

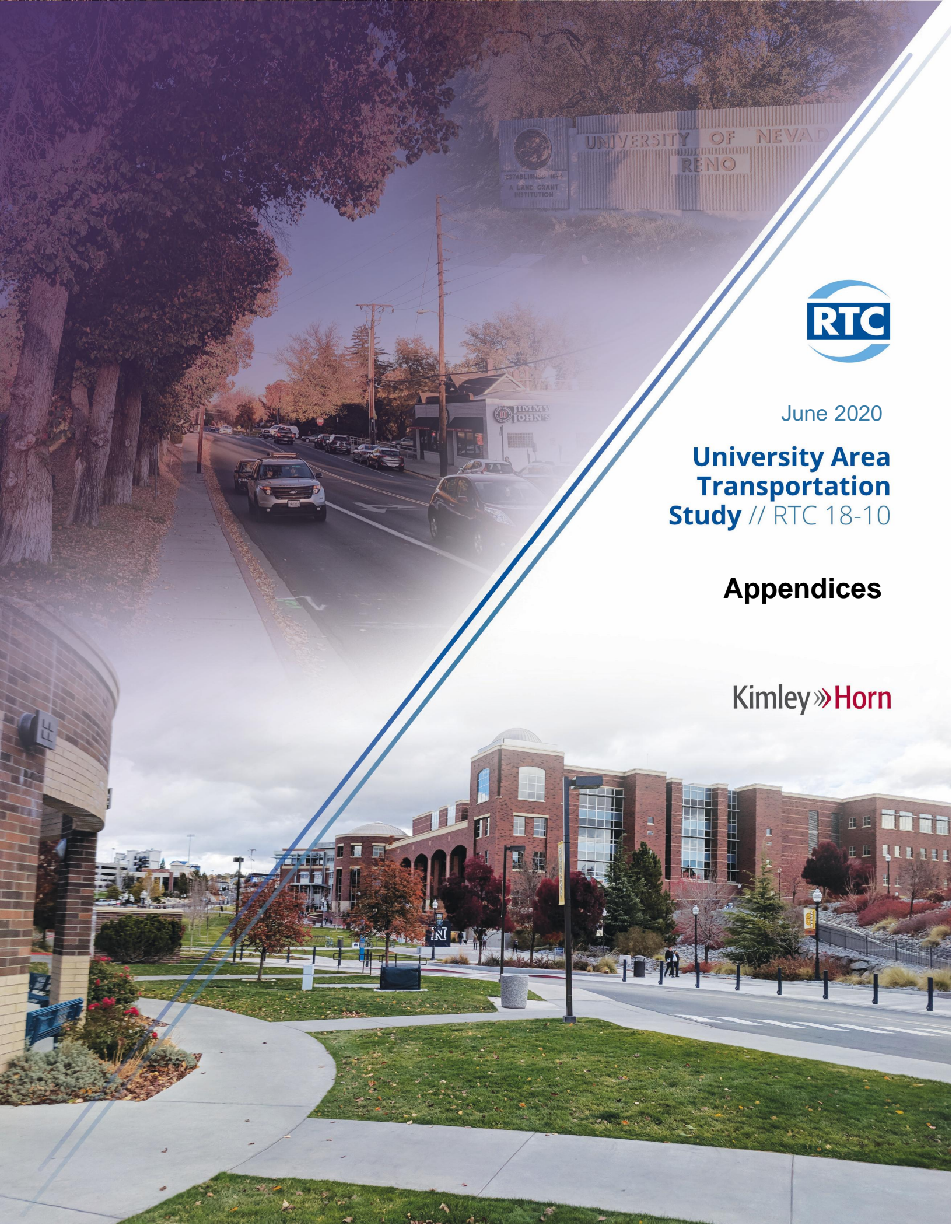


June 2020

# University Area Transportation Study // RTC 18-10

## Appendices

Kimley»Horn



## APPENDICES

FOR

# UNIVERSITY AREA TRANSPORTATION STUDY

*Prepared for:*



**Regional Transportation Commission of Washoe County**  
Planning  
1105 Terminal Way  
Reno, Nevada 89520  
775-348-0480

