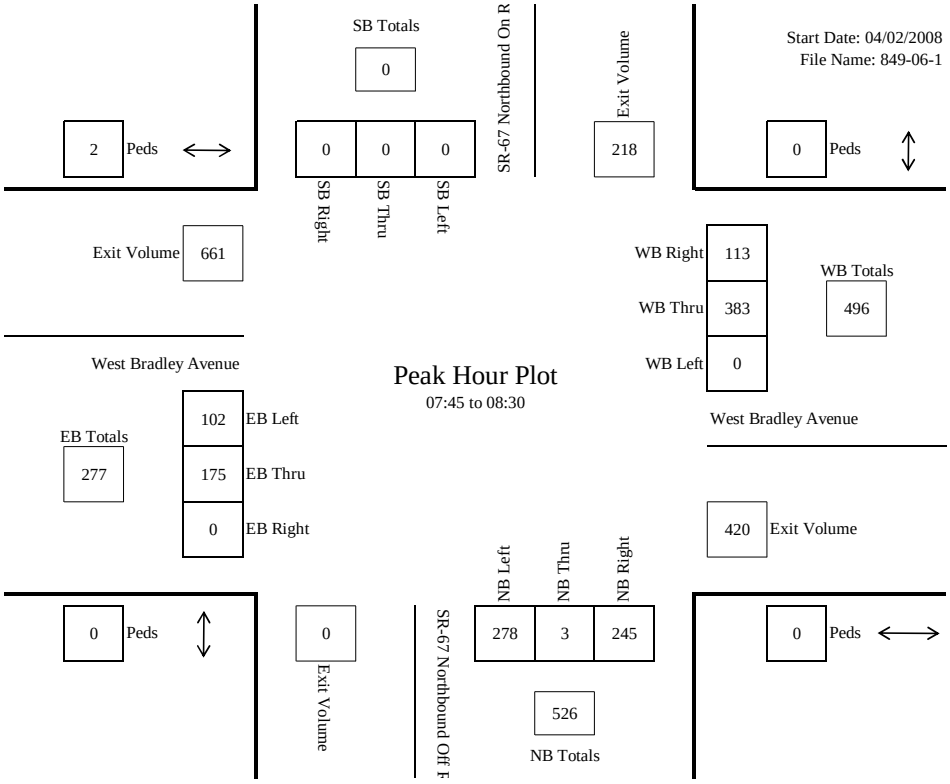

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Start Date: 04/02/2008
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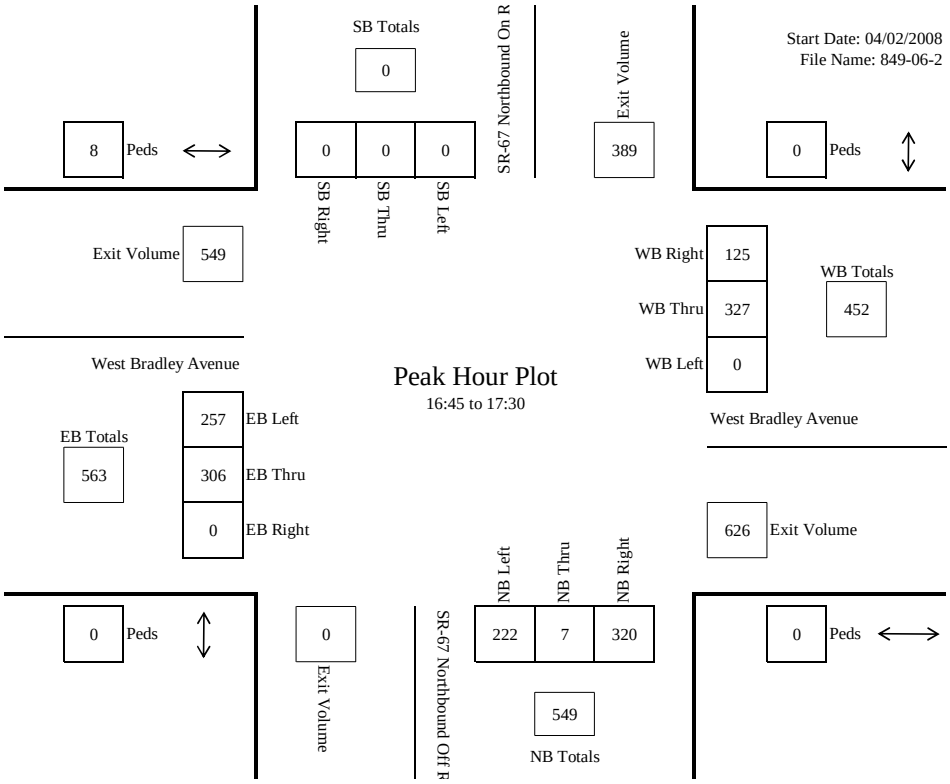

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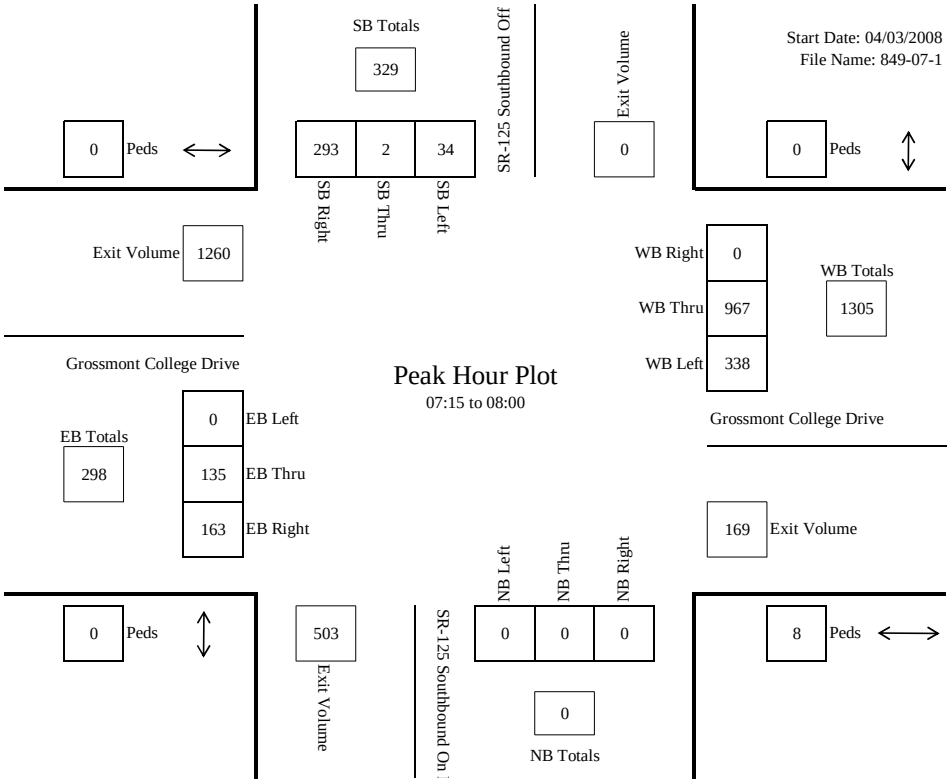

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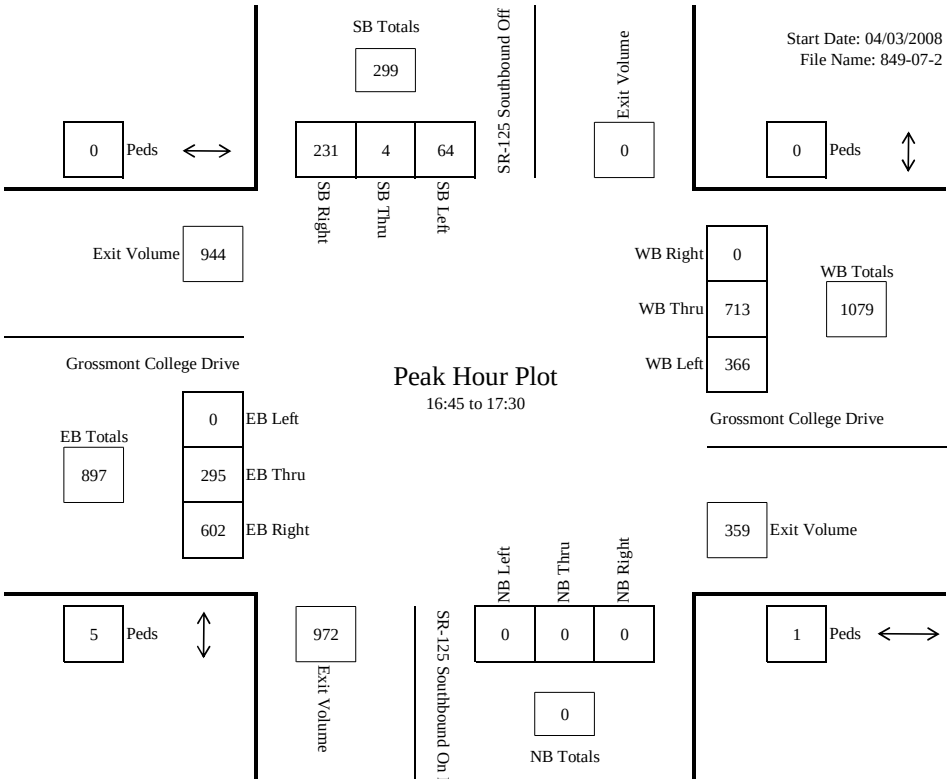

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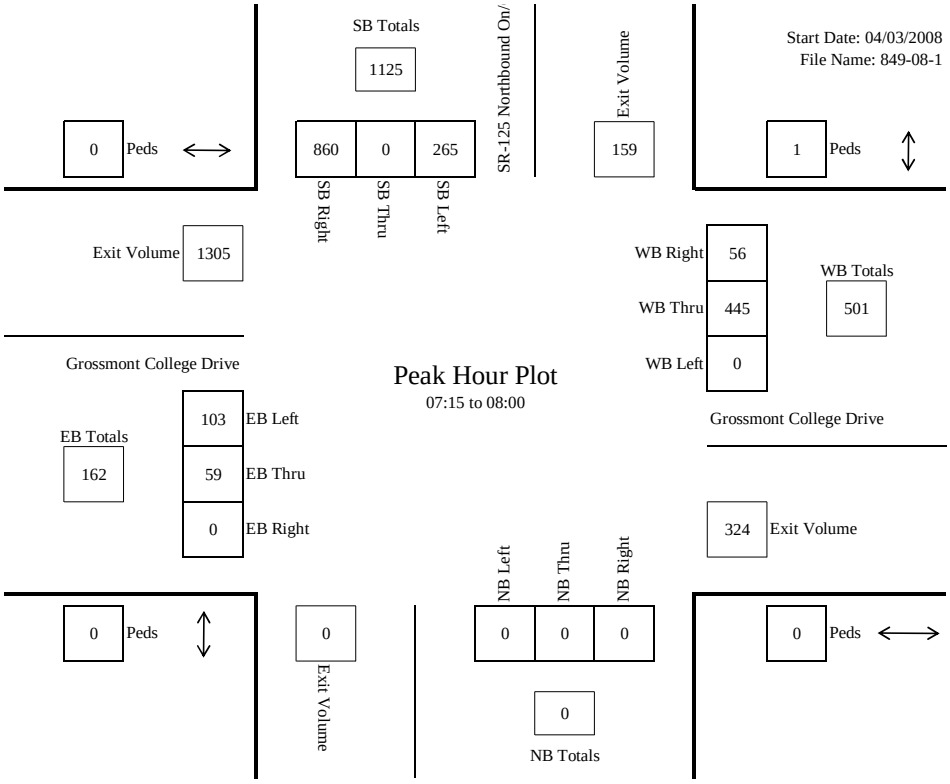

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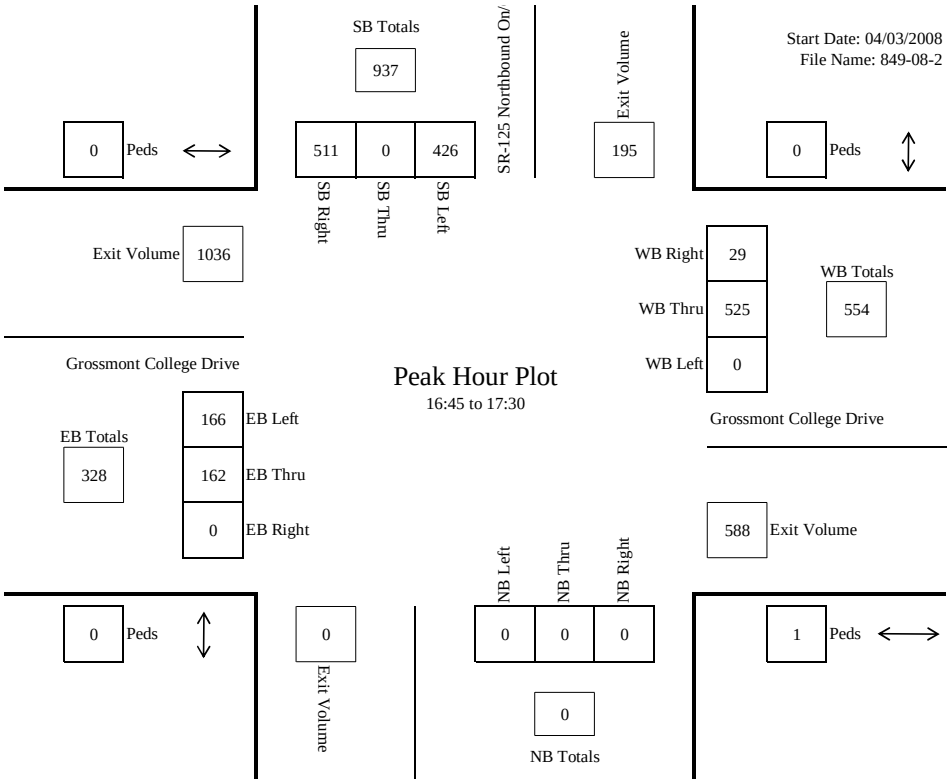

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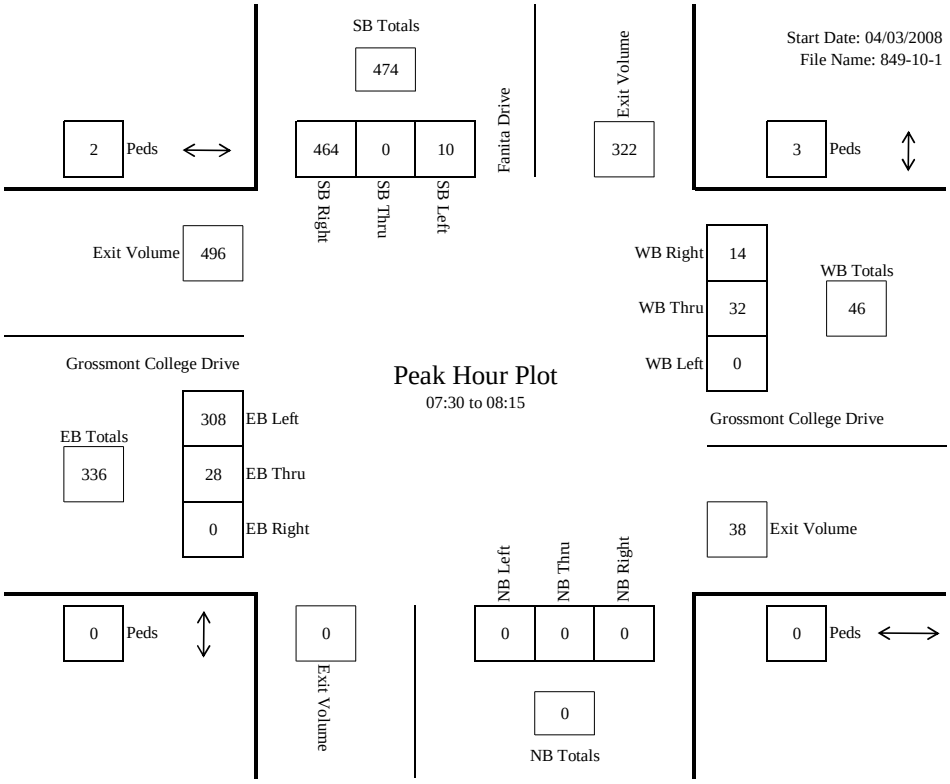
Start Date: 04/03/2008
File Name: 849-10-1



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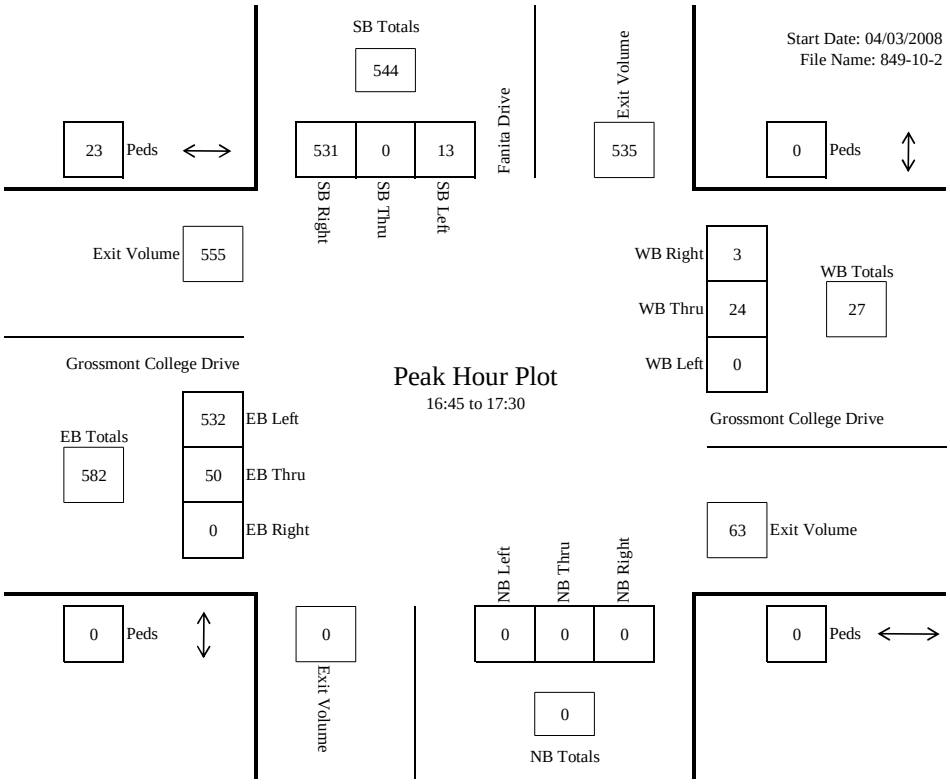
Start Date: 04/03/2008
File Name: 849-10-2



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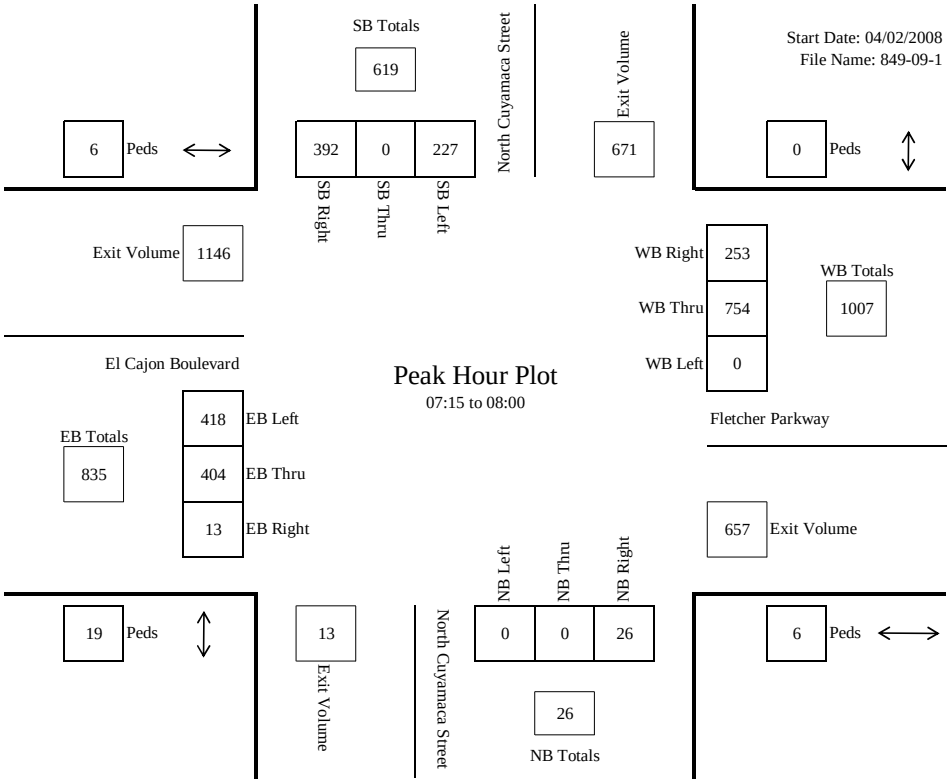
4542 Ruffner Street, Suite 100, San Diego, CA 92111



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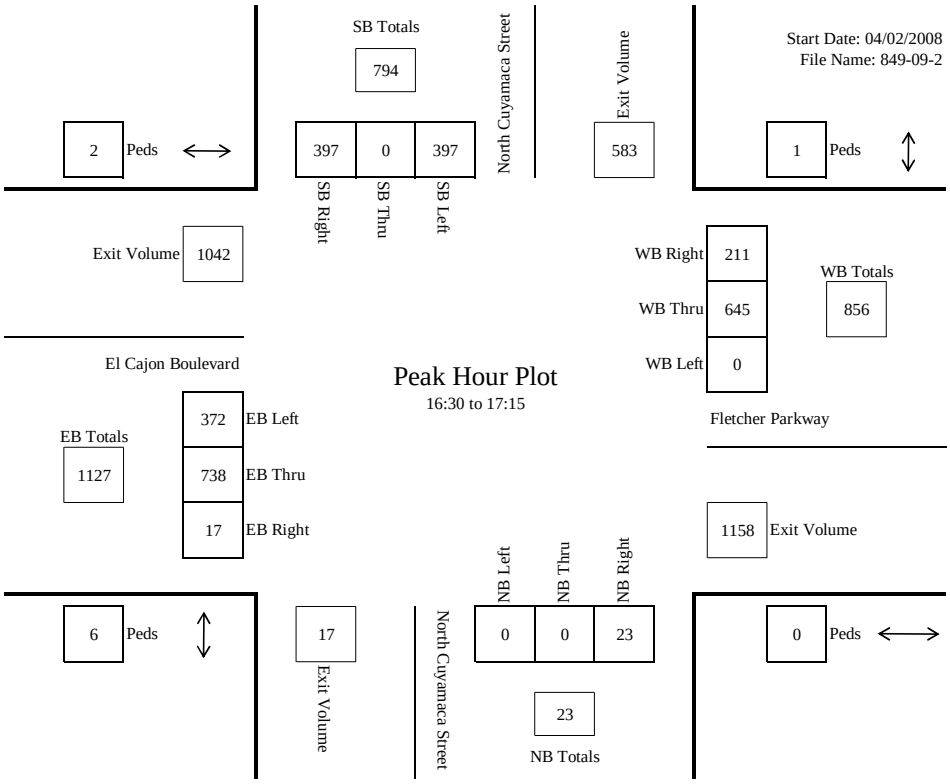
4542 Ruffner Street, Suite 100, San Diego, CA 92111



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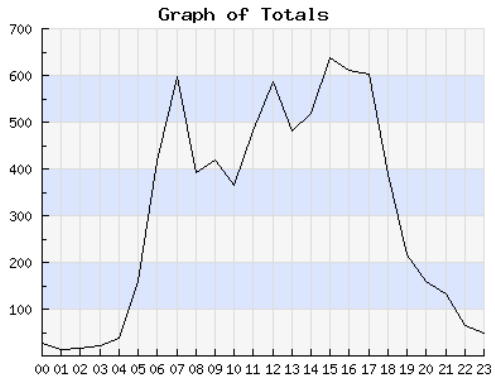
Daily Vehicle Volume Report

Location:
Weld Blvd btwn Gillespie Way & Cuyamaca St
File Number: 84912-1
Counter ID: SP-111/204
Report Duration:
Tuesday Apr 08, 2008 - 00:00 to
Tuesday Apr 08, 2008 - 23:59
Other Notes:
None at this time.



Time	East Bound Volume	West Bound Volume	Total Volume
00:00 - 00:59	14	13	27
01:00 - 01:59	3	10	13
02:00 - 02:59	6	9	15
03:00 - 03:59	16	5	21
04:00 - 04:59	23	15	38
05:00 - 05:59	86	73	159
06:00 - 06:59	197	220	417
07:00 - 07:59	269	329	598
08:00 - 08:59	196	196	392
09:00 - 09:59	216	202	418
10:00 - 10:59	186	180	366
11:00 - 11:59	264	216	480
12:00 - 12:59	298	289	587
13:00 - 13:59	231	250	481
14:00 - 14:59	268	252	520
15:00 - 15:59	339	299	638
16:00 - 16:59	306	304	610
17:00 - 17:59	327	276	603
18:00 - 18:59	180	209	389
19:00 - 19:59	103	114	217
20:00 - 20:59	82	77	159
21:00 - 21:59	63	70	133
22:00 - 22:59	28	38	66
23:00 - 23:59	20	30	50
Total	**3721**	**3676**	**7397**
AM Peak Hour	7:00 7:59	7:15 8:14	7:00 7:59
Volume	269	330	598
PM Peak Hour	15:15 16:14	16:15 17:14	16:30 17:29
Volume	359	318	667

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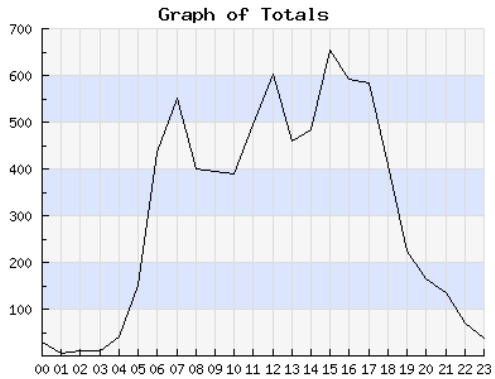
Daily Vehicle Volume Report

Location:
Weld Blvd btwn Gillespie Way & Cuyamaca St
File Number: 84912-2
Counter ID: SP-111/204
Report Duration:
Wednesday Apr 09, 2008 - 00:00 to
Wednesday Apr 09, 2008 - 23:59
Other Notes:
None at this time.



Time	East Bound Volume	West Bound Volume	Total Volume
00:00 - 00:59	22	9	31
01:00 - 01:59	3	2	5
02:00 - 02:59	6	6	12
03:00 - 03:59	4	8	12
04:00 - 04:59	26	15	41
05:00 - 05:59	92	59	151
06:00 - 06:59	224	210	434
07:00 - 07:59	252	300	552
08:00 - 08:59	189	212	401
09:00 - 09:59	210	185	395
10:00 - 10:59	205	183	388
11:00 - 11:59	274	221	495
12:00 - 12:59	309	294	603
13:00 - 13:59	228	231	459
14:00 - 14:59	251	233	484
15:00 - 15:59	350	305	655
16:00 - 16:59	314	277	591
17:00 - 17:59	292	293	585
18:00 - 18:59	204	203	407
19:00 - 19:59	99	126	225
20:00 - 20:59	75	90	165
21:00 - 21:59	62	74	136
22:00 - 22:59	36	35	71
23:00 - 23:59	18	19	37
Total	**3745**	**3590**	**7335**
AM Peak Hour	11:00 11:59	7:15 8:14	7:15 8:14
Volume	274	308	558
PM Peak Hour	15:30 16:29	15:30 16:29	15:30 16:29
Volume	369	314	683

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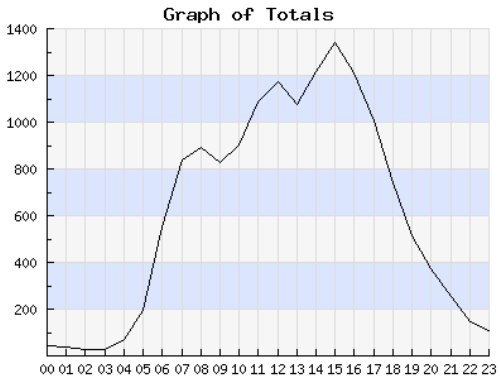
Daily Vehicle Volume Report

Location:
Cuyamaca St south of Weld Blvd/N Marshall Ave
File Number: 84913-1
Counter ID: AB-202/203
Report Duration:
Tuesday Apr 08, 2008 - 00:00 to
Tuesday Apr 08, 2008 - 23:59
Other Notes:
None at this time.



Time	North Bound Volume	South Bound Volume	Total Volume
00:00 - 00:59	17	25	42
01:00 - 01:59	22	14	36
02:00 - 02:59	14	12	26
03:00 - 03:59	13	16	29
04:00 - 04:59	25	45	70
05:00 - 05:59	84	112	196
06:00 - 06:59	207	347	554
07:00 - 07:59	342	495	837
08:00 - 08:59	428	462	890
09:00 - 09:59	382	444	826
10:00 - 10:59	438	464	902
11:00 - 11:59	525	562	1087
12:00 - 12:59	546	628	1174
13:00 - 13:59	478	595	1073
14:00 - 14:59	562	654	1216
15:00 - 15:59	654	685	1339
16:00 - 16:59	639	571	1210
17:00 - 17:59	475	533	1008
18:00 - 18:59	319	423	742
19:00 - 19:59	225	290	515
20:00 - 20:59	162	211	373
21:00 - 21:59	114	141	255
22:00 - 22:59	69	78	147
23:00 - 23:59	59	50	109
Total	**6799**	**7857**	**14656**
AM Peak Hour	11:00 11:59	11:00 11:59	11:00 11:59
Volume	525	562	1087
PM Peak Hour	14:45 15:44	15:00 15:59	14:45 15:44
Volume	660	685	1343

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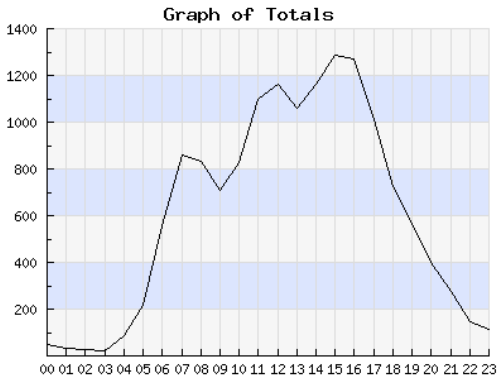
Daily Vehicle Volume Report

Location:
Cuyamaca St south of Weld Blvd/N Marshall Ave
File Number: 84913-2
Counter ID: AB-202/203
Report Duration:
Wednesday Apr 09, 2008 - 00:00 to
Wednesday Apr 09, 2008 - 23:59
Other Notes:
None at this time.



Time	North Bound Volume	South Bound Volume	Total Volume
00:00 - 00:59	23	23	46
01:00 - 01:59	19	15	34
02:00 - 02:59	13	15	28
03:00 - 03:59	9	11	20
04:00 - 04:59	39	45	84
05:00 - 05:59	85	129	214
06:00 - 06:59	212	347	559
07:00 - 07:59	324	534	858
08:00 - 08:59	382	452	834
09:00 - 09:59	324	382	706
10:00 - 10:59	407	419	826
11:00 - 11:59	556	539	1095
12:00 - 12:59	517	646	1163
13:00 - 13:59	494	568	1062
14:00 - 14:59	512	649	1161
15:00 - 15:59	648	640	1288
16:00 - 16:59	636	636	1272
17:00 - 17:59	509	500	1009
18:00 - 18:59	307	416	723
19:00 - 19:59	239	330	569
20:00 - 20:59	184	215	399
21:00 - 21:59	140	135	275
22:00 - 22:59	70	75	145
23:00 - 23:59	58	56	114
Total	**6707**	**7777**	**14484**
AM Peak Hour	11:00 11:59	11:00 11:59	11:00 11:59
Volume	556	539	1095
PM Peak Hour	15:45 16:44	14:45 15:44	14:45 15:44
Volume	660	668	1313

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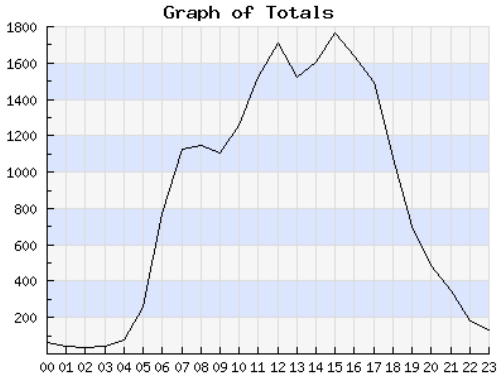
Daily Vehicle Volume Report

Location:
Cuyamaca St north of Weld Blvd/N Marshall Ave
File Number: 84914-1
Counter ID: SP-103/107
Report Duration:
Tuesday Apr 08, 2008 - 00:00 to
Tuesday Apr 08, 2008 - 23:59
Other Notes:
None at this time.



Time	North Bound Volume	South Bound Volume	Total Volume
00:00 - 00:59	33	31	64
01:00 - 01:59	22	21	43
02:00 - 02:59	17	15	32
03:00 - 03:59	28	16	44
04:00 - 04:59	29	48	77
05:00 - 05:59	116	144	260
06:00 - 06:59	338	434	772
07:00 - 07:59	475	653	1128
08:00 - 08:59	568	579	1147
09:00 - 09:59	554	553	1107
10:00 - 10:59	641	614	1255
11:00 - 11:59	799	722	1521
12:00 - 12:59	862	849	1711
13:00 - 13:59	760	761	1521
14:00 - 14:59	793	812	1605
15:00 - 15:59	917	846	1763
16:00 - 16:59	944	694	1638
17:00 - 17:59	800	692	1492
18:00 - 18:59	510	568	1078
19:00 - 19:59	329	376	705
20:00 - 20:59	238	248	486
21:00 - 21:59	172	173	345
22:00 - 22:59	89	94	183
23:00 - 23:59	70	59	129
Total	**10104**	**10002**	**20106**
AM Peak Hour	11:00 11:59	11:00 11:59	11:00 11:59
Volume	799	722	1521
PM Peak Hour	16:15 17:14	12:00 12:59	15:00 15:59
Volume	964	849	1763

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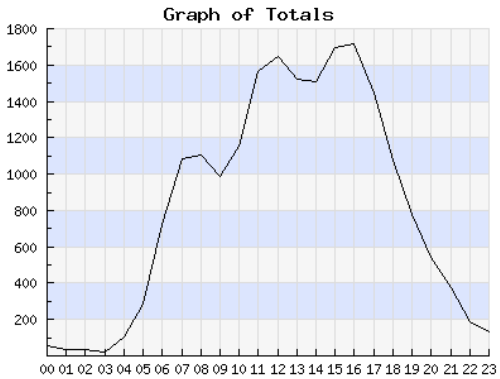
Daily Vehicle Volume Report

Location:
Cuyamaca St north of Weld Blvd/N Marshall Ave
File Number: 84914-2
Counter ID: SP-103/107
Report Duration:
Wednesday Apr 09, 2008 - 00:00 to
Wednesday Apr 09, 2008 - 23:59
Other Notes:
None at this time.



Time	North Bound Volume	South Bound Volume	Total Volume
00:00 - 00:59	36	22	58
01:00 - 01:59	21	17	38
02:00 - 02:59	20	13	33
03:00 - 03:59	12	12	24
04:00 - 04:59	53	49	102
05:00 - 05:59	134	150	284
06:00 - 06:59	301	419	720
07:00 - 07:59	432	655	1087
08:00 - 08:59	523	584	1107
09:00 - 09:59	489	495	984
10:00 - 10:59	617	535	1152
11:00 - 11:59	860	706	1566
12:00 - 12:59	809	835	1644
13:00 - 13:59	763	759	1522
14:00 - 14:59	730	779	1509
15:00 - 15:59	914	783	1697
16:00 - 16:59	959	759	1718
17:00 - 17:59	788	655	1443
18:00 - 18:59	526	554	1080
19:00 - 19:59	360	421	781
20:00 - 20:59	270	274	544
21:00 - 21:59	197	175	372
22:00 - 22:59	98	92	190
23:00 - 23:59	74	60	134
Total	**9986**	**9803**	**19789**
AM Peak Hour	11:00 11:59	11:00 11:59	11:00 11:59
Volume	860	706	1566
PM Peak Hour	16:15 17:14	12:00 12:59	16:15 17:14
Volume	973	835	1751

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RTE	DIST	CNTY	POST MILE	LEG	DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK AADT TOTAL By Axle 2	3	4	5+	% TRUCK AADT By Axle 2	3	4	5+	EAL 1-WAY (1000)	YEAR VER/ EST
067	11	SD	R0	A	EL CAJON, JCT. RTE. 8	45000	3510	7.8	2099	488	140	783	59.8	13.9	4	22.3	409	86E
067	11	SD	R.306	A	EL CAJON, BROADWAY	91000	6097	6.7	3646	847	244	1360	59.8	13.9	4	22.3	711	86V
067	11	SD	R1.118	A	BRADLEY AVENUE	81000	5427	6.7	3245	754	217	1210	59.8	13.9	4	22.3	632	86E
067	11	SD	R2.672	A	WOODSIDE AVENUE	69000	5037	7.3	3042	635	106	1254	60.4	12.6	2.1	24.9	613	86V
067	11	SD	R4.832	B	WINTER GARDEN BOULEVARD	53000	1378	2.6	832	174	29	343	60.4	12.6	2.1	24.9	168	86E
067	11	SD	R4.832	A	WINTER GARDEN BOULEVARD	24000	1008	4.2	609	126	22	251	60.4	12.5	2.2	24.9	123	86E
067	11	SD	15.2	B	POWAY ROAD	21800	2006	9.2	1304	156	34	512	65	7.8	1.7	25.5	242	96E
067	11	SD	15.2	A	POWAY ROAD	26500	1060	4	797	116	6	141	75.2	10.9	.6	13.3	88	85V
067	11	SD	24.377	B	RAMONA, JCT. RTE. 78	29500	1711	5.8	797	169	26	719	46.6	9.9	1.5	42	295	85E

CALTRANS TRAFFIC VOLUMES
LATEST TRAFFIC YEAR SELECTED
PEAK HOUR VOLUME DATA

									AM PEAK								PM PEAK						
DI	RTE	CO	PRE	PM	CS	LEG	YR	Dir	1 WAY PHV	% K	% D	% KD	HR	DAY	MNTH	Dir	1 WAY PHV	% K	% D	% KD	HR	DAY	MNTH
06	065	TUL		39.58	86	B	05	S	519	9.42	60.99	5.75	7	FRI	MAY	S	541	11.34	52.83	5.99	15	FRI	FEB
03	065	PLA	R	4.863	289	A	05	N	3601	6.84	59.57	4.08	12	FRI	FEB	N	3919	7.48	59.26	4.44	17	MON	MAY
03	065	PLA	R	9.569	291	B	05	S	2404	6.68	55.75	3.73	8	THU	AUG	S	2828	7.56	57.96	4.38	15	FRI	OCT
03	065	PLA	R	9.569	292	A	05	N	2146	7.37	56.08	4.13	7	TUE	SEP	S	2442	7.82	60.13	4.7	17	FRI	AUG
03	065	PLA		14.81	293	B	03	S	926	8.35	62.82	5.25	7	WED	MAR	N	1000	9.55	59.35	5.66	16	THU	JUN
03	065	PLA	R	24.26	303	O	03	S	1085	9.04	66.89	6.04	6	THU	MAR	N	1029	9.45	60.64	5.73	16	FRI	DEC
03	065	YUB	R	0	303	O	03	S	1085	9.04	66.89	6.04	6	THU	MAR	N	1029	9.45	60.64	5.73	16	FRI	DEC
03	065	YUB		2.207	296	O	03	S	942	7.63	67.58	5.16	6	THU	DEC	N	1058	7.73	74.93	5.79	19	FRI	JUN
03	065	YUB	R	6.884	294	B	03	S	981	6.76	83	5.61	5	WED	JUN	N	999	9.53	59.96	5.71	16	FRI	SEP
07	066	LA	R	.408	247	A	04	W	1146	8.21	50.11	4.11	12	SAT	OCT	E	1299	8.16	57.1	4.66	15	TUE	JAN
07	066	LA		3.219	104	A	04	E	1207	8.68	52.12	4.52	12	THU	APR	E	1300	9.07	53.74	4.87	13	WED	APR
07	066	LA		5.342	244	O	04	W	1020	6.99	64.68	4.52	8	WED	APR	E	1107	9.11	53.84	4.91	17	FRI	OCT
08	066	SBD		20.14	846	B	04	E	1006	6.48	61.79	4	7	MON	OCT	E	1207	8.78	54.69	4.8	17	FRI	OCT
11	067	SD	R	1.118	819	B	05	S	3108	6.63	51.69	3.43	7	TUE	SEP	N	4215	8.87	52.43	4.65	16	FRI	MAY
11	067	SD		6.67	821	A	05	N	1409	9.2	63.7	5.86	7	TUE	MAY	S	1253	8.74	59.67	5.21	17	THU	MAR
11	067	SD		15.2	972	A	05	S	1704	7.81	82.68	6.46	6	TUE	JAN	N	1595	8.66	69.83	6.04	16	WED	APR
11	067	SD		24.38	899	B	05	S	1320	8.71	51.38	4.47	12	SAT	NOV	N	1561	9.26	57.16	5.29	16	FRI	APR
05	068	MON	L	4.264	263	B	05	E	1143	8.15	53.36	4.35	12	FRI	JUN	E	1357	9	57.4	5.16	16	THU	MAR
05	068	MON	R	3.948	524	A	05	W	2076	16.39	55.3	9.06	12	FRI	DEC	W	2372	17.42	59.45	10.36	17	THU	DEC
05	068	MON	R	17.19	537	A	05	E	1808	9.85	70.02	6.89	7	TUE	JAN	W	1779	11.58	58.6	6.78	17	THU	OCT
05	068	MON		21.07	265	B	03	E	1412	9.35	56.46	5.28	12	MON	APR	E	1375	8.71	59.06	5.14	15	WED	APR
03	070	SUT	R	.051	610	A	05	W	978	10.61	58.56	6.21	6	TUE	JUN	E	884	8.82	63.69	5.61	17	FRI	MAY
03	070	YUB	R	7.345	616	B	03	W	823	8.73	74.95	6.54	6	TUE	SEP	E	871	9.81	70.58	6.92	17	FRI	JUN
03	070	YUB	R	9.282	617	B	05	W	1890	7.14	67.4	4.82	6	TUE	AUG	E	2076	8.73	60.6	5.29	15	FRI	OCT
03	070	YUB		13.60	620	O	05	W	2373	7.31	53.79	3.93	7	WED	FEB	E	2796	8.46	54.78	4.63	15	WED	JAN
03	070	YUB		14.71	625	A	05	E	833	7.46	63.64	4.74	11	SAT	MAY	E	1047	8.78	67.9	5.96	17	FRI	DEC
03	070	YUB		16.22	626	B	03	W	657	6.94	68.51	4.76	7	WED	SEP	E	756	8.75	62.53	5.47	16	FRI	MAR
03	070	BUT		13.90	630	B	03	W	581	7.04	57.3	4.03	12	SUN	SEP	W	717	9.94	50.07	4.98	17	FRI	JUN
03	070	BUT		21.87	634	B	05	W	584	12.34	58.11	7.17	7	TUE	SEP	E	502	8.83	69.82	6.17	17	TUE	MAR
03	070	BUT		21.87	635	A	05	W	232	9.62	77.59	7.46	7	THU	MAY	E	194	9.4	66.44	6.24	17	FRI	AUG
03	070	BUT		42.08	199	O	05	W	119	12.32	70.83	8.72	10	MON	SEP	W	157	17.08	67.38	11.51	14	SUN	JUL
02	070	PLU		33.03	306	B	04	W	118	13.39	54.88	7.35	12	SAT	AUG	W	122	11.96	63.54	7.6	16	SUN	AUG
02	070	PLU		43.09	287	B	04	E	428	7.89	75.75	5.98	11	THU	NOV	E	473	8.91	74.14	6.6	13	THU	NOV

APPENDIX B

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS - EXISTING

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	129	746	312	154	899	143	295	268	172	298	89
v/c Ratio	0.34	0.57	0.50	0.38	0.67	0.45	0.53	0.23	0.41	0.33	0.19
Control Delay	34.0	24.8	6.1	33.8	26.0	11.2	32.3	20.5	33.7	25.9	8.2
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	34.0	24.8	6.1	33.8	26.0	11.2	32.3	20.5	33.7	25.9	8.2
Queue Length 50th (ft)	27	104	0	32	128	0	62	43	37	57	0
Queue Length 95th (ft)	59	159	57	68	191	51	113	91	74	115	38
Internal Link Dist (ft)		365			755			1070		518	
Turn Bay Length (ft)											
Base Capacity (vph)	1010	2124	820	1069	2201	534	994	1146	933	908	458
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	0.13	0.35	0.38	0.14	0.41	0.27	0.30	0.23	0.18	0.33	0.19