*Prepared by:*

**Kimley»»Horn**

**Kimley-Horn and Associates, Inc.**  
5370 Kietzke Lane  
Suite 100  
Reno, Nevada 89511  
775-200-1979

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2020-06-23 Report Appendices.docx

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**APPENDIX A**  
**PEAK HOUR VEHICLE, BICYCLE, AND PEDESTRIAN COUNTS**

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Sierra - 9th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 1

## Groups Printed- Class 1

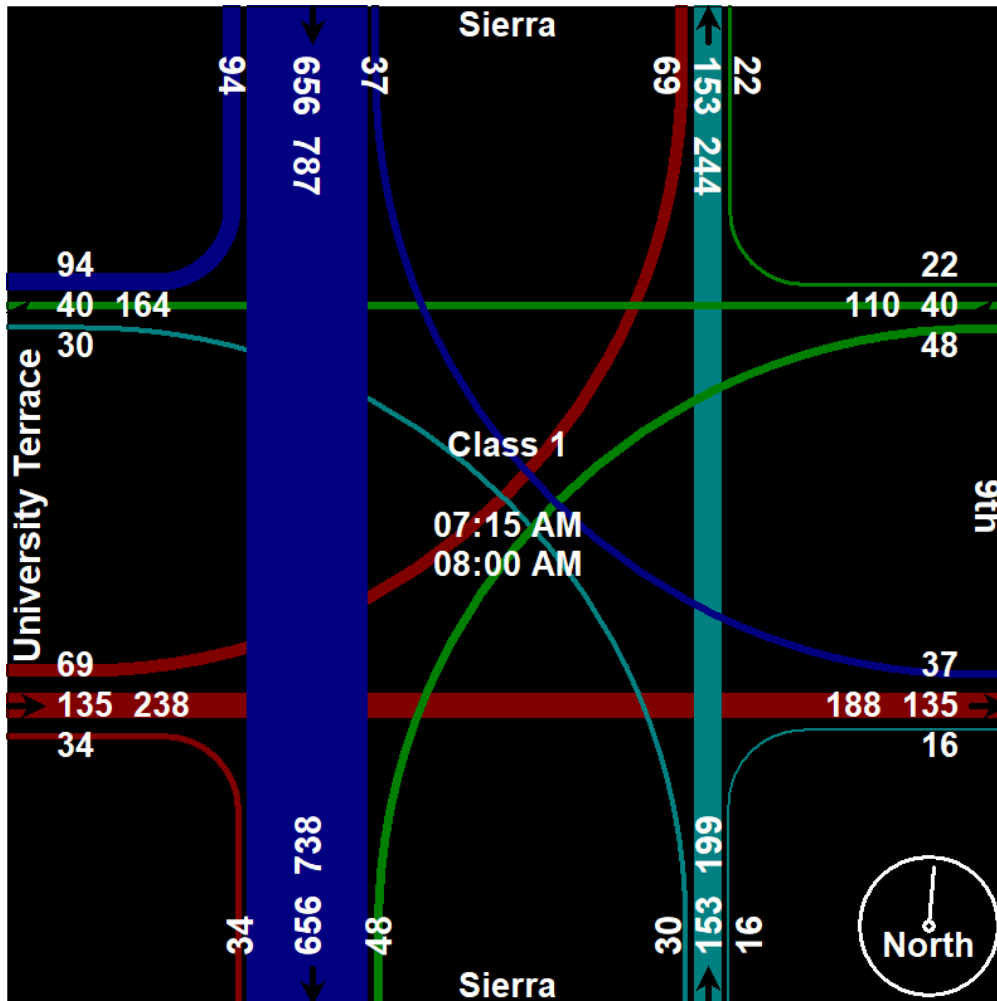
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	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	20	125	12	1	3	5	6	1	3	24	4	4	5	21	5	2	241
07:15 AM	25	156	9	0	4	8	6	0	1	34	7	4	11	34	16	1	316
07:30 AM	27	177	12	0	4	5	13	1	6	30	6	1	7	49	18	1	357
07:45 AM	23	166	7	0	4	15	22	1	5	57	9	2	10	27	30	0	378
Total	95	624	40	1	15	33	47	3	15	145	26	11	33	131	69	4	1292
08:00 AM	19	157	9	0	10	12	7	1	4	32	8	2	6	25	5	3	300
08:15 AM	15	100	2	0	6	13	13	0	5	35	8	1	6	31	15	2	252
08:30 AM	15	86	5	0	4	22	7	0	5	55	10	4	4	43	14	4	278
08:45 AM	11	103	10	0	11	22	16	0	3	52	3	11	11	33	26	8	320
Total	60	446	26	0	31	69	43	1	17	174	29	18	27	132	60	17	1150
*** BREAK ***																	
04:00 PM	19	98	9	0	11	30	22	2	6	74	12	9	15	27	30	3	367
04:15 PM	10	116	5	1	21	42	34	2	1	49	11	10	13	34	24	5	378
04:30 PM	19	140	15	0	22	31	29	0	5	58	15	6	10	29	32	2	413
04:45 PM	27	134	7	1	14	37	24	0	3	63	8	6	19	24	49	5	421
Total	75	488	36	2	68	140	109	4	15	244	46	31	57	114	135	15	1579
05:00 PM	18	117	8	1	15	39	31	0	2	75	11	4	15	27	51	7	421
05:15 PM	20	133	6	0	18	26	29	4	3	76	9	14	11	37	36	17	439
05:30 PM	10	97	9	0	22	29	21	0	6	65	15	9	4	41	41	9	378
05:45 PM	21	105	9	0	23	44	38	0	11	51	12	7	12	33	26	6	398
Total	69	452	32	1	78	138	119	4	22	267	47	34	42	138	154	39	1636
Grand Total	299	2010	134	4	192	380	318	12	69	830	148	94	159	515	418	75	5657
Apprch %	12.2	82.1	5.5	0.2	21.3	42.1	35.3	1.3	6	72.7	13	8.2	13.6	44.1	35.8	6.4	
Total %	5.3	35.5	2.4	0.1	3.4	6.7	5.6	0.2	1.2	14.7	2.6	1.7	2.8	9.1	7.4	1.3	

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Start Time	Sierra Southbound					9th Westbound					Sierra Northbound					University Terrace Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	25	156	9	0	190	4	8	6	0	18	1	34	7	4	46	11	34	16	1	62	316
07:30 AM	27	177	12	0	216	4	5	13	1	23	6	30	6	1	43	7	49	18	1	75	357
07:45 AM	23	166	7	0	196	4	15	22	1	42	5	57	9	2	73	10	27	30	0	67	378
08:00 AM	19	157	9	0	185	10	12	7	1	30	4	32	8	2	46	6	25	5	3	39	300
Total Volume	94	656	37	0	787	22	40	48	3	113	16	153	30	9	208	34	135	69	5	243	1351
% App. Total	11.9	83.4	4.7	0		19.5	35.4	42.5	2.7		7.7	73.6	14.4	4.3		14	55.6	28.4	2.1		
PHF	.870	.927	.771	.000	.911	.550	.667	.545	.750	.673	.667	.671	.833	.563	.712	.773	.689	.575	.417	.810	.894

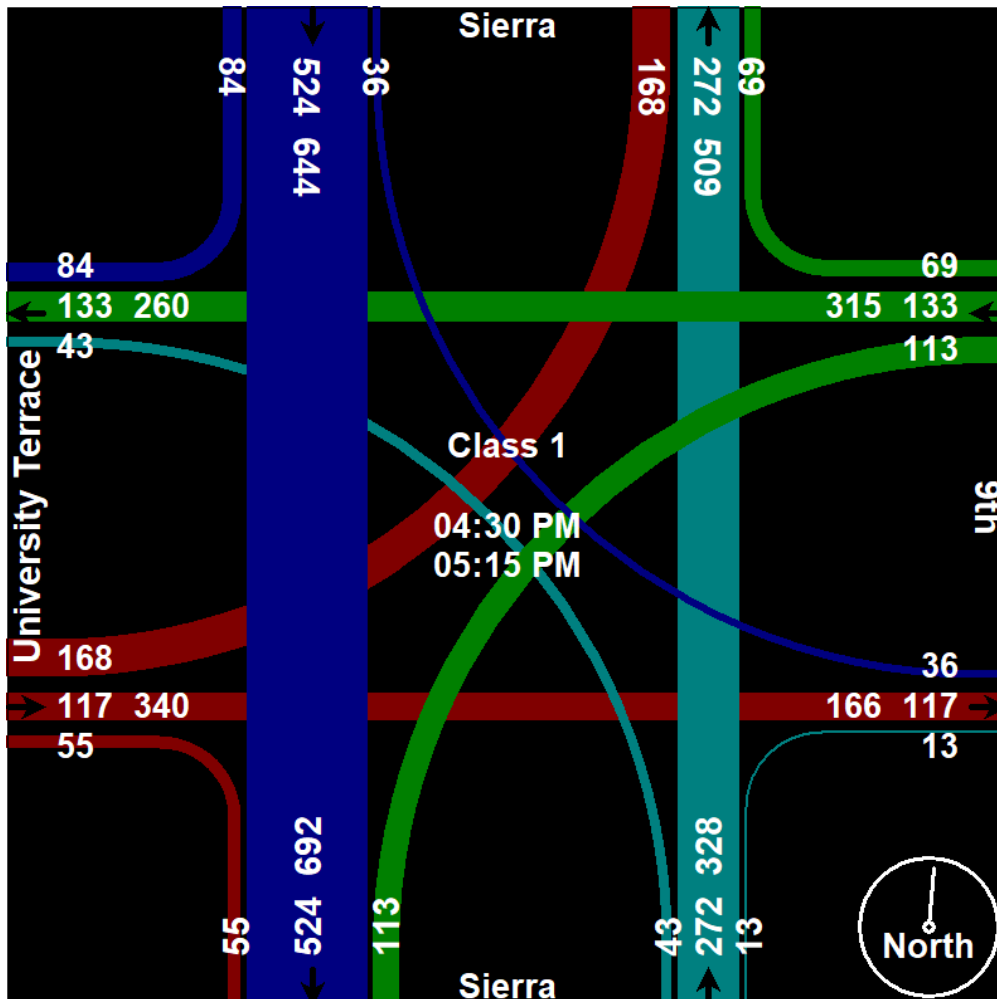


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Start Time	Sierra Southbound					9th Westbound					Sierra Northbound					University Terrace Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	19	140	15	0	174	22	31	29	0	82	5	58	15	6	84	10	29	32	2	73	413
04:45 PM	27	134	7	1	169	14	37	24	0	75	3	63	8	6	80	19	24	49	5	97	421
05:00 PM	18	117	8	1	144	15	39	31	0	85	2	75	11	4	92	15	27	51	7	100	421
05:15 PM	20	133	6	0	159	18	26	29	4	77	3	76	9	14	102	11	37	36	17	101	439
Total Volume	84	524	36	2	646	69	133	113	4	319	13	272	43	30	358	55	117	168	31	371	1694
% App. Total	13	81.1	5.6	0.3		21.6	41.7	35.4	1.3		3.6	76	12	8.4		14.8	31.5	45.3	8.4		
PHF	.778	.936	.600	.500	.928	.784	.853	.911	.250	.938	.650	.895	.717	.536	.877	.724	.791	.824	.456	.918	.965