Intersection Summary

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
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1544	3433	5085	1583	3433	3394		3433	3539	1544
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1544	3433	5085	1583	3433	3394		3433	3539	1544
Volume (vph)	119	686	287	142	827	132	271	189	58	158	274	82
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	746	312	154	899	143	295	205	63	172	298	89
RTOR Reduction (vph)	0	0	233	0	0	129	0	19	0	0	0	65
Lane Group Flow (vph)	129	746	79	154	899	14	295	249	0	172	298	24
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Over	Prot			Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	6.4	18.0	18.0	6.8	18.4	7.2	11.2	23.1		7.2	19.1	19.1
Effective Green, g (s)	6.4	18.0	18.0	6.8	18.4	7.2	11.2	23.1		7.2	19.1	19.1
Actuated g/C Ratio	0.09	0.25	0.25	0.10	0.26	0.10	0.16	0.32		0.10	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	309	1287	391	328	1316	160	541	1103		348	951	415
v/s Ratio Prot	0.04	0.15		c0.04	c0.18	0.01	c0.09	c0.07		0.05	c0.08	
v/s Ratio Perm			0.05									0.02
v/c Ratio	0.42	0.58	0.20	0.47	0.68	0.09	0.55	0.23		0.49	0.31	0.06
Uniform Delay, d1	30.6	23.2	20.9	30.4	23.7	29.0	27.6	17.5		30.2	20.8	19.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.6	0.3	1.1	1.5	0.2	1.1	0.5		1.1	0.9	0.3
Delay (s)	31.5	23.9	21.2	31.5	25.2	29.2	28.7	18.0		31.3	21.6	19.6
Level of Service	C	C	C	C	C	C	C	B		C	C	B
Approach Delay (s)		24.0			26.5			23.6			24.3	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	53	238	82	113	409	126	109	463	141	593	83
v/c Ratio	0.24	0.55	0.20	0.41	0.39	0.23	0.40	0.36	0.47	0.61	0.17
Control Delay	37.2	32.3	8.5	36.1	22.7	6.6	36.1	21.9	36.0	26.3	7.4
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	37.2	32.3	8.5	36.1	22.7	6.6	36.1	21.9	36.0	26.3	7.4
Queue Length 50th (ft)	20	86	0	41	73	0	40	51	52	109	0
Queue Length 95th (ft)	70	213	37	120	156	42	117	114	142	231	35
Internal Link Dist (ft)		296			520			1270		1070	
Turn Bay Length (ft)											
Base Capacity (vph)	431	844	735	574	1830	849	573	2305	624	1737	790
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	0.12	0.28	0.11	0.20	0.22	0.15	0.19	0.20	0.23	0.34	0.11

Intersection Summary

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
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1546	1770	3539	1546	1770	4909		1770	3539	1546
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1546	1770	3539	1546	1770	4909		1770	3539	1546
Volume (vph)	49	219	75	104	376	116	100	348	78	130	546	76
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	238	82	113	409	126	109	378	85	141	593	83
RTOR Reduction (vph)	0	0	62	0	0	89	0	26	0	0	0	61
Lane Group Flow (vph)	53	238	20	113	409	37	109	437	0	141	593	22
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	4.3	15.7	15.7	7.6	19.0	19.0	7.5	16.5		8.4	17.4	17.4
Effective Green, g (s)	4.3	15.7	15.7	7.6	19.0	19.0	7.5	16.5		8.4	17.4	17.4
Actuated g/C Ratio	0.07	0.24	0.24	0.12	0.30	0.30	0.12	0.26		0.13	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	119	456	378	210	1047	458	207	1262		232	959	419
v/s Ratio Prot	0.03	c0.13		c0.06	c0.12		0.06	0.09		c0.08	c0.17	
v/s Ratio Perm			0.01			0.02						0.01
v/c Ratio	0.45	0.52	0.05	0.54	0.39	0.08	0.53	0.35		0.61	0.62	0.05
Uniform Delay, d1	28.8	21.0	18.6	26.6	18.0	16.3	26.7	19.5		26.3	20.5	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	1.1	0.1	2.6	0.2	0.1	2.4	0.2		4.5	1.2	0.1
Delay (s)	31.4	22.1	18.6	29.3	18.2	16.4	29.1	19.6		30.8	21.7	17.4
Level of Service	C	C	B	C	B	B	C	B		C	C	B
Approach Delay (s)		22.7			19.8			21.4			22.8	
Approach LOS		C			B			C			C	

Intersection Summary

HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	173	88	309	142	170
v/c Ratio	0.39	0.19	0.38	0.34	0.22
Control Delay	14.3	5.1	6.9	14.5	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	5.1	6.9	14.5	5.4
Queue Length 50th (ft)	27	0	7	23	14
Queue Length 95th (ft)	79	24	37	69	42
Internal Link Dist (ft)	2680		3820		1318
Turn Bay Length (ft)					
Base Capacity (vph)	974	884	1695	939	1416
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.18	0.10	0.18	0.15	0.12

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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	1.00	0.95		1.00	1.00
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.90		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1557	3135		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1557	3135		1770	1863
Volume (vph)	159	81	87	197	131	156
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	173	88	95	214	142	170
RTOR Reduction (vph)	0	71	183	0	0	0
Lane Group Flow (vph)	173	17	126	0	142	170
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	4.9	4.9	3.7		4.6	12.3
Effective Green, g (s)	4.9	4.9	3.7		4.6	12.3
Actuated g/C Ratio	0.19	0.19	0.15		0.18	0.49
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	344	303	460		323	909
v/s Ratio Prot	c0.10		0.04		c0.08	c0.09
v/s Ratio Perm		0.01				
v/c Ratio	0.50	0.06	0.27		0.44	0.19
Uniform Delay, d1	9.1	8.3	9.6		9.2	3.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.1	0.3		1.0	0.1
Delay (s)	10.2	8.3	9.9		10.1	3.7
Level of Service	B	A	A		B	A
Approach Delay (s)	9.6		9.9			6.6
Approach LOS	A		A			A

Intersection Summary

HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	25.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	37.9%	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)	260	141	83	211	15	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	283	153	90	229	16	14
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				1140		
pX, platoon unblocked						
vC, conflicting volume			446		674	238
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			446		674	238
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		95	98
cM capacity (veh/h)			1101		350	751

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	188	247	90	115	115	16	14
Volume Left	0	0	90	0	0	16	0
Volume Right	0	153	0	0	0	0	14
cSH	1700	1700	1101	1700	1700	350	751
Volume to Capacity	0.11	0.15	0.08	0.07	0.07	0.05	0.02
Queue Length 95th (ft)	0	0	7	0	0	4	1
Control Delay (s)	0.0	0.0	8.6	0.0	0.0	15.8	9.9
Lane LOS			A			C	A
Approach Delay (s)	0.0		2.4			13.0	
Approach LOS						B	

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	90	94	108	13	89	92	80	271	75	549
v/c Ratio	0.25	0.25	0.26	0.04	0.28	0.27	0.16	0.27	0.26	0.52
Control Delay	23.3	23.1	8.0	22.8	24.5	8.9	24.1	16.8	24.7	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.3	23.1	8.0	22.8	24.5	8.9	24.1	16.8	24.7	16.4
Queue Length 50th (ft)	26	27	0	3	24	0	11	35	21	70
Queue Length 95th (ft)	75	78	38	19	72	36	34	78	63	138
Internal Link Dist (ft)		1060			1230			3344		1270
Turn Bay Length (ft)										
Base Capacity (vph)	655	681	664	600	632	581	1148	1918	435	1699
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.14	0.16	0.02	0.14	0.16	0.07	0.14	0.17	0.32

Intersection Summary

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	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.96	
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1748	1551	1770	1863	1551	3433	3521		1770	3386	
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1748	1551	1770	1863	1551	3433	3521		1770	3386	
Volume (vph)	104	65	99	12	82	85	74	242	7	69	376	129
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	71	108	13	89	92	80	263	8	75	409	140
RTOR Reduction (vph)	0	0	86	0	0	83	0	2	0	0	33	0
Lane Group Flow (vph)	90	94	22	13	89	9	80	269	0	75	516	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	9.3	9.3	9.3	4.3	4.3	4.3	3.4	12.6		4.1	13.3	
Effective Green, g (s)	9.3	9.3	9.3	4.3	4.3	4.3	3.4	12.6		4.1	13.3	
Actuated g/C Ratio	0.20	0.20	0.20	0.09	0.09	0.09	0.07	0.27		0.09	0.29	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	338	351	312	164	173	144	252	958		157	973	
v/s Ratio Prot	0.05	c0.05		0.01	c0.05		0.02	c0.08		0.04	c0.15	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.27	0.27	0.07	0.08	0.51	0.06	0.32	0.28		0.48	0.53	
Uniform Delay, d1	15.6	15.6	15.0	19.2	20.0	19.2	20.3	13.3		20.1	13.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.4	0.1	0.2	2.6	0.2	0.7	0.2		2.3	0.6	
Delay (s)	16.0	16.0	15.1	19.4	22.6	19.3	21.1	13.4		22.4	14.4	
Level of Service	B	B	B	B	C	B	C	B		C	B	
Approach Delay (s)		15.7			20.8			15.2			15.4	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	46.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	98	96	60	136	66	578	128	379
v/c Ratio	0.14	0.25	0.24	0.27	0.45	0.30	0.37	0.48	0.25
Control Delay	31.7	16.9	29.9	32.0	11.6	32.2	15.6	33.2	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	16.9	29.9	32.0	11.6	32.2	15.6	33.2	13.3
Queue Length 50th (ft)	10	7	19	23	0	25	84	49	48
Queue Length 95th (ft)	34	31	42	60	47	64	155	104	93
Internal Link Dist (ft)		416		1234			3646		3344
Turn Bay Length (ft)									
Base Capacity (vph)	455	856	856	465	485	461	1554	454	1576
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.11	0.11	0.13	0.28	0.14	0.37	0.28	0.24

Intersection Summary

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		0.97	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3173		3433	1863	1545	1770	3481		1770	3500	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3173		3433	1863	1545	1770	3481		1770	3500	
Volume (vph)	24	36	54	88	55	125	61	481	51	118	328	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	39	59	96	60	136	66	523	55	128	357	22
RTOR Reduction (vph)	0	53	0	0	0	123	0	6	0	0	3	0
Lane Group Flow (vph)	26	45	0	96	60	13	66	572	0	128	376	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	6.8	6.8		6.1	6.1	6.1	8.0	28.4		8.2	28.6	
Effective Green, g (s)	6.8	6.8		6.1	6.1	6.1	8.0	28.4		8.2	28.6	
Actuated g/C Ratio	0.10	0.10		0.09	0.09	0.09	0.12	0.43		0.13	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)	184	329		320	174	144	216	1509		222	1528	
v/s Ratio Prot	c0.01	0.01		0.03	c0.03		0.04	c0.16		c0.07	0.11	
v/s Ratio Perm						0.01						
v/c Ratio	0.14	0.14		0.30	0.34	0.09	0.31	0.38		0.58	0.25	
Uniform Delay, d1	26.7	26.7		27.7	27.8	27.2	26.2	12.6		27.0	11.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.2		0.5	1.2	0.3	0.8	0.7		3.6	0.1	
Delay (s)	27.0	26.9		28.2	29.0	27.4	27.0	13.3		30.6	11.7	
Level of Service	C	C		C	C	C	C	B		C	B	
Approach Delay (s)		26.9			28.0			14.7			16.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	5	188	70	617	161	36	105	87	9
v/c Ratio	0.02	0.25	0.23	0.52	0.39	0.10	0.30	0.23	0.03
Control Delay	29.0	19.2	24.8	10.8	22.9	9.3	23.7	22.8	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	19.2	24.8	10.8	22.9	9.3	23.7	22.8	13.8
Queue Length 50th (ft)	1	23	18	38	41	0	27	22	0
Queue Length 95th (ft)	12	60	64	125	116	22	85	73	12
Internal Link Dist (ft)		1234		2203	311			3353	
Turn Bay Length (ft)									
Base Capacity (vph)	376	1517	534	1776	755	647	711	748	622
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.12	0.13	0.35	0.21	0.06	0.15	0.12	0.01

Intersection Summary

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
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.93			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1764	3477		1770	3266			1851	1552	1770	1863	1552
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1764	3477		1770	3266			1851	1552	1770	1863	1552
Volume (vph)	5	156	17	64	307	260	18	130	33	97	80	8
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	170	18	70	334	283	20	141	36	105	87	9
RTOR Reduction (vph)	0	9	0	0	160	0	0	0	30	0	0	8
Lane Group Flow (vph)	5	179	0	70	457	0	0	161	6	105	87	1
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			4
Actuated Green, G (s)	0.8	8.4		4.0	11.6			7.3	7.3	6.3	6.3	6.3
Effective Green, g (s)	0.8	8.4		4.0	11.6			7.3	7.3	6.3	6.3	6.3
Actuated g/C Ratio	0.02	0.20		0.10	0.28			0.17	0.17	0.15	0.15	0.15
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	34	695		169	902			322	270	266	279	233
v/s Ratio Prot	0.00	0.05		c0.04	c0.14			c0.09		c0.06	0.05	
v/s Ratio Perm									0.00			0.00
v/c Ratio	0.15	0.26		0.41	0.51			0.50	0.02	0.39	0.31	0.01
Uniform Delay, d1	20.3	14.2		17.9	12.8			15.7	14.4	16.1	15.9	15.2
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.2		1.6	0.5			1.2	0.0	1.0	0.6	0.0
Delay (s)	22.3	14.4		19.5	13.2			16.9	14.4	17.1	16.6	15.2
Level of Service	C	B		B	B			B	B	B	B	B
Approach Delay (s)		14.6			13.9			16.5			16.8	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	42.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	223	239	714	79	397
v/c Ratio	0.74	0.54	0.94	0.15	0.89
Control Delay	54.5	10.1	48.7	26.7	56.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	10.1	48.7	26.7	56.4
Queue Length 50th (ft)	135	0	422	37	236
Queue Length 95th (ft)	#235	66	#661	72	#407
Internal Link Dist (ft)	2203		1011	533	
Turn Bay Length (ft)					
Base Capacity (vph)	339	469	805	561	486
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.51	0.89	0.14	0.82

Intersection Summary

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

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
Frpb, ped/bikes		1.00	0.95		1.00						1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.99						0.95	1.00
Satd. Flow (prot)		1863	1508		1836						1770	1538
Flt Permitted		1.00	1.00		0.99						0.95	1.00
Satd. Flow (perm)		1863	1508		1836						1770	1538
Volume (vph)	0	205	220	192	465	0	0	0	0	73	0	365
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	223	239	209	505	0	0	0	0	79	0	397
RTOR Reduction (vph)	0	0	200	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	223	39	0	714	0	0	0	0	0	79	397
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type			Perm	Split						Split		Perm
Protected Phases		4		8	8					6	6	
Permitted Phases			4									6
Actuated Green, G (s)		14.1	14.1		37.1						25.7	25.7
Effective Green, g (s)		14.7	14.7		37.7						26.3	26.3
Actuated g/C Ratio		0.16	0.16		0.42						0.29	0.29
Clearance Time (s)		4.6	4.6		4.6						4.6	4.6
Vehicle Extension (s)		3.0	3.0		3.0						3.0	3.0
Lane Grp Cap (vph)		302	244		763						513	446
v/s Ratio Prot		c0.12			c0.39						0.04	
v/s Ratio Perm			0.03									c0.26
v/c Ratio		0.74	0.16		0.94						0.15	0.89
Uniform Delay, d1		36.2	32.7		25.3						23.9	30.8
Progression Factor		1.00	1.00		1.00						1.00	1.00
Incremental Delay, d2		9.1	0.3		18.6						0.1	19.4
Delay (s)		45.3	33.0		43.9						24.1	50.2
Level of Service		D	C		D						C	D
Approach Delay (s)		38.9			43.9			0.0			45.8	
Approach LOS		D			D			A			D	

Intersection Summary			
HCM Average Control Delay	43.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	301	416	123	305	266
v/c Ratio	0.67	0.74	0.23	0.67	0.46
Control Delay	35.0	32.5	5.9	34.3	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	32.5	5.9	34.3	6.6
Queue Length 50th (ft)	108	147	0	109	0
Queue Length 95th (ft)	268	343	39	268	60
Internal Link Dist (ft)	1011	665		558	
Turn Bay Length (ft)					
Base Capacity (vph)	667	818	728	676	737
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.45	0.51	0.17	0.45	0.36

Intersection Summary

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			
Frpb, ped/bikes		1.00			1.00	0.96		1.00	0.96			
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (prot)		1829			1863	1519		1775	1519			
Flt Permitted		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (perm)		1829			1863	1519		1775	1519			
Volume (vph)	102	175	0	0	383	113	278	3	245	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	190	0	0	416	123	302	3	266	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	85	0	0	197	0	0	0
Lane Group Flow (vph)	0	301	0	0	416	38	0	305	69	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split					Perm	Split		Perm			
Protected Phases	4	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)		16.3			20.2	20.2		16.9	16.9			
Effective Green, g (s)		16.9			20.8	20.8		17.5	17.5			
Actuated g/C Ratio		0.25			0.31	0.31		0.26	0.26			
Clearance Time (s)		4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		460			577	470		462	396			
v/s Ratio Prot		c0.16			c0.22			c0.17				
v/s Ratio Perm						0.03			0.05			
v/c Ratio		0.65			0.72	0.08		0.66	0.17			
Uniform Delay, d1		22.5			20.6	16.4		22.2	19.3			
Progression Factor		1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2		3.3			4.4	0.1		3.5	0.2			
Delay (s)		25.9			25.0	16.5		25.7	19.5			
Level of Service		C			C	B		C	B			
Approach Delay (s)		25.9			23.1			22.8			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	67.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	220	104	367	1051	39	318
v/c Ratio	0.12	0.12	0.85	0.35	0.27	0.67
Control Delay	8.9	3.7	52.6	2.8	46.8	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	3.7	52.6	2.8	46.8	14.9
Queue Length 50th (ft)	21	0	240	80	24	11
Queue Length 95th (ft)	54	34	m284	m125	55	54
Internal Link Dist (ft)	1052			1290	497	
Turn Bay Length (ft)						
Base Capacity (vph)	1822	847	708	2969	320	711
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	0.12	0.12	0.52	0.35	0.12	0.45

Intersection Summary

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

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		0.91	0.91	1.00	0.95						1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	0.95
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		0.95	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)		3221	1441	1770	3539						1778	2646
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3221	1441	1770	3539						1778	2646
Volume (vph)	0	135	163	338	967	0	0	0	0	34	2	293
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	147	177	367	1051	0	0	0	0	37	2	318
RTOR Reduction (vph)	0	32	46	0	0	0	0	0	0	0	0	263
Lane Group Flow (vph)	0	188	58	367	1051	0	0	0	0	0	39	55
Confl. Peds. (#/hr)	10					10				10		10
Turn Type			Perm	Prot						Split		Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		55.6	55.6	24.3	83.9						8.1	8.1
Effective Green, g (s)		55.6	55.6	24.3	83.9						8.1	8.1
Actuated g/C Ratio		0.56	0.56	0.24	0.84						0.08	0.08
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)		1791	801	430	2969						144	214
v/s Ratio Prot		0.06		c0.21	c0.30						c0.02	
v/s Ratio Perm			0.04									0.02
v/c Ratio		0.10	0.07	0.85	0.35						0.27	0.26
Uniform Delay, d1		10.5	10.3	36.1	1.8						43.2	43.1
Progression Factor		1.00	1.00	1.08	1.28						1.00	1.00
Incremental Delay, d2		0.0	0.0	11.6	0.2						1.0	0.6
Delay (s)		10.5	10.3	50.7	2.6						44.2	43.8
Level of Service		B	B	D	A						D	D
Approach Delay (s)		10.4			15.0			0.0			43.8	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	112	64	545	288	935
v/c Ratio	0.15	0.06	0.26	0.52	0.88
Control Delay	11.3	10.9	11.0	29.7	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	10.9	11.0	29.7	31.5
Queue Length 50th (ft)	11	13	77	149	232
Queue Length 95th (ft)	23	30	143	187	265
Internal Link Dist (ft)		1290	1318		
Turn Bay Length (ft)					
Base Capacity (vph)	733	1117	2085	990	1664
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.15	0.06	0.26	0.29	0.56

Intersection Summary

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	0.97	1.00			0.95					1.00		0.88
Frpb, ped/bikes	1.00	1.00			1.00					1.00		0.97
Flpb, ped/bikes	0.99	1.00			1.00					0.98		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)	3388	1863			3468					1736		2702
Flt Permitted	0.42	1.00			1.00					0.95		1.00
Satd. Flow (perm)	1504	1863			3468					1736		2702
Volume (vph)	103	59	0	0	445	56	0	0	0	265	0	860
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	64	0	0	484	61	0	0	0	288	0	935
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	0	0	0	197
Lane Group Flow (vph)	112	64	0	0	539	0	0	0	0	288	0	738
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm									custom		custom
Protected Phases		2			6							
Permitted Phases	2									4		4
Actuated Green, G (s)	60.0	60.0			60.0					32.0		32.0
Effective Green, g (s)	60.0	60.0			60.0					32.0		32.0
Actuated g/C Ratio	0.60	0.60			0.60					0.32		0.32
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)	902	1118			2081					556		865
v/s Ratio Prot		0.03			c0.16							
v/s Ratio Perm	0.07									0.17		c0.27
v/c Ratio	0.12	0.06			0.26					0.52		0.85
Uniform Delay, d1	8.6	8.3			9.5					27.7		31.8
Progression Factor	0.96	0.98			1.00					1.00		1.00
Incremental Delay, d2	0.3	0.1			0.3					0.8		8.2
Delay (s)	8.6	8.2			9.8					28.5		40.0
Level of Service	A	A			A					C		D
Approach Delay (s)		8.4			9.8			0.0			37.3	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	308	28	32	14	10	464
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	335	30	35	15	11	504

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	335	30	50	11	504
Volume Left (vph)	335	0	0	11	0
Volume Right (vph)	0	0	15	0	504
Hadj (s)	0.53	0.03	-0.15	0.53	-0.67
Departure Headway (s)	6.5	6.0	6.3	6.4	5.1
Degree Utilization, x	0.61	0.05	0.09	0.02	0.72
Capacity (veh/h)	534	563	518	543	675
Control Delay (s)	17.9	8.1	9.9	8.3	19.1
Approach Delay (s)	17.1		9.9	18.9	
Approach LOS	C		A	C	

Intersection Summary			
Delay	17.7		
HCM Level of Service	C		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBT	WBR	NBR	SBL	SBR
Lane Group Flow (vph)	454	439	14	820	275	28	247	426
v/c Ratio	0.81	0.17	0.02	0.32	0.30	0.04	0.24	0.74
Control Delay	24.9	7.3	4.2	8.0	2.2	0.1	17.5	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	7.3	4.2	8.0	2.2	0.1	17.5	21.3
Queue Length 50th (ft)	47	20	0	42	0	0	26	62
Queue Length 95th (ft)	169	60	8	113	33	0	87	256
Internal Link Dist (ft)		1616		2336				
Turn Bay Length (ft)								
Base Capacity (vph)	773	3585	1120	3585	1163	1014	1724	852
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.12	0.01	0.23	0.24	0.03	0.14	0.50

Intersection Summary

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	0.97	0.91	1.00		0.91	1.00			1.00	0.97		1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98			1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85			0.86	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00			1.00	0.95		1.00
Satd. Flow (prot)	3422	5085	1583		5085	1549			1611	3433		1549
Flt Permitted	0.32	1.00	1.00		1.00	1.00			1.00	0.95		1.00
Satd. Flow (perm)	1152	5085	1583		5085	1549			1611	3433		1549
Volume (vph)	418	404	13	0	754	253	0	0	26	227	0	392
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	454	439	14	0	820	275	0	0	28	247	0	426
RTOR Reduction (vph)	0	0	7	0	0	128	0	0	19	0	0	112
Lane Group Flow (vph)	454	439	7	0	820	147	0	0	9	247	0	314
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm		Perm			Perm			custom	Prot		custom
Protected Phases		2			6					4		
Permitted Phases	2		2			6			8			4
Actuated Green, G (s)	28.1	28.1	28.1		28.1	28.1			16.6	16.6		16.6
Effective Green, g (s)	28.1	28.1	28.1		28.1	28.1			16.6	16.6		16.6
Actuated g/C Ratio	0.53	0.53	0.53		0.53	0.53			0.31	0.31		0.31
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0			4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)	614	2711	844		2711	826			507	1081		488
v/s Ratio Prot		0.09			0.16					0.07		
v/s Ratio Perm	c0.39		0.00			0.09			0.01			c0.20
v/c Ratio	0.74	0.16	0.01		0.30	0.18			0.02	0.23		0.64
Uniform Delay, d1	9.5	6.3	5.8		6.8	6.3			12.4	13.3		15.5
Progression Factor	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	4.7	0.0	0.0		0.1	0.1			0.0	0.1		2.9
Delay (s)	14.1	6.3	5.8		6.9	6.4			12.4	13.4		18.4
Level of Service	B	A	A		A	A			B	B		B
Approach Delay (s)		10.2			6.8			12.4			16.6	
Approach LOS		B			A			B			B	

Intersection Summary

HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	262	1330	300	201	957	202	473	528	361	523	165
v/c Ratio	0.59	0.80	0.43	0.62	0.65	0.48	0.76	0.66	0.67	0.73	0.37
Control Delay	41.6	30.6	5.0	47.6	29.0	9.5	41.9	31.8	40.8	38.1	7.7
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	41.6	30.6	5.0	47.6	29.0	9.5	41.9	31.8	40.8	38.1	7.7
Queue Length 50th (ft)	72	247	0	57	173	0	129	129	98	143	0
Queue Length 95th (ft)	112	308	55	#99	223	58	184	184	145	198	50
Internal Link Dist (ft)		365			755			1070		518	
Turn Bay Length (ft)											
Base Capacity (vph)	495	1749	726	335	1545	449	695	905	613	829	487
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	0.53	0.76	0.41	0.60	0.62	0.45	0.68	0.58	0.59	0.63	0.34

Intersection Summary

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

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
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1540	3433	5085	1583	3433	3401		3433	3539	1540
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1540	3433	5085	1583	3433	3401		3433	3539	1540
Volume (vph)	241	1224	276	185	880	186	435	378	108	332	481	152
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	1330	300	201	957	202	473	411	117	361	523	165
RTOR Reduction (vph)	0	0	202	0	0	170	0	29	0	0	0	132
Lane Group Flow (vph)	262	1330	98	201	957	32	473	499	0	361	523	33
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Over	Prot			Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	10.7	27.1	27.1	7.8	24.2	13.0	15.1	18.9		13.0	16.8	16.8
Effective Green, g (s)	10.7	27.1	27.1	7.8	24.2	13.0	15.1	18.9		13.0	16.8	16.8
Actuated g/C Ratio	0.13	0.33	0.33	0.09	0.29	0.16	0.18	0.23		0.16	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	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)	444	1664	504	323	1486	249	626	776		539	718	312
v/s Ratio Prot	c0.08	c0.26		0.06	0.19	0.02	c0.14	0.15		0.11	c0.15	
v/s Ratio Perm			0.06									0.02
v/c Ratio	0.59	0.80	0.19	0.62	0.64	0.13	0.76	0.64		0.67	0.73	0.11
Uniform Delay, d1	34.0	25.4	20.0	36.1	25.5	30.0	32.1	28.9		32.9	30.9	26.9
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	2.1	2.8	0.2	3.7	1.0	0.2	5.2	1.8		3.2	3.7	0.2
Delay (s)	36.1	28.2	20.2	39.8	26.5	30.3	37.3	30.7		36.0	34.6	27.0
Level of Service	D	C	C	D	C	C	D	C		D	C	C
Approach Delay (s)		28.0			29.0			33.8			33.9	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	82.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	57	383	133	78	273	234	162	881	266	671	97
v/c Ratio	0.31	0.73	0.25	0.38	0.24	0.36	0.58	0.67	0.72	0.61	0.18
Control Delay	54.8	42.6	7.3	53.9	27.5	6.0	52.8	36.2	49.6	32.0	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	42.6	7.3	53.9	27.5	6.0	52.8	36.2	49.6	32.0	7.5
Queue Length 50th (ft)	31	203	0	42	64	0	87	164	143	171	0
Queue Length 95th (ft)	98	422	48	124	134	61	215	322	316	338	42
Internal Link Dist (ft)		296			520			1270		1070	
Turn Bay Length (ft)											
Base Capacity (vph)	271	828	752	316	1661	839	470	1902	628	1626	753
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	0.21	0.46	0.18	0.25	0.16	0.28	0.34	0.46	0.42	0.41	0.13

Intersection Summary

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
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1539	1770	3539	1539	1770	4964		1770	3539	1539
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1539	1770	3539	1539	1770	4964		1770	3539	1539
Volume (vph)	52	352	122	72	251	215	149	712	98	245	617	89
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	57	383	133	78	273	234	162	774	107	266	671	97
RTOR Reduction (vph)	0	0	94	0	0	158	0	13	0	0	0	67
Lane Group Flow (vph)	57	383	39	78	273	76	162	868	0	266	671	30
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	4.7	25.7	25.7	7.2	28.2	28.2	10.8	23.0		15.1	27.3	27.3
Effective Green, g (s)	4.7	25.7	25.7	7.2	28.2	28.2	10.8	23.0		15.1	27.3	27.3
Actuated g/C Ratio	0.05	0.30	0.30	0.08	0.32	0.32	0.12	0.26		0.17	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	96	550	455	146	1147	499	220	1312		307	1111	483
v/s Ratio Prot	0.03	c0.21		c0.04	0.08		0.09	0.17		c0.15	c0.19	
v/s Ratio Perm			0.03			0.05						0.02
v/c Ratio	0.59	0.70	0.09	0.53	0.24	0.15	0.74	0.66		0.87	0.60	0.06
Uniform Delay, d1	40.2	27.2	22.2	38.3	21.5	20.9	36.7	28.5		35.0	25.3	20.9
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	9.5	3.8	0.1	3.7	0.1	0.1	12.1	1.3		21.7	0.9	0.1
Delay (s)	49.7	31.0	22.2	42.0	21.6	21.0	48.8	29.8		56.7	26.2	21.0
Level of Service	D	C	C	D	C	C	D	C		E	C	C
Approach Delay (s)		30.8			24.1			32.8			33.5	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	261	109	380	80	173
v/c Ratio	0.48	0.20	0.42	0.23	0.23
Control Delay	14.8	4.3	10.0	17.4	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	4.3	10.0	17.4	7.1
Queue Length 50th (ft)	45	0	21	14	17
Queue Length 95th (ft)	114	25	62	52	54
Internal Link Dist (ft)	2680		3820		1318
Turn Bay Length (ft)					
Base Capacity (vph)	1079	978	1789	786	1374
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.24	0.11	0.21	0.10	0.13

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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	1.00	0.95		1.00	1.00
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.94		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1555	3300		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1555	3300		1770	1863
Volume (vph)	240	100	208	142	74	159
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	109	226	154	80	173
RTOR Reduction (vph)	0	79	122	0	0	0
Lane Group Flow (vph)	261	30	258	0	80	173
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	8.6	8.6	6.5		3.9	14.4
Effective Green, g (s)	8.6	8.6	6.5		3.9	14.4
Actuated g/C Ratio	0.28	0.28	0.21		0.13	0.46
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	491	431	692		223	865
v/s Ratio Prot	c0.15		c0.08		c0.05	0.09
v/s Ratio Perm		0.02				
v/c Ratio	0.53	0.07	0.37		0.36	0.20
Uniform Delay, d1	9.5	8.3	10.5		12.4	4.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	0.1	0.3		1.0	0.1
Delay (s)	10.6	8.3	10.8		13.4	5.0
Level of Service	B	A	B		B	A
Approach Delay (s)	9.9		10.8			7.7
Approach LOS	A		B			A

Intersection Summary

HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	31.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.9%	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)	255	21	11	281	92	119
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	277	23	12	305	100	129
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				1140		
pX, platoon unblocked						
vC, conflicting volume			310		485	170
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			310		485	170
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		80	84
cM capacity (veh/h)			1237		498	830

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	185	115	12	153	153	100	129
Volume Left	0	0	12	0	0	100	0
Volume Right	0	23	0	0	0	0	129
cSH	1700	1700	1237	1700	1700	498	830
Volume to Capacity	0.11	0.07	0.01	0.09	0.09	0.20	0.16
Queue Length 95th (ft)	0	0	1	0	0	19	14
Control Delay (s)	0.0	0.0	7.9	0.0	0.0	14.0	10.1
Lane LOS			A			B	B
Approach Delay (s)	0.0		0.3			11.8	
Approach LOS						B	

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	25.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	136	143	93	11	68	208	114	474	91	664
v/c Ratio	0.50	0.51	0.28	0.05	0.29	0.56	0.28	0.29	0.40	0.44
Control Delay	30.5	30.6	9.0	28.0	30.5	11.3	28.7	17.5	32.4	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.5	30.6	9.0	28.0	30.5	11.3	28.7	17.5	32.4	18.2
Queue Length 50th (ft)	44	47	0	3	21	0	18	71	29	98
Queue Length 95th (ft)	121	126	37	20	70	59	53	153	87	202
Internal Link Dist (ft)		1060			1230			3344		1270
Turn Bay Length (ft)										
Base Capacity (vph)	458	468	486	483	508	570	562	1845	364	1848
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.31	0.19	0.02	0.13	0.36	0.20	0.26	0.25	0.36

Intersection Summary

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	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.97	
Flt Protected	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1719	1545	1770	1863	1545	3433	3537		1770	3424	
Flt Permitted	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1719	1545	1770	1863	1545	3433	3537		1770	3424	
Volume (vph)	203	53	86	10	63	191	105	434	2	84	496	115
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	221	58	93	11	68	208	114	472	2	91	539	125
RTOR Reduction (vph)	0	0	80	0	0	186	0	0	0	0	17	0
Lane Group Flow (vph)	136	143	13	11	68	22	114	474	0	91	647	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	9.4	9.4	9.4	6.9	6.9	6.9	6.4	28.5		5.8	27.9	
Effective Green, g (s)	9.4	9.4	9.4	6.9	6.9	6.9	6.4	28.5		5.8	27.9	
Actuated g/C Ratio	0.14	0.14	0.14	0.10	0.10	0.10	0.10	0.43		0.09	0.42	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	237	243	218	183	193	160	330	1514		154	1434	
v/s Ratio Prot	0.08	c0.08		0.01	c0.04		0.03	0.13		c0.05	c0.19	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.57	0.59	0.06	0.06	0.35	0.13	0.35	0.31		0.59	0.45	
Uniform Delay, d1	26.7	26.8	24.8	26.9	27.8	27.1	28.1	12.6		29.3	13.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.3	3.6	0.1	0.1	1.1	0.4	0.6	0.1		6.0	0.2	
Delay (s)	30.1	30.4	24.9	27.1	28.9	27.5	28.8	12.7		35.2	14.1	
Level of Service	C	C	C	C	C	C	C	B		D	B	
Approach Delay (s)		28.9			27.8			15.8			16.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	4	19	113	7	121	18	450	158	744
v/c Ratio	0.02	0.03	0.23	0.03	0.37	0.04	0.53	0.26	0.61
Control Delay	32.5	0.1	27.4	28.7	10.8	21.9	22.2	16.7	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.5	0.1	27.4	28.7	10.8	21.9	22.2	16.7	18.4
Queue Length 50th (ft)	1	0	13	2	0	4	52	29	82
Queue Length 95th (ft)	12	0	51	15	47	24	150	102	218
Internal Link Dist (ft)		416		1234			3646		3344
Turn Bay Length (ft)									
Base Capacity (vph)	467	1130	988	537	528	647	1273	870	1736
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.11	0.01	0.23	0.03	0.35	0.18	0.43

Intersection Summary

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		0.97	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3066		3433	1863	1549	1770	3457		1770	3529	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3066		3433	1863	1549	1770	3457		1770	3529	
Volume (vph)	4	4	14	104	6	111	17	358	56	145	674	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	4	15	113	7	121	18	389	61	158	733	11
RTOR Reduction (vph)	0	18	0	0	0	108	0	12	0	0	1	0
Lane Group Flow (vph)	4	1	0	113	7	13	18	438	0	158	743	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split			Split		Perm	Split			Split		
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	1.7	1.7		5.8	5.8	5.8	12.7	12.7		18.0	18.0	
Effective Green, g (s)	1.7	1.7		5.8	5.8	5.8	12.7	12.7		18.0	18.0	
Actuated g/C Ratio	0.03	0.03		0.11	0.11	0.11	0.23	0.23		0.33	0.33	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	56	96		367	199	166	415	810		588	1172	
v/s Ratio Prot	c0.00	0.00		c0.03	0.00		0.01	c0.13		0.09	c0.21	
v/s Ratio Perm						0.01						
v/c Ratio	0.07	0.01		0.31	0.04	0.08	0.04	0.54		0.27	0.63	
Uniform Delay, d1	25.5	25.4		22.3	21.7	21.8	16.1	18.2		13.3	15.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.0		0.5	0.1	0.2	0.0	0.7		0.2	1.1	
Delay (s)	26.0	25.5		22.8	21.8	22.0	16.1	18.9		13.5	16.4	
Level of Service	C	C		C	C	C	B	B		B	B	
Approach Delay (s)		25.6			22.4			18.8			15.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	4	254	21	534	198	78	248	228	18
v/c Ratio	0.02	0.30	0.08	0.56	0.45	0.18	0.52	0.45	0.04
Control Delay	32.2	18.9	31.2	14.2	23.6	7.8	22.4	21.0	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	18.9	31.2	14.2	23.6	7.8	22.4	21.0	10.1
Queue Length 50th (ft)	1	25	5	35	41	0	51	46	0
Queue Length 95th (ft)	12	93	33	132	159	34	187	169	16
Internal Link Dist (ft)		1234		2203	311			3353	
Turn Bay Length (ft)									
Base Capacity (vph)	344	1420	373	1485	792	703	841	885	738
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.18	0.06	0.36	0.25	0.11	0.29	0.26	0.02

Intersection Summary

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
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.93			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1763	3458		1754	3256			1846	1552	1770	1863	1552
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1763	3458		1754	3256			1846	1552	1770	1863	1552
Volume (vph)	4	204	29	19	258	234	33	149	72	228	210	17
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	222	32	21	280	254	36	162	78	248	228	18
RTOR Reduction (vph)	0	11	0	0	170	0	0	0	63	0	0	14
Lane Group Flow (vph)	4	243	0	21	364	0	0	198	15	248	228	4
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			4
Actuated Green, G (s)	0.7	8.3		0.9	8.5			8.3	8.3	9.8	9.8	9.8
Effective Green, g (s)	0.7	8.3		0.9	8.5			8.3	8.3	9.8	9.8	9.8
Actuated g/C Ratio	0.02	0.19		0.02	0.20			0.19	0.19	0.23	0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
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)	29	663		36	639			354	297	401	422	351
v/s Ratio Prot	0.00	0.07		c0.01	c0.11			c0.11		c0.14	0.12	
v/s Ratio Perm									0.01			0.00
v/c Ratio	0.14	0.37		0.58	0.57			0.56	0.05	0.62	0.54	0.01
Uniform Delay, d1	21.0	15.2		21.0	15.7			15.8	14.3	15.1	14.8	13.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.3		21.8	1.2			1.9	0.1	2.8	1.4	0.0
Delay (s)	23.2	15.6		42.8	16.9			17.8	14.4	17.9	16.2	13.0
Level of Service	C	B		D	B			B	B	B	B	B
Approach Delay (s)		15.7			17.9			16.8			16.9	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	43.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	466	525	594	163	159
v/c Ratio	0.79	0.63	0.84	0.56	0.63
Control Delay	38.7	6.3	37.0	44.1	48.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	6.3	37.0	44.1	48.6
Queue Length 50th (ft)	254	0	322	93	91
Queue Length 95th (ft)	#423	80	#518	162	162
Internal Link Dist (ft)	2203		1011	533	
Turn Bay Length (ft)					
Base Capacity (vph)	727	907	854	382	331
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	0.58	0.70	0.43	0.48

Intersection Summary

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

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
Frpb, ped/bikes		1.00	0.96		1.00						1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.98						0.95	1.00
Satd. Flow (prot)		1863	1514		1827						1770	1542
Flt Permitted		1.00	1.00		0.98						0.95	1.00
Satd. Flow (perm)		1863	1514		1827						1770	1542
Volume (vph)	0	429	483	215	331	0	0	0	0	150	0	146
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	466	525	234	360	0	0	0	0	163	0	159
RTOR Reduction (vph)	0	0	357	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	466	168	0	594	0	0	0	0	0	163	159
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type			Perm	Split						Split		Perm
Protected Phases		4		8	8					6	6	
Permitted Phases			4									6
Actuated Green, G (s)		24.4	24.4		29.7						10.0	10.0
Effective Green, g (s)		25.0	25.0		30.3						10.6	10.6
Actuated g/C Ratio		0.32	0.32		0.39						0.14	0.14
Clearance Time (s)		4.6	4.6		4.6						4.6	4.6
Vehicle Extension (s)		3.0	3.0		3.0						3.0	3.0
Lane Grp Cap (vph)		598	486		711						241	210
v/s Ratio Prot		c0.25			c0.33						0.09	
v/s Ratio Perm			0.11									c0.10
v/c Ratio		0.78	0.35		0.84						0.68	0.76
Uniform Delay, d1		24.0	20.2		21.5						32.0	32.4
Progression Factor		1.00	1.00		1.00						1.00	1.00
Incremental Delay, d2		6.4	0.4		8.4						7.3	14.4
Delay (s)		30.3	20.6		29.9						39.3	46.8
Level of Service		C	C		C						D	D
Approach Delay (s)		25.2			29.9			0.0			43.0	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	612	355	136	249	348
v/c Ratio	0.86	0.78	0.29	0.70	0.60
Control Delay	37.7	44.6	7.7	45.4	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	44.6	7.7	45.4	8.9
Queue Length 50th (ft)	304	185	0	132	0
Queue Length 95th (ft)	496	#348	47	240	78
Internal Link Dist (ft)	1011	665		558	
Turn Bay Length (ft)					
Base Capacity (vph)	882	585	564	477	657
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.69	0.61	0.24	0.52	0.53

Intersection Summary

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

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			
Frpb, ped/bikes		1.00			1.00	0.96		1.00	0.96			
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (prot)		1821			1863	1513		1777	1513			
Flt Permitted		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (perm)		1821			1863	1513		1777	1513			
Volume (vph)	257	306	0	0	327	125	222	7	320	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	333	0	0	355	136	241	8	348	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	102	0	0	277	0	0	0
Lane Group Flow (vph)	0	612	0	0	355	34	0	249	71	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split					Perm	Split		Perm			
Protected Phases	4	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)		30.8			19.2	19.2		15.5	15.5			
Effective Green, g (s)		31.4			19.8	19.8		16.1	16.1			
Actuated g/C Ratio		0.40			0.25	0.25		0.20	0.20			
Clearance Time (s)		4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		721			465	378		361	307			
v/s Ratio Prot		c0.34			c0.19			c0.14				
v/s Ratio Perm						0.02			0.05			
v/c Ratio		0.85			0.76	0.09		0.69	0.23			
Uniform Delay, d1		21.8			27.6	22.8		29.3	26.4			
Progression Factor		1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2		9.2			7.3	0.1		5.4	0.4			
Delay (s)		31.0			34.9	22.9		34.7	26.8			
Level of Service		C			C	C		C	C			
Approach Delay (s)		31.0			31.6			30.1			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	648	327	398	775	74	251
v/c Ratio	0.38	0.38	0.75	0.26	0.45	0.53
Control Delay	9.1	3.4	44.1	3.3	50.8	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	3.4	44.1	3.3	50.8	9.7
Queue Length 50th (ft)	64	0	238	28	45	0
Queue Length 95th (ft)	117	54	348	141	88	38
Internal Link Dist (ft)	1052			1290	497	
Turn Bay Length (ft)						
Base Capacity (vph)	1696	871	534	2927	374	754
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	0.38	0.38	0.75	0.26	0.20	0.33

Intersection Summary

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		0.91	0.91	1.00	0.95						1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	0.95
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		0.92	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3134	1441	1770	3539						1779	2646
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3134	1441	1770	3539						1779	2646
Volume (vph)	0	295	602	366	713	0	0	0	0	64	4	231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	321	654	398	775	0	0	0	0	70	4	251
RTOR Reduction (vph)	0	165	167	0	0	0	0	0	0	0	0	228
Lane Group Flow (vph)	0	483	160	398	775	0	0	0	0	0	74	23
Confl. Peds. (#/hr)	10					10				10		10
Turn Type			Perm	Prot						Split		Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		48.8	48.8	29.9	82.7						9.3	9.3
Effective Green, g (s)		48.8	48.8	29.9	82.7						9.3	9.3
Actuated g/C Ratio		0.49	0.49	0.30	0.83						0.09	0.09
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)		1529	703	529	2927						165	246
v/s Ratio Prot		c0.15		c0.22	0.22						c0.04	
v/s Ratio Perm			0.11									0.01
v/c Ratio		0.32	0.23	0.75	0.26						0.45	0.09
Uniform Delay, d1		15.5	14.7	31.7	1.9						42.9	41.5
Progression Factor		1.00	1.00	1.11	1.48						1.00	1.00
Incremental Delay, d2		0.1	0.2	5.6	0.2						1.9	0.2
Delay (s)		15.6	14.9	40.8	3.0						44.9	41.7
Level of Service		B	B	D	A						D	D
Approach Delay (s)		15.4			15.9			0.0			42.4	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	180	176	603	463	555
v/c Ratio	0.25	0.16	0.28	0.86	0.54
Control Delay	11.7	10.7	10.8	47.4	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	10.7	10.8	47.4	15.4
Queue Length 50th (ft)	24	45	85	278	85
Queue Length 95th (ft)	40	75	156	333	114
Internal Link Dist (ft)		1290	1318		
Turn Bay Length (ft)					
Base Capacity (vph)	708	1134	2137	920	1555
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.16	0.28	0.50	0.36