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 Page No : 1

## Groups Printed- Class 1

Start Time	Sierra Southbound				9th Westbound				Sierra Northbound				University Terrace Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
*** BREAK ***																	
07:45 AM	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	3	8
Total	0	0	0	0	0	1	0	0	0	0	1	5	0	0	0	5	12
08:00 AM	0	0	1	0	0	0	1	0	0	1	0	1	0	0	0	1	5
08:15 AM	0	0	0	2	0	0	0	0	0	1	1	2	0	0	0	2	8
08:30 AM	0	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	5
08:45 AM	1	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	5
Total	1	1	1	3	1	1	1	0	1	2	1	4	0	1	1	4	23
*** BREAK ***																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	3
*** BREAK ***																	
04:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Total	0	1	0	0	0	1	0	0	0	0	0	2	0	0	0	1	5
05:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2
*** BREAK ***																	
05:30 PM	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	4
*** BREAK ***																	
Total	0	1	0	0	0	0	0	2	2	0	0	0	0	1	0	0	6
Grand Total	1	3	1	3	1	3	1	2	3	2	2	11	0	2	1	10	46
Apprch %	12.5	37.5	12.5	37.5	14.3	42.9	14.3	28.6	16.7	11.1	11.1	61.1	0	15.4	7.7	76.9	
Total %	2.2	6.5	2.2	6.5	2.2	6.5	2.2	4.3	6.5	4.3	4.3	23.9	0	4.3	2.2	21.7	

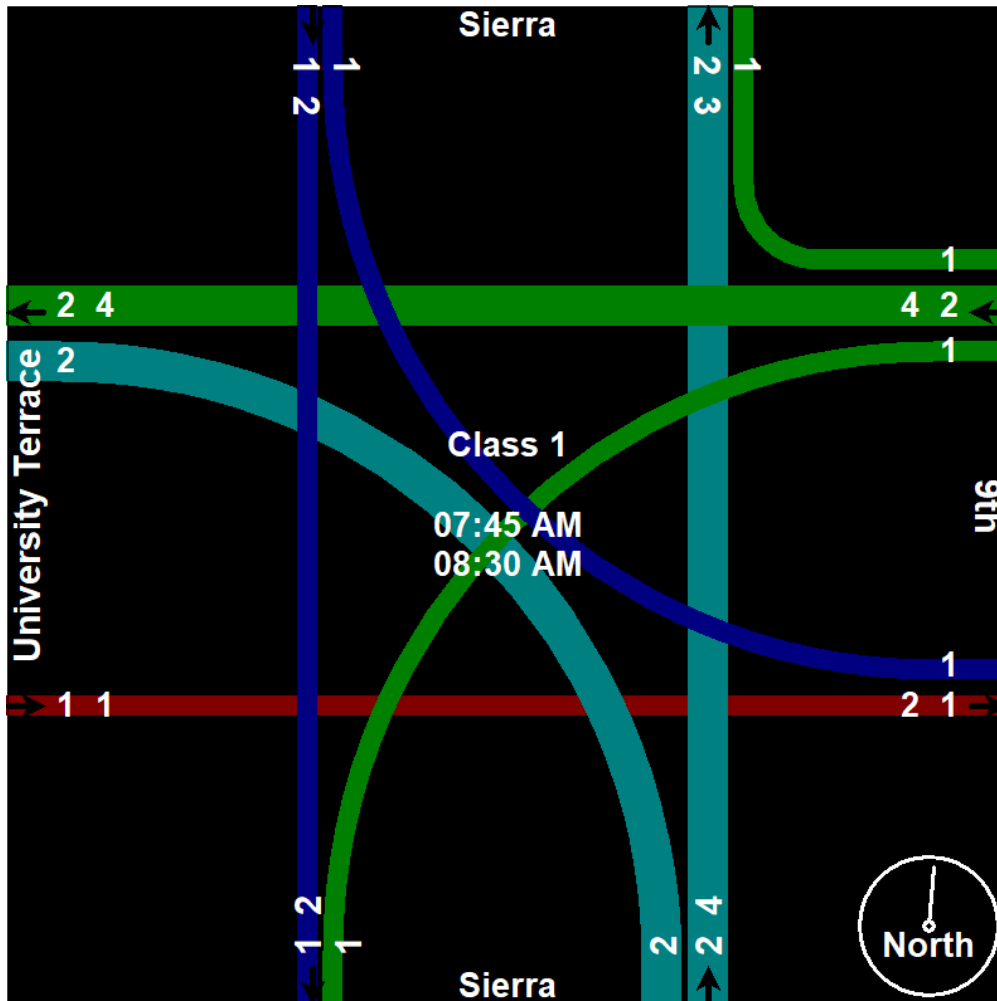


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 Start Date : 4/25/2019  
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Start Time	Sierra Southbound					9th Westbound					Sierra Northbound					University Terrace Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	3	4	0	0	0	3	3	8
08:00 AM	0	0	1	0	1	0	0	1	0	1	0	1	0	1	2	0	0	0	1	1	5
08:15 AM	0	0	0	2	2	0	0	0	0	0	0	1	1	2	4	0	0	0	2	2	8
08:30 AM	0	1	0	1	2	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	5
Total Volume	0	1	1	3	5	1	2	1	0	4	0	2	2	6	10	0	1	0	6	7	26
% App. Total	0	20	20	60		25	50	25	0		0	20	20	60		0	14.3	0	85.7		
PHF	.000	.250	.250	.375	.625	.250	.500	.250	.000	.500	.000	.500	.500	.500	.625	.000	.250	.000	.500	.583	.813