Intersection Summary

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	0.97	1.00			0.95					1.00		0.88
Frpb, ped/bikes	1.00	1.00			1.00					1.00		0.97
Flpb, ped/bikes	0.99	1.00			1.00					0.98		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)	3393	1863			3505					1736		2702
Flt Permitted	0.39	1.00			1.00					0.95		1.00
Satd. Flow (perm)	1405	1863			3505					1736		2702
Volume (vph)	166	162	0	0	525	29	0	0	0	426	0	511
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	176	0	0	571	32	0	0	0	463	0	555
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	180
Lane Group Flow (vph)	180	176	0	0	600	0	0	0	0	463	0	375
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm									custom		custom
Protected Phases		2			6							
Permitted Phases	2									4		4
Actuated Green, G (s)	60.9	60.9			60.9					31.1		31.1
Effective Green, g (s)	60.9	60.9			60.9					31.1		31.1
Actuated g/C Ratio	0.61	0.61			0.61					0.31		0.31
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)	856	1135			2135					540		840
v/s Ratio Prot		0.09			c0.17							
v/s Ratio Perm	0.13									c0.27		0.14
v/c Ratio	0.21	0.16			0.28					0.86		0.45
Uniform Delay, d1	8.8	8.4			9.2					32.4		27.6
Progression Factor	0.96	1.00			1.00					1.00		1.00
Incremental Delay, d2	0.5	0.3			0.3					12.7		0.4
Delay (s)	9.0	8.7			9.6					45.1		27.9
Level of Service	A	A			A					D		C
Approach Delay (s)		8.9			9.6			0.0			35.7	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	532	50	24	3	13	531
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	578	54	26	3	14	577

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	578	54	29	14	577
Volume Left (vph)	578	0	0	14	0
Volume Right (vph)	0	0	3	0	577
Hadj (s)	0.53	0.03	-0.03	0.53	-0.67
Departure Headway (s)	6.9	6.4	7.2	7.0	5.8
Degree Utilization, x	1.11	0.10	0.06	0.03	0.93
Capacity (veh/h)	530	549	486	505	607
Control Delay (s)	97.5	8.9	10.6	9.0	44.2
Approach Delay (s)	89.9		10.6	43.4	
Approach LOS	F		B	E	

Intersection Summary			
Delay	66.1		
HCM Level of Service	F		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBT	WBR	NBR	SBL	SBR
Lane Group Flow (vph)	404	802	18	701	229	25	432	432
v/c Ratio	0.70	0.34	0.02	0.29	0.27	0.04	0.38	0.69
Control Delay	19.1	9.1	4.8	8.9	2.6	0.1	15.4	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	9.1	4.8	8.9	2.6	0.1	15.4	16.7
Queue Length 50th (ft)	37	41	0	35	0	0	42	53
Queue Length 95th (ft)	137	120	10	105	34	0	131	229
Internal Link Dist (ft)		1616		2336				
Turn Bay Length (ft)								
Base Capacity (vph)	827	3414	1069	3414	1106	976	1955	947
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.23	0.02	0.21	0.21	0.03	0.22	0.46

Intersection Summary

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	0.97	0.91	1.00		0.91	1.00			1.00	0.97		1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98			1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85			0.86	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00			1.00	0.95		1.00
Satd. Flow (prot)	3421	5085	1583		5085	1550			1611	3433		1550
Flt Permitted	0.37	1.00	1.00		1.00	1.00			1.00	0.95		1.00
Satd. Flow (perm)	1333	5085	1583		5085	1550			1611	3433		1550
Volume (vph)	372	738	17	0	645	211	0	0	23	397	0	397
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	404	802	18	0	701	229	0	0	25	432	0	432
RTOR Reduction (vph)	0	0	9	0	0	117	0	0	16	0	0	111
Lane Group Flow (vph)	404	802	9	0	701	112	0	0	9	432	0	321
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm		Perm			Perm			custom	Prot		custom
Protected Phases		2			6					4		
Permitted Phases	2		2			6			8			4
Actuated Green, G (s)	24.5	24.5	24.5		24.5	24.5			17.4	17.4		17.4
Effective Green, g (s)	24.5	24.5	24.5		24.5	24.5			17.4	17.4		17.4
Actuated g/C Ratio	0.49	0.49	0.49		0.49	0.49			0.35	0.35		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)	654	2497	777		2497	761			562	1197		540
v/s Ratio Prot		0.16			0.14					0.13		
v/s Ratio Perm	c0.30		0.01			0.07			0.01			c0.21
v/c Ratio	0.62	0.32	0.01		0.28	0.15			0.02	0.36		0.59
Uniform Delay, d1	9.3	7.7	6.5		7.5	7.0			10.6	12.1		13.4
Progression Factor	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	1.7	0.1	0.0		0.1	0.1			0.0	0.2		1.8
Delay (s)	11.0	7.7	6.5		7.6	7.1			10.7	12.3		15.1
Level of Service	B	A	A		A	A			B	B		B
Approach Delay (s)		8.8			7.4			10.7			13.7	
Approach LOS		A			A			B			B	

Intersection Summary

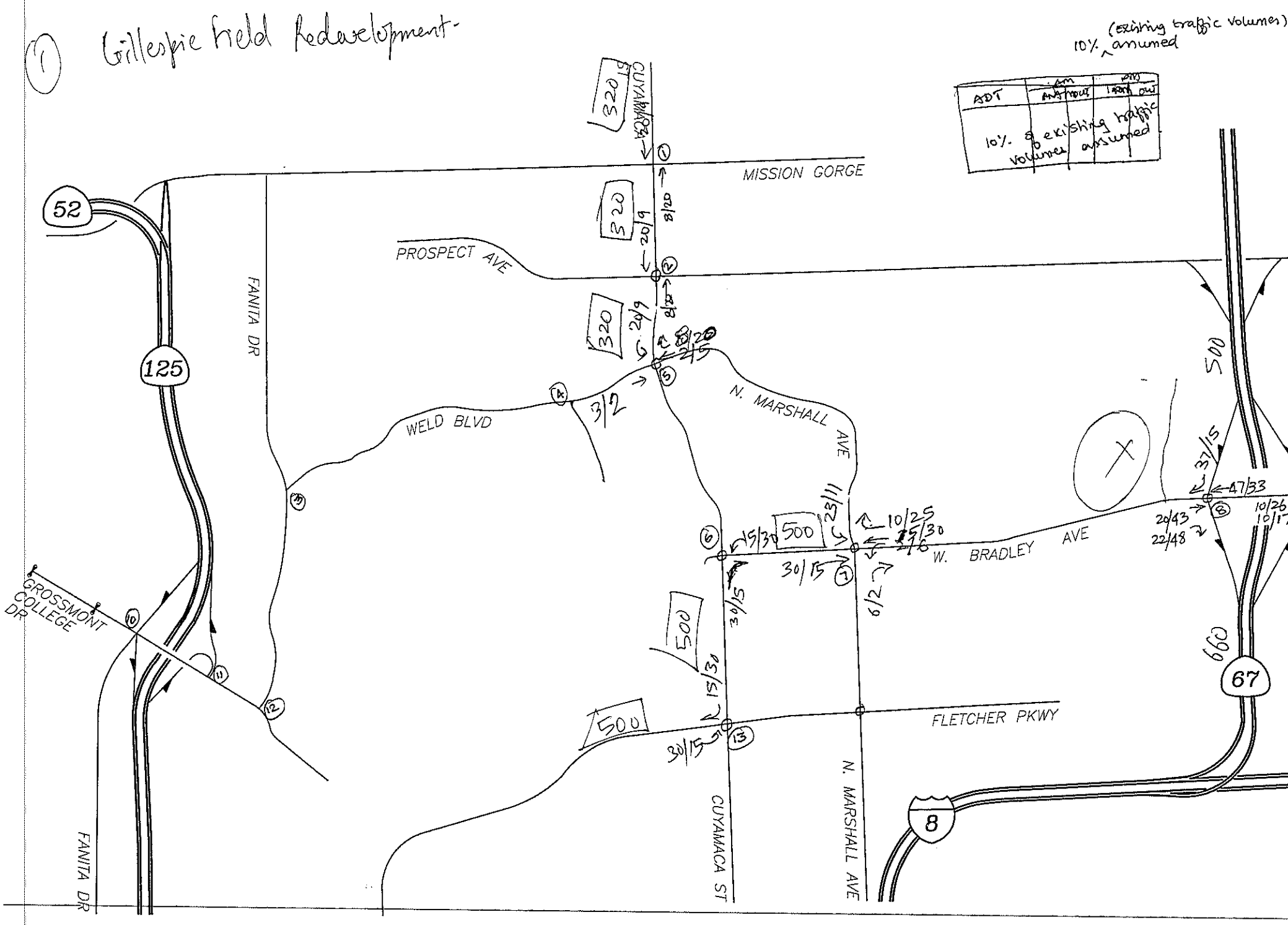
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	49.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX C

CUMULATIVE PROJECTS DATA

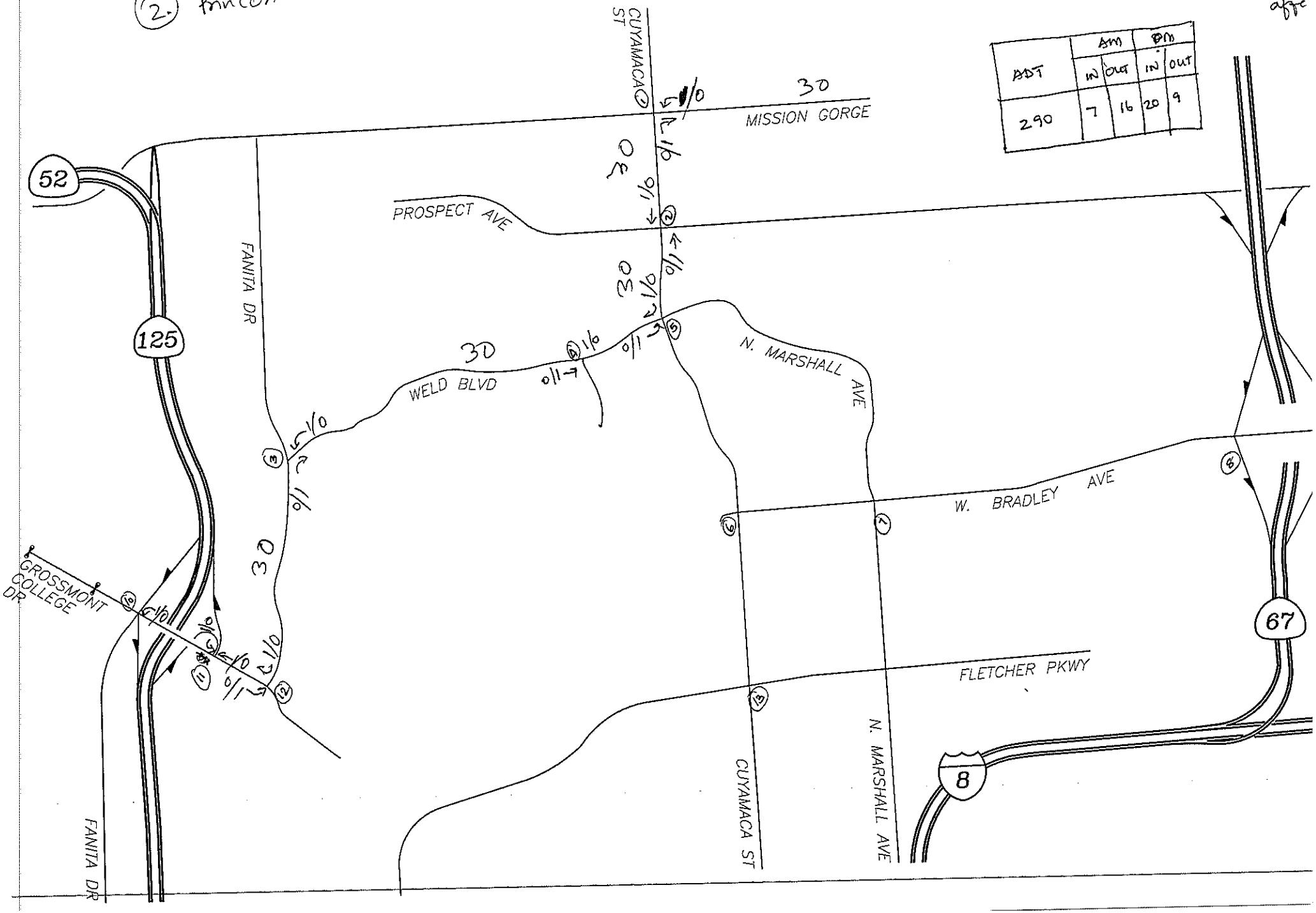
(1) Gillespie Field Redevelopment-



(2.) Princess Joanne

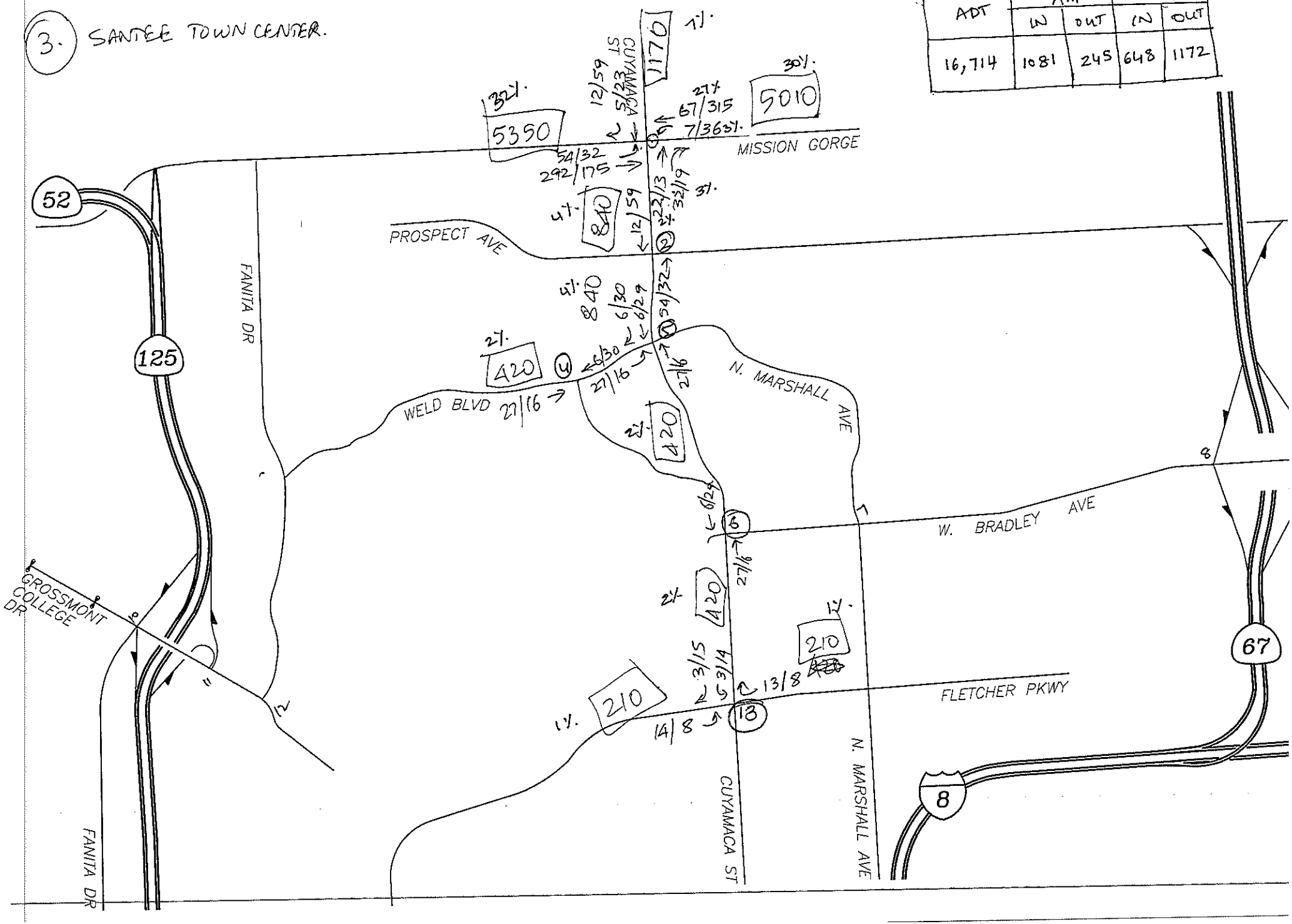
10% of the project afte

ADT	AM		PM	
	IN	OUT	IN	OUT
290	7	16	20	9



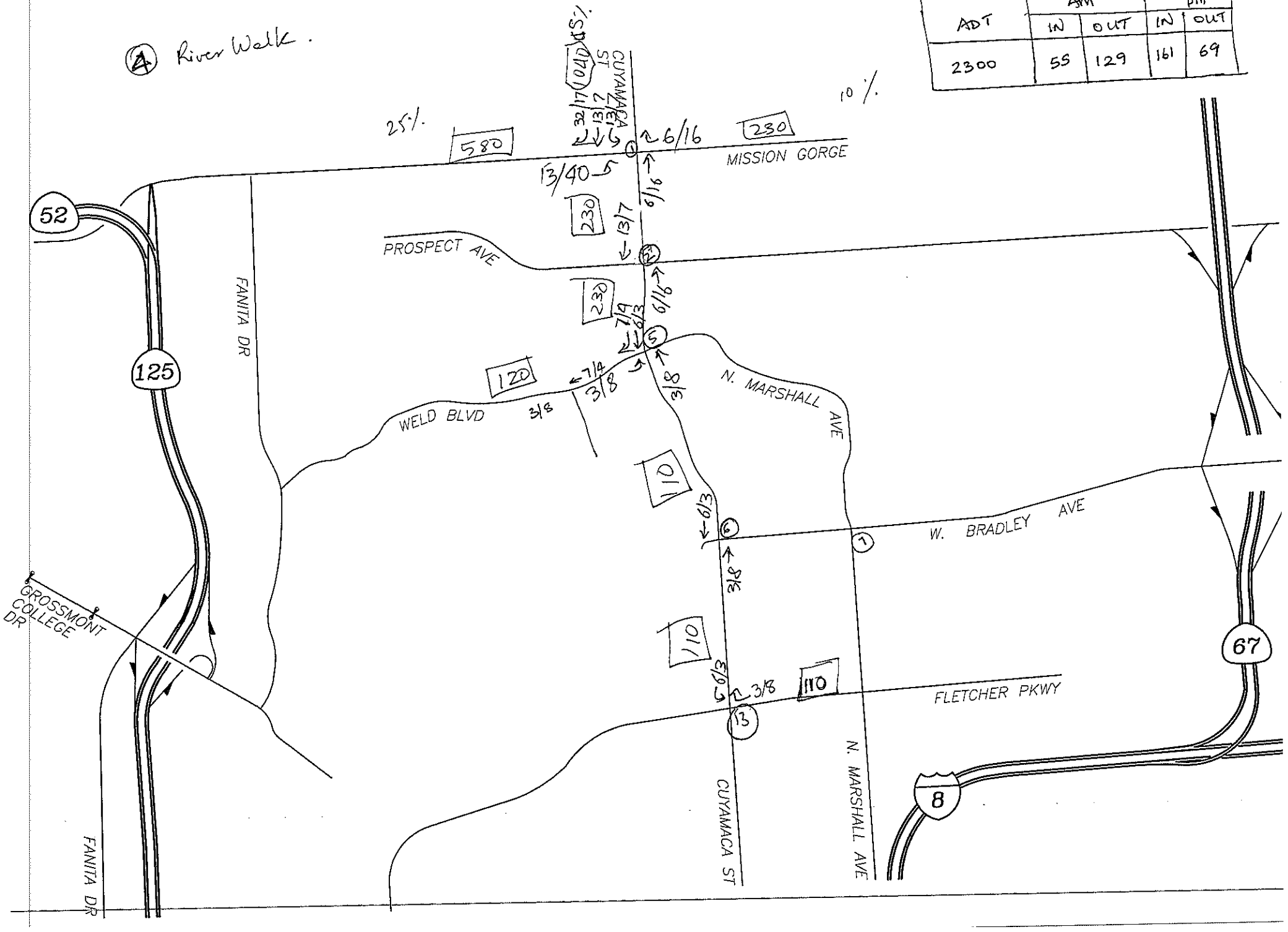
3. SANTEE TOWN CENTER.

ADT	AM		PM	
	IN	OUT	IN	OUT
16,714	1081	245	648	1172



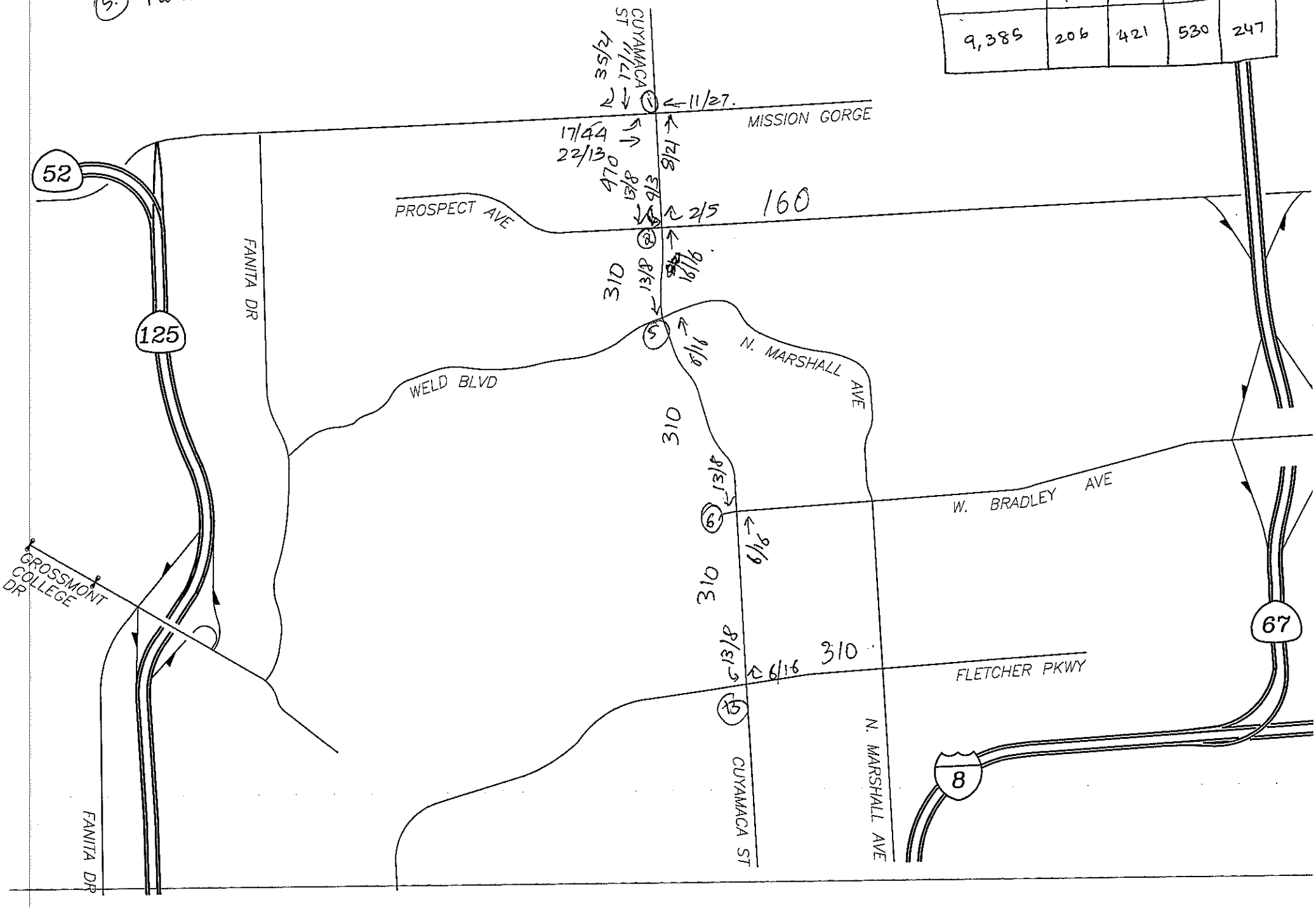
(4) River Walk.

ADT	AM		PM	
	IN	OUT	IN	OUT
2300	55	129	161	69



(5.) Fanita

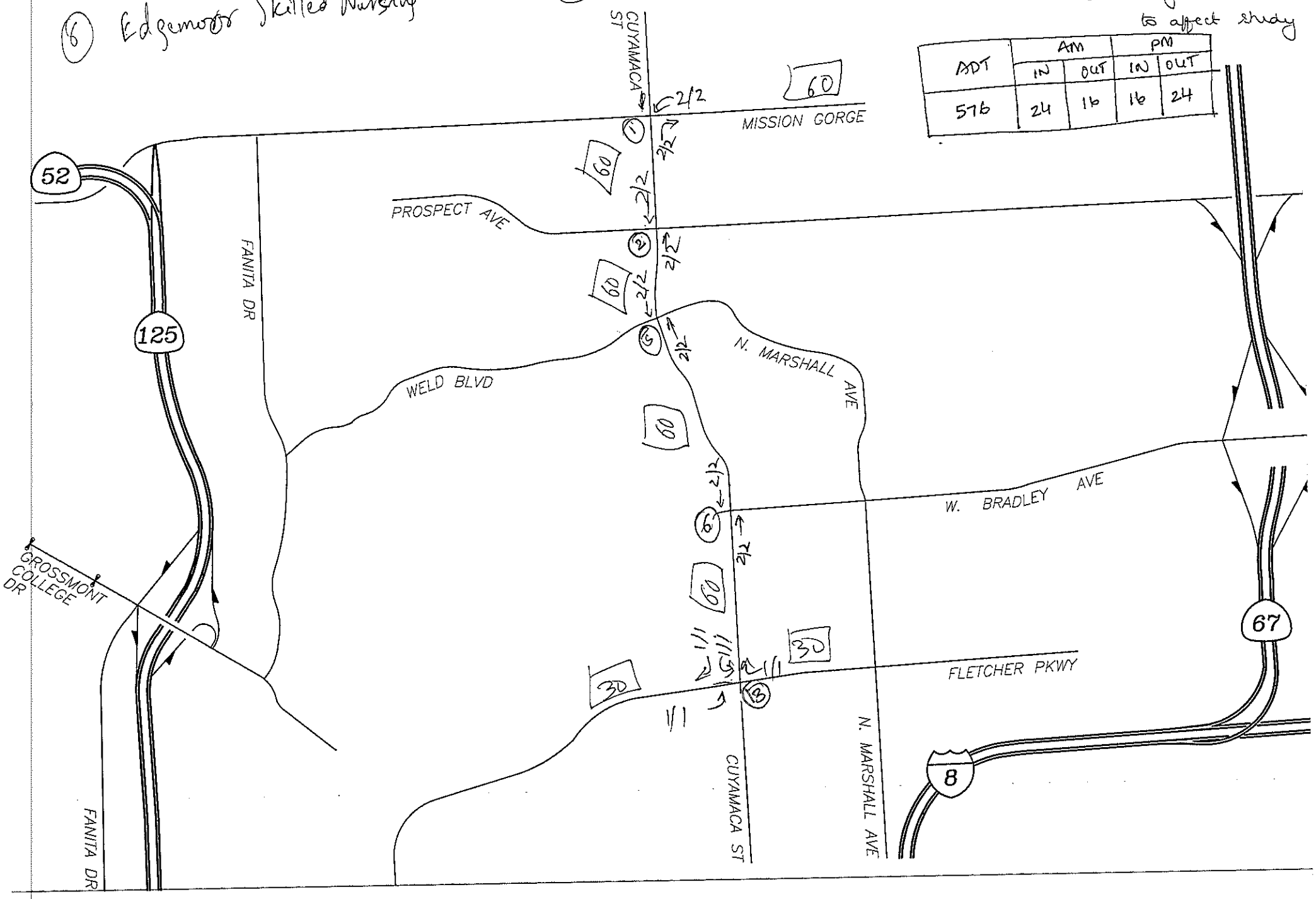
ADTs	AM		PM	
	IN	OUT	IN	OUT
9,385	206	421	530	247



(6) Edgemoor Skilled Nursing

Note: Only 10% of the
to affect study

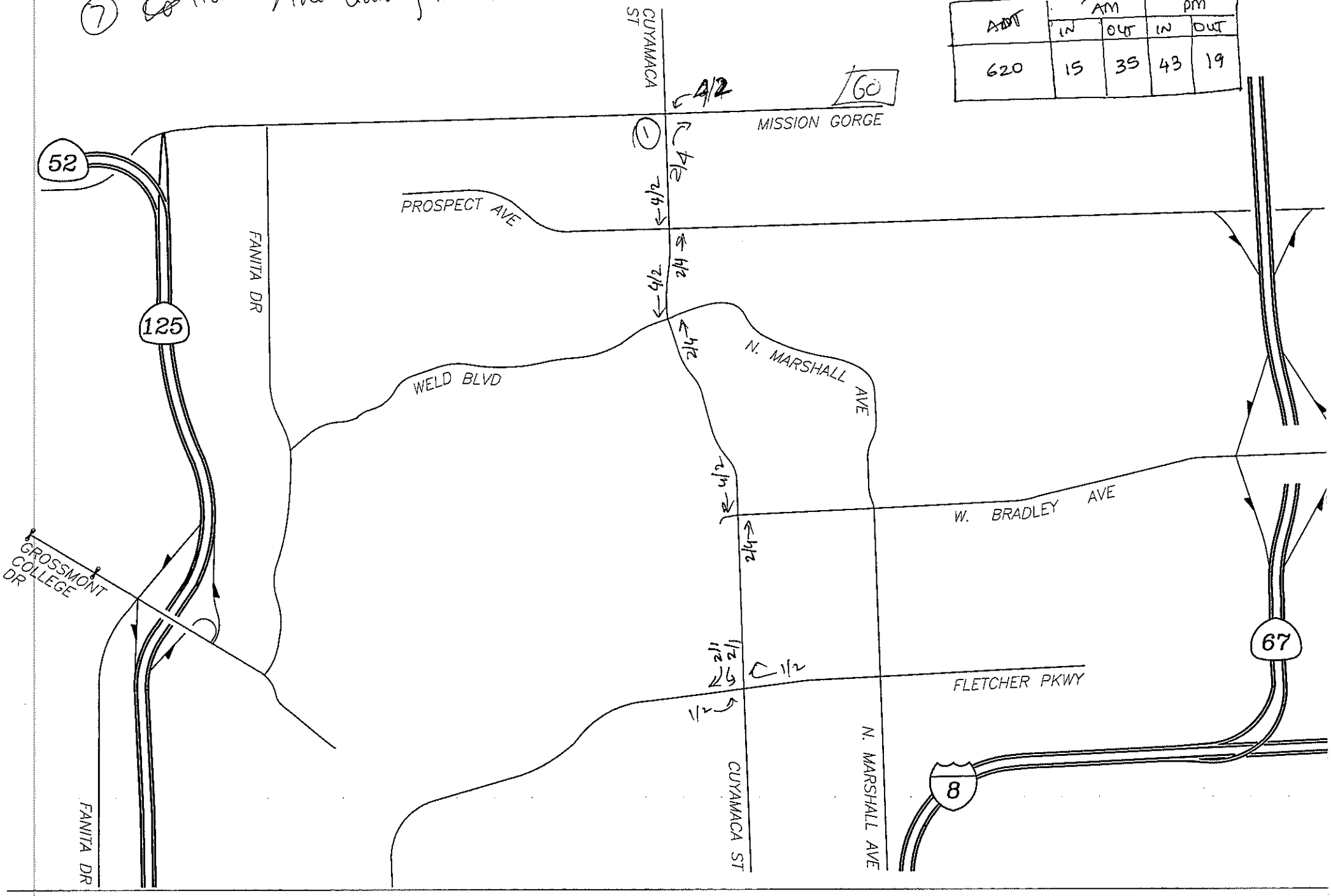
ADT	AM		PM	
	IN	OUT	IN	OUT
576	24	16	16	24



(7) ~~Go~~ Home of the Guiding Hands.

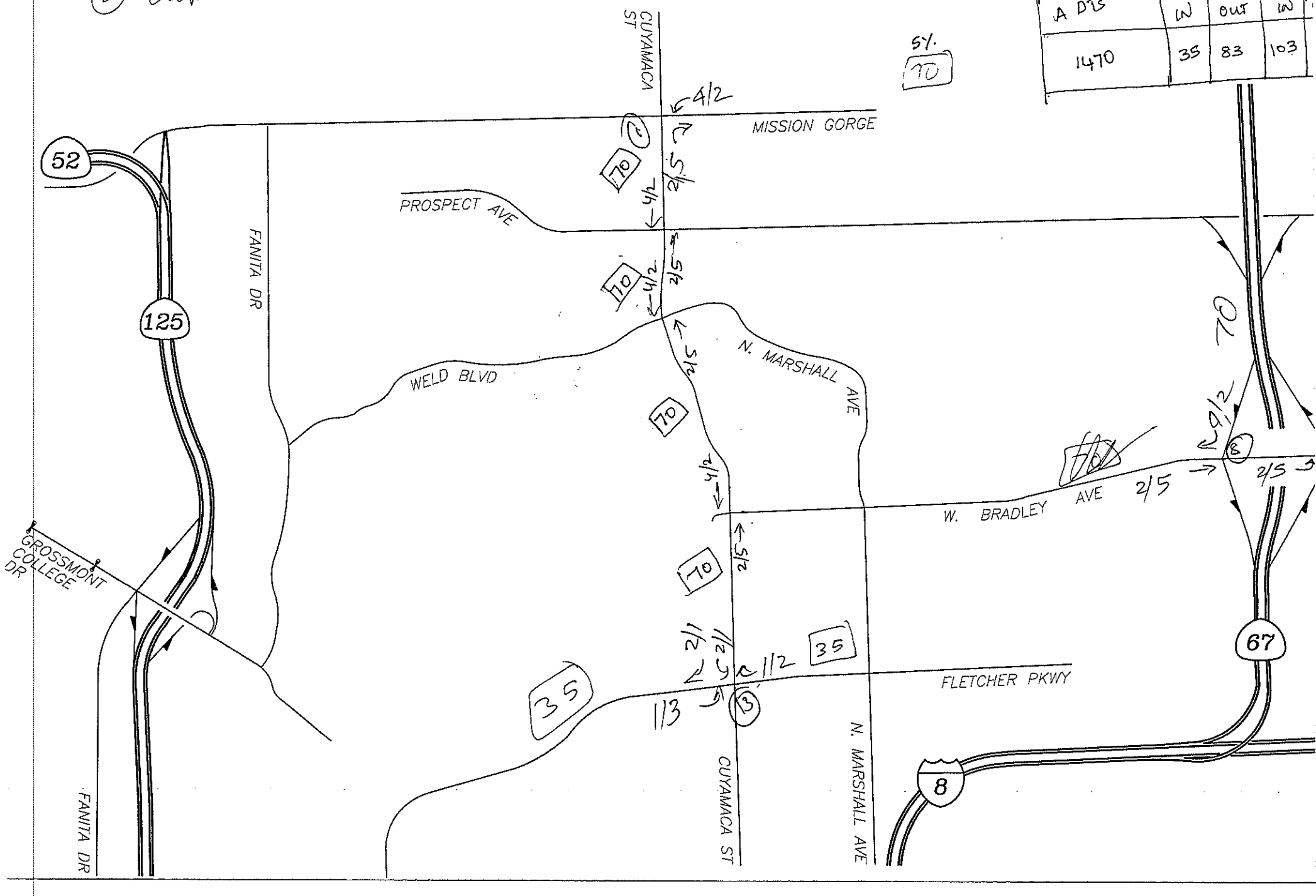
Note: So

ADT	AM		PM	
	IN	OUT	IN	OUT
620	15	35	43	19



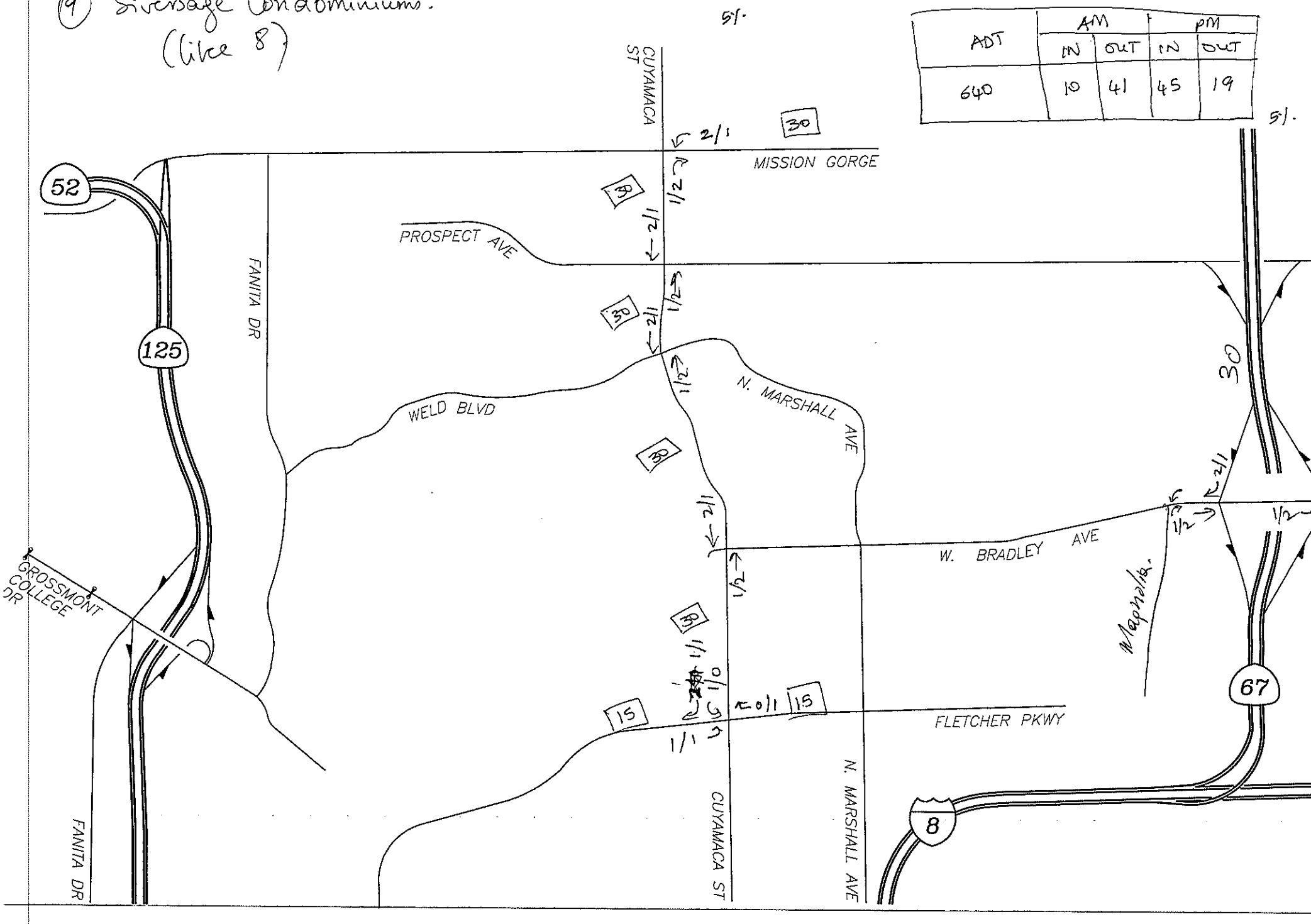
(8) Lakeside Downs.