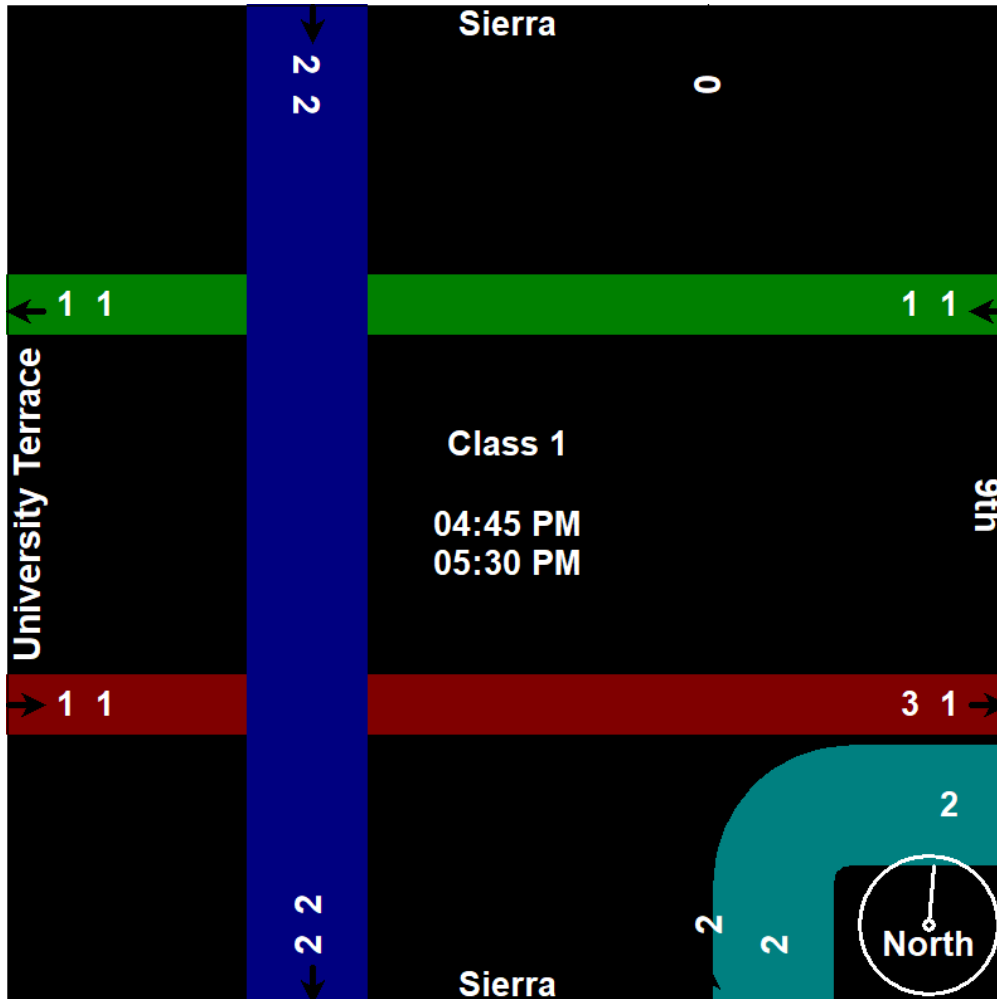


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Start Time	Sierra Southbound					9th Westbound					Sierra Northbound					University Terrace Eastbound					Int. Total	
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total		
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 04:45 PM																						
04:45 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	0	0	1	0	0	0	1	1	2	0	0	0	2	0	0	0	0	0	0	4
Total Volume	0	2	0	0	2	0	1	0	2	3	2	0	0	0	2	0	1	0	0	1	1	8
% App. Total	0	100	0	0		0	33.3	0	66.7		100	0	0	0		0	100	0	0			
PHF	.000	.500	.000	.000	.500	.000	.250	.000	.500	.750	.250	.000	.000	.000	.250	.000	.250	.000	.000	.250		.500