A DTS	AM		PM
	IN	OUT	IN
1470	35	83	103



(9) Siversage Condominiums.
(like 8)

ADT	AM		PM	
	IN	OUT	IN	OUT
640	10	41	45	19



APPENDIX D

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
- EXISTING + CUMULATIVE PROJECTS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	221	1087	312	176	984	150	295	358	186	358	175
v/c Ratio	0.48	0.59	0.41	0.43	0.62	0.46	0.55	0.42	0.45	0.58	0.43
Control Delay	38.2	23.3	4.6	39.1	25.1	12.3	37.3	26.5	39.0	35.8	9.4
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	38.2	23.3	4.6	39.1	25.1	12.3	37.3	26.5	39.0	35.8	9.4
Queue Length 50th (ft)	48	152	0	39	137	0	64	66	41	80	0
Queue Length 95th (ft)	113	271	57	94	248	59	142	144	98	168	58
Internal Link Dist (ft)		365			755			1070		518	
Turn Bay Length (ft)											
Base Capacity (vph)	828	2341	872	728	2177	517	933	1039	879	976	548
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	0.27	0.46	0.36	0.24	0.45	0.29	0.32	0.34	0.21	0.37	0.32

Intersection Summary

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
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1542	3433	5085	1583	3433	3357		3433	3539	1542
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1542	3433	5085	1583	3433	3357		3433	3539	1542
Volume (vph)	203	1000	287	162	905	138	271	233	97	171	329	161
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	221	1087	312	176	984	150	295	253	105	186	358	175
RTOR Reduction (vph)	0	0	200	0	0	135	0	36	0	0	0	142
Lane Group Flow (vph)	221	1087	112	176	984	15	295	322	0	186	358	33
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Over	Prot			Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	10.4	28.1	28.1	7.6	25.3	7.8	12.0	18.8		7.8	14.6	14.6
Effective Green, g (s)	10.4	28.1	28.1	7.6	25.3	7.8	12.0	18.8		7.8	14.6	14.6
Actuated g/C Ratio	0.13	0.36	0.36	0.10	0.32	0.10	0.15	0.24		0.10	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	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)	456	1825	553	333	1643	158	526	806		342	660	288
v/s Ratio Prot	c0.06	c0.21		0.05	0.19	0.01	c0.09	0.10		0.05	c0.10	
v/s Ratio Perm			0.07									0.02
v/c Ratio	0.48	0.60	0.20	0.53	0.60	0.09	0.56	0.40		0.54	0.54	0.11
Uniform Delay, d1	31.5	20.5	17.4	33.6	22.2	32.0	30.7	25.0		33.6	28.8	26.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.8	0.5	0.2	1.5	0.6	0.3	1.4	0.3		1.8	0.9	0.2
Delay (s)	32.3	21.0	17.5	35.2	22.8	32.3	32.1	25.3		35.3	29.7	26.6
Level of Service	C	C	B	D	C	C	C	C		D	C	C
Approach Delay (s)		21.9			25.6			28.4			30.4	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	53	238	82	113	409	128	109	562	146	671	83
v/c Ratio	0.25	0.56	0.20	0.42	0.40	0.24	0.41	0.41	0.49	0.64	0.16
Control Delay	39.4	34.2	8.8	38.3	24.2	6.8	38.4	22.9	38.1	26.7	7.1
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	39.4	34.2	8.8	38.3	24.2	6.8	38.4	22.9	38.1	26.7	7.1
Queue Length 50th (ft)	21	90	0	44	76	0	42	67	56	130	0
Queue Length 95th (ft)	73	224	38	127	165	44	123	144	153	269	35
Internal Link Dist (ft)		296			520			1270		1070	
Turn Bay Length (ft)											
Base Capacity (vph)	399	810	709	541	1765	824	540	2353	607	1783	809
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	0.13	0.29	0.12	0.21	0.23	0.16	0.20	0.24	0.24	0.38	0.10

Intersection Summary

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
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1545	1770	3539	1545	1770	4939		1770	3539	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1545	1770	3539	1545	1770	4939		1770	3539	1545
Volume (vph)	49	219	75	104	376	118	100	439	78	134	617	76
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	238	82	113	409	128	109	477	85	146	671	83
RTOR Reduction (vph)	0	0	62	0	0	91	0	18	0	0	0	59
Lane Group Flow (vph)	53	238	20	113	409	37	109	544	0	146	671	24
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	4.4	16.1	16.1	7.8	19.5	19.5	7.7	18.7		8.8	19.8	19.8
Effective Green, g (s)	4.4	16.1	16.1	7.8	19.5	19.5	7.7	18.7		8.8	19.8	19.8
Actuated g/C Ratio	0.07	0.24	0.24	0.12	0.29	0.29	0.11	0.28		0.13	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	116	445	369	205	1024	447	202	1370		231	1040	454
v/s Ratio Prot	0.03	c0.13		c0.06	c0.12		0.06	0.11		c0.08	c0.19	
v/s Ratio Perm			0.01			0.02						0.02
v/c Ratio	0.46	0.53	0.05	0.55	0.40	0.08	0.54	0.40		0.63	0.65	0.05
Uniform Delay, d1	30.3	22.4	19.8	28.1	19.2	17.4	28.2	19.8		27.8	20.7	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
Incremental Delay, d2	2.8	1.2	0.1	3.2	0.3	0.1	2.8	0.2		5.5	1.4	0.0
Delay (s)	33.2	23.6	19.8	31.3	19.5	17.5	30.9	20.0		33.3	22.1	17.1
Level of Service	C	C	B	C	B	B	C	B		C	C	B
Approach Delay (s)		24.1			21.2			21.7			23.5	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	174	88	309	142	170
v/c Ratio	0.39	0.19	0.38	0.34	0.22
Control Delay	14.2	5.1	6.9	14.5	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.2	5.1	6.9	14.5	5.4
Queue Length 50th (ft)	28	0	7	23	14
Queue Length 95th (ft)	79	24	37	69	42
Internal Link Dist (ft)	2680		3820		1318
Turn Bay Length (ft)					
Base Capacity (vph)	974	884	1719	923	1416
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.18	0.10	0.18	0.15	0.12

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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	1.00	0.95		1.00	1.00
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.90		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1557	3135		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1557	3135		1770	1863
Volume (vph)	160	81	87	197	131	156
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	88	95	214	142	170
RTOR Reduction (vph)	0	71	183	0	0	0
Lane Group Flow (vph)	174	17	126	0	142	170
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	4.9	4.9	3.7		4.6	12.3
Effective Green, g (s)	4.9	4.9	3.7		4.6	12.3
Actuated g/C Ratio	0.19	0.19	0.15		0.18	0.49
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	344	303	460		323	909
v/s Ratio Prot	c0.10		0.04		c0.08	c0.09
v/s Ratio Perm		0.01				
v/c Ratio	0.51	0.06	0.27		0.44	0.19
Uniform Delay, d1	9.1	8.3	9.6		9.2	3.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.1	0.3		1.0	0.1
Delay (s)	10.2	8.3	9.9		10.1	3.7
Level of Service	B	A	A		B	A
Approach Delay (s)	9.6		9.9			6.6
Approach LOS	A		A			A

Intersection Summary

HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	25.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.0%	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)	290	141	83	225	15	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	315	153	90	245	16	14
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				1140		
pX, platoon unblocked						
vC, conflicting volume			478		715	254
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			478		715	254
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		95	98
cM capacity (veh/h)			1071		329	733

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	210	258	90	122	122	16	14
Volume Left	0	0	90	0	0	16	0
Volume Right	0	153	0	0	0	0	14
cSH	1700	1700	1071	1700	1700	329	733
Volume to Capacity	0.12	0.15	0.08	0.07	0.07	0.05	0.02
Queue Length 95th (ft)	0	0	7	0	0	4	1
Control Delay (s)	0.0	0.0	8.7	0.0	0.0	16.5	10.0
Lane LOS			A			C	B
Approach Delay (s)	0.0		2.3			13.5	
Approach LOS						B	

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	107	113	108	13	91	101	80	318	97	604
v/c Ratio	0.31	0.32	0.27	0.04	0.26	0.28	0.15	0.35	0.30	0.60
Control Delay	25.1	25.0	8.1	24.4	25.7	8.9	26.0	18.8	26.4	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	25.0	8.1	24.4	25.7	8.9	26.0	18.8	26.4	18.2
Queue Length 50th (ft)	32	33	0	4	26	0	11	44	28	81
Queue Length 95th (ft)	90	94	38	20	78	39	37	98	82	163
Internal Link Dist (ft)		1060			1230			3344		1270
Turn Bay Length (ft)										
Base Capacity (vph)	658	681	666	685	721	656	801	1435	585	1644
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.17	0.16	0.02	0.13	0.15	0.10	0.22	0.17	0.37

Intersection Summary

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	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.96	
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1740	1552	1770	1863	1552	3433	3524		1770	3386	
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1740	1552	1770	1863	1552	3433	3524		1770	3386	
Volume (vph)	134	68	99	12	84	93	74	285	7	89	413	143
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	146	74	108	13	91	101	80	310	8	97	449	155
RTOR Reduction (vph)	0	0	91	0	0	87	0	2	0	0	36	0
Lane Group Flow (vph)	107	113	17	13	91	14	80	316	0	97	568	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	6.8	6.8	6.8	6.0	6.0	6.0	3.4	9.4		4.6	10.6	
Effective Green, g (s)	6.8	6.8	6.8	6.0	6.0	6.0	3.4	9.4		4.6	10.6	
Actuated g/C Ratio	0.16	0.16	0.16	0.14	0.14	0.14	0.08	0.22		0.11	0.25	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	267	276	247	248	261	218	273	774		190	839	
v/s Ratio Prot	0.06	c0.06		0.01	c0.05		0.02	0.09		c0.05	c0.17	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.40	0.41	0.07	0.05	0.35	0.06	0.29	0.41		0.51	0.68	
Uniform Delay, d1	16.2	16.2	15.3	15.9	16.6	16.0	18.6	14.3		18.0	14.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	1.0	0.1	0.1	0.8	0.1	0.6	0.4		2.3	2.2	
Delay (s)	17.2	17.2	15.4	16.0	17.4	16.1	19.2	14.7		20.3	16.7	
Level of Service	B	B	B	B	B	B	B	B		C	B	
Approach Delay (s)		16.6			16.7			15.6			17.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	42.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	98	112	60	136	66	658	128	419
v/c Ratio	0.12	0.23	0.24	0.23	0.41	0.12	0.62	0.31	0.51
Control Delay	31.2	16.7	28.7	30.3	10.8	18.3	21.3	24.9	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	16.7	28.7	30.3	10.8	18.3	21.3	24.9	24.1
Queue Length 50th (ft)	8	6	18	19	0	17	102	39	68
Queue Length 95th (ft)	36	32	50	63	49	52	196	102	141
Internal Link Dist (ft)		416		1234			3646		3344
Turn Bay Length (ft)									
Base Capacity (vph)	489	915	960	521	527	778	1527	608	1205
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.11	0.12	0.12	0.26	0.08	0.43	0.21	0.35

Intersection Summary

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		0.97	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3176		3433	1863	1548	1770	3458		1770	3504	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3176		3433	1863	1548	1770	3458		1770	3504	
Volume (vph)	24	36	54	103	55	125	61	524	81	118	365	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	39	59	112	60	136	66	570	88	128	397	22
RTOR Reduction (vph)	0	54	0	0	0	122	0	12	0	0	4	0
Lane Group Flow (vph)	26	44	0	112	60	14	66	646	0	128	415	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split			Split		Perm	Split			Split		
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	4.8	4.8		5.8	5.8	5.8	16.9	16.9		13.0	13.0	
Effective Green, g (s)	4.8	4.8		5.8	5.8	5.8	16.9	16.9		13.0	13.0	
Actuated g/C Ratio	0.08	0.08		0.10	0.10	0.10	0.30	0.30		0.23	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	150	270		352	191	159	529	1034		407	806	
v/s Ratio Prot	c0.01	0.01		c0.03	0.03		0.04	c0.19		0.07	c0.12	
v/s Ratio Perm						0.01						
v/c Ratio	0.17	0.16		0.32	0.31	0.09	0.12	0.62		0.31	0.52	
Uniform Delay, d1	24.0	24.0		23.5	23.5	23.0	14.4	17.1		18.1	19.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.3		0.5	0.9	0.2	0.1	1.2		0.4	0.6	
Delay (s)	24.6	24.3		24.0	24.5	23.2	14.5	18.3		18.5	19.6	
Level of Service	C	C		C	C	C	B	B		B	B	
Approach Delay (s)		24.3			23.7			17.9			19.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	5	220	72	643	161	42	130	87	9
v/c Ratio	0.02	0.28	0.23	0.53	0.40	0.11	0.35	0.22	0.03
Control Delay	30.4	20.0	26.0	11.5	24.1	9.3	24.7	22.9	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	20.0	26.0	11.5	24.1	9.3	24.7	22.9	13.8
Queue Length 50th (ft)	1	29	19	44	42	0	34	22	0
Queue Length 95th (ft)	12	72	68	140	122	25	103	74	12
Internal Link Dist (ft)		1234		2203	311			3353	
Turn Bay Length (ft)									
Base Capacity (vph)	370	1502	524	1756	741	639	703	740	615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.15	0.14	0.37	0.22	0.07	0.18	0.12	0.01

Intersection Summary

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
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.93			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1764	3486		1770	3267			1851	1552	1770	1863	1552
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1764	3486		1770	3267			1851	1552	1770	1863	1552
Volume (vph)	5	186	17	66	322	270	18	130	39	120	80	8
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	202	18	72	350	293	20	141	42	130	87	9
RTOR Reduction (vph)	0	7	0	0	155	0	0	0	35	0	0	8
Lane Group Flow (vph)	5	213	0	72	488	0	0	161	7	130	87	1
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			4
Actuated Green, G (s)	0.8	8.9		4.1	12.2			7.4	7.4	7.0	7.0	7.0
Effective Green, g (s)	0.8	8.9		4.1	12.2			7.4	7.4	7.0	7.0	7.0
Actuated g/C Ratio	0.02	0.21		0.09	0.28			0.17	0.17	0.16	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	33	715		167	918			316	265	285	300	250
v/s Ratio Prot	0.00	0.06		c0.04	c0.15			c0.09		c0.07	0.05	
v/s Ratio Perm									0.00			0.00
v/c Ratio	0.15	0.30		0.43	0.53			0.51	0.03	0.46	0.29	0.01
Uniform Delay, d1	21.0	14.6		18.5	13.2			16.4	15.0	16.5	16.0	15.3
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.2		1.8	0.6			1.3	0.0	1.2	0.5	0.0
Delay (s)	23.1	14.8		20.3	13.8			17.6	15.0	17.6	16.6	15.3
Level of Service	C	B		C	B			B	B	B	B	B
Approach Delay (s)		15.0			14.4			17.1			17.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	248	263	766	79	443
v/c Ratio	0.83	0.57	1.00	0.15	0.97
Control Delay	63.0	10.0	62.2	26.6	69.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	10.0	62.2	26.6	69.7
Queue Length 50th (ft)	152	0	~479	37	275
Queue Length 95th (ft)	#274	70	#734	72	#474
Internal Link Dist (ft)	2203		1011	533	
Turn Bay Length (ft)					
Base Capacity (vph)	312	471	768	530	459
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.79	0.56	1.00	0.15	0.97

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.

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
Frpb, ped/bikes		1.00	0.95		1.00						1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.99						0.95	1.00
Satd. Flow (prot)		1863	1504		1838						1770	1536
Flt Permitted		1.00	1.00		0.99						0.95	1.00
Satd. Flow (perm)		1863	1504		1838						1770	1536
Volume (vph)	0	228	242	192	512	0	0	0	0	73	0	408
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	248	263	209	557	0	0	0	0	79	0	443
RTOR Reduction (vph)	0	0	220	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	248	43	0	766	0	0	0	0	0	79	443
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type			Perm	Split						Split		Perm
Protected Phases		4		8	8					6	6	
Permitted Phases			4									6
Actuated Green, G (s)		15.3	15.3		40.4						28.8	28.8
Effective Green, g (s)		15.9	15.9		41.0						29.4	29.4
Actuated g/C Ratio		0.16	0.16		0.42						0.30	0.30
Clearance Time (s)		4.6	4.6		4.6						4.6	4.6
Vehicle Extension (s)		3.0	3.0		3.0						3.0	3.0
Lane Grp Cap (vph)		301	243		767						529	459
v/s Ratio Prot		c0.13			c0.42						0.04	
v/s Ratio Perm			0.03									c0.29
v/c Ratio		0.82	0.18		1.00						0.15	0.97
Uniform Delay, d1		39.8	35.5		28.6						25.3	33.9
Progression Factor		1.00	1.00		1.00						1.00	1.00
Incremental Delay, d2		16.5	0.3		31.9						0.1	32.8
Delay (s)		56.3	35.9		60.5						25.4	66.8
Level of Service		E	D		E						C	E
Approach Delay (s)		45.8			60.5			0.0			60.5	
Approach LOS		D			E			A			E	

Intersection Summary			
HCM Average Control Delay	56.4	HCM Level of Service	E
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	98.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	326	437	123	336	266
v/c Ratio	0.72	0.78	0.23	0.72	0.45
Control Delay	38.7	36.2	6.1	36.8	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	36.2	6.1	36.8	6.4
Queue Length 50th (ft)	132	174	0	136	0
Queue Length 95th (ft)	296	370	40	291	59
Internal Link Dist (ft)	1011	665		558	
Turn Bay Length (ft)					
Base Capacity (vph)	632	775	696	678	738
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	0.56	0.18	0.50	0.36

Intersection Summary

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			
Frpb, ped/bikes		1.00			1.00	0.96		1.00	0.96			
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (prot)		1828			1863	1517		1775	1517			
Flt Permitted		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (perm)		1828			1863	1517		1775	1517			
Volume (vph)	115	185	0	0	402	113	306	3	245	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	201	0	0	437	123	333	3	266	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	85	0	0	194	0	0	0
Lane Group Flow (vph)	0	326	0	0	437	38	0	336	72	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split					Perm	Split		Perm			
Protected Phases	4	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)		17.6			21.6	21.6		18.8	18.8			
Effective Green, g (s)		18.2			22.2	22.2		19.4	19.4			
Actuated g/C Ratio		0.25			0.31	0.31		0.27	0.27			
Clearance Time (s)		4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		463			576	469		480	410			
v/s Ratio Prot		c0.18			c0.23			c0.19				
v/s Ratio Perm						0.03			0.05			
v/c Ratio		0.70			0.76	0.08		0.70	0.18			
Uniform Delay, d1		24.4			22.4	17.6		23.6	20.1			
Progression Factor		1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2		4.8			5.7	0.1		4.6	0.2			
Delay (s)		29.2			28.1	17.6		28.2	20.3			
Level of Service		C			C	B		C	C			
Approach Delay (s)		29.2			25.8			24.7			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	71.8	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

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	217	107	368	1051	39	318
v/c Ratio	0.12	0.13	0.88	0.36	0.25	0.70
Control Delay	9.2	3.8	53.2	2.5	44.7	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	3.8	53.2	2.5	44.7	20.4
Queue Length 50th (ft)	22	0	238	79	24	26
Queue Length 95th (ft)	56	34	m278	m86	54	71
Internal Link Dist (ft)	1052			1290	497	
Turn Bay Length (ft)						
Base Capacity (vph)	1824	848	708	2941	427	818
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	0.12	0.13	0.52	0.36	0.09	0.39

Intersection Summary

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

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		0.91	0.91	1.00	0.95						1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	0.95
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		0.95	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)		3226	1441	1770	3539						1778	2646
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3226	1441	1770	3539						1778	2646
Volume (vph)	0	135	163	339	967	0	0	0	0	34	2	293
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	147	177	368	1051	0	0	0	0	37	2	318
RTOR Reduction (vph)	0	30	48	0	0	0	0	0	0	0	0	220
Lane Group Flow (vph)	0	187	59	368	1051	0	0	0	0	0	39	98
Confl. Peds. (#/hr)	10					10				10		10
Turn Type			Perm	Prot						Split		Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		55.6	55.6	23.5	83.1						8.9	8.9
Effective Green, g (s)		55.6	55.6	23.5	83.1						8.9	8.9
Actuated g/C Ratio		0.56	0.56	0.24	0.83						0.09	0.09
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)		1794	801	416	2941						158	235
v/s Ratio Prot		0.06		c0.21	c0.30						0.02	
v/s Ratio Perm			0.04									c0.04
v/c Ratio		0.10	0.07	0.88	0.36						0.25	0.42
Uniform Delay, d1		10.5	10.3	36.9	2.0						42.4	43.1
Progression Factor		1.00	1.00	1.02	1.01						1.00	1.00
Incremental Delay, d2		0.0	0.0	14.0	0.2						0.8	1.2
Delay (s)		10.5	10.3	51.6	2.3						43.2	44.3
Level of Service		B	B	D	A						D	D
Approach Delay (s)		10.4			15.1			0.0			44.2	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	176	546	289	935
v/c Ratio	0.13	0.44	0.69	0.89
Control Delay	8.4	10.2	41.8	25.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.4	10.2	41.8	25.5
Queue Length 50th (ft)	17	137	169	152
Queue Length 95th (ft)	27	292	219	207
Internal Link Dist (ft)	1290	1318		
Turn Bay Length (ft)				
Base Capacity (vph)	1402	1237	712	1421
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.13	0.44	0.41	0.66

Intersection Summary

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			1.00					1.00		0.88
Frpb, ped/bikes		1.00			0.99					1.00		0.97
Flpb, ped/bikes		0.99			1.00					0.98		1.00
Frt		1.00			0.98					1.00		0.85
Flt Protected		0.97			1.00					0.95		1.00
Satd. Flow (prot)		3408			1821					1736		2702
Flt Permitted		0.61			1.00					0.95		1.00
Satd. Flow (perm)		2141			1821					1736		2702
Volume (vph)	103	59	0	0	446	56	0	0	0	266	0	860
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	64	0	0	485	61	0	0	0	289	0	935
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	402
Lane Group Flow (vph)	0	176	0	0	543	0	0	0	0	289	0	533
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm			Prot						custom		custom
Protected Phases		2		1	6							
Permitted Phases	2									7		4
Actuated Green, G (s)		67.8			67.8					24.2		24.2
Effective Green, g (s)		67.8			67.8					24.2		24.2
Actuated g/C Ratio		0.68			0.68					0.24		0.24
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)		1452			1235					420		654
v/s Ratio Prot					c0.30							
v/s Ratio Perm		0.08								0.17		c0.20
v/c Ratio		0.12			0.44					0.69		0.82
Uniform Delay, d1		5.6			7.4					34.5		35.8
Progression Factor		1.13			1.00					1.00		1.00
Incremental Delay, d2		0.2			1.1					4.6		7.7
Delay (s)		6.5			8.5					39.1		43.5
Level of Service		A			A					D		D
Approach Delay (s)		6.5			8.5			0.0			42.5	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	308	28	32	14	10	465
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	335	30	35	15	11	505

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	335	30	50	11	505
Volume Left (vph)	335	0	0	11	0
Volume Right (vph)	0	0	15	0	505
Hadj (s)	0.53	0.03	-0.15	0.53	-0.67
Departure Headway (s)	6.5	6.0	6.3	6.4	5.2
Degree Utilization, x	0.61	0.05	0.09	0.02	0.72
Capacity (veh/h)	533	562	517	543	675
Control Delay (s)	17.9	8.1	9.9	8.3	19.2
Approach Delay (s)	17.1		9.9	19.0	
Approach LOS	C		A	C	

Intersection Summary			
Delay	17.7		
HCM Level of Service	C		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBT	WBR	NBR	SBL	SBR
Lane Group Flow (vph)	505	439	15	821	301	28	277	452
v/c Ratio	0.85	0.16	0.02	0.32	0.31	0.04	0.27	0.79
Control Delay	28.3	7.3	4.0	8.1	2.0	0.1	20.1	25.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	7.3	4.0	8.1	2.0	0.1	20.1	25.4
Queue Length 50th (ft)	65	24	0	49	0	0	36	83
Queue Length 95th (ft)	194	56	8	108	32	0	99	285
Internal Link Dist (ft)		1616		2336				
Turn Bay Length (ft)								
Base Capacity (vph)	775	3558	1112	3344	1164	969	1576	799
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.12	0.01	0.25	0.26	0.03	0.18	0.57

Intersection Summary

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	0.97	0.91	1.00		0.91	1.00			1.00	0.97		1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98			1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85			0.86	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00			1.00	0.95		1.00
Satd. Flow (prot)	3421	5085	1583		5085	1547			1611	3433		1547
Flt Permitted	0.32	1.00	1.00		0.94	1.00			1.00	0.95		1.00
Satd. Flow (perm)	1145	5085	1583		4779	1547			1611	3433		1547
Volume (vph)	465	404	14	1	754	277	0	0	26	255	0	416
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	505	439	15	1	820	301	0	0	28	277	0	452
RTOR Reduction (vph)	0	0	7	0	0	133	0	0	19	0	0	121
Lane Group Flow (vph)	505	439	8	0	821	168	0	0	9	277	0	331
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm		Perm	Perm		Perm			custom	Prot		custom
Protected Phases		2			6					4		
Permitted Phases	2		2	6		6			8			4
Actuated Green, G (s)	33.0	33.0	33.0		33.0	33.0			18.1	18.1		18.1
Effective Green, g (s)	33.0	33.0	33.0		33.0	33.0			18.1	18.1		18.1
Actuated g/C Ratio	0.56	0.56	0.56		0.56	0.56			0.31	0.31		0.31
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0			4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)	639	2839	884		2668	864			493	1051		474
v/s Ratio Prot		0.09								0.08		
v/s Ratio Perm	c0.44		0.01		0.17	0.11			0.01			c0.21
v/c Ratio	0.79	0.15	0.01		0.31	0.19			0.02	0.26		0.70
Uniform Delay, d1	10.3	6.3	5.8		7.0	6.5			14.3	15.5		18.1
Progression Factor	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	6.6	0.0	0.0		0.1	0.1			0.0	0.1		4.5
Delay (s)	16.9	6.3	5.8		7.0	6.6			14.3	15.6		22.6
Level of Service	B	A	A		A	A			B	B		C
Approach Delay (s)		11.9			6.9			14.3			19.9	
Approach LOS		B			A			B			B	

Intersection Summary

HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	388	1535	300	248	1328	220	473	640	368	577	271
v/c Ratio	0.79	0.89	0.42	0.71	0.88	0.55	0.83	0.75	0.80	0.78	0.55
Control Delay	49.3	35.5	4.7	51.1	37.8	10.9	49.8	34.7	51.7	40.9	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	35.5	4.7	51.1	37.8	10.9	49.8	34.7	51.7	40.9	12.5
Queue Length 50th (ft)	111	302	0	71	265	0	135	162	106	161	26
Queue Length 95th (ft)	#176	#394	54	#122	#350	63	#211	223	#173	220	98
Internal Link Dist (ft)		365			755			1070		518	
Turn Bay Length (ft)											
Base Capacity (vph)	511	1747	726	355	1521	408	589	911	473	798	514
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	0.76	0.88	0.41	0.70	0.87	0.54	0.80	0.70	0.78	0.72	0.53

Intersection Summary

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

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
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1539	3433	5085	1583	3433	3389		3433	3539	1539
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1539	3433	5085	1583	3433	3389		3433	3539	1539
Volume (vph)	357	1412	276	228	1222	202	435	448	141	339	531	249
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	388	1535	300	248	1328	220	473	487	153	368	577	271
RTOR Reduction (vph)	0	0	198	0	0	191	0	34	0	0	0	170
Lane Group Flow (vph)	388	1535	102	248	1328	29	473	606	0	368	577	101
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Over	Prot			Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	12.5	29.6	29.6	8.8	25.9	11.6	14.4	21.0		11.6	18.2	18.2
Effective Green, g (s)	12.5	29.6	29.6	8.8	25.9	11.6	14.4	21.0		11.6	18.2	18.2
Actuated g/C Ratio	0.14	0.34	0.34	0.10	0.30	0.13	0.17	0.24		0.13	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	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)	493	1730	524	347	1514	211	568	818		458	740	322
v/s Ratio Prot	c0.11	c0.30		0.07	0.26	0.02	c0.14	c0.18		0.11	0.16	
v/s Ratio Perm			0.07									0.07
v/c Ratio	0.79	0.89	0.19	0.71	0.88	0.14	0.83	0.74		0.80	0.78	0.31
Uniform Delay, d1	36.0	27.1	20.3	37.9	29.0	33.3	35.1	30.5		36.6	32.5	29.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.1	5.9	0.2	6.8	6.1	0.3	10.1	3.6		9.8	5.2	0.6
Delay (s)	44.1	33.0	20.5	44.7	35.1	33.6	45.3	34.1		46.4	37.7	29.7
Level of Service	D	C	C	D	D	C	D	C		D	D	C
Approach Delay (s)		33.3			36.2			38.9			38.6	
Approach LOS		C			D			D			D	

Intersection Summary

HCM Average Control Delay	36.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	57	383	133	78	273	239	162	987	270	768	97
v/c Ratio	0.34	0.74	0.26	0.41	0.24	0.37	0.61	0.68	0.73	0.64	0.17
Control Delay	58.5	45.5	7.6	57.5	29.3	6.3	56.5	35.6	52.5	31.3	6.7
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	58.5	45.5	7.6	57.5	29.3	6.3	56.5	35.6	52.5	31.3	6.7
Queue Length 50th (ft)	33	217	0	45	68	0	93	197	154	209	0
Queue Length 95th (ft)	99	431	50	126	137	62	219	349	324	370	39
Internal Link Dist (ft)		296			520			1270		1070	
Turn Bay Length (ft)											
Base Capacity (vph)	220	781	716	264	1569	809	419	2030	593	1718	790
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	0.26	0.49	0.19	0.30	0.17	0.30	0.39	0.49	0.46	0.45	0.12

Intersection Summary

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
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1538	1770	3539	1538	1770	4977		1770	3539	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1538	1770	3539	1538	1770	4977		1770	3539	1538
Volume (vph)	52	352	122	72	251	220	149	810	98	248	707	89
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	57	383	133	78	273	239	162	880	107	270	768	97
RTOR Reduction (vph)	0	0	95	0	0	164	0	11	0	0	0	64
Lane Group Flow (vph)	57	383	38	78	273	75	162	976	0	270	768	33
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	4.4	26.2	26.2	7.0	28.8	28.8	10.8	26.5		15.6	31.3	31.3
Effective Green, g (s)	4.4	26.2	26.2	7.0	28.8	28.8	10.8	26.5		15.6	31.3	31.3
Actuated g/C Ratio	0.05	0.29	0.29	0.08	0.32	0.32	0.12	0.29		0.17	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	85	535	441	136	1116	485	209	1445		302	1213	527
v/s Ratio Prot	0.03	c0.21		c0.04	c0.08		0.09	0.20		c0.15	c0.22	
v/s Ratio Perm			0.02			0.05						0.02
v/c Ratio	0.67	0.72	0.09	0.57	0.24	0.16	0.78	0.68		0.89	0.63	0.06
Uniform Delay, d1	42.7	29.2	23.8	40.7	23.2	22.5	39.1	28.6		37.0	25.2	20.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	18.8	4.5	0.1	5.7	0.1	0.2	16.3	1.3		26.6	1.1	0.1
Delay (s)	61.6	33.7	23.9	46.4	23.3	22.6	55.4	29.9		63.6	26.3	20.2
Level of Service	E	C	C	D	C	C	E	C		E	C	C
Approach Delay (s)		34.2			26.1			33.5			34.6	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	261	109	381	80	173
v/c Ratio	0.48	0.20	0.42	0.23	0.23
Control Delay	14.8	4.3	10.0	17.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	4.3	10.0	17.5	7.1
Queue Length 50th (ft)	45	0	21	14	17
Queue Length 95th (ft)	115	25	62	52	54
Internal Link Dist (ft)	2680		3820		1318
Turn Bay Length (ft)					
Base Capacity (vph)	1079	979	1791	787	1375
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.24	0.11	0.21	0.10	0.13

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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	1.00	0.95		1.00	1.00
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.94		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1555	3299		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1555	3299		1770	1863
Volume (vph)	240	100	208	143	74	159
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	109	226	155	80	173
RTOR Reduction (vph)	0	79	123	0	0	0
Lane Group Flow (vph)	261	30	259	0	80	173
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	8.6	8.6	6.5		3.9	14.4
Effective Green, g (s)	8.6	8.6	6.5		3.9	14.4
Actuated g/C Ratio	0.28	0.28	0.21		0.13	0.46
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	491	431	692		223	865
v/s Ratio Prot	c0.15		c0.08		c0.05	0.09
v/s Ratio Perm		0.02				
v/c Ratio	0.53	0.07	0.37		0.36	0.20
Uniform Delay, d1	9.5	8.3	10.5		12.4	4.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	0.1	0.3		1.0	0.1
Delay (s)	10.6	8.3	10.8		13.4	5.0
Level of Service	B	A	B		B	A
Approach Delay (s)	9.9		10.8			7.7
Approach LOS	A		B			A

Intersection Summary

HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	31.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.9%	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)	280	21	11	315	92	119
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	304	23	12	342	100	129
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				1140		
pX, platoon unblocked						
vC, conflicting volume			337		531	184
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			337		531	184
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		79	84
cM capacity (veh/h)			1209		466	814

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	203	124	12	171	171	100	129
Volume Left	0	0	12	0	0	100	0
Volume Right	0	23	0	0	0	0	129
cSH	1700	1700	1209	1700	1700	466	814
Volume to Capacity	0.12	0.07	0.01	0.10	0.10	0.21	0.16
Queue Length 95th (ft)	0	0	1	0	0	20	14
Control Delay (s)	0.0	0.0	8.0	0.0	0.0	14.8	10.3
Lane LOS			A			B	B
Approach Delay (s)	0.0		0.3			12.3	
Approach LOS						B	

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	26.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	150	158	93	11	74	229	114	531	112	752
v/c Ratio	0.48	0.50	0.26	0.04	0.25	0.52	0.25	0.50	0.40	0.66
Control Delay	32.0	32.2	8.8	29.9	31.3	10.0	31.4	21.9	32.7	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	32.2	8.8	29.9	31.3	10.0	31.4	21.9	32.7	21.4
Queue Length 50th (ft)	52	55	0	4	25	0	20	86	38	119
Queue Length 95th (ft)	138	145	38	21	78	63	57	181	108	236
Internal Link Dist (ft)		1060			1230			3344		1270
Turn Bay Length (ft)										
Base Capacity (vph)	495	505	517	582	613	658	599	1549	431	1670
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.31	0.18	0.02	0.12	0.35	0.19	0.34	0.26	0.45

Intersection Summary

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	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.97	
Flt Protected	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1716	1547	1770	1863	1547	3433	3537		1770	3408	
Flt Permitted	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1716	1547	1770	1863	1547	3433	3537		1770	3408	
Volume (vph)	228	55	86	10	68	211	105	487	2	103	543	149
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	248	60	93	11	74	229	114	529	2	112	590	162
RTOR Reduction (vph)	0	0	79	0	0	193	0	0	0	0	26	0
Lane Group Flow (vph)	150	158	14	11	74	36	114	531	0	112	726	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	8.8	8.8	8.8	9.4	9.4	9.4	5.6	17.6		7.3	19.3	
Effective Green, g (s)	8.8	8.8	8.8	9.4	9.4	9.4	5.6	17.6		7.3	19.3	
Actuated g/C Ratio	0.15	0.15	0.15	0.16	0.16	0.16	0.09	0.30		0.12	0.33	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	250	256	230	282	296	246	325	1053		219	1113	
v/s Ratio Prot	0.09	c0.09		0.01	c0.04		0.03	0.15		c0.06	c0.21	
v/s Ratio Perm			0.01			0.02						
v/c Ratio	0.60	0.62	0.06	0.04	0.25	0.15	0.35	0.50		0.51	0.65	
Uniform Delay, d1	23.5	23.6	21.6	21.0	21.8	21.4	25.0	17.1		24.2	17.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.0	4.4	0.1	0.1	0.4	0.3	0.7	0.4		2.0	1.4	
Delay (s)	27.5	27.9	21.7	21.1	22.2	21.7	25.7	17.5		26.2	18.4	
Level of Service	C	C	C	C	C	C	C	B		C	B	
Approach Delay (s)		26.3			21.8			19.0			19.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	4	19	146	7	121	18	524	158	795
v/c Ratio	0.02	0.03	0.29	0.03	0.37	0.04	0.58	0.26	0.65
Control Delay	34.8	0.1	29.1	30.0	10.9	22.1	23.2	17.8	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	0.1	29.1	30.0	10.9	22.1	23.2	17.8	20.2
Queue Length 50th (ft)	1	0	19	2	0	4	66	31	96
Queue Length 95th (ft)	12	0	65	15	47	24	177	107	248
Internal Link Dist (ft)		416		1234			3646		3344
Turn Bay Length (ft)									
Base Capacity (vph)	430	1067	912	495	497	669	1314	846	1688
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.16	0.01	0.24	0.03	0.40	0.19	0.47

Intersection Summary

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		0.97	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3065		3433	1863	1548	1770	3450		1770	3530	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3065		3433	1863	1548	1770	3450		1770	3530	
Volume (vph)	4	4	14	134	6	111	17	411	71	145	721	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	4	15	146	7	121	18	447	77	158	784	11
RTOR Reduction (vph)	0	18	0	0	0	108	0	14	0	0	1	0
Lane Group Flow (vph)	4	1	0	146	7	13	18	510	0	158	794	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split			Split		Perm	Split			Split		
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	1.7	1.7		6.2	6.2	6.2	14.3	14.3		19.1	19.1	
Effective Green, g (s)	1.7	1.7		6.2	6.2	6.2	14.3	14.3		19.1	19.1	
Actuated g/C Ratio	0.03	0.03		0.11	0.11	0.11	0.25	0.25		0.33	0.33	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	53	91		371	202	167	442	861		590	1177	
v/s Ratio Prot	c0.00	0.00		c0.04	0.00		0.01	c0.15		0.09	c0.23	
v/s Ratio Perm						0.01						
v/c Ratio	0.08	0.01		0.39	0.03	0.08	0.04	0.59		0.27	0.67	
Uniform Delay, d1	27.0	27.0		23.8	22.9	23.0	16.3	18.9		14.0	16.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.0		0.7	0.1	0.2	0.0	1.1		0.2	1.5	
Delay (s)	27.6	27.0		24.5	22.9	23.2	16.3	20.0		14.2	18.0	
Level of Service	C	C		C	C	C	B	C		B	B	
Approach Delay (s)		27.1			23.9			19.9			17.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	4	270	27	595	198	80	260	228	18
v/c Ratio	0.02	0.34	0.11	0.58	0.46	0.19	0.55	0.46	0.04
Control Delay	36.0	21.5	32.5	14.6	26.5	8.4	24.9	23.0	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	21.5	32.5	14.6	26.5	8.4	24.9	23.0	10.9
Queue Length 50th (ft)	1	27	6	42	43	0	56	48	0
Queue Length 95th (ft)	13	102	40	156	169	36	205	177	16
Internal Link Dist (ft)		1234		2203	311			3353	
Turn Bay Length (ft)									
Base Capacity (vph)	303	1430	339	1525	742	665	810	853	712
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.19	0.08	0.39	0.27	0.12	0.32	0.27	0.03

Intersection Summary

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
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.93			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1763	3462		1770	3256			1846	1551	1770	1863	1551
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1763	3462		1770	3256			1846	1551	1770	1863	1551
Volume (vph)	4	219	29	25	288	259	33	149	74	239	210	17
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	238	32	27	313	282	36	162	80	260	228	18
RTOR Reduction (vph)	0	11	0	0	168	0	0	0	65	0	0	14
Lane Group Flow (vph)	4	259	0	27	427	0	0	198	15	260	228	4
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			4
Actuated Green, G (s)	0.7	9.3		2.0	10.6			8.7	8.7	10.5	10.5	10.5
Effective Green, g (s)	0.7	9.3		2.0	10.6			8.7	8.7	10.5	10.5	10.5
Actuated g/C Ratio	0.02	0.20		0.04	0.23			0.19	0.19	0.23	0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
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)	27	692		76	742			345	290	400	421	350
v/s Ratio Prot	0.00	0.07		c0.02	c0.13			c0.11		c0.15	0.12	
v/s Ratio Perm									0.01			0.00
v/c Ratio	0.15	0.37		0.36	0.58			0.57	0.05	0.65	0.54	0.01
Uniform Delay, d1	22.6	16.1		21.6	15.9			17.2	15.5	16.3	15.9	14.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.3		2.8	1.1			2.3	0.1	3.8	1.4	0.0
Delay (s)	25.1	16.4		24.5	17.0			19.5	15.6	20.1	17.3	14.0
Level of Service	C	B		C	B			B	B	C	B	B
Approach Delay (s)		16.6			17.4			18.4			18.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	46.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	521	577	630	163	178
v/c Ratio	0.88	0.66	0.92	0.56	0.70
Control Delay	48.4	6.6	47.3	44.4	53.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	6.6	47.3	44.4	53.1
Queue Length 50th (ft)	307	0	361	94	105
Queue Length 95th (ft)	#502	86	#581	160	178
Internal Link Dist (ft)	2203		1011	533	
Turn Bay Length (ft)					
Base Capacity (vph)	641	896	754	354	307
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.81	0.64	0.84	0.46	0.58

Intersection Summary

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

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
Frpb, ped/bikes		1.00	0.95		1.00						1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.98						0.95	1.00
Satd. Flow (prot)		1863	1509		1829						1770	1539
Flt Permitted		1.00	1.00		0.98						0.95	1.00
Satd. Flow (perm)		1863	1509		1829						1770	1539
Volume (vph)	0	479	531	215	364	0	0	0	0	150	0	164
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	521	577	234	396	0	0	0	0	163	0	178
RTOR Reduction (vph)	0	0	392	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	521	185	0	630	0	0	0	0	0	163	178
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type			Perm	Split						Split		Perm
Protected Phases		4		8	8					6	6	
Permitted Phases			4									6
Actuated Green, G (s)		27.7	27.7		32.9						14.0	14.0
Effective Green, g (s)		28.3	28.3		33.5						14.6	14.6
Actuated g/C Ratio		0.32	0.32		0.38						0.17	0.17
Clearance Time (s)		4.6	4.6		4.6						4.6	4.6
Vehicle Extension (s)		3.0	3.0		3.0						3.0	3.0
Lane Grp Cap (vph)		596	483		693						292	254
v/s Ratio Prot		c0.28			c0.34						0.09	
v/s Ratio Perm			0.12									c0.12
v/c Ratio		0.87	0.38		0.91						0.56	0.70
Uniform Delay, d1		28.4	23.3		26.0						33.9	34.8
Progression Factor		1.00	1.00		1.00						1.00	1.00
Incremental Delay, d2		13.4	0.5		15.8						2.3	8.4
Delay (s)		41.8	23.8		41.8						36.2	43.3
Level of Service		D	C		D						D	D
Approach Delay (s)		32.3			41.8			0.0			39.9	
Approach LOS		C			D			A			D	

Intersection Summary			
HCM Average Control Delay	36.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	666	367	136	273	348
v/c Ratio	0.90	0.82	0.29	0.76	0.60
Control Delay	41.4	50.6	7.8	50.7	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	50.6	7.8	50.7	8.8
Queue Length 50th (ft)	387	229	0	170	0
Queue Length 95th (ft)	#598	#376	47	#284	78
Internal Link Dist (ft)	1011	665		558	
Turn Bay Length (ft)					
Base Capacity (vph)	866	535	528	441	634
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.77	0.69	0.26	0.62	0.55

Intersection Summary

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

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			
Frpb, ped/bikes		1.00			1.00	0.95		1.00	0.95			
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (prot)		1820			1863	1510		1777	1510			
Flt Permitted		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (perm)		1820			1863	1510		1777	1510			
Volume (vph)	290	323	0	0	338	125	244	7	320	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	351	0	0	367	136	265	8	348	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	103	0	0	277	0	0	0
Lane Group Flow (vph)	0	666	0	0	367	33	0	273	71	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split					Perm	Split		Perm			
Protected Phases	4	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)		35.0			20.3	20.3		17.0	17.0			
Effective Green, g (s)		35.6			20.9	20.9		17.6	17.6			
Actuated g/C Ratio		0.41			0.24	0.24		0.20	0.20			
Clearance Time (s)		4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		753			452	367		363	309			
v/s Ratio Prot		c0.37			c0.20			c0.15				
v/s Ratio Perm						0.02			0.05			
v/c Ratio		0.88			0.81	0.09		0.75	0.23			
Uniform Delay, d1		23.3			30.7	25.2		32.2	28.6			
Progression Factor		1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2		12.0			10.6	0.1		8.5	0.4			
Delay (s)		35.4			41.4	25.3		40.7	29.0			
Level of Service		D			D	C		D	C			
Approach Delay (s)		35.4			37.0			34.1			0.0	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	86.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	610	365	398	775	74	251
v/c Ratio	0.35	0.40	0.83	0.26	0.45	0.53
Control Delay	10.4	3.4	46.3	3.8	50.8	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	3.4	46.3	3.8	50.8	9.7
Queue Length 50th (ft)	72	0	241	95	45	0
Queue Length 95th (ft)	140	60	331	104	88	38
Internal Link Dist (ft)	1052			1290	497	
Turn Bay Length (ft)						
Base Capacity (vph)	1736	921	690	2927	374	754
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	0.35	0.40	0.58	0.26	0.20	0.33

Intersection Summary

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		0.91	0.91	1.00	0.95						1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	0.95
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		0.93	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)		3149	1441	1770	3539						1779	2646
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3149	1441	1770	3539						1779	2646
Volume (vph)	0	295	602	366	713	0	0	0	0	64	4	231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	321	654	398	775	0	0	0	0	70	4	251
RTOR Reduction (vph)	0	109	177	0	0	0	0	0	0	0	0	228
Lane Group Flow (vph)	0	501	188	398	775	0	0	0	0	0	74	23
Confl. Peds. (#/hr)	10					10				10		10
Turn Type			Perm	Prot						Split		Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		51.6	51.6	27.1	82.7						9.3	9.3
Effective Green, g (s)		51.6	51.6	27.1	82.7						9.3	9.3
Actuated g/C Ratio		0.52	0.52	0.27	0.83						0.09	0.09
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)		1625	744	480	2927						165	246
v/s Ratio Prot		c0.16		c0.22	0.22						c0.04	
v/s Ratio Perm			0.13									0.01
v/c Ratio		0.31	0.25	0.83	0.26						0.45	0.09
Uniform Delay, d1		13.9	13.5	34.3	1.9						42.9	41.5
Progression Factor		1.00	1.00	0.94	1.70						1.00	1.00
Incremental Delay, d2		0.5	0.8	10.8	0.2						1.9	0.2
Delay (s)		14.4	14.3	42.9	3.5						44.9	41.7
Level of Service		B	B	D	A						D	D
Approach Delay (s)		14.4			16.8			0.0			42.4	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	180	176	603	463	555
v/c Ratio	0.19	0.15	0.28	0.88	0.50
Control Delay	9.9	9.7	10.3	50.3	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	9.7	10.3	50.3	7.4
Queue Length 50th (ft)	18	35	84	280	34
Queue Length 95th (ft)	29	55	151	345	67
Internal Link Dist (ft)		1290	1318		
Turn Bay Length (ft)					
Base Capacity (vph)	930	1147	2161	712	1358
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.19	0.15	0.28	0.65	0.41

Intersection Summary

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	0.97	1.00			0.95					1.00		0.88
Frpb, ped/bikes	1.00	1.00			1.00					1.00		0.97
Flpb, ped/bikes	0.99	1.00			1.00					0.98		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)	3393	1863			3505					1736		2702
Flt Permitted	0.39	1.00			1.00					0.95		1.00
Satd. Flow (perm)	1410	1863			3505					1736		2702
Volume (vph)	166	162	0	0	525	29	0	0	0	426	0	511
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	176	0	0	571	32	0	0	0	463	0	555
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	295
Lane Group Flow (vph)	180	176	0	0	600	0	0	0	0	463	0	260
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm									custom		custom
Protected Phases		2			6							
Permitted Phases	2									7		4
Actuated Green, G (s)	61.6	61.6			61.6					30.4		30.4
Effective Green, g (s)	61.6	61.6			61.6					30.4		30.4
Actuated g/C Ratio	0.62	0.62			0.62					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)	869	1148			2159					528		821
v/s Ratio Prot		0.09			c0.17							
v/s Ratio Perm	0.13									c0.27		0.10
v/c Ratio	0.21	0.15			0.28					0.88		0.32
Uniform Delay, d1	8.5	8.1			8.9					33.0		26.8
Progression Factor	0.93	0.95			1.00					1.00		1.00
Incremental Delay, d2	0.5	0.3			0.3					15.1		0.2
Delay (s)	8.4	8.0			9.2					48.1		27.0
Level of Service	A	A			A					D		C
Approach Delay (s)		8.2			9.2			0.0			36.6	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	533	50	24	3	13	531
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	579	54	26	3	14	577

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	579	54	29	14	577
Volume Left (vph)	579	0	0	14	0
Volume Right (vph)	0	0	3	0	577
Hadj (s)	0.53	0.03	-0.03	0.53	-0.67
Departure Headway (s)	6.9	6.4	7.2	7.0	5.8
Degree Utilization, x	1.11	0.10	0.06	0.03	0.93
Capacity (veh/h)	530	549	486	505	607
Control Delay (s)	98.2	8.9	10.6	9.0	44.2
Approach Delay (s)	90.5		10.6	43.4	
Approach LOS	F		B	E	

Intersection Summary			
Delay	66.4		
HCM Level of Service	F		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBT	WBR	NBR	SBL	SBR
Lane Group Flow (vph)	435	802	21	703	268	25	473	485
v/c Ratio	0.74	0.33	0.03	0.31	0.31	0.04	0.40	0.75
Control Delay	22.2	9.9	4.9	9.9	2.7	0.1	16.4	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.2	9.9	4.9	9.9	2.7	0.1	16.4	19.9
Queue Length 50th (ft)	47	48	0	42	0	0	53	75
Queue Length 95th (ft)	162	128	11	113	38	0	145	278
Internal Link Dist (ft)		1616		2336				
Turn Bay Length (ft)								
Base Capacity (vph)	812	3344	1048	3141	1101	946	1877	919
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.24	0.02	0.22	0.24	0.03	0.25	0.53