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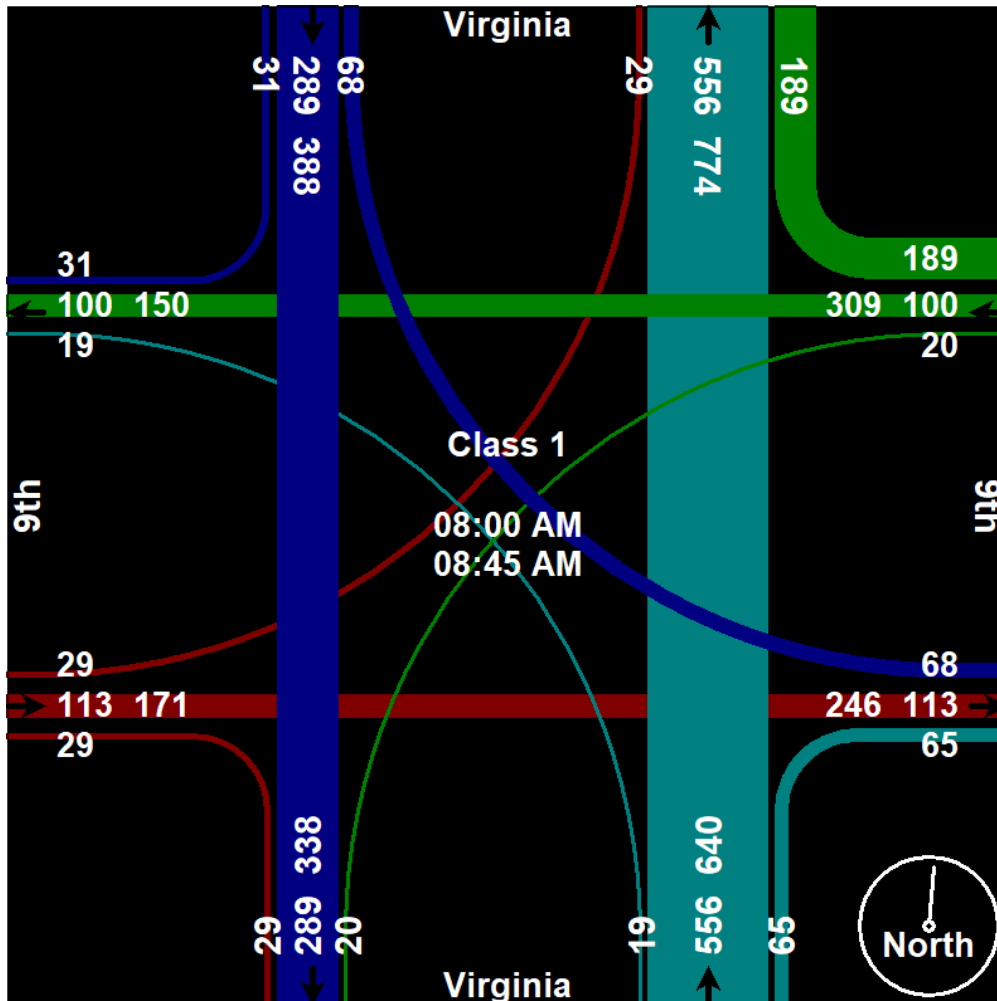
Start Time	Virginia Southbound				9th Westbound				Virginia Northbound				9th Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	4	133	14	1	17	9	2	4	12	98	8	2	13	23	7	12	359
07:15 AM	4	109	23	1	22	12	3	5	10	116	4	3	16	16	10	10	364
07:30 AM	6	134	17	2	35	17	3	9	16	92	5	0	24	32	13	2	407
07:45 AM	10	137	13	0	47	24	5	5	16	109	3	1	8	19	4	4	405
Total	24	513	67	4	121	62	13	23	54	415	20	6	61	90	34	28	1535
08:00 AM	7	71	12	4	28	27	4	7	12	94	7	2	8	27	9	3	322
08:15 AM	1	60	16	5	50	22	6	4	13	130	3	5	3	20	5	5	348
08:30 AM	12	67	12	8	52	21	2	12	21	171	5	5	6	44	14	14	466
08:45 AM	11	91	28	8	59	30	8	12	19	161	4	7	12	22	1	11	484
Total	31	289	68	25	189	100	20	35	65	556	19	19	29	113	29	33	1620
*** BREAK ***																	
04:00 PM	18	127	19	1	32	48	13	13	10	139	6	5	7	32	7	8	485
04:15 PM	17	147	18	5	40	64	11	20	14	149	16	11	4	32	4	23	575
04:30 PM	14	169	13	5	24	70	11	6	17	141	8	4	11	39	2	10	544
04:45 PM	19	121	30	5	36	41	9	9	16	152	9	10	8	16	6	11	498
Total	68	564	80	16	132	223	44	48	57	581	39	30	30	119	19	52	2102
05:00 PM	16	172	23	9	44	70	17	8	12	159	9	5	9	25	5	12	595