Intersection Summary

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	0.97	0.91	1.00		0.91	1.00			1.00	0.97		1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98			1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85			0.86	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00			1.00	0.95		1.00
Satd. Flow (prot)	3420	5085	1583		5085	1548			1611	3433		1548
Flt Permitted	0.36	1.00	1.00		0.94	1.00			1.00	0.95		1.00
Satd. Flow (perm)	1312	5085	1583		4773	1548			1611	3433		1548
Volume (vph)	400	738	19	2	645	247	0	0	23	435	0	446
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	435	802	21	2	701	268	0	0	25	473	0	485
RTOR Reduction (vph)	0	0	11	0	0	135	0	0	16	0	0	113
Lane Group Flow (vph)	435	802	10	0	703	133	0	0	9	473	0	372
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm		Perm	Perm		Perm			custom	Prot		custom
Protected Phases		2			6					4		
Permitted Phases	2		2	6		6			8			4
Actuated Green, G (s)	27.0	27.0	27.0		27.0	27.0			19.6	19.6		19.6
Effective Green, g (s)	27.0	27.0	27.0		27.0	27.0			19.6	19.6		19.6
Actuated g/C Ratio	0.49	0.49	0.49		0.49	0.49			0.36	0.36		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)	649	2515	783		2360	765			578	1232		556
v/s Ratio Prot		0.16								0.14		
v/s Ratio Perm	c0.33		0.01		0.15	0.09			0.01			c0.24
v/c Ratio	0.67	0.32	0.01		0.30	0.17			0.02	0.38		0.67
Uniform Delay, d1	10.4	8.3	7.0		8.2	7.6			11.3	13.0		14.8
Progression Factor	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	2.7	0.1	0.0		0.1	0.1			0.0	0.2		3.0
Delay (s)	13.2	8.4	7.0		8.3	7.7			11.3	13.2		17.8
Level of Service	B	A	A		A	A			B	B		B
Approach Delay (s)		10.0			8.1			11.3			15.5	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX E

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
- EXISTING + CUMULATIVE PROJECTS + PROJECT PHASE I

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	221	1087	314	177	984	150	295	360	186	371	175
v/c Ratio	0.48	0.59	0.42	0.43	0.62	0.46	0.55	0.42	0.45	0.59	0.42
Control Delay	38.3	23.5	4.7	39.1	25.3	12.3	37.4	26.1	39.1	35.9	9.3
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	38.3	23.5	4.7	39.1	25.3	12.3	37.4	26.1	39.1	35.9	9.3
Queue Length 50th (ft)	49	154	0	39	138	0	65	66	41	84	0
Queue Length 95th (ft)	112	272	58	94	249	58	141	142	98	172	57
Internal Link Dist (ft)		365			755			1070		518	
Turn Bay Length (ft)											
Base Capacity (vph)	794	2302	864	694	2139	479	901	1165	789	1064	582
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	0.28	0.47	0.36	0.26	0.46	0.31	0.33	0.31	0.24	0.35	0.30

Intersection Summary

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
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1541	3433	5085	1583	3433	3358		3433	3539	1541
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1541	3433	5085	1583	3433	3358		3433	3539	1541
Volume (vph)	203	1000	289	163	905	138	271	235	97	171	341	161
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	221	1087	314	177	984	150	295	255	105	186	371	175
RTOR Reduction (vph)	0	0	202	0	0	135	0	37	0	0	0	142
Lane Group Flow (vph)	221	1087	112	177	984	15	295	323	0	186	371	33
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Over	Prot			Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	10.4	28.0	28.0	7.7	25.3	7.8	12.0	19.1		7.8	14.9	14.9
Effective Green, g (s)	10.4	28.0	28.0	7.7	25.3	7.8	12.0	19.1		7.8	14.9	14.9
Actuated g/C Ratio	0.13	0.36	0.36	0.10	0.32	0.10	0.15	0.24		0.10	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	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)	454	1811	549	336	1637	157	524	816		341	671	292
v/s Ratio Prot	c0.06	c0.21		0.05	0.19	0.01	c0.09	0.10		0.05	c0.10	
v/s Ratio Perm			0.07									0.02
v/c Ratio	0.49	0.60	0.20	0.53	0.60	0.09	0.56	0.40		0.55	0.55	0.11
Uniform Delay, d1	31.6	20.7	17.6	33.7	22.4	32.2	30.9	24.9		33.7	28.8	26.4
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	0.8	0.6	0.2	1.5	0.6	0.3	1.4	0.3		1.8	1.0	0.2
Delay (s)	32.4	21.3	17.7	35.2	23.0	32.5	32.3	25.2		35.5	29.8	26.6
Level of Service	C	C	B	D	C	C	C	C		D	C	C
Approach Delay (s)		22.1			25.8			28.4			30.5	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	53	238	83	122	409	128	109	574	146	772	83
v/c Ratio	0.26	0.57	0.21	0.46	0.40	0.24	0.42	0.38	0.51	0.69	0.15
Control Delay	43.4	37.5	9.5	42.0	26.2	7.1	42.1	22.9	41.9	27.9	6.9
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	43.4	37.5	9.5	42.0	26.2	7.1	42.1	22.9	41.9	27.9	6.9
Queue Length 50th (ft)	23	100	0	52	84	0	46	72	62	161	0
Queue Length 95th (ft)	79	246	41	146	181	46	135	154	168	331	35
Internal Link Dist (ft)		296			520			1270		1070	
Turn Bay Length (ft)											
Base Capacity (vph)	363	769	677	534	1727	809	502	2347	568	1775	806
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	0.15	0.31	0.12	0.23	0.24	0.16	0.22	0.24	0.26	0.43	0.10

Intersection Summary

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
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1543	1770	3539	1543	1770	4940		1770	3539	1543
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1543	1770	3539	1543	1770	4940		1770	3539	1543
Volume (vph)	49	219	76	112	376	118	100	449	79	134	710	76
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	238	83	122	409	128	109	488	86	146	772	83
RTOR Reduction (vph)	0	0	64	0	0	91	0	17	0	0	0	57
Lane Group Flow (vph)	53	238	19	122	409	37	109	557	0	146	772	26
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	4.5	17.0	17.0	8.4	20.9	20.9	8.0	21.8		9.2	23.0	23.0
Effective Green, g (s)	4.5	17.0	17.0	8.4	20.9	20.9	8.0	21.8		9.2	23.0	23.0
Actuated g/C Ratio	0.06	0.23	0.23	0.12	0.29	0.29	0.11	0.30		0.13	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	110	437	362	205	1022	445	196	1487		225	1124	490
v/s Ratio Prot	0.03	c0.13		c0.07	c0.12		0.06	0.11		c0.08	c0.22	
v/s Ratio Perm			0.01			0.02						0.02
v/c Ratio	0.48	0.54	0.05	0.60	0.40	0.08	0.56	0.37		0.65	0.69	0.05
Uniform Delay, d1	32.8	24.3	21.5	30.4	20.7	18.8	30.5	19.9		30.1	21.6	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
Incremental Delay, d2	3.3	1.4	0.1	4.6	0.3	0.1	3.4	0.2		6.3	1.8	0.0
Delay (s)	36.1	25.7	21.5	35.0	21.0	18.8	33.9	20.1		36.4	23.3	17.2
Level of Service	D	C	C	C	C	B	C	C		D	C	B
Approach Delay (s)		26.2			23.1			22.3			24.7	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	175	88	322	146	170
v/c Ratio	0.39	0.19	0.39	0.34	0.22
Control Delay	14.3	5.2	6.8	14.6	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	5.2	6.8	14.6	5.4
Queue Length 50th (ft)	28	0	8	23	14
Queue Length 95th (ft)	80	24	37	71	43
Internal Link Dist (ft)	2680		3820		1318
Turn Bay Length (ft)					
Base Capacity (vph)	978	888	1703	943	1420
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.18	0.10	0.19	0.15	0.12

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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	1.00	0.95		1.00	1.00
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.89		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1557	3128		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1557	3128		1770	1863
Volume (vph)	161	81	87	209	134	156
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	88	95	227	146	170
RTOR Reduction (vph)	0	71	194	0	0	0
Lane Group Flow (vph)	175	17	128	0	146	170
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	4.9	4.9	3.6		4.6	12.2
Effective Green, g (s)	4.9	4.9	3.6		4.6	12.2
Actuated g/C Ratio	0.20	0.20	0.14		0.18	0.49
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	346	304	449		324	906
v/s Ratio Prot	c0.10		0.04		c0.08	c0.09
v/s Ratio Perm		0.01				
v/c Ratio	0.51	0.06	0.28		0.45	0.19
Uniform Delay, d1	9.0	8.2	9.6		9.1	3.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.1	0.3		1.0	0.1
Delay (s)	10.2	8.3	9.9		10.1	3.7
Level of Service	B	A	A		B	A
Approach Delay (s)	9.6		9.9			6.7
Approach LOS	A		A			A

Intersection Summary

HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	25.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

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)	16	290	141	83	225	155	15	9	13	17	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	315	153	90	245	168	16	10	14	18	1	2
Pedestrians		10			10			10				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		1			1			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					1140							
pX, platoon unblocked												
vC, conflicting volume	413			478			752	1030	254	731	1022	217
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	413			478			752	1030	254	731	1022	217
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 %	98			92			94	95	98	93	99	100
cM capacity (veh/h)	1142			1071			268	207	733	267	210	781

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	175	311	90	163	250	16	24	18	3
Volume Left	17	0	90	0	0	16	0	18	0
Volume Right	0	153	0	0	168	0	14	0	2
cSH	1142	1700	1071	1700	1700	268	360	267	409
Volume to Capacity	0.02	0.18	0.08	0.10	0.15	0.06	0.07	0.07	0.01
Queue Length 95th (ft)	1	0	7	0	0	5	5	6	1
Control Delay (s)	0.9	0.0	8.7	0.0	0.0	19.3	15.7	19.5	13.9
Lane LOS	A		A			C	C	C	B
Approach Delay (s)	0.3		1.6			17.2		18.6	
Approach LOS						C		C	

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	114	120	112	13	109	101	121	318	97	715
v/c Ratio	0.35	0.36	0.29	0.04	0.33	0.28	0.22	0.28	0.32	0.67
Control Delay	29.1	29.1	8.7	27.1	29.5	9.4	28.9	18.1	30.5	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.1	29.1	8.7	27.1	29.5	9.4	28.9	18.1	30.5	19.1
Queue Length 50th (ft)	37	40	0	4	35	0	20	46	31	94
Queue Length 95th (ft)	107	111	42	22	100	42	56	103	92	195
Internal Link Dist (ft)		1060			1230			3344		1270
Turn Bay Length (ft)										
Base Capacity (vph)	587	607	609	613	645	597	858	1502	520	1553
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.20	0.18	0.02	0.17	0.17	0.14	0.21	0.19	0.46

Intersection Summary

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	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.94	
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1738	1550	1770	1863	1550	3433	3524		1770	3316	
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1738	1550	1770	1863	1550	3433	3524		1770	3316	
Volume (vph)	145	70	103	12	100	93	111	285	7	89	413	245
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	76	112	13	109	101	121	310	8	97	449	266
RTOR Reduction (vph)	0	0	95	0	0	87	0	1	0	0	89	0
Lane Group Flow (vph)	114	120	17	13	109	14	121	317	0	97	626	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	7.3	7.3	7.3	6.6	6.6	6.6	5.5	14.0		5.0	13.5	
Effective Green, g (s)	7.3	7.3	7.3	6.6	6.6	6.6	5.5	14.0		5.0	13.5	
Actuated g/C Ratio	0.15	0.15	0.15	0.13	0.13	0.13	0.11	0.29		0.10	0.28	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	251	259	231	239	251	209	386	1009		181	915	
v/s Ratio Prot	0.07	c0.07		0.01	c0.06		0.04	0.09		c0.05	c0.19	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.45	0.46	0.07	0.05	0.43	0.07	0.31	0.31		0.54	0.68	
Uniform Delay, d1	19.0	19.0	17.9	18.4	19.4	18.5	20.0	13.7		20.8	15.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	1.3	0.1	0.1	1.2	0.1	0.5	0.2		3.0	2.1	
Delay (s)	20.3	20.3	18.0	18.5	20.6	18.6	20.4	13.9		23.9	17.9	
Level of Service	C	C	B	B	C	B	C	B		C	B	
Approach Delay (s)		19.6			19.6			15.7			18.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	48.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	98	112	60	153	66	690	130	422
v/c Ratio	0.12	0.23	0.24	0.24	0.45	0.12	0.63	0.32	0.52
Control Delay	32.0	17.1	29.3	31.0	11.0	18.3	21.5	25.7	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	17.1	29.3	31.0	11.0	18.3	21.5	25.7	24.8
Queue Length 50th (ft)	9	6	19	20	0	17	109	40	71
Queue Length 95th (ft)	37	33	51	64	52	52	211	106	146
Internal Link Dist (ft)		416		1234			3646		3344
Turn Bay Length (ft)									
Base Capacity (vph)	481	902	944	513	533	774	1522	599	1188
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.11	0.12	0.12	0.29	0.09	0.45	0.22	0.36

Intersection Summary

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		0.97	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3176		3433	1863	1548	1770	3461		1770	3505	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3176		3433	1863	1548	1770	3461		1770	3505	
Volume (vph)	24	36	54	103	55	141	61	554	81	120	368	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	39	59	112	60	153	66	602	88	130	400	22
RTOR Reduction (vph)	0	54	0	0	0	138	0	11	0	0	4	0
Lane Group Flow (vph)	26	44	0	112	60	15	66	679	0	130	418	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split			Split		Perm	Split			Split		
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	4.8	4.8		5.8	5.8	5.8	17.9	17.9		13.3	13.3	
Effective Green, g (s)	4.8	4.8		5.8	5.8	5.8	17.9	17.9		13.3	13.3	
Actuated g/C Ratio	0.08	0.08		0.10	0.10	0.10	0.31	0.31		0.23	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	147	264		344	187	155	548	1072		407	807	
v/s Ratio Prot	c0.01	0.01		c0.03	0.03		0.04	c0.20		0.07	c0.12	
v/s Ratio Perm						0.01						
v/c Ratio	0.18	0.17		0.33	0.32	0.10	0.12	0.63		0.32	0.52	
Uniform Delay, d1	24.7	24.6		24.2	24.2	23.6	14.3	17.1		18.5	19.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.3		0.6	1.0	0.3	0.1	1.2		0.5	0.6	
Delay (s)	25.2	24.9		24.7	25.2	23.9	14.4	18.4		18.9	20.0	
Level of Service	C	C		C	C	C	B	B		B	C	
Approach Delay (s)		25.0			24.4			18.0			19.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	5	223	72	661	178	42	132	88	9
v/c Ratio	0.02	0.29	0.24	0.55	0.43	0.11	0.36	0.23	0.03
Control Delay	31.2	20.3	26.8	11.9	24.4	9.2	25.3	23.6	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	20.3	26.8	11.9	24.4	9.2	25.3	23.6	14.1
Queue Length 50th (ft)	1	30	20	46	48	0	36	23	0
Queue Length 95th (ft)	13	75	70	147	135	25	108	77	12
Internal Link Dist (ft)		1234		2203	311			3353	
Turn Bay Length (ft)									
Base Capacity (vph)	339	1549	496	1792	737	637	678	714	594
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.14	0.15	0.37	0.24	0.07	0.19	0.12	0.02

Intersection Summary

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
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.93			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1764	3481		1770	3269			1850	1551	1770	1863	1551
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1764	3481		1770	3269			1850	1551	1770	1863	1551
Volume (vph)	5	187	18	66	333	275	23	141	39	121	81	8
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	203	20	72	362	299	25	153	42	132	88	9
RTOR Reduction (vph)	0	8	0	0	158	0	0	0	34	0	0	8
Lane Group Flow (vph)	5	215	0	72	503	0	0	178	8	132	88	1
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			4
Actuated Green, G (s)	0.8	9.1		4.1	12.4			7.9	7.9	7.1	7.1	7.1
Effective Green, g (s)	0.8	9.1		4.1	12.4			7.9	7.9	7.1	7.1	7.1
Actuated g/C Ratio	0.02	0.21		0.09	0.28			0.18	0.18	0.16	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	32	717		164	917			331	277	284	299	249
v/s Ratio Prot	0.00	0.06		c0.04	c0.15			c0.10		c0.07	0.05	
v/s Ratio Perm									0.00			0.00
v/c Ratio	0.16	0.30		0.44	0.55			0.54	0.03	0.46	0.29	0.01
Uniform Delay, d1	21.4	14.9		19.0	13.5			16.5	15.0	16.8	16.3	15.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.2		1.9	0.7			1.7	0.0	1.2	0.6	0.0
Delay (s)	23.6	15.1		20.8	14.2			18.2	15.0	18.0	16.9	15.6
Level of Service	C	B		C	B			B	B	B	B	B
Approach Delay (s)		15.3			14.8			17.6			17.5	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	44.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	248	263	773	79	443
v/c Ratio	0.83	0.57	0.98	0.16	1.01
Control Delay	63.0	10.0	55.8	27.6	81.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	10.0	55.8	27.6	81.9
Queue Length 50th (ft)	152	0	470	37	~287
Queue Length 95th (ft)	#274	70	#728	74	#487
Internal Link Dist (ft)	2203		1011	533	
Turn Bay Length (ft)					
Base Capacity (vph)	312	471	792	506	439
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.79	0.56	0.98	0.16	1.01

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.

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
Frpb, ped/bikes		1.00	0.95		1.00						1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.99						0.95	1.00
Satd. Flow (prot)		1863	1504		1838						1770	1536
Flt Permitted		1.00	1.00		0.99						0.95	1.00
Satd. Flow (perm)		1863	1504		1838						1770	1536
Volume (vph)	0	228	242	192	519	0	0	0	0	73	0	408
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	248	263	209	564	0	0	0	0	79	0	443
RTOR Reduction (vph)	0	0	220	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	248	43	0	773	0	0	0	0	0	79	443
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type			Perm	Split						Split		Perm
Protected Phases		4		8	8					6	6	
Permitted Phases			4									6
Actuated Green, G (s)		15.3	15.3		41.7						27.5	27.5
Effective Green, g (s)		15.9	15.9		42.3						28.1	28.1
Actuated g/C Ratio		0.16	0.16		0.43						0.29	0.29
Clearance Time (s)		4.6	4.6		4.6						4.6	4.6
Vehicle Extension (s)		3.0	3.0		3.0						3.0	3.0
Lane Grp Cap (vph)		301	243		791						506	439
v/s Ratio Prot		c0.13			c0.42						0.04	
v/s Ratio Perm			0.03									c0.29
v/c Ratio		0.82	0.18		0.98						0.16	1.01
Uniform Delay, d1		39.8	35.5		27.5						26.2	35.1
Progression Factor		1.00	1.00		1.00						1.00	1.00
Incremental Delay, d2		16.5	0.3		26.2						0.1	45.2
Delay (s)		56.3	35.9		53.7						26.4	80.3
Level of Service		E	D		D						C	F
Approach Delay (s)		45.8			53.7			0.0			72.2	
Approach LOS		D			D			A			E	

Intersection Summary			
HCM Average Control Delay	56.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	98.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	326	440	123	340	266
v/c Ratio	0.73	0.78	0.23	0.71	0.44
Control Delay	39.9	36.8	6.1	36.2	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.9	36.8	6.1	36.2	6.2
Queue Length 50th (ft)	138	184	0	141	0
Queue Length 95th (ft)	300	373	40	290	58
Internal Link Dist (ft)	1011	665		558	
Turn Bay Length (ft)					
Base Capacity (vph)	612	770	693	689	746
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.57	0.18	0.49	0.36

Intersection Summary

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			
Frpb, ped/bikes		1.00			1.00	0.96		1.00	0.96			
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (prot)		1828			1863	1517		1775	1517			
Flt Permitted		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (perm)		1828			1863	1517		1775	1517			
Volume (vph)	115	185	0	0	405	113	310	3	245	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	201	0	0	440	123	337	3	266	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	85	0	0	193	0	0	0
Lane Group Flow (vph)	0	326	0	0	440	38	0	340	73	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split					Perm	Split		Perm			
Protected Phases	4	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)		17.5			21.8	21.8		19.3	19.3			
Effective Green, g (s)		18.1			22.4	22.4		19.9	19.9			
Actuated g/C Ratio		0.25			0.31	0.31		0.27	0.27			
Clearance Time (s)		4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		457			576	469		488	417			
v/s Ratio Prot		c0.18			c0.24			c0.19				
v/s Ratio Perm						0.03			0.05			
v/c Ratio		0.71			0.76	0.08		0.70	0.18			
Uniform Delay, d1		24.8			22.6	17.7		23.5	20.0			
Progression Factor		1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2		5.2			6.0	0.1		4.3	0.2			
Delay (s)		30.0			28.6	17.8		27.8	20.2			
Level of Service		C			C	B		C	C			
Approach Delay (s)		30.0			26.2			24.5			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	217	107	370	1051	39	318
v/c Ratio	0.14	0.14	0.86	0.39	0.14	0.51
Control Delay	11.4	4.3	51.9	4.3	37.6	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	4.3	51.9	4.3	37.6	13.5
Queue Length 50th (ft)	26	0	239	106	22	24
Queue Length 95th (ft)	58	36	m279	m105	52	68
Internal Link Dist (ft)	1052			1290	497	
Turn Bay Length (ft)						
Base Capacity (vph)	1575	743	708	2690	427	818
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	0.14	0.14	0.52	0.39	0.09	0.39

Intersection Summary

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

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		0.91	0.91	1.00	0.95						1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	0.95
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		0.95	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)		3226	1441	1770	3539						1778	2646
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3226	1441	1770	3539						1778	2646
Volume (vph)	0	135	163	340	967	0	0	0	0	34	2	293
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	147	177	370	1051	0	0	0	0	37	2	318
RTOR Reduction (vph)	0	36	56	0	0	0	0	0	0	0	0	202
Lane Group Flow (vph)	0	181	51	370	1051	0	0	0	0	0	39	116
Confl. Peds. (#/hr)	10					10				10		10
Turn Type			Perm	Prot						Split		Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		47.7	47.7	24.3	76.0						16.0	16.0
Effective Green, g (s)		47.7	47.7	24.3	76.0						16.0	16.0
Actuated g/C Ratio		0.48	0.48	0.24	0.76						0.16	0.16
Clearance Time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		1539	687	430	2690						284	423
v/s Ratio Prot		0.06		c0.21	c0.30						0.02	
v/s Ratio Perm			0.04									c0.04
v/c Ratio		0.12	0.07	0.86	0.39						0.14	0.27
Uniform Delay, d1		14.5	14.2	36.2	4.1						36.1	36.9
Progression Factor		1.00	1.00	1.07	0.98						1.00	1.00
Incremental Delay, d2		0.2	0.2	11.2	0.3						0.2	0.4
Delay (s)		14.6	14.4	50.0	4.3						36.3	37.2
Level of Service		B	B	D	A						D	D
Approach Delay (s)		14.6			16.2			0.0			37.1	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	176	547	302	935
v/c Ratio	0.13	0.44	0.72	0.88
Control Delay	8.3	10.3	43.2	25.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.3	10.3	43.2	25.3
Queue Length 50th (ft)	17	138	178	153
Queue Length 95th (ft)	27	293	230	207
Internal Link Dist (ft)	1290	1318		
Turn Bay Length (ft)				
Base Capacity (vph)	1399	1235	712	1420
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.13	0.44	0.42	0.66

Intersection Summary

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			1.00					1.00		0.88
Frpb, ped/bikes		1.00			0.99					1.00		0.97
Flpb, ped/bikes		0.99			1.00					0.98		1.00
Frt		1.00			0.98					1.00		0.85
Flt Protected		0.97			1.00					0.95		1.00
Satd. Flow (prot)		3408			1821					1736		2702
Flt Permitted		0.61			1.00					0.95		1.00
Satd. Flow (perm)		2139			1821					1736		2702
Volume (vph)	103	59	0	0	447	56	0	0	0	278	0	860
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	64	0	0	486	61	0	0	0	302	0	935
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	400
Lane Group Flow (vph)	0	176	0	0	544	0	0	0	0	302	0	535
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm			Prot						custom		custom
Protected Phases		2		1	6							
Permitted Phases	2									7		4
Actuated Green, G (s)		67.7			67.7					24.3		24.3
Effective Green, g (s)		67.7			67.7					24.3		24.3
Actuated g/C Ratio		0.68			0.68					0.24		0.24
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)		1448			1233					422		657
v/s Ratio Prot					c0.30							
v/s Ratio Perm		0.08								0.17		c0.20
v/c Ratio		0.12			0.44					0.72		0.81
Uniform Delay, d1		5.7			7.4					34.7		35.7
Progression Factor		1.11			1.00					1.00		1.00
Incremental Delay, d2		0.2			1.1					5.7		7.6
Delay (s)		6.5			8.6					40.4		43.3
Level of Service		A			A					D		D
Approach Delay (s)		6.5			8.6			0.0			42.6	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	320	28	32	14	10	466
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	348	30	35	15	11	507

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	348	30	50	11	507
Volume Left (vph)	348	0	0	11	0
Volume Right (vph)	0	0	15	0	507
Hadj (s)	0.53	0.03	-0.15	0.53	-0.67
Departure Headway (s)	6.5	6.0	6.3	6.4	5.2
Degree Utilization, x	0.63	0.05	0.09	0.02	0.73
Capacity (veh/h)	533	562	513	539	669
Control Delay (s)	18.9	8.2	9.9	8.3	19.8
Approach Delay (s)	18.0		9.9	19.5	
Approach LOS	C		A	C	

Intersection Summary			
Delay	18.4		
HCM Level of Service	C		
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBT	WBR	NBR	SBL	SBR
Lane Group Flow (vph)	536	439	15	821	303	28	277	455
v/c Ratio	0.87	0.16	0.02	0.31	0.31	0.04	0.28	0.80
Control Delay	29.6	7.2	3.8	7.9	1.9	0.1	21.7	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	7.2	3.8	7.9	1.9	0.1	21.7	27.2
Queue Length 50th (ft)	78	26	0	53	0	0	41	94
Queue Length 95th (ft)	#221	54	8	105	31	0	101	288
Internal Link Dist (ft)		1616		2336				
Turn Bay Length (ft)								
Base Capacity (vph)	778	3552	1110	3339	1164	943	1489	768
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.12	0.01	0.25	0.26	0.03	0.19	0.59

Intersection Summary

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

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	0.97	0.91	1.00		0.91	1.00			1.00	0.97		1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98			1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85			0.86	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00			1.00	0.95		1.00
Satd. Flow (prot)	3421	5085	1583		5085	1546			1611	3433		1546
Flt Permitted	0.32	1.00	1.00		0.94	1.00			1.00	0.95		1.00
Satd. Flow (perm)	1144	5085	1583		4779	1546			1611	3433		1546
Volume (vph)	493	404	14	1	754	279	0	0	26	255	0	419
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	536	439	15	1	820	303	0	0	28	277	0	455
RTOR Reduction (vph)	0	0	6	0	0	129	0	0	20	0	0	126
Lane Group Flow (vph)	536	439	9	0	821	174	0	0	8	277	0	329
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm		Perm	Perm		Perm			custom	Prot		custom
Protected Phases		2			6					4		
Permitted Phases	2		2	6		6			8			4
Actuated Green, G (s)	36.2	36.2	36.2		36.2	36.2			18.7	18.7		18.7
Effective Green, g (s)	36.2	36.2	36.2		36.2	36.2			18.7	18.7		18.7
Actuated g/C Ratio	0.58	0.58	0.58		0.58	0.58			0.30	0.30		0.30
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)	658	2927	911		2750	890			479	1021		460
v/s Ratio Prot		0.09								0.08		
v/s Ratio Perm	c0.47		0.01		0.17	0.11			0.01			c0.21
v/c Ratio	0.81	0.15	0.01		0.30	0.20			0.02	0.27		0.71
Uniform Delay, d1	10.7	6.2	5.7		6.8	6.4			15.6	16.9		19.7
Progression Factor	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	7.7	0.0	0.0		0.1	0.1			0.0	0.1		5.2
Delay (s)	18.3	6.2	5.7		6.9	6.5			15.6	17.0		24.9
Level of Service	B	A	A		A	A			B	B		C
Approach Delay (s)		12.8			6.8			15.6			21.9	
Approach LOS		B			A			B			C	

Intersection Summary

HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	388	1535	300	249	1328	220	474	654	368	580	271
v/c Ratio	0.79	0.89	0.42	0.72	0.88	0.55	0.83	0.77	0.80	0.78	0.55
Control Delay	49.3	35.5	4.7	51.3	37.8	10.9	50.0	35.6	51.7	41.0	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	35.5	4.7	51.3	37.8	10.9	50.0	35.6	51.7	41.0	12.5
Queue Length 50th (ft)	111	302	0	72	265	0	136	167	106	162	26
Queue Length 95th (ft)	#176	#394	54	#123	#350	63	#212	230	#173	222	98
Internal Link Dist (ft)		365			755			1070		518	
Turn Bay Length (ft)											
Base Capacity (vph)	511	1746	725	355	1520	408	589	909	473	798	513
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	0.76	0.88	0.41	0.70	0.87	0.54	0.80	0.72	0.78	0.73	0.53

Intersection Summary

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

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
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1539	3433	5085	1583	3433	3391		3433	3539	1539
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1539	3433	5085	1583	3433	3391		3433	3539	1539
Volume (vph)	357	1412	276	229	1222	202	436	459	143	339	534	249
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	388	1535	300	249	1328	220	474	499	155	368	580	271
RTOR Reduction (vph)	0	0	198	0	0	190	0	33	0	0	0	170
Lane Group Flow (vph)	388	1535	102	249	1328	30	474	621	0	368	580	101
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Over	Prot			Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	12.5	29.6	29.6	8.8	25.9	11.7	14.4	21.0		11.7	18.3	18.3
Effective Green, g (s)	12.5	29.6	29.6	8.8	25.9	11.7	14.4	21.0		11.7	18.3	18.3
Actuated g/C Ratio	0.14	0.34	0.34	0.10	0.30	0.13	0.17	0.24		0.13	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	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)	493	1728	523	347	1512	213	568	818		461	744	323
v/s Ratio Prot	c0.11	c0.30		0.07	0.26	0.02	c0.14	c0.18		0.11	0.16	
v/s Ratio Perm			0.07									0.07
v/c Ratio	0.79	0.89	0.19	0.72	0.88	0.14	0.83	0.76		0.80	0.78	0.31
Uniform Delay, d1	36.0	27.2	20.3	37.9	29.1	33.3	35.2	30.7		36.6	32.5	29.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.1	6.0	0.2	6.9	6.1	0.3	10.2	4.1		9.3	5.2	0.6
Delay (s)	44.1	33.2	20.5	44.9	35.2	33.6	45.4	34.8		45.9	37.7	29.6
Level of Service	D	C	C	D	D	C	D	C		D	D	C
Approach Delay (s)		33.4			36.4			39.2			38.4	
Approach LOS		C			D			D			D	

Intersection Summary

HCM Average Control Delay	36.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	57	383	133	80	273	239	163	1092	270	793	97
v/c Ratio	0.35	0.76	0.26	0.42	0.25	0.37	0.62	0.71	0.75	0.63	0.16
Control Delay	61.1	48.0	7.8	59.4	30.2	6.3	58.0	37.2	55.3	32.3	6.9
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	61.1	48.0	7.8	59.4	30.2	6.3	58.0	37.2	55.3	32.3	6.9
Queue Length 50th (ft)	36	236	0	50	74	0	102	235	168	227	0
Queue Length 95th (ft)	99	431	50	128	135	61	216	398	324	398	40
Internal Link Dist (ft)		296			520			1270		1070	
Turn Bay Length (ft)											
Base Capacity (vph)	210	757	698	270	1542	799	432	1973	573	1644	760
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	0.27	0.51	0.19	0.30	0.18	0.30	0.38	0.55	0.47	0.48	0.13

Intersection Summary

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
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1537	1770	3539	1537	1770	4980		1770	3539	1537
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1537	1770	3539	1537	1770	4980		1770	3539	1537
Volume (vph)	52	352	122	74	251	220	150	900	105	248	730	89
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	57	383	133	80	273	239	163	978	114	270	793	97
RTOR Reduction (vph)	0	0	96	0	0	165	0	10	0	0	0	63
Lane Group Flow (vph)	57	383	37	80	273	75	163	1082	0	270	793	34
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	4.5	26.9	26.9	7.4	29.8	29.8	11.4	29.2		16.1	33.9	33.9
Effective Green, g (s)	4.5	26.9	26.9	7.4	29.8	29.8	11.4	29.2		16.1	33.9	33.9
Actuated g/C Ratio	0.05	0.28	0.28	0.08	0.31	0.31	0.12	0.31		0.17	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	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)	83	524	432	137	1103	479	211	1521		298	1255	545
v/s Ratio Prot	0.03	c0.21		c0.05	c0.08		0.09	c0.22		c0.15	0.22	
v/s Ratio Perm			0.02			0.05						0.02
v/c Ratio	0.69	0.73	0.09	0.58	0.25	0.16	0.77	0.71		0.91	0.63	0.06
Uniform Delay, d1	44.9	31.1	25.3	42.6	24.5	23.8	40.8	29.5		39.0	25.7	20.4
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	21.0	5.2	0.1	6.2	0.1	0.2	16.0	1.6		29.0	1.0	0.0
Delay (s)	65.9	36.3	25.4	48.8	24.7	24.0	56.8	31.1		68.0	26.7	20.4
Level of Service	E	D	C	D	C	C	E	C		E	C	C
Approach Delay (s)		36.7			27.6			34.4			35.8	
Approach LOS		D			C			C			D	

Intersection Summary

HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	95.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	274	112	385	82	173
v/c Ratio	0.50	0.20	0.42	0.23	0.23
Control Delay	14.9	4.2	10.1	17.8	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	4.2	10.1	17.8	7.3
Queue Length 50th (ft)	47	0	21	15	17
Queue Length 95th (ft)	121	26	63	54	56
Internal Link Dist (ft)	2680		3820		1318
Turn Bay Length (ft)					
Base Capacity (vph)	1091	989	1758	784	1365
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.11	0.22	0.10	0.13

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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	1.00	0.95		1.00	1.00
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.94		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1555	3296		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1555	3296		1770	1863
Volume (vph)	252	103	208	146	75	159
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	274	112	226	159	82	173
RTOR Reduction (vph)	0	81	125	0	0	0
Lane Group Flow (vph)	274	31	260	0	82	173
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	8.8	8.8	6.6		3.9	14.5
Effective Green, g (s)	8.8	8.8	6.6		3.9	14.5
Actuated g/C Ratio	0.28	0.28	0.21		0.12	0.46
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	498	437	695		221	863
v/s Ratio Prot	c0.15		c0.08		c0.05	0.09
v/s Ratio Perm		0.02				
v/c Ratio	0.55	0.07	0.37		0.37	0.20
Uniform Delay, d1	9.6	8.3	10.6		12.6	5.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.1	0.3		1.1	0.1
Delay (s)	10.9	8.3	10.9		13.6	5.1
Level of Service	B	A	B		B	A
Approach Delay (s)	10.1		10.9			7.8
Approach LOS	B		B			A

Intersection Summary

HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	31.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.7%	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		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	280	21	11	315	38	92	2	119	150	9	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	304	23	12	342	41	100	2	129	163	10	16
Pedestrians		10			10			10				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		1			1			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					1140							
pX, platoon unblocked												
vC, conflicting volume	384			337			561	742	184	688	733	202
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	384			337			561	742	184	688	733	202
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			74	99	84	40	97	98
cM capacity (veh/h)	1171			1209			380	335	814	271	339	799

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	157	175	12	228	155	100	132	163	26
Volume Left	4	0	12	0	0	100	0	163	0
Volume Right	0	23	0	0	41	0	129	0	16
cSH	1171	1700	1209	1700	1700	380	795	271	529
Volume to Capacity	0.00	0.10	0.01	0.13	0.09	0.26	0.17	0.60	0.05
Queue Length 95th (ft)	0	0	1	0	0	26	15	89	4
Control Delay (s)	0.3	0.0	8.0	0.0	0.0	17.8	10.4	36.4	12.2
Lane LOS	A		A			C	B	E	B
Approach Delay (s)	0.1		0.2			13.6		33.1	
Approach LOS						B		D	

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	211	221	133	11	78	229	124	531	112	779
v/c Ratio	0.55	0.57	0.29	0.04	0.27	0.53	0.25	0.35	0.37	0.50
Control Delay	32.9	33.1	7.7	32.6	34.2	10.3	34.0	21.5	35.2	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.9	33.1	7.7	32.6	34.2	10.3	34.0	21.5	35.2	20.4
Queue Length 50th (ft)	81	85	0	4	29	0	23	94	42	135
Queue Length 95th (ft)	194	204	46	22	85	65	63	187	115	257
Internal Link Dist (ft)		1060			1230			3344		1270
Turn Bay Length (ft)										
Base Capacity (vph)	580	590	616	531	559	620	655	1727	437	1786
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.37	0.22	0.02	0.14	0.37	0.19	0.31	0.26	0.44

Intersection Summary

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	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.96	
Flt Protected	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1714	1546	1770	1863	1546	3433	3537		1770	3391	
Flt Permitted	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1714	1546	1770	1863	1546	3433	3537		1770	3391	
Volume (vph)	327	71	122	10	72	211	114	487	2	103	543	174
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	355	77	133	11	78	229	124	529	2	112	590	189
RTOR Reduction (vph)	0	0	110	0	0	206	0	0	0	0	29	0
Lane Group Flow (vph)	211	221	23	11	78	23	124	531	0	112	750	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	10.5	10.5	10.5	6.3	6.3	6.3	5.6	21.7		7.1	23.2	
Effective Green, g (s)	10.5	10.5	10.5	6.3	6.3	6.3	5.6	21.7		7.1	23.2	
Actuated g/C Ratio	0.17	0.17	0.17	0.10	0.10	0.10	0.09	0.35		0.12	0.38	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	287	292	264	181	191	158	312	1246		204	1277	
v/s Ratio Prot	0.13	c0.13		0.01	c0.04		0.04	0.15		c0.06	c0.22	
v/s Ratio Perm			0.01			0.02						
v/c Ratio	0.74	0.76	0.09	0.06	0.41	0.15	0.40	0.43		0.55	0.59	
Uniform Delay, d1	24.2	24.3	21.5	25.0	25.9	25.2	26.4	15.2		25.7	15.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.4	10.7	0.1	0.1	1.4	0.4	0.8	0.2		3.0	0.7	
Delay (s)	33.6	35.0	21.7	25.1	27.3	25.6	27.2	15.4		28.7	16.1	
Level of Service	C	C	C	C	C	C	C	B		C	B	
Approach Delay (s)		31.3			26.0			17.7			17.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	4	19	146	7	125	18	531	174	826
v/c Ratio	0.02	0.03	0.29	0.03	0.38	0.04	0.59	0.28	0.67
Control Delay	35.0	0.1	29.5	30.3	11.0	22.2	23.5	17.9	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	0.1	29.5	30.3	11.0	22.2	23.5	17.9	20.5
Queue Length 50th (ft)	1	0	20	2	0	4	69	35	102
Queue Length 95th (ft)	12	0	65	15	48	24	180	117	260
Internal Link Dist (ft)		416		1234			3646		3344
Turn Bay Length (ft)									
Base Capacity (vph)	426	1060	905	491	497	664	1305	844	1685
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.16	0.01	0.25	0.03	0.41	0.21	0.49

Intersection Summary

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		0.97	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3064		3433	1863	1547	1770	3451		1770	3530	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3064		3433	1863	1547	1770	3451		1770	3530	
Volume (vph)	4	4	14	134	6	115	17	418	71	160	750	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	4	15	146	7	125	18	454	77	174	815	11
RTOR Reduction (vph)	0	18	0	0	0	112	0	14	0	0	1	0
Lane Group Flow (vph)	4	1	0	146	7	13	18	517	0	174	825	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split			Split		Perm	Split			Split		
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	1.7	1.7		6.2	6.2	6.2	14.4	14.4		19.6	19.6	
Effective Green, g (s)	1.7	1.7		6.2	6.2	6.2	14.4	14.4		19.6	19.6	
Actuated g/C Ratio	0.03	0.03		0.11	0.11	0.11	0.25	0.25		0.34	0.34	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	52	90		368	199	166	440	858		599	1195	
v/s Ratio Prot	c0.00	0.00		c0.04	0.00		0.01	c0.15		0.10	c0.23	
v/s Ratio Perm						0.01						
v/c Ratio	0.08	0.01		0.40	0.04	0.08	0.04	0.60		0.29	0.69	
Uniform Delay, d1	27.3	27.3		24.1	23.2	23.3	16.5	19.2		14.0	16.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.0		0.7	0.1	0.2	0.0	1.2		0.3	1.7	
Delay (s)	28.0	27.3		24.8	23.2	23.5	16.5	20.4		14.3	18.3	
Level of Service	C	C		C	C	C	B	C		B	B	
Approach Delay (s)		27.4			24.2			20.3			17.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	4	287	27	599	202	80	265	240	18
v/c Ratio	0.02	0.36	0.11	0.58	0.47	0.19	0.56	0.48	0.04
Control Delay	36.5	21.8	32.9	15.0	26.9	8.5	25.2	23.5	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	21.8	32.9	15.0	26.9	8.5	25.2	23.5	11.1
Queue Length 50th (ft)	1	30	6	44	45	0	58	51	0
Queue Length 95th (ft)	13	110	41	161	174	36	211	188	16
Internal Link Dist (ft)		1234		2203	311			3353	
Turn Bay Length (ft)									
Base Capacity (vph)	301	1422	337	1517	739	662	807	849	710
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.20	0.08	0.39	0.27	0.12	0.33	0.28	0.03

Intersection Summary

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
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.93			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1763	3455		1770	3256			1846	1551	1770	1863	1551
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1763	3455		1770	3256			1846	1551	1770	1863	1551
Volume (vph)	4	230	34	25	291	260	34	152	74	244	221	17
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	250	37	27	316	283	37	165	80	265	240	18
RTOR Reduction (vph)	0	12	0	0	166	0	0	0	65	0	0	14
Lane Group Flow (vph)	4	275	0	27	433	0	0	202	15	265	240	4
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			4
Actuated Green, G (s)	0.7	9.4		2.1	10.8			8.9	8.9	10.7	10.7	10.7
Effective Green, g (s)	0.7	9.4		2.1	10.8			8.9	8.9	10.7	10.7	10.7
Actuated g/C Ratio	0.01	0.20		0.04	0.23			0.19	0.19	0.23	0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
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)	26	690		79	747			349	293	402	423	352
v/s Ratio Prot	0.00	0.08		c0.02	c0.13			c0.11		c0.15	0.13	
v/s Ratio Perm									0.01			0.00
v/c Ratio	0.15	0.40		0.34	0.58			0.58	0.05	0.66	0.57	0.01
Uniform Delay, d1	22.9	16.4		21.8	16.1			17.4	15.6	16.5	16.1	14.1
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.4		2.6	1.1			2.3	0.1	3.9	1.7	0.0
Delay (s)	25.7	16.8		24.4	17.2			19.7	15.7	20.4	17.9	14.1
Level of Service	C	B		C	B			B	B	C	B	B
Approach Delay (s)		16.9			17.5			18.6			19.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	47.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	524	580	632	163	178
v/c Ratio	0.89	0.66	0.92	0.56	0.71
Control Delay	49.0	6.6	47.5	44.4	53.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	6.6	47.5	44.4	53.2
Queue Length 50th (ft)	310	0	363	94	105
Queue Length 95th (ft)	#507	86	#583	160	178
Internal Link Dist (ft)	2203		1011	533	
Turn Bay Length (ft)					
Base Capacity (vph)	640	897	752	353	306
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.82	0.65	0.84	0.46	0.58

Intersection Summary

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

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
Frpb, ped/bikes		1.00	0.95		1.00						1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.98						0.95	1.00
Satd. Flow (prot)		1863	1509		1829						1770	1539
Flt Permitted		1.00	1.00		0.98						0.95	1.00
Satd. Flow (perm)		1863	1509		1829						1770	1539
Volume (vph)	0	482	534	215	366	0	0	0	0	150	0	164
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	524	580	234	398	0	0	0	0	163	0	178
RTOR Reduction (vph)	0	0	395	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	524	185	0	632	0	0	0	0	0	163	178
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type			Perm	Split						Split		Perm
Protected Phases		4		8	8					6	6	
Permitted Phases			4									6
Actuated Green, G (s)		27.7	27.7		33.0						14.0	14.0
Effective Green, g (s)		28.3	28.3		33.6						14.6	14.6
Actuated g/C Ratio		0.32	0.32		0.38						0.16	0.16
Clearance Time (s)		4.6	4.6		4.6						4.6	4.6
Vehicle Extension (s)		3.0	3.0		3.0						3.0	3.0
Lane Grp Cap (vph)		596	483		694						292	254
v/s Ratio Prot		c0.28			c0.35						0.09	
v/s Ratio Perm			0.12									c0.12
v/c Ratio		0.88	0.38		0.91						0.56	0.70
Uniform Delay, d1		28.5	23.3		26.0						34.0	34.9
Progression Factor		1.00	1.00		1.00						1.00	1.00
Incremental Delay, d2		13.9	0.5		16.1						2.3	8.4
Delay (s)		42.4	23.9		42.2						36.3	43.3
Level of Service		D	C		D						D	D
Approach Delay (s)		32.6			42.2			0.0			40.0	
Approach LOS		C			D			A			D	

Intersection Summary			
HCM Average Control Delay	36.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	88.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	669	368	136	274	348
v/c Ratio	0.90	0.82	0.29	0.76	0.60
Control Delay	42.7	50.7	7.7	50.2	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	50.7	7.7	50.2	8.7
Queue Length 50th (ft)	394	231	0	171	0
Queue Length 95th (ft)	#609	#377	47	#280	78
Internal Link Dist (ft)	1011	665		558	
Turn Bay Length (ft)					
Base Capacity (vph)	856	535	528	447	638
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.78	0.69	0.26	0.61	0.55

Intersection Summary

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

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			
Frpb, ped/bikes		1.00			1.00	0.95		1.00	0.95			
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (prot)		1820			1863	1510		1777	1510			
Flt Permitted		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (perm)		1820			1863	1510		1777	1510			
Volume (vph)	290	326	0	0	339	125	245	7	320	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	354	0	0	368	136	266	8	348	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	103	0	0	276	0	0	0
Lane Group Flow (vph)	0	669	0	0	368	33	0	274	72	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split					Perm	Split		Perm			
Protected Phases	4	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)		35.0			20.4	20.4		17.2	17.2			
Effective Green, g (s)		35.6			21.0	21.0		17.8	17.8			
Actuated g/C Ratio		0.41			0.24	0.24		0.21	0.21			
Clearance Time (s)		4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		750			453	367		366	311			
v/s Ratio Prot		c0.37			c0.20			c0.15				
v/s Ratio Perm						0.02			0.05			
v/c Ratio		0.89			0.81	0.09		0.75	0.23			
Uniform Delay, d1		23.6			30.8	25.3		32.2	28.6			
Progression Factor		1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2		12.9			10.6	0.1		8.1	0.4			
Delay (s)		36.5			41.5	25.4		40.3	29.0			
Level of Service		D			D	C		D	C			
Approach Delay (s)		36.5			37.1			34.0			0.0	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM Average Control Delay	35.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	627	348	411	775	74	251
v/c Ratio	0.36	0.38	0.84	0.26	0.45	0.53
Control Delay	10.3	3.5	46.5	3.8	50.7	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	3.5	46.5	3.8	50.7	9.7
Queue Length 50th (ft)	67	0	258	95	45	0
Queue Length 95th (ft)	143	61	335	100	88	38
Internal Link Dist (ft)	1052			1290	497	
Turn Bay Length (ft)						
Base Capacity (vph)	1728	906	640	2926	356	730
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	0.36	0.38	0.64	0.26	0.21	0.34

Intersection Summary

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		0.91	0.91	1.00	0.95						1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	0.95
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		0.93	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)		3142	1441	1770	3539						1779	2646
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3142	1441	1770	3539						1779	2646
Volume (vph)	0	295	602	378	713	0	0	0	0	64	4	231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	321	654	411	775	0	0	0	0	70	4	251
RTOR Reduction (vph)	0	124	171	0	0	0	0	0	0	0	0	228
Lane Group Flow (vph)	0	503	177	411	775	0	0	0	0	0	74	23
Confl. Peds. (#/hr)	10					10				10		10
Turn Type			Perm	Prot						Split		Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		51.0	51.0	27.7	82.7						9.3	9.3
Effective Green, g (s)		51.0	51.0	27.7	82.7						9.3	9.3
Actuated g/C Ratio		0.51	0.51	0.28	0.83						0.09	0.09
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)		1602	735	490	2927						165	246
v/s Ratio Prot		c0.16		c0.23	0.22						c0.04	
v/s Ratio Perm			0.12									0.01
v/c Ratio		0.31	0.24	0.84	0.26						0.45	0.09
Uniform Delay, d1		14.3	13.7	34.0	1.9						42.9	41.5
Progression Factor		1.00	1.00	0.94	1.69						1.00	1.00
Incremental Delay, d2		0.1	0.2	11.4	0.2						1.9	0.2
Delay (s)		14.4	13.9	43.4	3.5						44.9	41.7
Level of Service		B	B	D	A						D	D
Approach Delay (s)		14.2			17.3			0.0			42.4	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	180	176	616	466	555
v/c Ratio	0.23	0.15	0.29	0.88	0.50
Control Delay	10.6	10.0	10.5	50.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	10.0	10.5	50.2	8.0
Queue Length 50th (ft)	19	36	86	281	38
Queue Length 95th (ft)	30	57	154	347	72
Internal Link Dist (ft)		1290	1318		
Turn Bay Length (ft)					
Base Capacity (vph)	797	1144	2155	712	1349
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.23	0.15	0.29	0.65	0.41

Intersection Summary

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	0.97	1.00			0.95					1.00		0.88
Frpb, ped/bikes	1.00	1.00			1.00					1.00		0.97
Flpb, ped/bikes	0.99	1.00			1.00					0.98		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)	3394	1863			3506					1736		2702
Flt Permitted	0.39	1.00			1.00					0.95		1.00
Satd. Flow (perm)	1386	1863			3506					1736		2702
Volume (vph)	166	162	0	0	537	29	0	0	0	429	0	511
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	176	0	0	584	32	0	0	0	466	0	555
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	284
Lane Group Flow (vph)	180	176	0	0	613	0	0	0	0	466	0	271
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm									custom		custom
Protected Phases		2			6							
Permitted Phases	2									7		4
Actuated Green, G (s)	61.4	61.4			61.4					30.6		30.6
Effective Green, g (s)	61.4	61.4			61.4					30.6		30.6
Actuated g/C Ratio	0.61	0.61			0.61					0.31		0.31
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)	851	1144			2153					531		827
v/s Ratio Prot		0.09			c0.17							
v/s Ratio Perm	0.13									c0.27		0.10
v/c Ratio	0.21	0.15			0.28					0.88		0.33
Uniform Delay, d1	8.6	8.2			9.0					32.9		26.8
Progression Factor	0.94	0.97			1.00					1.00		1.00
Incremental Delay, d2	0.5	0.3			0.3					15.1		0.2
Delay (s)	8.6	8.3			9.4					48.0		27.0
Level of Service	A	A			A					D		C
Approach Delay (s)		8.4			9.4			0.0			36.6	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	536	50	24	3	13	543
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	583	54	26	3	14	590

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	583	54	29	14	590
Volume Left (vph)	583	0	0	14	0
Volume Right (vph)	0	0	3	0	590
Hadj (s)	0.53	0.03	-0.03	0.53	-0.67
Departure Headway (s)	7.0	6.5	7.2	7.0	5.8
Degree Utilization, x	1.13	0.10	0.06	0.03	0.95
Capacity (veh/h)	530	549	486	505	611
Control Delay (s)	102.8	8.9	10.7	9.0	48.4
Approach Delay (s)	94.8		10.7	47.5	
Approach LOS	F		B	E	

Intersection Summary			
Delay	70.3		
HCM Level of Service	F		
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBT	WBR	NBR	SBL	SBR
Lane Group Flow (vph)	442	802	21	703	270	25	475	514
v/c Ratio	0.76	0.33	0.03	0.31	0.31	0.04	0.39	0.78
Control Delay	23.6	10.4	5.1	10.3	2.7	0.1	16.6	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.6	10.4	5.1	10.3	2.7	0.1	16.6	22.0
Queue Length 50th (ft)	54	53	0	46	0	0	56	90
Queue Length 95th (ft)	167	128	11	113	38	0	146	309
Internal Link Dist (ft)		1616		2336				
Turn Bay Length (ft)								
Base Capacity (vph)	801	3296	1034	3095	1090	936	1855	911
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.24	0.02	0.23	0.25	0.03	0.26	0.56

Intersection Summary

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	0.97	0.91	1.00		0.91	1.00			1.00	0.97		1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98			1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85			0.86	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00			1.00	0.95		1.00
Satd. Flow (prot)	3420	5085	1583		5085	1548			1611	3433		1548
Flt Permitted	0.36	1.00	1.00		0.94	1.00			1.00	0.95		1.00
Satd. Flow (perm)	1303	5085	1583		4773	1548			1611	3433		1548
Volume (vph)	407	738	19	2	645	248	0	0	23	437	0	473
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	442	802	21	2	701	270	0	0	25	475	0	514
RTOR Reduction (vph)	0	0	11	0	0	137	0	0	16	0	0	112
Lane Group Flow (vph)	442	802	10	0	703	133	0	0	9	475	0	402
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm		Perm	Perm		Perm			custom	Prot		custom
Protected Phases		2			6					4		
Permitted Phases	2		2	6		6			8			4
Actuated Green, G (s)	28.0	28.0	28.0		28.0	28.0			20.9	20.9		20.9
Effective Green, g (s)	28.0	28.0	28.0		28.0	28.0			20.9	20.9		20.9
Actuated g/C Ratio	0.49	0.49	0.49		0.49	0.49			0.37	0.37		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)	641	2502	779		2349	762			592	1261		569
v/s Ratio Prot		0.16								0.14		
v/s Ratio Perm	c0.34		0.01		0.15	0.09			0.01			c0.26
v/c Ratio	0.69	0.32	0.01		0.30	0.17			0.02	0.38		0.71
Uniform Delay, d1	11.1	8.7	7.4		8.6	8.0			11.5	13.2		15.4
Progression Factor	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	3.1	0.1	0.0		0.1	0.1			0.0	0.2		4.0
Delay (s)	14.2	8.8	7.4		8.7	8.1			11.5	13.4		19.4
Level of Service	B	A	A		A	A			B	B		B
Approach Delay (s)		10.7			8.5			11.5			16.5	
Approach LOS		B			A			B			B	

Intersection Summary

HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX F

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
- EXISTING + CUMULATIVE PROJECTS + PROJECT PHASES I & II

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	221	1087	315	179	984	150	295	364	186	384	175
v/c Ratio	0.48	0.59	0.42	0.44	0.63	0.46	0.55	0.42	0.45	0.60	0.42
Control Delay	38.6	23.8	4.7	39.5	25.6	12.4	37.7	26.1	39.4	36.0	9.2
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	38.6	23.8	4.7	39.5	25.6	12.4	37.7	26.1	39.4	36.0	9.2
Queue Length 50th (ft)	50	155	0	40	139	0	66	67	42	87	0
Queue Length 95th (ft)	113	276	58	96	252	59	142	145	98	178	57
Internal Link Dist (ft)		365			755			1070		518	
Turn Bay Length (ft)											
Base Capacity (vph)	789	2291	862	690	2128	478	896	1162	785	1061	581
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	0.28	0.47	0.37	0.26	0.46	0.31	0.33	0.31	0.24	0.36	0.30

Intersection Summary

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
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1541	3433	5085	1583	3433	3357		3433	3539	1541
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1541	3433	5085	1583	3433	3357		3433	3539	1541
Volume (vph)	203	1000	290	165	905	138	271	236	98	171	353	161
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	221	1087	315	179	984	150	295	257	107	186	384	175
RTOR Reduction (vph)	0	0	203	0	0	135	0	37	0	0	0	141
Lane Group Flow (vph)	221	1087	112	179	984	15	295	327	0	186	384	34
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Over	Prot			Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	10.5	28.1	28.1	7.7	25.3	7.9	12.1	19.5		7.9	15.3	15.3
Effective Green, g (s)	10.5	28.1	28.1	7.7	25.3	7.9	12.1	19.5		7.9	15.3	15.3
Actuated g/C Ratio	0.13	0.35	0.35	0.10	0.32	0.10	0.15	0.25		0.10	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	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)	455	1804	547	334	1624	158	524	827		342	684	298
v/s Ratio Prot	c0.06	c0.21		0.05	0.19	0.01	c0.09	0.10		0.05	c0.11	
v/s Ratio Perm			0.07									0.02
v/c Ratio	0.49	0.60	0.20	0.54	0.61	0.09	0.56	0.40		0.54	0.56	0.11
Uniform Delay, d1	31.8	21.0	17.8	34.0	22.7	32.4	31.1	24.9		33.9	28.9	26.4
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	0.8	0.6	0.2	1.7	0.6	0.3	1.4	0.3		1.8	1.1	0.2
Delay (s)	32.7	21.5	18.0	35.7	23.4	32.7	32.5	25.2		35.7	30.0	26.5
Level of Service	C	C	B	D	C	C	C	C		D	C	C
Approach Delay (s)		22.4			26.1			28.5			30.6	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	53	238	85	129	409	128	109	586	146	871	83
v/c Ratio	0.27	0.59	0.21	0.48	0.40	0.24	0.44	0.37	0.52	0.73	0.15
Control Delay	46.3	40.1	9.8	44.9	27.7	7.3	45.1	23.1	44.9	29.4	8.4
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	46.3	40.1	9.8	44.9	27.7	7.3	45.1	23.1	44.9	29.4	8.4
Queue Length 50th (ft)	24	107	0	59	90	0	50	77	66	195	3
Queue Length 95th (ft)	82	256	42	159	187	47	140	162	175	393	41
Internal Link Dist (ft)		296			520			1270		1070	
Turn Bay Length (ft)											
Base Capacity (vph)	349	744	659	545	1716	805	483	2262	548	1715	776
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	0.15	0.32	0.13	0.24	0.24	0.16	0.23	0.26	0.27	0.51	0.11

Intersection Summary

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
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1542	1770	3539	1542	1770	4940		1770	3539	1542
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1542	1770	3539	1542	1770	4940		1770	3539	1542
Volume (vph)	49	219	78	119	376	118	100	459	80	134	801	76
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	238	85	129	409	128	109	499	87	146	871	83
RTOR Reduction (vph)	0	0	65	0	0	91	0	16	0	0	0	48
Lane Group Flow (vph)	53	238	20	129	409	37	109	570	0	146	871	35
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	4.6	17.7	17.7	8.9	22.0	22.0	8.2	24.5		9.5	25.8	25.8
Effective Green, g (s)	4.6	17.7	17.7	8.9	22.0	22.0	8.2	24.5		9.5	25.8	25.8
Actuated g/C Ratio	0.06	0.23	0.23	0.12	0.29	0.29	0.11	0.32		0.12	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	106	430	356	206	1016	443	189	1580		220	1192	519
v/s Ratio Prot	0.03	c0.13		c0.07	0.12		0.06	0.12		c0.08	c0.25	
v/s Ratio Perm			0.01			0.02						0.02
v/c Ratio	0.50	0.55	0.06	0.63	0.40	0.08	0.58	0.36		0.66	0.73	0.07
Uniform Delay, d1	34.9	26.0	22.9	32.3	22.0	19.9	32.5	20.0		32.0	22.3	17.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.7	1.5	0.1	5.8	0.3	0.1	4.2	0.1		7.3	2.3	0.1
Delay (s)	38.6	27.5	23.0	38.1	22.3	20.0	36.8	20.2		39.4	24.7	17.3
Level of Service	D	C	C	D	C	C	D	C		D	C	B
Approach Delay (s)		28.0			24.9			22.8			26.1	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	76.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	177	89	336	149	170
v/c Ratio	0.39	0.19	0.40	0.34	0.22
Control Delay	14.3	5.2	6.7	14.6	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	5.2	6.7	14.6	5.4
Queue Length 50th (ft)	28	0	8	24	14
Queue Length 95th (ft)	82	24	38	73	43
Internal Link Dist (ft)	2680		3820		1318
Turn Bay Length (ft)					
Base Capacity (vph)	981	891	1687	961	1424
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.18	0.10	0.20	0.16	0.12

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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	1.00	0.95		1.00	1.00
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.89		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1557	3121		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1557	3121		1770	1863
Volume (vph)	163	82	87	222	137	156
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	89	95	241	149	170
RTOR Reduction (vph)	0	72	206	0	0	0
Lane Group Flow (vph)	177	17	130	0	149	170
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	4.9	4.9	3.6		4.6	12.2
Effective Green, g (s)	4.9	4.9	3.6		4.6	12.2
Actuated g/C Ratio	0.20	0.20	0.14		0.18	0.49
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	346	304	448		324	906
v/s Ratio Prot	c0.10		0.04		c0.08	c0.09
v/s Ratio Perm		0.01				
v/c Ratio	0.51	0.06	0.29		0.46	0.19
Uniform Delay, d1	9.0	8.2	9.6		9.1	3.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.1	0.4		1.0	0.1
Delay (s)	10.3	8.3	10.0		10.2	3.7
Level of Service	B	A	A		B	A
Approach Delay (s)	9.6		10.0			6.8
Approach LOS	A		A			A

Intersection Summary

HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	25.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.0%	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		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	31	290	141	83	225	306	15	18	13	35	2	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	315	153	90	245	333	16	20	14	38	2	3
Pedestrians		10			10			10				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		1			1			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					1140							
pX, platoon unblocked												
vC, conflicting volume	577			478			786	1227	254	850	1137	299
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	577			478			786	1227	254	850	1137	299
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 %	97			92			93	87	98	81	99	100
cM capacity (veh/h)	992			1071			248	155	733	202	176	692

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	191	311	90	163	414	16	34	38	5
Volume Left	34	0	90	0	0	16	0	38	0
Volume Right	0	153	0	0	333	0	14	0	3
cSH	992	1700	1071	1700	1700	248	232	202	318
Volume to Capacity	0.03	0.18	0.08	0.10	0.24	0.07	0.15	0.19	0.02
Queue Length 95th (ft)	3	0	7	0	0	5	12	17	1
Control Delay (s)	1.8	0.0	8.7	0.0	0.0	20.5	23.1	26.8	16.5
Lane LOS	A		A			C	C	D	C
Approach Delay (s)	0.7		1.2			22.3		25.6	
Approach LOS						C		D	

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	121	128	116	13	126	101	160	318	97	824
v/c Ratio	0.38	0.39	0.30	0.04	0.37	0.28	0.29	0.21	0.32	0.53
Control Delay	32.1	32.1	9.1	29.4	32.4	9.7	31.2	19.0	32.8	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.1	32.1	9.1	29.4	32.4	9.7	31.2	19.0	32.8	15.9
Queue Length 50th (ft)	43	46	0	4	43	0	28	47	33	103
Queue Length 95th (ft)	124	129	45	23	123	43	76	108	101	225
Internal Link Dist (ft)		1060			1230			3344		1270
Turn Bay Length (ft)										
Base Capacity (vph)	531	548	564	556	585	551	871	1808	473	1805
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.23	0.21	0.02	0.22	0.18	0.18	0.18	0.21	0.46

Intersection Summary

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	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.93	
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1736	1547	1770	1863	1547	3433	3524		1770	3263	
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1736	1547	1770	1863	1547	3433	3524		1770	3263	
Volume (vph)	157	72	107	12	116	93	147	285	7	89	413	345
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	171	78	116	13	126	101	160	310	8	97	449	375
RTOR Reduction (vph)	0	0	101	0	0	88	0	2	0	0	142	0
Lane Group Flow (vph)	121	128	15	13	126	13	160	316	0	97	682	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	7.7	7.7	7.7	7.3	7.3	7.3	6.2	20.8		6.7	21.3	
Effective Green, g (s)	7.7	7.7	7.7	7.3	7.3	7.3	6.2	20.8		6.7	21.3	
Actuated g/C Ratio	0.13	0.13	0.13	0.12	0.12	0.12	0.11	0.36		0.11	0.36	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	221	228	204	221	232	193	364	1253		203	1188	
v/s Ratio Prot	0.07	c0.07		0.01	c0.07		0.05	0.09		c0.05	c0.21	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.55	0.56	0.07	0.06	0.54	0.07	0.44	0.25		0.48	0.57	
Uniform Delay, d1	23.8	23.8	22.3	22.6	24.0	22.6	24.5	13.3		24.3	15.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.8	3.1	0.2	0.1	2.6	0.1	0.9	0.1		1.8	0.7	
Delay (s)	26.5	27.0	22.4	22.7	26.6	22.7	25.4	13.5		26.0	15.6	
Level of Service	C	C	C	C	C	C	C	B		C	B	
Approach Delay (s)		25.4			24.8			17.4			16.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	98	112	60	170	66	723	132	426
v/c Ratio	0.12	0.23	0.24	0.24	0.48	0.12	0.65	0.33	0.53
Control Delay	32.6	17.4	29.7	31.4	11.0	17.9	21.5	26.6	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	17.4	29.7	31.4	11.0	17.9	21.5	26.6	25.7
Queue Length 50th (ft)	9	6	19	20	0	17	117	41	72
Queue Length 95th (ft)	37	33	52	65	55	52	219	111	153
Internal Link Dist (ft)		416		1234			3646		3344
Turn Bay Length (ft)									
Base Capacity (vph)	457	860	935	507	542	803	1578	573	1138
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.11	0.12	0.12	0.31	0.08	0.46	0.23	0.37

Intersection Summary

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		0.97	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3175		3433	1863	1547	1770	3465		1770	3505	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3175		3433	1863	1547	1770	3465		1770	3505	
Volume (vph)	24	36	54	103	55	156	61	584	81	121	372	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	39	59	112	60	170	66	635	88	132	404	22
RTOR Reduction (vph)	0	54	0	0	0	153	0	10	0	0	4	0
Lane Group Flow (vph)	26	44	0	112	60	17	66	713	0	132	422	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split			Split		Perm	Split			Split		
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	4.8	4.8		5.9	5.9	5.9	18.7	18.7		13.3	13.3	
Effective Green, g (s)	4.8	4.8		5.9	5.9	5.9	18.7	18.7		13.3	13.3	
Actuated g/C Ratio	0.08	0.08		0.10	0.10	0.10	0.32	0.32		0.23	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	145	260		345	187	155	564	1104		401	794	
v/s Ratio Prot	c0.01	0.01		c0.03	0.03		0.04	c0.21		0.07	c0.12	
v/s Ratio Perm						0.01						
v/c Ratio	0.18	0.17		0.32	0.32	0.11	0.12	0.65		0.33	0.53	
Uniform Delay, d1	25.1	25.1		24.5	24.5	24.0	14.2	17.2		19.0	20.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.3		0.6	1.0	0.3	0.1	1.3		0.5	0.7	
Delay (s)	25.7	25.4		25.1	25.5	24.3	14.2	18.5		19.5	20.6	
Level of Service	C	C		C	C	C	B	B		B	C	
Approach Delay (s)		25.5			24.8			18.1			20.4	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	5	224	72	678	194	42	132	89	9
v/c Ratio	0.02	0.29	0.24	0.56	0.45	0.11	0.36	0.23	0.03
Control Delay	32.2	20.6	27.4	12.5	24.7	9.2	26.0	24.2	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	20.6	27.4	12.5	24.7	9.2	26.0	24.2	14.6
Queue Length 50th (ft)	1	31	20	51	53	0	36	24	0
Queue Length 95th (ft)	13	77	72	159	148	25	111	80	12
Internal Link Dist (ft)		1234		2203	311			3353	
Turn Bay Length (ft)									
Base Capacity (vph)	336	1509	491	1757	753	649	672	707	588
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.15	0.15	0.39	0.26	0.06	0.20	0.13	0.02

Intersection Summary

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
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.93			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1764	3481		1770	3271			1849	1551	1770	1863	1551
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1764	3481		1770	3271			1849	1551	1770	1863	1551
Volume (vph)	5	188	18	66	344	280	27	152	39	121	82	8
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	204	20	72	374	304	29	165	42	132	89	9
RTOR Reduction (vph)	0	8	0	0	153	0	0	0	34	0	0	8
Lane Group Flow (vph)	5	216	0	72	525	0	0	194	8	132	89	1
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			4
Actuated Green, G (s)	0.8	9.3		4.2	12.7			8.3	8.3	7.1	7.1	7.1
Effective Green, g (s)	0.8	9.3		4.2	12.7			8.3	8.3	7.1	7.1	7.1
Actuated g/C Ratio	0.02	0.21		0.09	0.28			0.18	0.18	0.16	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	31	721		166	925			342	287	280	295	245
v/s Ratio Prot	0.00	0.06		c0.04	c0.16			c0.10		c0.07	0.05	
v/s Ratio Perm									0.01			0.00
v/c Ratio	0.16	0.30		0.43	0.57			0.57	0.03	0.47	0.30	0.01
Uniform Delay, d1	21.7	15.0		19.2	13.8			16.7	15.0	17.2	16.7	15.9
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.2		1.8	0.8			2.2	0.0	1.3	0.6	0.0
Delay (s)	24.2	15.3		21.0	14.6			18.8	15.0	18.4	17.3	15.9
Level of Service	C	B		C	B			B	B	B	B	B
Approach Delay (s)		15.5			15.2			18.1			17.9	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	44.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	249	264	780	79	443
v/c Ratio	0.83	0.57	0.99	0.15	1.00
Control Delay	63.2	10.0	59.9	27.4	78.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	10.0	59.9	27.4	78.8
Queue Length 50th (ft)	153	0	480	37	~282
Queue Length 95th (ft)	#276	70	#740	74	#484
Internal Link Dist (ft)	2203		1011	533	
Turn Bay Length (ft)					
Base Capacity (vph)	312	472	786	512	444
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.80	0.56	0.99	0.15	1.00

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.

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
Frpb, ped/bikes		1.00	0.95		1.00						1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.99						0.95	1.00
Satd. Flow (prot)		1863	1504		1838						1770	1536
Flt Permitted		1.00	1.00		0.99						0.95	1.00
Satd. Flow (perm)		1863	1504		1838						1770	1536
Volume (vph)	0	229	243	192	525	0	0	0	0	73	0	408
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	249	264	209	571	0	0	0	0	79	0	443
RTOR Reduction (vph)	0	0	221	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	249	43	0	780	0	0	0	0	0	79	443
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type			Perm	Split						Split		Perm
Protected Phases		4		8	8					6	6	
Permitted Phases			4									6
Actuated Green, G (s)		15.3	15.3		41.4						27.8	27.8
Effective Green, g (s)		15.9	15.9		42.0						28.4	28.4
Actuated g/C Ratio		0.16	0.16		0.43						0.29	0.29
Clearance Time (s)		4.6	4.6		4.6						4.6	4.6
Vehicle Extension (s)		3.0	3.0		3.0						3.0	3.0
Lane Grp Cap (vph)		301	243		785						511	444
v/s Ratio Prot		c0.13			c0.42						0.04	
v/s Ratio Perm			0.03									c0.29
v/c Ratio		0.83	0.18		0.99						0.15	1.00
Uniform Delay, d1		39.9	35.5		28.0						26.0	34.9
Progression Factor		1.00	1.00		1.00						1.00	1.00
Incremental Delay, d2		16.8	0.3		30.4						0.1	41.8
Delay (s)		56.6	35.9		58.4						26.2	76.7
Level of Service		E	D		E						C	E
Approach Delay (s)		46.0			58.4			0.0			69.1	
Approach LOS		D			E			A			E	

Intersection Summary			
HCM Average Control Delay	57.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	98.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	327	443	123	343	266
v/c Ratio	0.74	0.79	0.23	0.71	0.44
Control Delay	40.8	37.4	6.2	35.5	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	37.4	6.2	35.5	6.0
Queue Length 50th (ft)	142	190	0	147	0
Queue Length 95th (ft)	#323	382	40	284	56
Internal Link Dist (ft)	1011	665		558	
Turn Bay Length (ft)					
Base Capacity (vph)	592	752	679	712	762
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.55	0.59	0.18	0.48	0.35

Intersection Summary

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

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			
Frpb, ped/bikes		1.00			1.00	0.96		1.00	0.96			
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (prot)		1828			1863	1516		1775	1516			
Flt Permitted		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (perm)		1828			1863	1516		1775	1516			
Volume (vph)	115	186	0	0	408	113	313	3	245	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	202	0	0	443	123	340	3	266	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	85	0	0	192	0	0	0
Lane Group Flow (vph)	0	327	0	0	443	38	0	343	74	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split					Perm	Split		Perm			
Protected Phases	4	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)		17.5			21.9	21.9		19.8	19.8			
Effective Green, g (s)		18.1			22.5	22.5		20.4	20.4			
Actuated g/C Ratio		0.25			0.31	0.31		0.28	0.28			
Clearance Time (s)		4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		453			574	467		496	424			
v/s Ratio Prot		c0.18			c0.24			c0.19				
v/s Ratio Perm						0.03			0.05			
v/c Ratio		0.72			0.77	0.08		0.69	0.18			
Uniform Delay, d1		25.1			22.9	17.9		23.5	19.9			
Progression Factor		1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2		5.6			6.4	0.1		4.1	0.2			
Delay (s)		30.8			29.3	18.0		27.6	20.1			
Level of Service		C			C	B		C	C			
Approach Delay (s)		30.8			26.8			24.4			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	217	107	372	1051	39	318
v/c Ratio	0.14	0.14	0.87	0.39	0.14	0.51
Control Delay	11.4	4.4	53.3	4.3	37.6	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	4.4	53.3	4.3	37.6	13.5
Queue Length 50th (ft)	26	0	240	104	22	24
Queue Length 95th (ft)	58	36	m280	m106	52	68
Internal Link Dist (ft)	1052			1290	497	
Turn Bay Length (ft)						
Base Capacity (vph)	1580	746	690	2690	427	818
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	0.14	0.14	0.54	0.39	0.09	0.39

Intersection Summary

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

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		0.91	0.91	1.00	0.95						1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	0.95
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		0.95	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)		3226	1441	1770	3539						1778	2646
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3226	1441	1770	3539						1778	2646
Volume (vph)	0	135	163	342	967	0	0	0	0	34	2	293
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	147	177	372	1051	0	0	0	0	37	2	318
RTOR Reduction (vph)	0	36	56	0	0	0	0	0	0	0	0	202
Lane Group Flow (vph)	0	181	51	372	1051	0	0	0	0	0	39	116
Confl. Peds. (#/hr)	10					10				10		10
Turn Type			Perm	Prot						Split		Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		47.9	47.9	24.1	76.0						16.0	16.0
Effective Green, g (s)		47.9	47.9	24.1	76.0						16.0	16.0
Actuated g/C Ratio		0.48	0.48	0.24	0.76						0.16	0.16
Clearance Time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		1545	690	427	2690						284	423
v/s Ratio Prot		0.06		c0.21	c0.30						0.02	
v/s Ratio Perm			0.04									c0.04
v/c Ratio		0.12	0.07	0.87	0.39						0.14	0.27
Uniform Delay, d1		14.4	14.1	36.5	4.1						36.1	36.9
Progression Factor		1.00	1.00	1.08	0.97						1.00	1.00
Incremental Delay, d2		0.0	0.0	12.3	0.3						0.2	0.4
Delay (s)		14.4	14.1	51.6	4.3						36.3	37.2
Level of Service		B	B	D	A						D	D
Approach Delay (s)		14.3			16.6			0.0			37.1	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	176	549	316	935
v/c Ratio	0.13	0.45	0.73	0.88
Control Delay	8.2	10.5	43.8	25.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.2	10.5	43.8	25.9
Queue Length 50th (ft)	17	141	187	158
Queue Length 95th (ft)	27	297	239	213
Internal Link Dist (ft)	1290	1318		
Turn Bay Length (ft)				
Base Capacity (vph)	1379	1227	729	1433
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.13	0.45	0.43	0.65

Intersection Summary

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			1.00					1.00		0.88
Frpb, ped/bikes		1.00			0.99					1.00		0.97
Flpb, ped/bikes		0.99			1.00					0.98		1.00
Frt		1.00			0.98					1.00		0.85
Flt Protected		0.97			1.00					0.95		1.00
Satd. Flow (prot)		3409			1821					1736		2702
Flt Permitted		0.61			1.00					0.95		1.00
Satd. Flow (perm)		2134			1821					1736		2702
Volume (vph)	103	59	0	0	449	56	0	0	0	291	0	860
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	64	0	0	488	61	0	0	0	316	0	935
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	387
Lane Group Flow (vph)	0	176	0	0	546	0	0	0	0	316	0	548
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm			Prot						custom		custom
Protected Phases		2		1	6							
Permitted Phases	2									7		4
Actuated Green, G (s)		67.2			67.2					24.8		24.8
Effective Green, g (s)		67.2			67.2					24.8		24.8
Actuated g/C Ratio		0.67			0.67					0.25		0.25
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)		1434			1224					431		670
v/s Ratio Prot					c0.30							
v/s Ratio Perm		0.08								0.18		c0.20
v/c Ratio		0.12			0.45					0.73		0.82
Uniform Delay, d1		5.9			7.7					34.6		35.5
Progression Factor		1.08			1.00					1.00		1.00
Incremental Delay, d2		0.2			1.2					6.3		7.7
Delay (s)		6.5			8.9					40.9		43.2
Level of Service		A			A					D		D
Approach Delay (s)		6.5			8.9			0.0			42.6	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	333	28	32	14	10	468
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	362	30	35	15	11	509

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	362	30	50	11	509
Volume Left (vph)	362	0	0	11	0
Volume Right (vph)	0	0	15	0	509
Hadj (s)	0.53	0.03	-0.15	0.53	-0.67
Departure Headway (s)	6.6	6.1	6.4	6.4	5.2
Degree Utilization, x	0.66	0.05	0.09	0.02	0.74
Capacity (veh/h)	523	560	509	535	664
Control Delay (s)	20.2	8.2	10.0	8.4	20.5
Approach Delay (s)	19.2		10.0	20.2	
Approach LOS	C		A	C	

Intersection Summary			
Delay	19.3		
HCM Level of Service	C		
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBT	WBR	NBR	SBL	SBR
Lane Group Flow (vph)	565	439	15	821	307	28	278	459
v/c Ratio	0.89	0.15	0.02	0.30	0.30	0.04	0.29	0.82
Control Delay	31.0	6.9	3.6	7.7	1.8	0.1	23.0	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	6.9	3.6	7.7	1.8	0.1	23.0	29.2
Queue Length 50th (ft)	93	27	0	57	0	0	47	110
Queue Length 95th (ft)	#256	53	8	102	30	0	103	#321
Internal Link Dist (ft)		1616		2336				
Turn Bay Length (ft)								
Base Capacity (vph)	782	3557	1112	3343	1166	920	1410	739
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.12	0.01	0.25	0.26	0.03	0.20	0.62

Intersection Summary

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

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	0.97	0.91	1.00		0.91	1.00			1.00	0.97		1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98			1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85			0.86	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00			1.00	0.95		1.00
Satd. Flow (prot)	3420	5085	1583		5085	1545			1611	3433		1545
Flt Permitted	0.32	1.00	1.00		0.94	1.00			1.00	0.95		1.00
Satd. Flow (perm)	1146	5085	1583		4779	1545			1611	3433		1545
Volume (vph)	520	404	14	1	754	282	0	0	26	256	0	422
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	565	439	15	1	820	307	0	0	28	278	0	459
RTOR Reduction (vph)	0	0	6	0	0	126	0	0	20	0	0	132
Lane Group Flow (vph)	565	439	9	0	821	181	0	0	8	278	0	327
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm		Perm	Perm		Perm			custom	Prot		custom
Protected Phases		2			6					4		
Permitted Phases	2		2	6		6			8			4
Actuated Green, G (s)	38.9	38.9	38.9		38.9	38.9			19.0	19.0		19.0
Effective Green, g (s)	38.9	38.9	38.9		38.9	38.9			19.0	19.0		19.0
Actuated g/C Ratio	0.59	0.59	0.59		0.59	0.59			0.29	0.29		0.29
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)	676	3002	934		2821	912			464	990		445
v/s Ratio Prot		0.09								0.08		
v/s Ratio Perm	c0.49		0.01		0.17	0.12			0.01			c0.21
v/c Ratio	0.84	0.15	0.01		0.29	0.20			0.02	0.28		0.74
Uniform Delay, d1	10.9	6.1	5.6		6.7	6.3			16.8	18.2		21.2
Progression Factor	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	8.8	0.0	0.0		0.1	0.1			0.0	0.2		6.2
Delay (s)	19.7	6.1	5.6		6.7	6.4			16.8	18.3		27.4
Level of Service	B	A	A		A	A			B	B		C
Approach Delay (s)		13.6			6.6			16.8			24.0	
Approach LOS		B			A			B			C	

Intersection Summary

HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	65.9	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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	388	1535	301	249	1328	220	476	669	368	584	271
v/c Ratio	0.79	0.89	0.42	0.72	0.88	0.55	0.80	0.78	0.80	0.81	0.56
Control Delay	49.7	36.0	4.7	51.6	38.2	10.9	46.4	36.0	52.1	43.4	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.7	36.0	4.7	51.6	38.2	10.9	46.4	36.0	52.1	43.4	12.8
Queue Length 50th (ft)	111	302	0	72	265	0	134	172	106	166	26
Queue Length 95th (ft)	#176	#394	55	#123	#350	63	#202	236	#173	#228	99
Internal Link Dist (ft)		365			755			1070		518	
Turn Bay Length (ft)											
Base Capacity (vph)	509	1740	724	354	1515	407	624	909	471	760	500
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	0.76	0.88	0.42	0.70	0.88	0.54	0.76	0.74	0.78	0.77	0.54

Intersection Summary

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

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
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1539	3433	5085	1583	3433	3392		3433	3539	1539
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1539	3433	5085	1583	3433	3392		3433	3539	1539
Volume (vph)	357	1412	277	229	1222	202	438	471	144	339	537	249
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	388	1535	301	249	1328	220	476	512	157	368	584	271
RTOR Reduction (vph)	0	0	199	0	0	191	0	33	0	0	0	172
Lane Group Flow (vph)	388	1535	102	249	1328	29	476	636	0	368	584	99
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Over	Prot			Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	12.5	29.6	29.6	8.8	25.9	11.7	15.2	21.3		11.7	17.8	17.8
Effective Green, g (s)	12.5	29.6	29.6	8.8	25.9	11.7	15.2	21.3		11.7	17.8	17.8
Actuated g/C Ratio	0.14	0.34	0.34	0.10	0.30	0.13	0.17	0.24		0.13	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	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)	491	1722	521	346	1507	212	597	827		460	721	313
v/s Ratio Prot	c0.11	c0.30		0.07	0.26	0.02	c0.14	c0.19		0.11	0.17	
v/s Ratio Perm			0.07									0.06
v/c Ratio	0.79	0.89	0.20	0.72	0.88	0.14	0.80	0.77		0.80	0.81	0.32
Uniform Delay, d1	36.2	27.4	20.5	38.1	29.3	33.4	34.6	30.8		36.7	33.2	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.4	6.3	0.2	7.0	6.4	0.3	7.3	4.4		9.6	6.7	0.6
Delay (s)	44.6	33.6	20.7	45.1	35.7	33.7	41.9	35.1		46.3	39.9	30.2
Level of Service	D	C	C	D	D	C	D	D		D	D	C
Approach Delay (s)		33.8			36.7			38.0			39.7	
Approach LOS		C			D			D			D	

Intersection Summary

HCM Average Control Delay	36.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	57	383	134	83	273	239	165	1197	270	817	97
v/c Ratio	0.38	0.82	0.28	0.49	0.29	0.41	0.66	0.79	0.76	0.57	0.14
Control Delay	63.5	54.7	8.0	64.8	33.9	7.0	61.7	39.6	58.1	31.0	6.6
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	63.5	54.7	8.0	64.8	33.9	7.0	61.7	39.6	58.1	31.0	6.6
Queue Length 50th (ft)	39	258	0	57	81	0	113	278	183	248	0
Queue Length 95th (ft)	99	435	51	132	138	63	219	432	327	403	39
Internal Link Dist (ft)		296			520			1270		1070	
Turn Bay Length (ft)											
Base Capacity (vph)	190	688	647	224	1357	732	393	1926	545	1663	768
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	0.30	0.56	0.21	0.37	0.20	0.33	0.42	0.62	0.50	0.49	0.13

Intersection Summary

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
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1535	1770	3539	1535	1770	4981		1770	3539	1535
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1535	1770	3539	1535	1770	4981		1770	3539	1535
Volume (vph)	52	352	123	76	251	220	152	988	113	248	752	89
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	57	383	134	83	273	239	165	1074	123	270	817	97
RTOR Reduction (vph)	0	0	100	0	0	177	0	10	0	0	0	58
Lane Group Flow (vph)	57	383	34	83	273	62	165	1187	0	270	817	39
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	6.3	25.5	25.5	7.4	26.6	26.6	12.0	32.6		20.4	41.0	41.0
Effective Green, g (s)	6.3	25.5	25.5	7.4	26.6	26.6	12.0	32.6		20.4	41.0	41.0
Actuated g/C Ratio	0.06	0.25	0.25	0.07	0.26	0.26	0.12	0.32		0.20	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	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)	109	466	384	129	924	401	208	1594		354	1424	618
v/s Ratio Prot	0.03	c0.21		c0.05	0.08		0.09	c0.24		c0.15	0.23	
v/s Ratio Perm			0.02			0.04						0.03
v/c Ratio	0.52	0.82	0.09	0.64	0.30	0.16	0.79	0.74		0.76	0.57	0.06
Uniform Delay, d1	46.3	36.1	29.3	46.0	30.1	29.0	43.7	30.9		38.5	23.7	18.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.5	11.1	0.1	10.5	0.2	0.2	18.5	1.9		9.4	0.6	0.0
Delay (s)	50.8	47.2	29.4	56.5	30.3	29.2	62.2	32.9		47.8	24.2	18.7
Level of Service	D	D	C	E	C	C	E	C		D	C	B
Approach Delay (s)		43.4			33.5			36.4			29.2	
Approach LOS		D			C			D			C	

Intersection Summary

HCM Average Control Delay	34.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	101.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	287	115	388	83	173
v/c Ratio	0.51	0.20	0.42	0.23	0.23
Control Delay	15.0	4.2	10.2	18.0	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	4.2	10.2	18.0	7.4
Queue Length 50th (ft)	50	0	21	15	17
Queue Length 95th (ft)	128	26	65	55	57
Internal Link Dist (ft)	2680		3820		1318
Turn Bay Length (ft)					
Base Capacity (vph)	1092	991	1781	764	1361
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.26	0.12	0.22	0.11	0.13

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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	1.00	0.95		1.00	1.00
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.94		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1555	3293		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1555	3293		1770	1863
Volume (vph)	264	106	208	149	76	159
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	287	115	226	162	83	173
RTOR Reduction (vph)	0	82	128	0	0	0
Lane Group Flow (vph)	287	33	260	0	83	173
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	9.1	9.1	6.6		3.9	14.5
Effective Green, g (s)	9.1	9.1	6.6		3.9	14.5
Actuated g/C Ratio	0.29	0.29	0.21		0.12	0.46
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	510	448	688		218	855
v/s Ratio Prot	c0.16		c0.08		c0.05	0.09
v/s Ratio Perm		0.02				
v/c Ratio	0.56	0.07	0.38		0.38	0.20
Uniform Delay, d1	9.6	8.2	10.7		12.7	5.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.4	0.1	0.3		1.1	0.1
Delay (s)	11.0	8.3	11.1		13.9	5.2
Level of Service	B	A	B		B	A
Approach Delay (s)	10.2		11.1			8.0
Approach LOS	B		B			A

Intersection Summary

HCM Average Control Delay	10.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	31.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	280	21	11	315	75	92	4	119	297	17	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	304	23	12	342	82	100	4	129	323	18	33
Pedestrians		10			10			10				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		1			1			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					1140							
pX, platoon unblocked												
vC, conflicting volume	424			337			590	791	184	718	762	222
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	424			337			590	791	184	718	762	222
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 %	99			99			71	99	84	0	94	96
cM capacity (veh/h)	1132			1209			346	312	814	256	325	775

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	161	175	12	228	196	100	134	323	51
Volume Left	9	0	12	0	0	100	0	323	0
Volume Right	0	23	0	0	82	0	129	0	33
cSH	1132	1700	1209	1700	1700	346	773	256	516
Volume to Capacity	0.01	0.10	0.01	0.13	0.12	0.29	0.17	1.26	0.10
Queue Length 95th (ft)	1	0	1	0	0	29	16	399	8
Control Delay (s)	0.5	0.0	8.0	0.0	0.0	19.6	10.6	184.9	12.7
Lane LOS	A		A			C	B	F	B
Approach Delay (s)	0.2		0.2			14.5		161.4	
Approach LOS						B		F	

Intersection Summary			
Average Delay	46.3		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	270	284	170	11	83	229	134	531	112	806
v/c Ratio	0.63	0.65	0.33	0.05	0.33	0.57	0.33	0.50	0.44	0.72
Control Delay	34.5	35.0	6.8	34.7	37.8	11.6	37.8	24.7	39.8	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.5	35.0	6.8	34.7	37.8	11.6	37.8	24.7	39.8	25.1
Queue Length 50th (ft)	115	122	0	5	35	0	29	106	47	160
Queue Length 95th (ft)	246	258	49	22	91	66	70	190	118	271
Internal Link Dist (ft)		1060			1230			3344		1270
Turn Bay Length (ft)										
Base Capacity (vph)	594	605	652	442	464	555	493	1443	348	1532
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.47	0.26	0.02	0.18	0.41	0.27	0.37	0.32	0.53

Intersection Summary

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	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.96	
Flt Protected	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1712	1545	1770	1863	1545	3433	3537		1770	3375	
Flt Permitted	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1712	1545	1770	1863	1545	3433	3537		1770	3375	
Volume (vph)	424	86	156	10	76	211	123	487	2	103	543	199
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	461	93	170	11	83	229	134	529	2	112	590	216
RTOR Reduction (vph)	0	0	127	0	0	206	0	0	0	0	38	0
Lane Group Flow (vph)	270	284	43	11	83	23	134	531	0	112	768	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	17.3	17.3	17.3	6.8	6.8	6.8	5.7	20.3		7.4	22.0	
Effective Green, g (s)	17.3	17.3	17.3	6.8	6.8	6.8	5.7	20.3		7.4	22.0	
Actuated g/C Ratio	0.26	0.26	0.26	0.10	0.10	0.10	0.08	0.30		0.11	0.32	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	429	437	394	178	187	155	289	1059		193	1095	
v/s Ratio Prot	0.16	c0.17		0.01	c0.04		0.04	0.15		c0.06	c0.23	
v/s Ratio Perm			0.03			0.01						
v/c Ratio	0.63	0.65	0.11	0.06	0.44	0.15	0.46	0.50		0.58	0.70	
Uniform Delay, d1	22.4	22.5	19.4	27.6	28.7	27.9	29.6	19.6		28.7	20.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	3.3	0.1	0.1	1.7	0.4	1.2	0.4		4.4	2.1	
Delay (s)	25.3	25.9	19.5	27.8	30.4	28.3	30.8	20.0		33.1	22.1	
Level of Service	C	C	B	C	C	C	C	B		C	C	
Approach Delay (s)		24.2			28.8			22.1			23.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	4	19	146	7	129	18	540	190	858
v/c Ratio	0.02	0.03	0.30	0.03	0.39	0.04	0.60	0.30	0.67
Control Delay	35.5	0.1	30.4	30.8	11.1	22.7	24.4	17.9	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	0.1	30.4	30.8	11.1	22.7	24.4	17.9	20.5
Queue Length 50th (ft)	1	0	21	2	0	4	75	40	110
Queue Length 95th (ft)	12	0	65	15	49	24	183	127	272
Internal Link Dist (ft)		416		1234			3646		3344
Turn Bay Length (ft)									
Base Capacity (vph)	417	1045	881	478	490	650	1278	839	1675
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.17	0.01	0.26	0.03	0.42	0.23	0.51

Intersection Summary

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		0.97	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3064		3433	1863	1547	1770	3452		1770	3531	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3064		3433	1863	1547	1770	3452		1770	3531	
Volume (vph)	4	4	14	134	6	119	17	426	71	175	779	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	4	15	146	7	129	18	463	77	190	847	11
RTOR Reduction (vph)	0	18	0	0	0	115	0	13	0	0	1	0
Lane Group Flow (vph)	4	1	0	146	7	14	18	527	0	190	857	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split			Split		Perm	Split			Split		
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	1.7	1.7		6.3	6.3	6.3	14.8	14.8		20.9	20.9	
Effective Green, g (s)	1.7	1.7		6.3	6.3	6.3	14.8	14.8		20.9	20.9	
Actuated g/C Ratio	0.03	0.03		0.11	0.11	0.11	0.25	0.25		0.35	0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	50	87		362	197	163	439	856		620	1236	
v/s Ratio Prot	c0.00	0.00		c0.04	0.00		0.01	c0.15		0.11	c0.24	
v/s Ratio Perm						0.01						
v/c Ratio	0.08	0.01		0.40	0.04	0.08	0.04	0.62		0.31	0.69	
Uniform Delay, d1	28.2	28.2		24.9	24.0	24.1	17.1	19.9		14.1	16.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.0		0.7	0.1	0.2	0.0	1.3		0.3	1.7	
Delay (s)	28.9	28.2		25.7	24.0	24.3	17.1	21.3		14.4	18.4	
Level of Service	C	C		C	C	C	B	C		B	B	
Approach Delay (s)		28.3			25.0			21.1			17.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	4	302	27	602	205	80	271	251	18
v/c Ratio	0.02	0.37	0.11	0.58	0.48	0.19	0.56	0.50	0.04
Control Delay	37.0	21.8	33.9	15.0	27.2	8.5	25.4	23.8	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	21.8	33.9	15.0	27.2	8.5	25.4	23.8	11.1
Queue Length 50th (ft)	1	32	6	44	46	0	60	54	0
Queue Length 95th (ft)	13	114	42	162	178	36	217	198	16
Internal Link Dist (ft)		1234		2203	311			3353	
Turn Bay Length (ft)									
Base Capacity (vph)	270	1479	306	1568	718	646	805	847	707
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.20	0.09	0.38	0.29	0.12	0.34	0.30	0.03

Intersection Summary

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
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.93			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1763	3451		1770	3257			1846	1551	1770	1863	1551
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1763	3451		1770	3257			1846	1551	1770	1863	1551
Volume (vph)	4	240	38	25	293	261	35	154	74	249	231	17
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	261	41	27	318	284	38	167	80	271	251	18
RTOR Reduction (vph)	0	14	0	0	171	0	0	0	65	0	0	14
Lane Group Flow (vph)	4	288	0	27	431	0	0	205	15	271	251	4
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			4
Actuated Green, G (s)	0.7	9.6		1.9	10.8			9.0	9.0	10.9	10.9	10.9
Effective Green, g (s)	0.7	9.6		1.9	10.8			9.0	9.0	10.9	10.9	10.9
Actuated g/C Ratio	0.01	0.20		0.04	0.23			0.19	0.19	0.23	0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
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)	26	699		71	742			351	294	407	428	357
v/s Ratio Prot	0.00	0.08		c0.02	c0.13			c0.11		c0.15	0.13	
v/s Ratio Perm									0.01			0.00
v/c Ratio	0.15	0.41		0.38	0.58			0.58	0.05	0.67	0.59	0.01
Uniform Delay, d1	23.1	16.4		22.2	16.3			17.5	15.7	16.6	16.2	14.1
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.4		3.4	1.2			2.5	0.1	4.1	2.1	0.0
Delay (s)	25.8	16.8		25.6	17.4			20.0	15.8	20.7	18.3	14.1
Level of Service	C	B		C	B			B	B	C	B	B
Approach Delay (s)		17.0			17.8			18.8			19.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	47.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	527	585	633	163	178
v/c Ratio	0.89	0.67	0.92	0.56	0.71
Control Delay	49.5	6.6	47.7	44.5	53.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	6.6	47.7	44.5	53.4
Queue Length 50th (ft)	312	0	364	94	105
Queue Length 95th (ft)	#513	87	#586	160	178
Internal Link Dist (ft)	2203		1011	533	
Turn Bay Length (ft)					
Base Capacity (vph)	639	900	752	352	306
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.82	0.65	0.84	0.46	0.58

Intersection Summary

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

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
Frpb, ped/bikes		1.00	0.95		1.00						1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.98						0.95	1.00
Satd. Flow (prot)		1863	1509		1829						1770	1539
Flt Permitted		1.00	1.00		0.98						0.95	1.00
Satd. Flow (perm)		1863	1509		1829						1770	1539
Volume (vph)	0	485	538	215	367	0	0	0	0	150	0	164
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	527	585	234	399	0	0	0	0	163	0	178
RTOR Reduction (vph)	0	0	398	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	527	187	0	633	0	0	0	0	0	163	178
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type			Perm	Split						Split		Perm
Protected Phases		4		8	8					6	6	
Permitted Phases			4									6
Actuated Green, G (s)		27.8	27.8		33.1						14.0	14.0
Effective Green, g (s)		28.4	28.4		33.7						14.6	14.6
Actuated g/C Ratio		0.32	0.32		0.38						0.16	0.16
Clearance Time (s)		4.6	4.6		4.6						4.6	4.6
Vehicle Extension (s)		3.0	3.0		3.0						3.0	3.0
Lane Grp Cap (vph)		596	483		695						291	253
v/s Ratio Prot		c0.28			c0.35						0.09	
v/s Ratio Perm			0.12									c0.12
v/c Ratio		0.88	0.39		0.91						0.56	0.70
Uniform Delay, d1		28.6	23.4		26.1						34.1	35.0
Progression Factor		1.00	1.00		1.00						1.00	1.00
Incremental Delay, d2		14.6	0.5		16.1						2.5	8.6
Delay (s)		43.2	23.9		42.2						36.6	43.6
Level of Service		D	C		D						D	D
Approach Delay (s)		33.0			42.2			0.0			40.2	
Approach LOS		C			D			A			D	

Intersection Summary			
HCM Average Control Delay	37.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	673	370	136	275	348
v/c Ratio	0.90	0.83	0.29	0.77	0.60
Control Delay	42.6	51.0	7.7	51.2	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	51.0	7.7	51.2	8.8
Queue Length 50th (ft)	395	232	0	172	0
Queue Length 95th (ft)	#613	#377	47	#286	78
Internal Link Dist (ft)	1011	665		558	
Turn Bay Length (ft)					
Base Capacity (vph)	858	534	528	439	633
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.78	0.69	0.26	0.63	0.55

Intersection Summary

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

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			
Frpb, ped/bikes		1.00			1.00	0.95		1.00	0.95			
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (prot)		1820			1863	1510		1777	1510			
Flt Permitted		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (perm)		1820			1863	1510		1777	1510			
Volume (vph)	290	329	0	0	340	125	246	7	320	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	358	0	0	370	136	267	8	348	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	103	0	0	277	0	0	0
Lane Group Flow (vph)	0	673	0	0	370	33	0	275	71	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split					Perm	Split		Perm			
Protected Phases	4	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)		35.4			20.5	20.5		17.2	17.2			
Effective Green, g (s)		36.0			21.1	21.1		17.8	17.8			
Actuated g/C Ratio		0.41			0.24	0.24		0.20	0.20			
Clearance Time (s)		4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		754			452	367		364	309			
v/s Ratio Prot		c0.37			c0.20			c0.15				
v/s Ratio Perm						0.02			0.05			
v/c Ratio		0.89			0.82	0.09		0.76	0.23			
Uniform Delay, d1		23.7			31.1	25.5		32.5	28.8			
Progression Factor		1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2		12.9			11.0	0.1		8.6	0.4			
Delay (s)		36.6			42.1	25.6		41.1	29.2			
Level of Service		D			D	C		D	C			
Approach Delay (s)		36.6			37.7			34.5			0.0	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM Average Control Delay	36.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	86.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	610	365	424	775	74	251
v/c Ratio	0.36	0.40	0.84	0.26	0.45	0.53
Control Delay	11.1	3.6	45.5	3.7	50.7	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	3.6	45.5	3.7	50.7	9.7
Queue Length 50th (ft)	75	0	257	95	45	0
Queue Length 95th (ft)	145	62	347	97	88	38
Internal Link Dist (ft)	1052			1290	497	
Turn Bay Length (ft)						
Base Capacity (vph)	1689	904	708	2926	356	730
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	0.36	0.40	0.60	0.26	0.21	0.34

Intersection Summary

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		0.91	0.91	1.00	0.95						1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	0.95
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		0.93	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)		3149	1441	1770	3539						1779	2646
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3149	1441	1770	3539						1779	2646
Volume (vph)	0	295	602	390	713	0	0	0	0	64	4	231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	321	654	424	775	0	0	0	0	70	4	251
RTOR Reduction (vph)	0	113	182	0	0	0	0	0	0	0	0	228
Lane Group Flow (vph)	0	497	183	424	775	0	0	0	0	0	74	23
Confl. Peds. (#/hr)	10					10				10		10
Turn Type			Perm	Prot						Split		Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		50.1	50.1	28.6	82.7						9.3	9.3
Effective Green, g (s)		50.1	50.1	28.6	82.7						9.3	9.3
Actuated g/C Ratio		0.50	0.50	0.29	0.83						0.09	0.09
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)		1578	722	506	2927						165	246
v/s Ratio Prot		c0.16		c0.24	0.22						c0.04	
v/s Ratio Perm			0.13									0.01
v/c Ratio		0.32	0.25	0.84	0.26						0.45	0.09
Uniform Delay, d1		14.8	14.3	33.5	1.9						42.9	41.5
Progression Factor		1.00	1.00	0.94	1.68						1.00	1.00
Incremental Delay, d2		0.1	0.2	11.0	0.2						1.9	0.2
Delay (s)		14.9	14.4	42.6	3.4						44.9	41.7
Level of Service		B	B	D	A						D	D
Approach Delay (s)		14.7			17.3			0.0			42.4	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	180	176	629	470	555
v/c Ratio	0.23	0.15	0.29	0.88	0.50
Control Delay	10.4	9.8	10.6	50.3	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	9.8	10.6	50.3	8.5
Queue Length 50th (ft)	19	35	90	283	42
Queue Length 95th (ft)	29	55	158	351	76
Internal Link Dist (ft)		1290	1318		
Turn Bay Length (ft)					
Base Capacity (vph)	779	1140	2149	712	1341
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.23	0.15	0.29	0.66	0.41

Intersection Summary

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	0.97	1.00			0.95					1.00		0.88
Frpb, ped/bikes	1.00	1.00			1.00					1.00		0.97
Flpb, ped/bikes	0.99	1.00			1.00					0.98		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)	3395	1863			3507					1736		2702
Flt Permitted	0.38	1.00			1.00					0.95		1.00
Satd. Flow (perm)	1362	1863			3507					1736		2702
Volume (vph)	166	162	0	0	549	29	0	0	0	432	0	511
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	176	0	0	597	32	0	0	0	470	0	555
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	273
Lane Group Flow (vph)	180	176	0	0	626	0	0	0	0	470	0	282
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm									custom		custom
Protected Phases		2			6							
Permitted Phases	2									7		4
Actuated Green, G (s)	61.2	61.2			61.2					30.8		30.8
Effective Green, g (s)	61.2	61.2			61.2					30.8		30.8
Actuated g/C Ratio	0.61	0.61			0.61					0.31		0.31
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)	834	1140			2146					535		832
v/s Ratio Prot		0.09			c0.18							
v/s Ratio Perm	0.13									c0.27		0.10
v/c Ratio	0.22	0.15			0.29					0.88		0.34
Uniform Delay, d1	8.7	8.3			9.2					32.8		26.7
Progression Factor	0.91	0.95			1.00					1.00		1.00
Incremental Delay, d2	0.6	0.3			0.3					15.1		0.2
Delay (s)	8.4	8.2			9.5					47.9		27.0
Level of Service	A	A			A					D		C
Approach Delay (s)		8.3			9.5			0.0			36.6	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	539	50	24	3	13	555
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	586	54	26	3	14	603

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	586	54	29	14	603
Volume Left (vph)	586	0	0	14	0
Volume Right (vph)	0	0	3	0	603
Hadj (s)	0.53	0.03	-0.03	0.53	-0.67
Departure Headway (s)	7.0	6.5	7.3	7.0	5.8
Degree Utilization, x	1.14	0.10	0.06	0.03	0.98
Capacity (veh/h)	519	549	486	505	614
Control Delay (s)	107.6	9.0	10.7	9.0	53.0
Approach Delay (s)	99.2		10.7	52.0	
Approach LOS	F		B	F	

Intersection Summary			
Delay	74.5		
HCM Level of Service	F		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBT	WBR	NBR	SBL	SBR
Lane Group Flow (vph)	450	802	21	703	270	25	478	542
v/c Ratio	0.78	0.34	0.03	0.31	0.31	0.04	0.38	0.82
Control Delay	26.1	11.1	5.3	11.0	2.8	0.1	16.7	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.1	11.1	5.3	11.0	2.8	0.1	16.7	24.5
Queue Length 50th (ft)	61	58	0	51	0	0	60	112
Queue Length 95th (ft)	176	131	12	116	39	0	144	340
Internal Link Dist (ft)		1616		2336				
Turn Bay Length (ft)								
Base Capacity (vph)	774	3208	1007	3012	1068	930	1847	904
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.25	0.02	0.23	0.25	0.03	0.26	0.60

Intersection Summary

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	0.97	0.91	1.00		0.91	1.00			1.00	0.97		1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98			1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85			0.86	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00			1.00	0.95		1.00
Satd. Flow (prot)	3419	5085	1583		5085	1547			1611	3433		1547
Flt Permitted	0.36	1.00	1.00		0.94	1.00			1.00	0.95		1.00
Satd. Flow (perm)	1291	5085	1583		4773	1547			1611	3433		1547
Volume (vph)	414	738	19	2	645	248	0	0	23	440	0	499
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	450	802	21	2	701	270	0	0	25	478	0	542
RTOR Reduction (vph)	0	0	11	0	0	138	0	0	16	0	0	106
Lane Group Flow (vph)	450	802	10	0	703	132	0	0	9	478	0	436
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm		Perm	Perm		Perm			custom	Prot		custom
Protected Phases		2			6					4		
Permitted Phases	2		2	6		6			8			4
Actuated Green, G (s)	29.3	29.3	29.3		29.3	29.3			22.6	22.6		22.6
Effective Green, g (s)	29.3	29.3	29.3		29.3	29.3			22.6	22.6		22.6
Actuated g/C Ratio	0.49	0.49	0.49		0.49	0.49			0.38	0.38		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)	631	2487	774		2335	757			608	1295		584
v/s Ratio Prot		0.16								0.14		
v/s Ratio Perm	c0.35		0.01		0.15	0.09			0.01			c0.28
v/c Ratio	0.71	0.32	0.01		0.30	0.17			0.02	0.37		0.75
Uniform Delay, d1	12.0	9.3	7.9		9.2	8.5			11.7	13.5		16.2
Progression Factor	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	3.8	0.1	0.0		0.1	0.1			0.0	0.2		5.2
Delay (s)	15.8	9.4	7.9		9.2	8.7			11.7	13.7		21.4
Level of Service	B	A	A		A	A			B	B		C
Approach Delay (s)		11.6			9.1			11.7			17.8	
Approach LOS		B			A			B			B	

Intersection Summary

HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX G

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
- EXISTING + CUMULATIVE PROJECTS + ENTIRE PROJECT (PHASES I, II & III)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	221	1087	316	179	984	150	295	365	186	388	175
v/c Ratio	0.48	0.59	0.42	0.44	0.63	0.46	0.56	0.42	0.45	0.61	0.42
Control Delay	38.7	23.8	4.7	39.6	25.6	12.4	37.8	26.1	39.4	36.1	9.1
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	38.7	23.8	4.7	39.6	25.6	12.4	37.8	26.1	39.4	36.1	9.1
Queue Length 50th (ft)	50	155	0	40	140	0	66	68	42	88	0
Queue Length 95th (ft)	113	276	58	96	252	59	142	145	98	180	57
Internal Link Dist (ft)		365			755			1070		518	
Turn Bay Length (ft)											
Base Capacity (vph)	789	2289	862	689	2126	477	895	1162	784	1061	581
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	0.28	0.47	0.37	0.26	0.46	0.31	0.33	0.31	0.24	0.37	0.30

Intersection Summary

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
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1541	3433	5085	1583	3433	3357		3433	3539	1541
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1541	3433	5085	1583	3433	3357		3433	3539	1541
Volume (vph)	203	1000	291	165	905	138	271	237	98	171	357	161
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	221	1087	316	179	984	150	295	258	107	186	388	175
RTOR Reduction (vph)	0	0	204	0	0	135	0	37	0	0	0	141
Lane Group Flow (vph)	221	1087	112	179	984	15	295	328	0	186	388	34
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Over	Prot			Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	10.5	28.2	28.2	7.7	25.4	7.9	12.1	19.5		7.9	15.3	15.3
Effective Green, g (s)	10.5	28.2	28.2	7.7	25.4	7.9	12.1	19.5		7.9	15.3	15.3
Actuated g/C Ratio	0.13	0.36	0.36	0.10	0.32	0.10	0.15	0.25		0.10	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	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)	455	1808	548	333	1629	158	524	825		342	683	297
v/s Ratio Prot	c0.06	c0.21		0.05	0.19	0.01	c0.09	0.10		0.05	c0.11	
v/s Ratio Perm			0.07									0.02
v/c Ratio	0.49	0.60	0.21	0.54	0.60	0.09	0.56	0.40		0.54	0.57	0.11
Uniform Delay, d1	31.9	20.9	17.8	34.1	22.7	32.4	31.1	25.0		34.0	29.0	26.4
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	0.8	0.6	0.2	1.7	0.6	0.3	1.4	0.3		1.8	1.1	0.2
Delay (s)	32.7	21.5	17.9	35.8	23.4	32.7	32.5	25.3		35.8	30.1	26.6
Level of Service	C	C	B	D	C	C	C	C		D	C	C
Approach Delay (s)		22.3			26.1			28.5			30.7	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	53	238	86	133	409	128	109	591	146	909	83
v/c Ratio	0.27	0.59	0.22	0.50	0.40	0.24	0.44	0.36	0.53	0.74	0.14
Control Delay	47.8	41.4	9.9	46.4	28.5	7.4	46.5	23.1	46.4	29.9	8.6
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	47.8	41.4	9.9	46.4	28.5	7.4	46.5	23.1	46.4	29.9	8.6
Queue Length 50th (ft)	25	110	0	62	92	0	51	79	68	210	4
Queue Length 95th (ft)	84	263	43	167	192	47	144	166	180	422	42
Internal Link Dist (ft)		296			520			1270		1070	
Turn Bay Length (ft)											
Base Capacity (vph)	325	720	642	536	1692	795	459	2303	525	1742	787
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	0.16	0.33	0.13	0.25	0.24	0.16	0.24	0.26	0.28	0.52	0.11

Intersection Summary

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
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1541	1770	3539	1541	1770	4941		1770	3539	1541
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1541	1770	3539	1541	1770	4941		1770	3539	1541
Volume (vph)	49	219	79	122	376	118	100	464	80	134	836	76
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	238	86	133	409	128	109	504	87	146	909	83
RTOR Reduction (vph)	0	0	66	0	0	91	0	16	0	0	0	47
Lane Group Flow (vph)	53	238	20	133	409	37	109	575	0	146	909	36
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	4.6	17.9	17.9	9.2	22.5	22.5	8.3	25.9		9.7	27.3	27.3
Effective Green, g (s)	4.6	17.9	17.9	9.2	22.5	22.5	8.3	25.9		9.7	27.3	27.3
Actuated g/C Ratio	0.06	0.23	0.23	0.12	0.29	0.29	0.11	0.33		0.12	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	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)	103	424	350	207	1012	441	187	1626		218	1228	535
v/s Ratio Prot	0.03	c0.13		c0.08	0.12		0.06	0.12		c0.08	c0.26	
v/s Ratio Perm			0.01			0.02						0.02
v/c Ratio	0.51	0.56	0.06	0.64	0.40	0.08	0.58	0.35		0.67	0.74	0.07
Uniform Delay, d1	36.0	26.9	23.8	33.2	22.7	20.6	33.6	20.0		33.0	22.6	17.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.3	1.7	0.1	6.7	0.3	0.1	4.6	0.1		7.6	2.4	0.1
Delay (s)	40.3	28.6	23.9	39.8	23.0	20.6	38.1	20.2		40.6	25.0	17.2
Level of Service	D	C	C	D	C	C	D	C		D	C	B
Approach Delay (s)		29.2			25.9			23.0			26.4	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	78.7	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

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	177	89	341	150	170
v/c Ratio	0.39	0.19	0.40	0.35	0.22
Control Delay	14.3	5.2	6.7	14.6	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	5.2	6.7	14.6	5.4
Queue Length 50th (ft)	28	0	8	24	14
Queue Length 95th (ft)	82	24	38	73	43
Internal Link Dist (ft)	2680		3820		1318
Turn Bay Length (ft)					
Base Capacity (vph)	983	892	1692	963	1425
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.18	0.10	0.20	0.16	0.12

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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	1.00	0.95		1.00	1.00
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.89		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1557	3118		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1557	3118		1770	1863
Volume (vph)	163	82	87	226	138	156
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	89	95	246	150	170
RTOR Reduction (vph)	0	72	211	0	0	0
Lane Group Flow (vph)	177	17	130	0	150	170
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	4.9	4.9	3.6		4.6	12.2
Effective Green, g (s)	4.9	4.9	3.6		4.6	12.2
Actuated g/C Ratio	0.20	0.20	0.14		0.18	0.49
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	346	304	447		324	906
v/s Ratio Prot	c0.10		0.04		c0.08	c0.09
v/s Ratio Perm		0.01				
v/c Ratio	0.51	0.06	0.29		0.46	0.19
Uniform Delay, d1	9.0	8.2	9.6		9.1	3.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.1	0.4		1.0	0.1
Delay (s)	10.3	8.3	10.0		10.2	3.7
Level of Service	B	A	A		B	A
Approach Delay (s)	9.6		10.0			6.8
Approach LOS	A		A			A

Intersection Summary

HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	25.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.2%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	37	290	141	83	225	365	15	21	13	42	2	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	315	153	90	245	397	16	23	14	46	2	4
Pedestrians		10			10			10				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		1			1			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					1140							
pX, platoon unblocked												
vC, conflicting volume	641			478			800	1304	254	897	1182	331
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	641			478			800	1304	254	897	1182	331
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 %	96			92			93	83	98	75	99	99
cM capacity (veh/h)	939			1071			240	138	733	180	164	660

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	198	311	90	163	478	16	37	46	7
Volume Left	40	0	90	0	0	16	0	46	0
Volume Right	0	153	0	0	397	0	14	0	4
cSH	939	1700	1071	1700	1700	240	201	180	328
Volume to Capacity	0.04	0.18	0.08	0.10	0.28	0.07	0.18	0.25	0.02
Queue Length 95th (ft)	3	0	7	0	0	5	16	24	2
Control Delay (s)	2.2	0.0	8.7	0.0	0.0	21.1	27.0	31.7	16.2
Lane LOS	A		A			C	D	D	C
Approach Delay (s)	0.8		1.1			25.2		29.7	
Approach LOS						D		D	

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	124	130	118	13	133	101	175	318	97	866
v/c Ratio	0.39	0.40	0.31	0.04	0.39	0.28	0.31	0.20	0.32	0.55
Control Delay	33.2	33.2	9.2	29.9	33.4	9.7	31.9	19.0	33.9	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	33.2	9.2	29.9	33.4	9.7	31.9	19.0	33.9	16.1
Queue Length 50th (ft)	47	49	0	4	48	0	32	49	35	111
Queue Length 95th (ft)	127	132	46	23	129	43	82	110	102	241
Internal Link Dist (ft)		1060			1230			3344		1270
Turn Bay Length (ft)										
Base Capacity (vph)	522	538	558	548	577	545	858	1797	465	1795
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.24	0.21	0.02	0.23	0.19	0.20	0.18	0.21	0.48

Intersection Summary

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	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.93	
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1735	1547	1770	1863	1547	3433	3524		1770	3247	
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1735	1547	1770	1863	1547	3433	3524		1770	3247	
Volume (vph)	162	72	109	12	122	93	161	285	7	89	413	384
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	176	78	118	13	133	101	175	310	8	97	449	417
RTOR Reduction (vph)	0	0	103	0	0	88	0	2	0	0	157	0
Lane Group Flow (vph)	124	130	15	13	133	13	175	316	0	97	709	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	7.9	7.9	7.9	7.6	7.6	7.6	6.5	21.9		6.8	22.2	
Effective Green, g (s)	7.9	7.9	7.9	7.6	7.6	7.6	6.5	21.9		6.8	22.2	
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13	0.13	0.11	0.36		0.11	0.37	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	221	228	203	223	235	195	371	1282		200	1197	
v/s Ratio Prot	0.07	c0.07		0.01	c0.07		0.05	0.09		c0.05	c0.22	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.56	0.57	0.08	0.06	0.57	0.07	0.47	0.25		0.48	0.59	
Uniform Delay, d1	24.5	24.6	22.9	23.2	24.7	23.2	25.2	13.4		25.1	15.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.2	3.4	0.2	0.1	3.1	0.1	0.9	0.1		1.8	0.8	
Delay (s)	27.8	28.0	23.1	23.3	27.9	23.3	26.2	13.5		26.9	16.1	
Level of Service	C	C	C	C	C	C	C	B		C	B	
Approach Delay (s)		26.4			25.8			18.0			17.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	98	112	60	176	66	735	133	429
v/c Ratio	0.13	0.23	0.24	0.23	0.48	0.12	0.66	0.33	0.54
Control Delay	33.0	17.6	29.7	31.2	10.8	18.1	21.9	27.0	26.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	17.6	29.7	31.2	10.8	18.1	21.9	27.0	26.0
Queue Length 50th (ft)	9	6	19	20	0	17	120	42	74
Queue Length 95th (ft)	38	34	52	65	55	52	228	114	156
Internal Link Dist (ft)		416		1234			3646		3344
Turn Bay Length (ft)									
Base Capacity (vph)	455	856	932	506	545	800	1573	571	1133
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.11	0.12	0.12	0.32	0.08	0.47	0.23	0.38

Intersection Summary

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		0.97	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3175		3433	1863	1547	1770	3466		1770	3505	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3175		3433	1863	1547	1770	3466		1770	3505	
Volume (vph)	24	36	54	103	55	162	61	595	81	122	374	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	39	59	112	60	176	66	647	88	133	407	22
RTOR Reduction (vph)	0	54	0	0	0	158	0	10	0	0	4	0
Lane Group Flow (vph)	26	44	0	112	60	18	66	725	0	133	425	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split			Split		Perm	Split			Split		
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	4.8	4.8		6.1	6.1	6.1	18.9	18.9		13.4	13.4	
Effective Green, g (s)	4.8	4.8		6.1	6.1	6.1	18.9	18.9		13.4	13.4	
Actuated g/C Ratio	0.08	0.08		0.10	0.10	0.10	0.32	0.32		0.23	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	144	257		354	192	159	565	1107		401	793	
v/s Ratio Prot	c0.01	0.01		c0.03	0.03		0.04	c0.21		0.08	c0.12	
v/s Ratio Perm						0.01						
v/c Ratio	0.18	0.17		0.32	0.31	0.11	0.12	0.65		0.33	0.54	
Uniform Delay, d1	25.4	25.3		24.6	24.6	24.1	14.2	17.3		19.2	20.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.3		0.5	0.9	0.3	0.1	1.4		0.5	0.7	
Delay (s)	26.0	25.7		25.1	25.5	24.4	14.3	18.7		19.6	20.9	
Level of Service	C	C		C	C	C	B	B		B	C	
Approach Delay (s)		25.7			24.8			18.4			20.6	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	59.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	5	225	72	685	202	42	132	90	9
v/c Ratio	0.02	0.29	0.24	0.57	0.47	0.11	0.36	0.23	0.03
Control Delay	32.6	20.8	27.7	12.6	24.9	9.1	26.3	24.5	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	20.8	27.7	12.6	24.9	9.1	26.3	24.5	14.6
Queue Length 50th (ft)	1	31	20	51	55	0	36	24	0
Queue Length 95th (ft)	13	78	73	161	154	25	113	81	13
Internal Link Dist (ft)		1234		2203	311			3353	
Turn Bay Length (ft)									
Base Capacity (vph)	306	1562	465	1800	750	648	651	685	570
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.14	0.15	0.38	0.27	0.06	0.20	0.13	0.02

Intersection Summary

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
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.93			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1764	3482		1770	3271			1848	1551	1770	1863	1551
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1764	3482		1770	3271			1848	1551	1770	1863	1551
Volume (vph)	5	189	18	66	348	282	29	156	39	121	83	8
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	205	20	72	378	307	32	170	42	132	90	9
RTOR Reduction (vph)	0	8	0	0	158	0	0	0	34	0	0	8
Lane Group Flow (vph)	5	217	0	72	527	0	0	202	8	132	90	1
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			4
Actuated Green, G (s)	0.8	9.3		4.2	12.7			8.5	8.5	7.2	7.2	7.2
Effective Green, g (s)	0.8	9.3		4.2	12.7			8.5	8.5	7.2	7.2	7.2
Actuated g/C Ratio	0.02	0.21		0.09	0.28			0.19	0.19	0.16	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	31	716		164	919			348	292	282	297	247
v/s Ratio Prot	0.00	0.06		c0.04	c0.16			c0.11		c0.07	0.05	
v/s Ratio Perm									0.01			0.00
v/c Ratio	0.16	0.30		0.44	0.57			0.58	0.03	0.47	0.30	0.01
Uniform Delay, d1	21.9	15.2		19.4	13.9			16.7	15.0	17.3	16.8	16.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.2		1.9	0.9			2.5	0.0	1.2	0.6	0.0
Delay (s)	24.3	15.4		21.3	14.8			19.2	15.0	18.5	17.4	16.0
Level of Service	C	B		C	B			B	B	B	B	B
Approach Delay (s)		15.6			15.4			18.5			18.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	249	264	783	79	443
v/c Ratio	0.83	0.57	0.97	0.16	1.03
Control Delay	63.1	10.0	54.8	28.2	89.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	10.0	54.8	28.2	89.0
Queue Length 50th (ft)	153	0	474	38	~304
Queue Length 95th (ft)	#276	70	#734	75	#494
Internal Link Dist (ft)	2203		1011	533	
Turn Bay Length (ft)					
Base Capacity (vph)	312	472	805	494	429
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.80	0.56	0.97	0.16	1.03

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.

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
Frpb, ped/bikes		1.00	0.95		1.00						1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.99						0.95	1.00
Satd. Flow (prot)		1863	1504		1838						1770	1536
Flt Permitted		1.00	1.00		0.99						0.95	1.00
Satd. Flow (perm)		1863	1504		1838						1770	1536
Volume (vph)	0	229	243	192	528	0	0	0	0	73	0	408
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	249	264	209	574	0	0	0	0	79	0	443
RTOR Reduction (vph)	0	0	221	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	249	43	0	783	0	0	0	0	0	79	443
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type			Perm	Split						Split		Perm
Protected Phases		4		8	8					6	6	
Permitted Phases			4									6
Actuated Green, G (s)		15.3	15.3		42.3						26.8	26.8
Effective Green, g (s)		15.9	15.9		42.9						27.4	27.4
Actuated g/C Ratio		0.16	0.16		0.44						0.28	0.28
Clearance Time (s)		4.6	4.6		4.6						4.6	4.6
Vehicle Extension (s)		3.0	3.0		3.0						3.0	3.0
Lane Grp Cap (vph)		302	244		803						494	429
v/s Ratio Prot		c0.13			c0.43						0.04	
v/s Ratio Perm			0.03									c0.29
v/c Ratio		0.82	0.18		0.98						0.16	1.03
Uniform Delay, d1		39.8	35.5		27.1						26.7	35.4
Progression Factor		1.00	1.00		1.00						1.00	1.00
Incremental Delay, d2		16.5	0.3		25.5						0.2	52.1
Delay (s)		56.3	35.8		52.6						26.9	87.5
Level of Service		E	D		D						C	F
Approach Delay (s)		45.8			52.6			0.0			78.3	
Approach LOS		D			D			A			E	

Intersection Summary			
HCM Average Control Delay	58.1	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	98.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	327	445	123	344	266
v/c Ratio	0.74	0.79	0.23	0.71	0.44
Control Delay	40.9	37.5	6.2	35.7	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	37.5	6.2	35.7	6.0
Queue Length 50th (ft)	142	192	0	148	0
Queue Length 95th (ft)	#323	384	40	286	56
Internal Link Dist (ft)	1011	665		558	
Turn Bay Length (ft)					
Base Capacity (vph)	590	752	679	711	761
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.55	0.59	0.18	0.48	0.35

Intersection Summary

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

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			
Frpb, ped/bikes		1.00			1.00	0.96		1.00	0.96			
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (prot)		1828			1863	1516		1775	1516			
Flt Permitted		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (perm)		1828			1863	1516		1775	1516			
Volume (vph)	115	186	0	0	409	113	314	3	245	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	202	0	0	445	123	341	3	266	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	85	0	0	192	0	0	0
Lane Group Flow (vph)	0	327	0	0	445	38	0	344	74	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split					Perm	Split		Perm			
Protected Phases	4	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)		17.6			22.1	22.1		19.8	19.8			
Effective Green, g (s)		18.2			22.7	22.7		20.4	20.4			
Actuated g/C Ratio		0.25			0.31	0.31		0.28	0.28			
Clearance Time (s)		4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		454			577	469		494	422			
v/s Ratio Prot		c0.18			c0.24			c0.19				
v/s Ratio Perm						0.03			0.05			
v/c Ratio		0.72			0.77	0.08		0.70	0.18			
Uniform Delay, d1		25.2			22.9	17.9		23.7	20.1			
Progression Factor		1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2		5.6			6.3	0.1		4.2	0.2			
Delay (s)		30.8			29.3	18.0		27.9	20.3			
Level of Service		C			C	B		C	C			
Approach Delay (s)		30.8			26.8			24.6			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	217	107	372	1051	39	318
v/c Ratio	0.14	0.14	0.88	0.39	0.14	0.51
Control Delay	11.4	4.3	54.0	4.3	37.6	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	4.3	54.0	4.3	37.6	13.5
Queue Length 50th (ft)	27	0	241	104	22	24
Queue Length 95th (ft)	58	36	m281	m106	52	68
Internal Link Dist (ft)	1052			1290	497	
Turn Bay Length (ft)						
Base Capacity (vph)	1585	748	708	2690	427	818
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	0.14	0.14	0.53	0.39	0.09	0.39

Intersection Summary

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

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		0.91	0.91	1.00	0.95						1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	0.95
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		0.95	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)		3226	1441	1770	3539						1778	2646
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3226	1441	1770	3539						1778	2646
Volume (vph)	0	135	163	342	967	0	0	0	0	34	2	293
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	147	177	372	1051	0	0	0	0	37	2	318
RTOR Reduction (vph)	0	35	56	0	0	0	0	0	0	0	0	202
Lane Group Flow (vph)	0	182	51	372	1051	0	0	0	0	0	39	116
Confl. Peds. (#/hr)	10					10				10		10
Turn Type			Perm	Prot						Split		Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		48.0	48.0	24.0	76.0						16.0	16.0
Effective Green, g (s)		48.0	48.0	24.0	76.0						16.0	16.0
Actuated g/C Ratio		0.48	0.48	0.24	0.76						0.16	0.16
Clearance Time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		1548	692	425	2690						284	423
v/s Ratio Prot		0.06		c0.21	c0.30						0.02	
v/s Ratio Perm			0.04									c0.04
v/c Ratio		0.12	0.07	0.88	0.39						0.14	0.27
Uniform Delay, d1		14.3	14.0	36.6	4.1						36.1	36.9
Progression Factor		1.00	1.00	1.08	0.97						1.00	1.00
Incremental Delay, d2		0.0	0.0	12.7	0.3						0.2	0.4
Delay (s)		14.4	14.1	52.1	4.3						36.3	37.2
Level of Service		B	B	D	A						D	D
Approach Delay (s)		14.3			16.8			0.0			37.1	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	176	549	321	935
v/c Ratio	0.13	0.45	0.74	0.88
Control Delay	8.2	10.5	44.4	25.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.2	10.5	44.4	25.9
Queue Length 50th (ft)	17	141	191	158
Queue Length 95th (ft)	26	297	243	213
Internal Link Dist (ft)	1290	1318		
Turn Bay Length (ft)				
Base Capacity (vph)	1378	1226	729	1433
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.13	0.45	0.44	0.65

Intersection Summary

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			1.00					1.00		0.88
Frpb, ped/bikes		1.00			0.99					1.00		0.97
Flpb, ped/bikes		0.99			1.00					0.98		1.00
Frt		1.00			0.98					1.00		0.85
Flt Protected		0.97			1.00					0.95		1.00
Satd. Flow (prot)		3409			1821					1736		2702
Flt Permitted		0.61			1.00					0.95		1.00
Satd. Flow (perm)		2134			1821					1736		2702
Volume (vph)	103	59	0	0	449	56	0	0	0	295	0	860
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	64	0	0	488	61	0	0	0	321	0	935
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	387
Lane Group Flow (vph)	0	176	0	0	546	0	0	0	0	321	0	548
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm			Prot						custom		custom
Protected Phases		2		1	6							
Permitted Phases	2									7		4
Actuated Green, G (s)		67.2			67.2					24.8		24.8
Effective Green, g (s)		67.2			67.2					24.8		24.8
Actuated g/C Ratio		0.67			0.67					0.25		0.25
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)		1434			1224					431		670
v/s Ratio Prot					c0.30							
v/s Ratio Perm		0.08								0.18		c0.20
v/c Ratio		0.12			0.45					0.74		0.82
Uniform Delay, d1		5.9			7.7					34.7		35.5
Progression Factor		1.07			1.00					1.00		1.00
Incremental Delay, d2		0.2			1.2					6.9		7.7
Delay (s)		6.5			8.9					41.5		43.2
Level of Service		A			A					D		D
Approach Delay (s)		6.5			8.9			0.0			42.8	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	337	28	32	14	10	468
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	366	30	35	15	11	509

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	366	30	50	11	509
Volume Left (vph)	366	0	0	11	0
Volume Right (vph)	0	0	15	0	509
Hadj (s)	0.53	0.03	-0.15	0.53	-0.67
Departure Headway (s)	6.6	6.1	6.4	6.5	5.3
Degree Utilization, x	0.67	0.05	0.09	0.02	0.74
Capacity (veh/h)	524	560	508	533	662
Control Delay (s)	20.6	8.2	10.0	8.4	20.7
Approach Delay (s)	19.6		10.0	20.4	
Approach LOS	C		A	C	

Intersection Summary			
Delay	19.6		
HCM Level of Service	C		
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBT	WBR	NBR	SBL	SBR
Lane Group Flow (vph)	576	439	15	821	308	28	278	461
v/c Ratio	0.89	0.15	0.02	0.30	0.30	0.04	0.29	0.82
Control Delay	31.0	6.7	3.4	7.4	1.8	0.1	23.8	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	6.7	3.4	7.4	1.8	0.1	23.8	29.9
Queue Length 50th (ft)	101	28	0	60	0	0	51	116
Queue Length 95th (ft)	#260	51	7	98	29	0	105	#329
Internal Link Dist (ft)		1616		2336				
Turn Bay Length (ft)								
Base Capacity (vph)	788	3574	1117	3359	1170	907	1364	724
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.12	0.01	0.24	0.26	0.03	0.20	0.64

Intersection Summary

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

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	0.97	0.91	1.00		0.91	1.00			1.00	0.97		1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98			1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85			0.86	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00			1.00	0.95		1.00
Satd. Flow (prot)	3420	5085	1583		5085	1545			1611	3433		1545
Flt Permitted	0.32	1.00	1.00		0.94	1.00			1.00	0.95		1.00
Satd. Flow (perm)	1147	5085	1583		4779	1545			1611	3433		1545
Volume (vph)	530	404	14	1	754	283	0	0	26	256	0	424
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	576	439	15	1	820	308	0	0	28	278	0	461
RTOR Reduction (vph)	0	0	6	0	0	124	0	0	20	0	0	136
Lane Group Flow (vph)	576	439	9	0	821	184	0	0	8	278	0	325
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm		Perm	Perm		Perm			custom	Prot		custom
Protected Phases		2			6					4		
Permitted Phases	2		2	6		6			8			4
Actuated Green, G (s)	40.0	40.0	40.0		40.0	40.0			19.0	19.0		19.0
Effective Green, g (s)	40.0	40.0	40.0		40.0	40.0			19.0	19.0		19.0
Actuated g/C Ratio	0.60	0.60	0.60		0.60	0.60			0.28	0.28		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)	685	3036	945		2853	922			457	974		438
v/s Ratio Prot		0.09								0.08		
v/s Ratio Perm	c0.50		0.01		0.17	0.12			0.00			c0.21
v/c Ratio	0.84	0.14	0.01		0.29	0.20			0.02	0.29		0.74
Uniform Delay, d1	10.9	6.0	5.5		6.6	6.2			17.3	18.7		21.8
Progression Factor	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	9.2	0.0	0.0		0.1	0.1			0.0	0.2		6.7
Delay (s)	20.1	6.0	5.5		6.6	6.3			17.3	18.9		28.4
Level of Service	C	A	A		A	A			B	B		C
Approach Delay (s)		13.9			6.5			17.3			24.8	
Approach LOS		B			A			B			C	

Intersection Summary

HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	388	1535	301	249	1328	220	477	674	368	585	271
v/c Ratio	0.79	0.89	0.42	0.72	0.88	0.55	0.80	0.78	0.80	0.81	0.56
Control Delay	49.8	35.9	4.7	51.7	38.1	10.9	46.5	36.2	52.1	43.5	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	35.9	4.7	51.7	38.1	10.9	46.5	36.2	52.1	43.5	12.8
Queue Length 50th (ft)	111	302	0	72	265	0	135	174	106	166	26
Queue Length 95th (ft)	#176	#394	55	#123	#350	63	#202	238	#173	#230	99
Internal Link Dist (ft)		365			755			1070		518	
Turn Bay Length (ft)											
Base Capacity (vph)	509	1739	724	354	1514	407	623	909	471	760	500
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	0.76	0.88	0.42	0.70	0.88	0.54	0.77	0.74	0.78	0.77	0.54

Intersection Summary

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

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
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1539	3433	5085	1583	3433	3392		3433	3539	1539
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1539	3433	5085	1583	3433	3392		3433	3539	1539
Volume (vph)	357	1412	277	229	1222	202	439	475	145	339	538	249
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	388	1535	301	249	1328	220	477	516	158	368	585	271
RTOR Reduction (vph)	0	0	199	0	0	191	0	33	0	0	0	172
Lane Group Flow (vph)	388	1535	102	249	1328	29	477	641	0	368	585	99
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Over	Prot			Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	12.5	29.6	29.6	8.8	25.9	11.7	15.2	21.3		11.7	17.8	17.8
Effective Green, g (s)	12.5	29.6	29.6	8.8	25.9	11.7	15.2	21.3		11.7	17.8	17.8
Actuated g/C Ratio	0.14	0.34	0.34	0.10	0.30	0.13	0.17	0.24		0.13	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	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)	491	1722	521	346	1507	212	597	827		460	721	313
v/s Ratio Prot	c0.11	c0.30		0.07	0.26	0.02	c0.14	c0.19		0.11	0.17	
v/s Ratio Perm			0.07									0.06
v/c Ratio	0.79	0.89	0.20	0.72	0.88	0.14	0.80	0.78		0.80	0.81	0.32
Uniform Delay, d1	36.2	27.4	20.5	38.1	29.3	33.4	34.6	30.8		36.7	33.2	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.4	6.3	0.2	7.0	6.4	0.3	7.4	4.6		9.6	6.9	0.6
Delay (s)	44.6	33.6	20.7	45.1	35.7	33.7	42.0	35.4		46.3	40.1	30.2
Level of Service	D	C	C	D	D	C	D	D		D	D	C
Approach Delay (s)		33.8			36.7			38.1			39.8	
Approach LOS		C			D			D			D	

Intersection Summary

HCM Average Control Delay	36.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	57	383	134	83	273	239	165	1237	270	826	97
v/c Ratio	0.39	0.82	0.28	0.50	0.29	0.42	0.66	0.81	0.76	0.57	0.14
Control Delay	64.2	55.3	8.0	65.5	34.2	7.0	61.5	40.2	58.6	31.3	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	55.3	8.0	65.5	34.2	7.0	61.5	40.2	58.6	31.3	6.8
Queue Length 50th (ft)	40	265	0	59	83	0	116	295	189	255	0
Queue Length 95th (ft)	99	435	51	132	138	63	217	450	327	413	41
Internal Link Dist (ft)		296			520			1270		1070	
Turn Bay Length (ft)											
Base Capacity (vph)	186	680	642	221	1343	727	401	1916	539	1640	758
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	0.31	0.56	0.21	0.38	0.20	0.33	0.41	0.65	0.50	0.50	0.13

Intersection Summary

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
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1534	1770	3539	1534	1770	4981		1770	3539	1534
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1534	1770	3539	1534	1770	4981		1770	3539	1534
Volume (vph)	52	352	123	76	251	220	152	1022	116	248	760	89
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	57	383	134	83	273	239	165	1111	126	270	826	97
RTOR Reduction (vph)	0	0	101	0	0	177	0	9	0	0	0	57
Lane Group Flow (vph)	57	383	33	83	273	62	165	1228	0	270	826	40
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	6.3	25.7	25.7	7.5	26.9	26.9	12.2	33.5		20.6	41.9	41.9
Effective Green, g (s)	6.3	25.7	25.7	7.5	26.9	26.9	12.2	33.5		20.6	41.9	41.9
Actuated g/C Ratio	0.06	0.25	0.25	0.07	0.26	0.26	0.12	0.32		0.20	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	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	463	382	129	922	399	209	1615		353	1435	622
v/s Ratio Prot	0.03	c0.21		c0.05	0.08		0.09	c0.25		c0.15	0.23	
v/s Ratio Perm			0.02			0.04						0.03
v/c Ratio	0.53	0.83	0.09	0.64	0.30	0.16	0.79	0.76		0.76	0.58	0.06
Uniform Delay, d1	47.1	36.7	29.8	46.6	30.6	29.4	44.3	31.3		39.1	23.8	18.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.6	11.5	0.1	10.5	0.2	0.2	17.7	2.2		9.5	0.6	0.0
Delay (s)	51.7	48.2	29.9	57.1	30.8	29.6	62.0	33.5		48.6	24.4	18.8
Level of Service	D	D	C	E	C	C	E	C		D	C	B
Approach Delay (s)		44.3			34.0			36.8			29.4	
Approach LOS		D			C			D			C	

Intersection Summary

HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	103.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	291	116	389	83	173
v/c Ratio	0.52	0.20	0.42	0.23	0.23
Control Delay	15.1	4.1	10.2	18.2	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	4.1	10.2	18.2	7.5
Queue Length 50th (ft)	51	0	21	15	18
Queue Length 95th (ft)	129	26	65	56	58
Internal Link Dist (ft)	2680		3820		1318
Turn Bay Length (ft)					
Base Capacity (vph)	1092	992	1781	763	1360
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	0.12	0.22	0.11	0.13

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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	1.00	0.95		1.00	1.00
Frpb, ped/bikes	1.00	0.98	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.94		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1555	3292		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1555	3292		1770	1863
Volume (vph)	268	107	208	150	76	159
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	291	116	226	163	83	173
RTOR Reduction (vph)	0	83	129	0	0	0
Lane Group Flow (vph)	291	33	260	0	83	173
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	9.1	9.1	6.6		3.9	14.5
Effective Green, g (s)	9.1	9.1	6.6		3.9	14.5
Actuated g/C Ratio	0.29	0.29	0.21		0.12	0.46
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	510	448	688		218	855
v/s Ratio Prot	c0.16		c0.08		c0.05	0.09
v/s Ratio Perm		0.02				
v/c Ratio	0.57	0.07	0.38		0.38	0.20
Uniform Delay, d1	9.6	8.2	10.7		12.7	5.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	0.1	0.3		1.1	0.1
Delay (s)	11.1	8.3	11.1		13.9	5.2
Level of Service	B	A	B		B	A
Approach Delay (s)	10.3		11.1			8.0
Approach LOS	B		B			A

Intersection Summary

HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	31.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.7%	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		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	280	21	11	315	89	92	5	119	355	21	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	304	23	12	342	97	100	5	129	386	23	39
Pedestrians		10			10			10				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		1			1			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					1140							
pX, platoon unblocked												
vC, conflicting volume	439			337			601	808	184	728	771	230
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	439			337			601	808	184	728	771	230
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 %	99			99			70	98	84	0	93	95
cM capacity (veh/h)	1117			1209			332	305	814	251	320	766

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	162	175	12	228	211	100	135	386	62
Volume Left	10	0	12	0	0	100	0	386	0
Volume Right	0	23	0	0	97	0	129	0	39
cSH	1117	1700	1209	1700	1700	332	762	251	506
Volume to Capacity	0.01	0.10	0.01	0.13	0.12	0.30	0.18	1.54	0.12
Queue Length 95th (ft)	1	0	1	0	0	31	16	579	10
Control Delay (s)	0.6	0.0	8.0	0.0	0.0	20.4	10.7	298.0	13.1
Lane LOS	A		A			C	B	F	B
Approach Delay (s)	0.3		0.2			14.9		258.6	
Approach LOS						B		F	

Intersection Summary			
Average Delay	81.3		
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	293	309	185	11	84	229	137	531	112	816
v/c Ratio	0.66	0.68	0.34	0.05	0.34	0.58	0.34	0.51	0.45	0.73
Control Delay	35.2	36.0	6.6	35.0	38.5	12.7	38.7	25.4	40.8	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	36.0	6.6	35.0	38.5	12.7	38.7	25.4	40.8	26.2
Queue Length 50th (ft)	130	138	0	5	37	3	31	111	50	170
Queue Length 95th (ft)	267	281	51	22	91	70	71	194	118	281
Internal Link Dist (ft)		1060			1230			3344		1270
Turn Bay Length (ft)										
Base Capacity (vph)	605	616	671	434	457	544	484	1394	342	1485
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.50	0.28	0.03	0.18	0.42	0.28	0.38	0.33	0.55

Intersection Summary

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	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.96	
Flt Protected	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1712	1544	1770	1863	1544	3433	3537		1770	3369	
Flt Permitted	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1712	1544	1770	1863	1544	3433	3537		1770	3369	
Volume (vph)	462	92	170	10	77	211	126	487	2	103	543	208
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	502	100	185	11	84	229	137	529	2	112	590	226
RTOR Reduction (vph)	0	0	136	0	0	200	0	0	0	0	40	0
Lane Group Flow (vph)	293	309	49	11	84	29	137	531	0	112	776	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	18.3	18.3	18.3	6.9	6.9	6.9	5.8	20.6		7.4	22.2	
Effective Green, g (s)	18.3	18.3	18.3	6.9	6.9	6.9	5.8	20.6		7.4	22.2	
Actuated g/C Ratio	0.26	0.26	0.26	0.10	0.10	0.10	0.08	0.30		0.11	0.32	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	445	453	408	176	186	154	288	1053		189	1081	
v/s Ratio Prot	0.17	c0.18		0.01	c0.05		0.04	0.15		c0.06	c0.23	
v/s Ratio Perm			0.03			0.02						
v/c Ratio	0.66	0.68	0.12	0.06	0.45	0.19	0.48	0.50		0.59	0.72	
Uniform Delay, d1	22.7	22.8	19.3	28.2	29.4	28.6	30.2	20.1		29.5	20.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.5	4.2	0.1	0.1	1.7	0.6	1.2	0.4		4.9	2.3	
Delay (s)	26.2	27.0	19.5	28.4	31.1	29.2	31.5	20.5		34.4	23.0	
Level of Service	C	C	B	C	C	C	C	C		C	C	
Approach Delay (s)		24.9			29.7			22.7			24.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	4	19	146	7	130	18	542	197	870
v/c Ratio	0.02	0.03	0.30	0.03	0.40	0.04	0.61	0.30	0.68
Control Delay	35.8	0.1	30.5	31.0	11.2	23.2	24.8	17.7	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.8	0.1	30.5	31.0	11.2	23.2	24.8	17.7	20.4
Queue Length 50th (ft)	1	0	21	2	0	4	76	41	112
Queue Length 95th (ft)	12	0	65	15	49	24	187	128	272
Internal Link Dist (ft)		416		1234			3646		3344
Turn Bay Length (ft)									
Base Capacity (vph)	416	1033	881	478	490	631	1242	854	1703
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.17	0.01	0.27	0.03	0.44	0.23	0.51

Intersection Summary

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		0.97	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3063		3433	1863	1547	1770	3452		1770	3531	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3063		3433	1863	1547	1770	3452		1770	3531	
Volume (vph)	4	4	14	134	6	120	17	428	71	181	790	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	4	15	146	7	130	18	465	77	197	859	11
RTOR Reduction (vph)	0	18	0	0	0	116	0	13	0	0	1	0
Lane Group Flow (vph)	4	1	0	146	7	14	18	529	0	197	869	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split			Split		Perm	Split			Split		
Protected Phases	4	4		8	8		2	2		6	6	
Permitted Phases						8						
Actuated Green, G (s)	1.7	1.7		6.3	6.3	6.3	14.7	14.7		21.1	21.1	
Effective Green, g (s)	1.7	1.7		6.3	6.3	6.3	14.7	14.7		21.1	21.1	
Actuated g/C Ratio	0.03	0.03		0.11	0.11	0.11	0.25	0.25		0.35	0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	50	87		362	196	163	435	849		625	1246	
v/s Ratio Prot	c0.00	0.00		c0.04	0.00		0.01	c0.15		0.11	c0.25	
v/s Ratio Perm						0.01						
v/c Ratio	0.08	0.01		0.40	0.04	0.08	0.04	0.62		0.32	0.70	
Uniform Delay, d1	28.3	28.2		25.0	24.0	24.1	17.2	20.1		14.1	16.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.0		0.7	0.1	0.2	0.0	1.4		0.3	1.7	
Delay (s)	29.0	28.3		25.7	24.1	24.4	17.2	21.5		14.4	18.3	
Level of Service	C	C		C	C	C	B	C		B	B	
Approach Delay (s)		28.4			25.1			21.4			17.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	4	308	27	605	207	80	273	255	18
v/c Ratio	0.02	0.38	0.11	0.59	0.48	0.19	0.56	0.50	0.04
Control Delay	37.5	21.9	34.4	15.2	27.5	8.6	25.5	24.0	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	21.9	34.4	15.2	27.5	8.6	25.5	24.0	11.0
Queue Length 50th (ft)	1	32	6	44	47	0	61	56	0
Queue Length 95th (ft)	13	117	42	166	183	37	220	202	16
Internal Link Dist (ft)		1234		2203	311			3353	
Turn Bay Length (ft)									
Base Capacity (vph)	269	1473	305	1563	715	644	803	845	706
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.21	0.09	0.39	0.29	0.12	0.34	0.30	0.03

Intersection Summary

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
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.93			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1763	3448		1770	3257			1845	1550	1770	1863	1550
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1763	3448		1770	3257			1845	1550	1770	1863	1550
Volume (vph)	4	244	40	25	294	262	36	155	74	251	235	17
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	265	43	27	320	285	39	168	80	273	255	18
RTOR Reduction (vph)	0	14	0	0	170	0	0	0	65	0	0	14
Lane Group Flow (vph)	4	294	0	27	435	0	0	207	15	273	255	4
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases									8			4
Actuated Green, G (s)	0.7	9.7		1.9	10.9			9.1	9.1	11.1	11.1	11.1
Effective Green, g (s)	0.7	9.7		1.9	10.9			9.1	9.1	11.1	11.1	11.1
Actuated g/C Ratio	0.01	0.20		0.04	0.23			0.19	0.19	0.23	0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
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)	26	700		70	743			351	295	411	433	360
v/s Ratio Prot	0.00	0.09		c0.02	c0.13			c0.11		c0.15	0.14	
v/s Ratio Perm									0.01			0.00
v/c Ratio	0.15	0.42		0.39	0.59			0.59	0.05	0.66	0.59	0.01
Uniform Delay, d1	23.3	16.6		22.4	16.4			17.6	15.8	16.7	16.3	14.1
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.4		3.5	1.2			2.5	0.1	4.0	2.0	0.0
Delay (s)	26.0	17.0		25.9	17.6			20.2	15.9	20.7	18.4	14.1
Level of Service	C	B		C	B			C	B	C	B	B
Approach Delay (s)		17.1			18.0			19.0			19.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	47.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	528	586	634	163	178
v/c Ratio	0.89	0.67	0.92	0.56	0.71
Control Delay	49.8	6.6	47.7	44.5	53.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	6.6	47.7	44.5	53.4
Queue Length 50th (ft)	313	0	364	94	105
Queue Length 95th (ft)	#513	86	#587	160	178
Internal Link Dist (ft)	2203		1011	533	
Turn Bay Length (ft)					
Base Capacity (vph)	638	900	751	352	305
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.83	0.65	0.84	0.46	0.58

Intersection Summary

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

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
Frpb, ped/bikes		1.00	0.95		1.00						1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.98						0.95	1.00
Satd. Flow (prot)		1863	1509		1829						1770	1539
Flt Permitted		1.00	1.00		0.98						0.95	1.00
Satd. Flow (perm)		1863	1509		1829						1770	1539
Volume (vph)	0	486	539	215	368	0	0	0	0	150	0	164
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	528	586	234	400	0	0	0	0	163	0	178
RTOR Reduction (vph)	0	0	398	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	528	188	0	634	0	0	0	0	0	163	178
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type			Perm	Split						Split		Perm
Protected Phases		4		8	8					6	6	
Permitted Phases			4									6
Actuated Green, G (s)		27.8	27.8		33.1						14.0	14.0
Effective Green, g (s)		28.4	28.4		33.7						14.6	14.6
Actuated g/C Ratio		0.32	0.32		0.38						0.16	0.16
Clearance Time (s)		4.6	4.6		4.6						4.6	4.6
Vehicle Extension (s)		3.0	3.0		3.0						3.0	3.0
Lane Grp Cap (vph)		596	483		695						291	253
v/s Ratio Prot		c0.28			c0.35						0.09	
v/s Ratio Perm			0.12									c0.12
v/c Ratio		0.89	0.39		0.91						0.56	0.70
Uniform Delay, d1		28.6	23.4		26.1						34.1	35.0
Progression Factor		1.00	1.00		1.00						1.00	1.00
Incremental Delay, d2		14.7	0.5		16.3						2.5	8.6
Delay (s)		43.3	23.9		42.4						36.6	43.6
Level of Service		D	C		D						D	D
Approach Delay (s)		33.1			42.4			0.0			40.2	
Approach LOS		C			D			A			D	

Intersection Summary			
HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	88.7	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

Lane Group	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	674	370	136	275	348
v/c Ratio	0.91	0.83	0.30	0.75	0.59
Control Delay	43.6	52.0	7.8	49.1	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	52.0	7.8	49.1	8.6
Queue Length 50th (ft)	399	233	0	170	0
Queue Length 95th (ft)	#623	#384	47	262	76
Internal Link Dist (ft)	1011	665		558	
Turn Bay Length (ft)					
Base Capacity (vph)	849	525	520	457	645
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.79	0.70	0.26	0.60	0.54

Intersection Summary

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

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			
Frpb, ped/bikes		1.00			1.00	0.95		1.00	0.95			
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00			
Frt		1.00			1.00	0.85		1.00	0.85			
Flt Protected		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (prot)		1820			1863	1509		1777	1509			
Flt Permitted		0.98			1.00	1.00		0.95	1.00			
Satd. Flow (perm)		1820			1863	1509		1777	1509			
Volume (vph)	290	330	0	0	340	125	246	7	320	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	359	0	0	370	136	267	8	348	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	103	0	0	275	0	0	0
Lane Group Flow (vph)	0	674	0	0	370	33	0	275	73	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Split					Perm	Split		Perm			
Protected Phases	4	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)		35.3			20.4	20.4		17.6	17.6			
Effective Green, g (s)		35.9			21.0	21.0		18.2	18.2			
Actuated g/C Ratio		0.41			0.24	0.24		0.21	0.21			
Clearance Time (s)		4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		750			449	364		371	315			
v/s Ratio Prot		c0.37			c0.20			c0.15				
v/s Ratio Perm						0.02			0.05			
v/c Ratio		0.90			0.82	0.09		0.74	0.23			
Uniform Delay, d1		23.9			31.3	25.6		32.2	28.6			
Progression Factor		1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2		13.5			11.7	0.1		7.8	0.4			
Delay (s)		37.4			43.0	25.7		40.0	29.0			
Level of Service		D			D	C		D	C			
Approach Delay (s)		37.4			38.3			33.9			0.0	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM Average Control Delay	36.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	610	365	428	775	74	251
v/c Ratio	0.36	0.40	0.84	0.26	0.45	0.53
Control Delay	11.2	3.7	55.2	1.9	50.7	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	3.7	55.2	1.9	50.7	9.7
Queue Length 50th (ft)	70	0	282	34	45	0
Queue Length 95th (ft)	148	63	366	44	88	38
Internal Link Dist (ft)	1052			1290	497	
Turn Bay Length (ft)						
Base Capacity (vph)	1686	903	708	2926	356	730
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	0.36	0.40	0.60	0.26	0.21	0.34

Intersection Summary

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		0.91	0.91	1.00	0.95						1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	0.95
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		0.93	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)		3149	1441	1770	3539						1779	2646
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3149	1441	1770	3539						1779	2646
Volume (vph)	0	295	602	394	713	0	0	0	0	64	4	231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	321	654	428	775	0	0	0	0	70	4	251
RTOR Reduction (vph)	0	113	183	0	0	0	0	0	0	0	0	228
Lane Group Flow (vph)	0	497	183	428	775	0	0	0	0	0	74	23
Confl. Peds. (#/hr)	10					10				10		10
Turn Type			Perm	Prot						Split		Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		50.0	50.0	28.7	82.7						9.3	9.3
Effective Green, g (s)		50.0	50.0	28.7	82.7						9.3	9.3
Actuated g/C Ratio		0.50	0.50	0.29	0.83						0.09	0.09
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)		1575	721	508	2927						165	246
v/s Ratio Prot		c0.16		c0.24	0.22						c0.04	
v/s Ratio Perm			0.13									0.01
v/c Ratio		0.32	0.25	0.84	0.26						0.45	0.09
Uniform Delay, d1		14.8	14.3	33.5	1.9						42.9	41.5
Progression Factor		1.00	1.00	1.23	0.82						1.00	1.00
Incremental Delay, d2		0.1	0.2	11.4	0.2						1.9	0.2
Delay (s)		15.0	14.5	52.8	1.8						44.9	41.7
Level of Service		B	B	D	A						D	D
Approach Delay (s)		14.8			19.9			0.0			42.4	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	180	176	633	471	555
v/c Ratio	0.23	0.15	0.29	0.88	0.50
Control Delay	18.2	16.2	10.6	50.4	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	16.2	10.6	50.4	8.6
Queue Length 50th (ft)	26	49	91	284	43
Queue Length 95th (ft)	91	154	159	352	77
Internal Link Dist (ft)		1290	1318		
Turn Bay Length (ft)					
Base Capacity (vph)	775	1140	2148	712	1339
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.23	0.15	0.29	0.66	0.41

Intersection Summary

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	0.97	1.00			0.95					1.00		0.88
Frpb, ped/bikes	1.00	1.00			1.00					1.00		0.97
Flpb, ped/bikes	0.99	1.00			1.00					0.98		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)	3395	1863			3507					1736		2702
Flt Permitted	0.38	1.00			1.00					0.95		1.00
Satd. Flow (perm)	1355	1863			3507					1736		2702
Volume (vph)	166	162	0	0	553	29	0	0	0	433	0	511
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	176	0	0	601	32	0	0	0	471	0	555
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	271
Lane Group Flow (vph)	180	176	0	0	630	0	0	0	0	471	0	284
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Perm									custom		custom
Protected Phases		2			6							
Permitted Phases	2									7		4
Actuated Green, G (s)	61.2	61.2			61.2					30.8		30.8
Effective Green, g (s)	61.2	61.2			61.2					30.8		30.8
Actuated g/C Ratio	0.61	0.61			0.61					0.31		0.31
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)	829	1140			2146					535		832
v/s Ratio Prot		0.09			c0.18							
v/s Ratio Perm	0.13									c0.27		0.11
v/c Ratio	0.22	0.15			0.29					0.88		0.34
Uniform Delay, d1	8.7	8.3			9.2					32.9		26.8
Progression Factor	1.63	1.59			1.00					1.00		1.00
Incremental Delay, d2	0.6	0.3			0.3					15.5		0.2
Delay (s)	14.7	13.5			9.5					48.4		27.0
Level of Service	B	B			A					D		C
Approach Delay (s)		14.1			9.5			0.0			36.8	
Approach LOS		B			A			A			D	

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	540	50	24	3	13	559
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	587	54	26	3	14	608

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	587	54	29	14	608
Volume Left (vph)	587	0	0	14	0
Volume Right (vph)	0	0	3	0	608
Hadj (s)	0.53	0.03	-0.03	0.53	-0.67
Departure Headway (s)	7.0	6.5	7.3	7.0	5.8
Degree Utilization, x	1.14	0.10	0.06	0.03	0.98
Capacity (veh/h)	511	549	486	505	608
Control Delay (s)	109.2	9.0	10.8	9.0	54.6
Approach Delay (s)	100.7		10.8	53.6	
Approach LOS	F		B	F	

Intersection Summary			
Delay	76.0		
HCM Level of Service	F		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBT	WBR	NBR	SBL	SBR
Lane Group Flow (vph)	452	802	21	703	270	25	479	554
v/c Ratio	0.58	0.28	0.02	0.56	0.45	0.05	0.51	0.68
Control Delay	24.0	6.8	3.3	20.8	5.9	0.2	20.1	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	6.8	3.3	20.8	5.9	0.2	20.1	7.2
Queue Length 50th (ft)	67	41	0	70	0	0	65	3
Queue Length 95th (ft)	145	89	9	147	55	0	138	78
Internal Link Dist (ft)		1616		2336				
Turn Bay Length (ft)								
Base Capacity (vph)	1171	3408	1068	1727	729	842	1632	1016
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.24	0.02	0.41	0.37	0.03	0.29	0.55

Intersection Summary

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	0.97	0.91	1.00		0.91	1.00			1.00	0.97		1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98			1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85			0.86	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00			1.00	0.95		1.00
Satd. Flow (prot)	3433	5085	1583		5085	1548			1611	3433		1548
Flt Permitted	0.95	1.00	1.00		0.94	1.00			1.00	0.95		1.00
Satd. Flow (perm)	3433	5085	1583		4769	1548			1611	3433		1548
Volume (vph)	416	738	19	2	645	248	0	0	23	441	0	510
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	452	802	21	2	701	270	0	0	25	479	0	554
RTOR Reduction (vph)	0	0	9	0	0	196	0	0	18	0	0	393
Lane Group Flow (vph)	452	802	12	0	703	74	0	0	7	479	0	161
Confl. Peds. (#/hr)	10					10				10		10
Turn Type	Prot		Perm	Perm		Perm			custom	Prot		custom
Protected Phases	5	2			6					4		
Permitted Phases			2	6		6			8			4
Actuated Green, G (s)	12.7	31.7	31.7		15.0	15.0			15.1	15.1		15.1
Effective Green, g (s)	12.7	31.7	31.7		15.0	15.0			15.1	15.1		15.1
Actuated g/C Ratio	0.23	0.58	0.58		0.27	0.27			0.28	0.28		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)	796	2942	916		1305	424			444	946		427
v/s Ratio Prot	c0.13	0.16								c0.14		
v/s Ratio Perm			0.01		c0.15	0.05			0.00			0.10
v/c Ratio	0.57	0.27	0.01		0.54	0.17			0.02	0.51		0.38
Uniform Delay, d1	18.6	5.8	4.9		17.0	15.2			14.4	16.7		16.0
Progression Factor	1.00	1.00	1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2	0.9	0.1	0.0		0.4	0.2			0.0	0.4		0.6
Delay (s)	19.6	5.8	4.9		17.4	15.4			14.5	17.1		16.6
Level of Service	B	A	A		B	B			B	B		B
Approach Delay (s)		10.7			16.8			14.5			16.9	
Approach LOS		B			B			B			B	

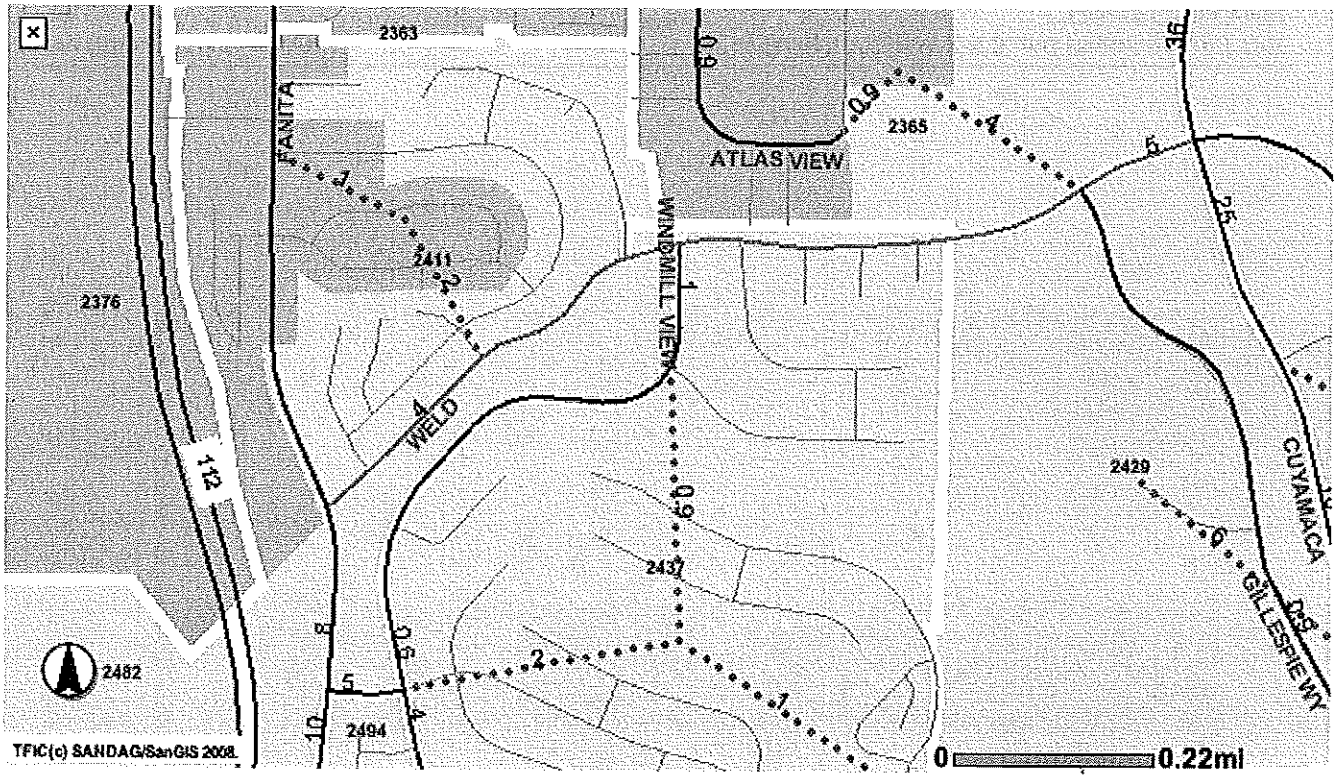
Intersection Summary

HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX H

YEAR 2030 SANDAG ADT VOLUMES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2365
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2376
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WINDMILL VIEW
WELD
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CUYAMACA
GILLESPIE WY
2482
2494
TFIC(c) SANDAG/SanGIS 2008
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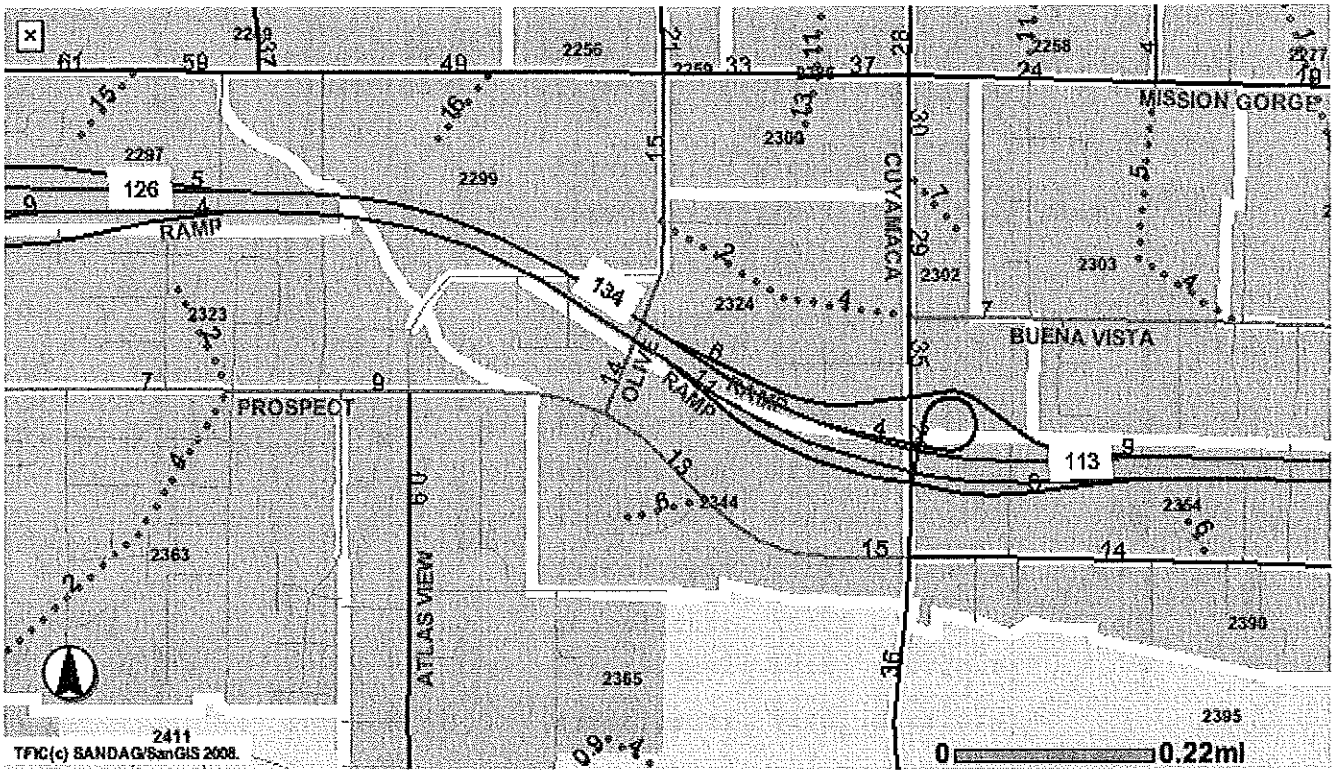
0.22mi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RAMP
134
OLIVE
RAMP
PROSPECT
ATLAS VIEW
CUYAMACA
MISSION GORGE
BUENA VISTA
113
2256
2258
2299
2300
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2303
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2324
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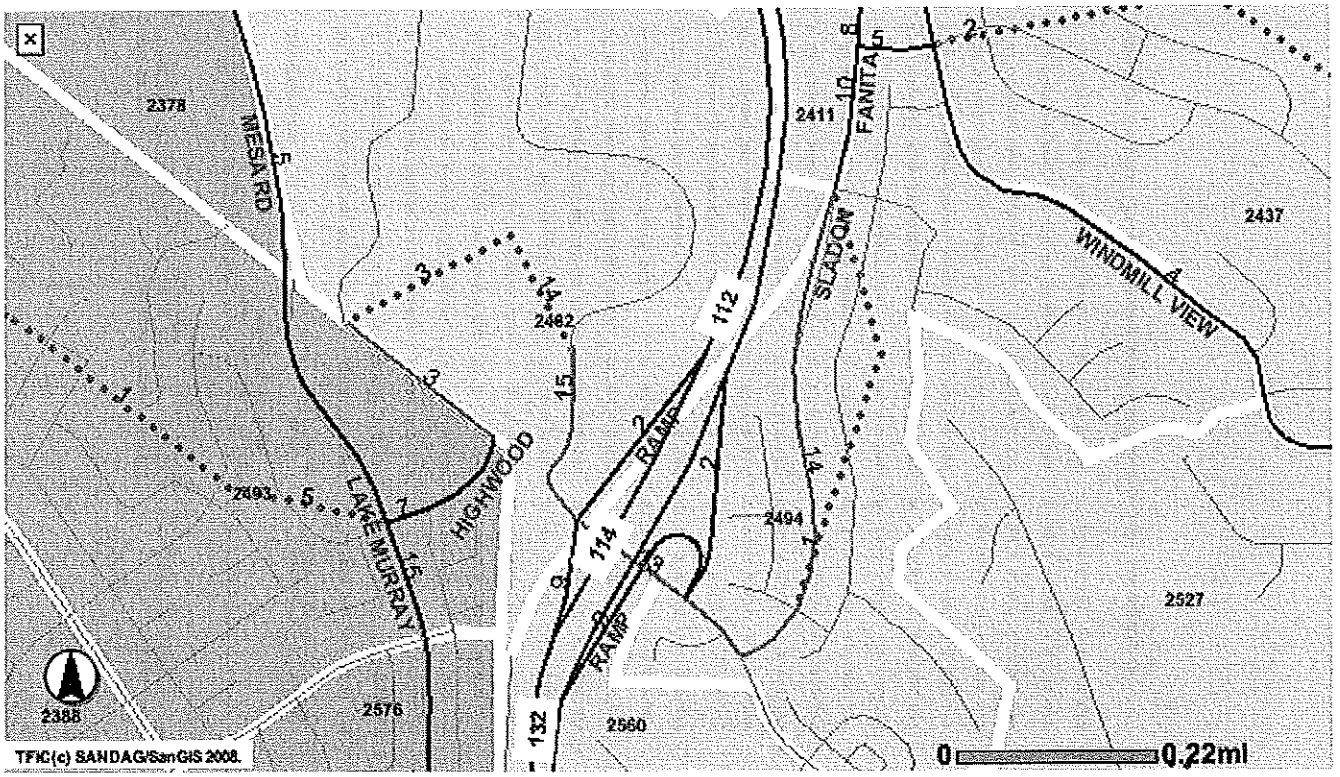
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WINDMILL VIEW
SLADOW
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15
HIGHWOOD
RAMP
114
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LAKE MURRAY
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RAMP
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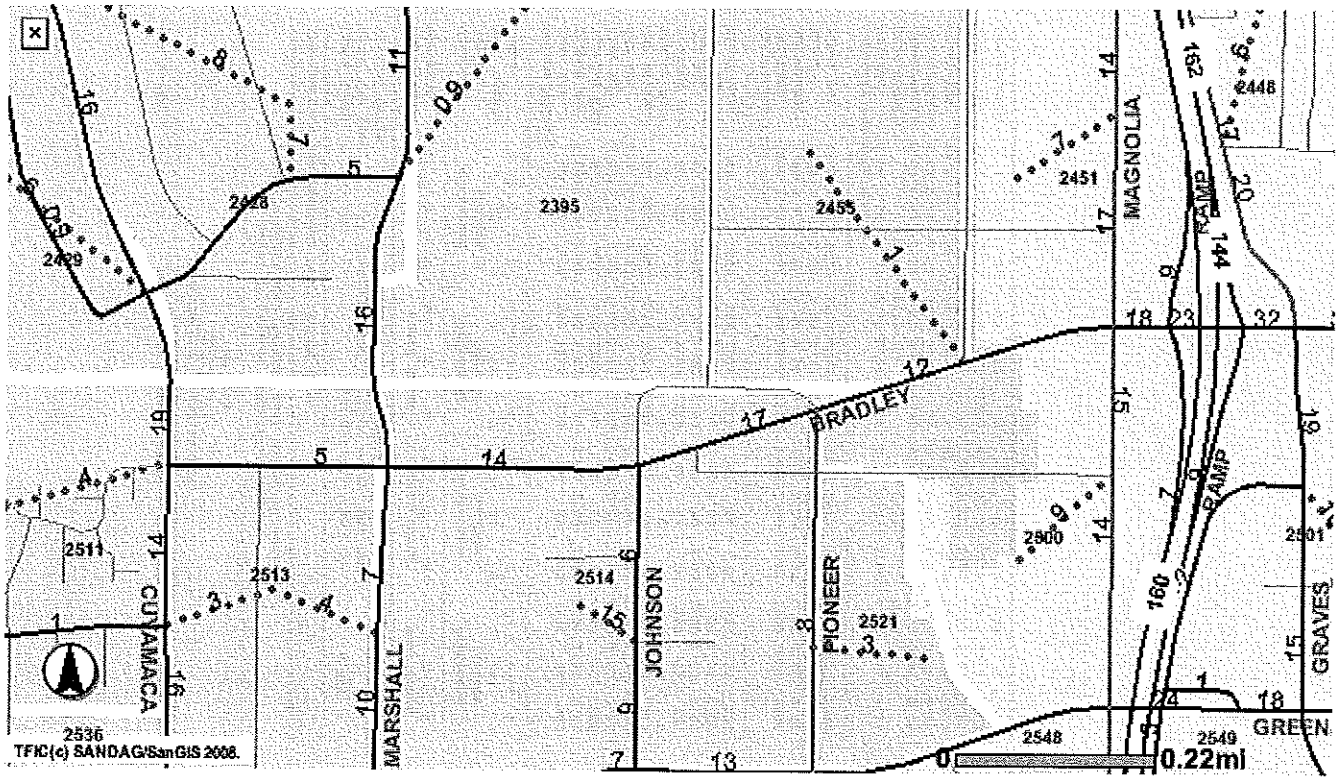
2560
0
0.22mi
TFIC(c) SANDAG/SanGIS 2008.


BRADLEY
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RAMP
CUYAMACA
MARSHALL
JOHNSON
PIONEER
GRAVES
GREEN
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2448
2451
2455
2511
2513
2514
2521
2536
2548
2549
TFIC(c) SANDAG/SanGIS 2008.
0
0.22mi

Roads

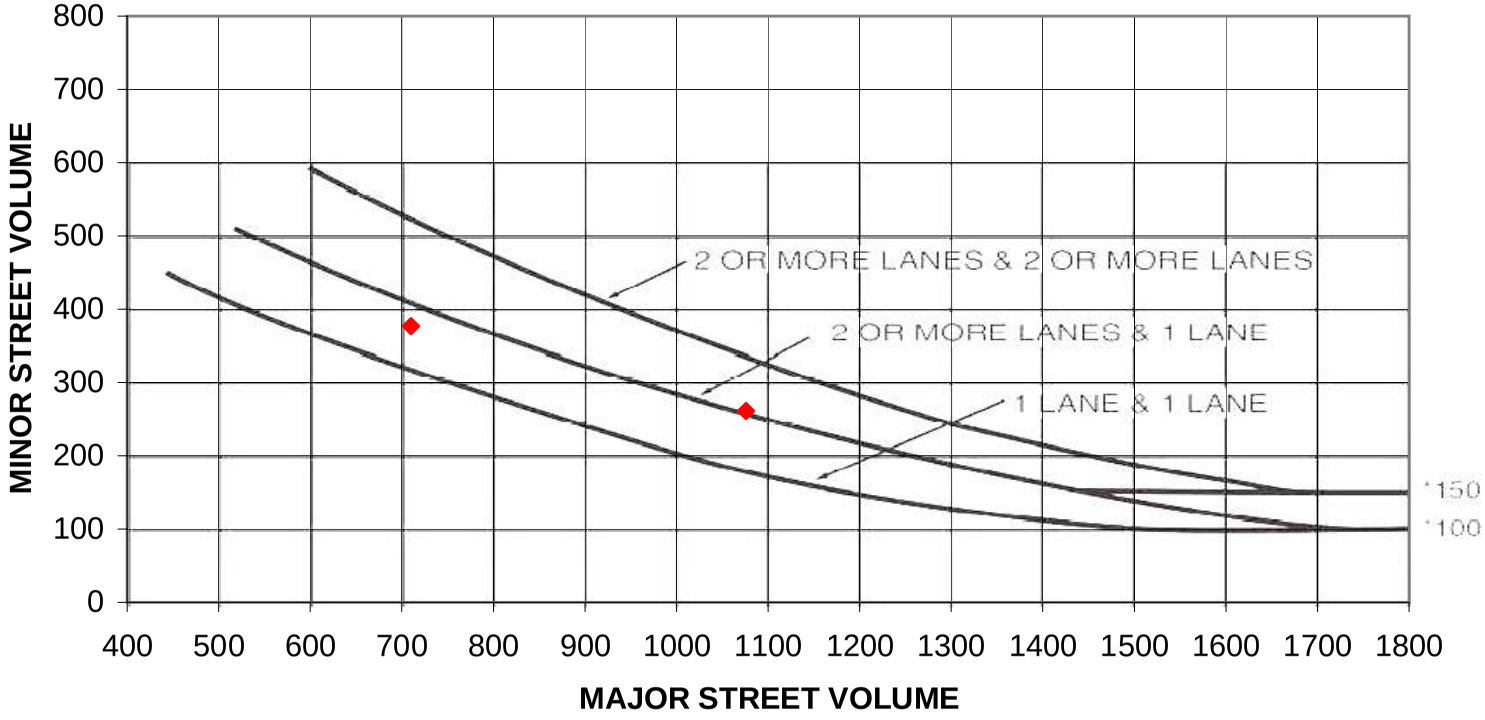
Rec	NM	ADT1000S	SPEED	LANES	WAY	MEDIAN	CLASS	#SHAPE#	#ID#
1	BRADLEY	5	45	4	2	CENTER TURN LANE	MAJOR ARTERIAL	[line]	16024

APPENDIX I

PEAK HOUR SIGNAL WARRANT SHEETS

Gillespie Boulevard/Weld Boulevard Parkway

Figure 4C-3, Warrant 3, Peak Hour



Grossmont College Drive / Fanita Drive

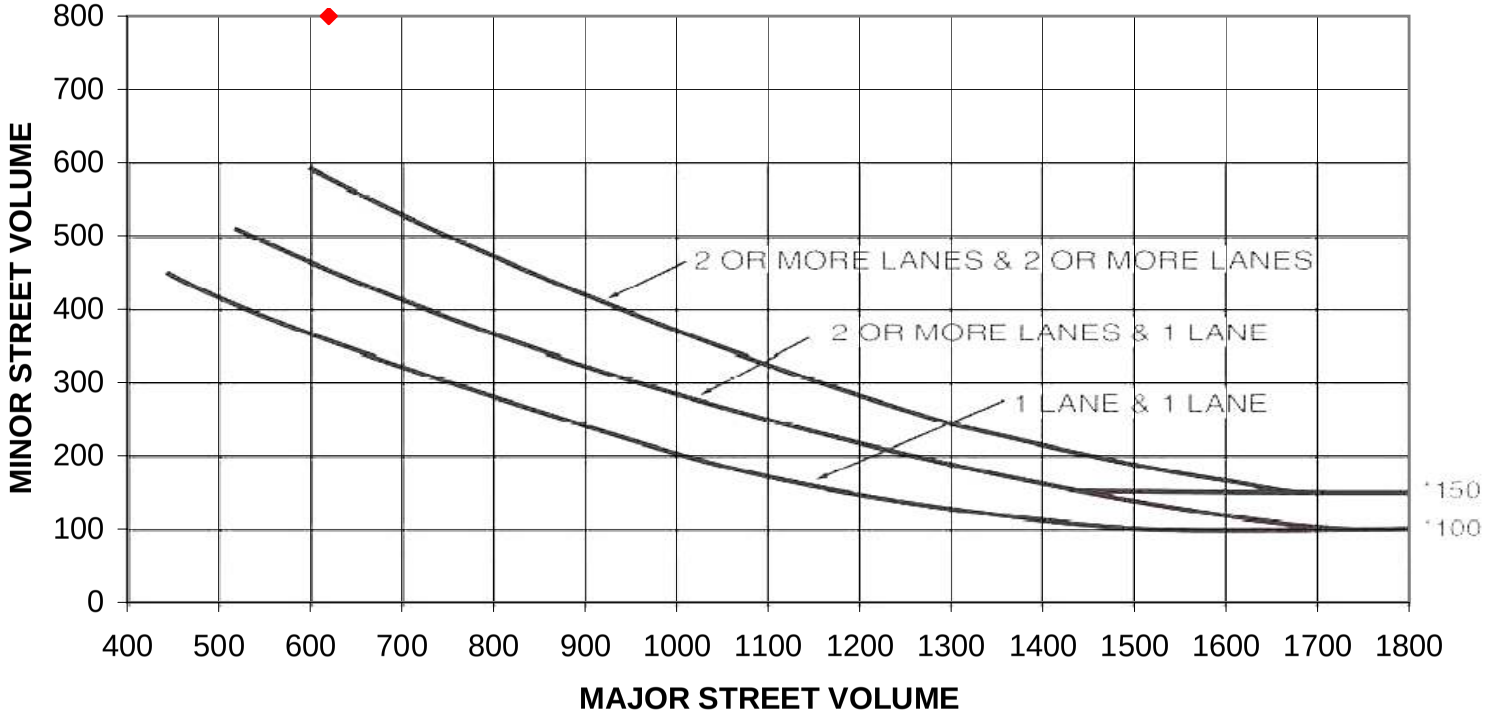



Figure 4C-3, Warrant 3, Peak Hour