05:15 PM	10	127	17	10	39	53	13	9	17	185	11	11	13	31	2	13	561
05:30 PM	11	118	22	17	53	60	8	10	15	144	11	5	14	37	8	13	546
05:45 PM	23	126	21	13	46	56	3	11	24	145	14	9	6	37	4	13	551
Total	60	543	83	49	182	239	41	38	68	633	45	30	42	130	19	51	2253
Grand Total	183	1909	298	94	624	624	118	144	244	2185	123	85	162	452	101	164	7510
Apprch %	7.4	76.9	12	3.8	41.3	41.3	7.8	9.5	9.3	82.9	4.7	3.2	18.4	51.4	11.5	18.7	
Total %	2.4	25.4	4	1.3	8.3	8.3	1.6	1.9	3.2	29.1	1.6	1.1	2.2	6	1.3	2.2	

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	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	7	71	12	4	94	28	27	4	7	66	12	94	7	2	115	8	27	9	3	47	322
08:15 AM	1	60	16	5	82	50	22	6	4	82	13	130	3	5	151	3	20	5	5	33	348
08:30 AM	12	67	12	8	99	52	21	2	12	87	21	171	5	5	202	6	44	14	14	78	466
08:45 AM	11	91	28	8	138	59	30	8	12	109	19	161	4	7	191	12	22	1	11	46	484
Total Volume	31	289	68	25	413	189	100	20	35	344	65	556	19	19	659	29	113	29	33	204	1620
% App. Total	7.5	70	16.5	6.1		54.9	29.1	5.8	10.2		9.9	84.4	2.9	2.9		14.2	55.4	14.2	16.2		
PHF	.646	.794	.607	.781	.748	.801	.833	.625	.729	.789	.774	.813	.679	.679	.816	.604	.642	.518	.589	.654	.837

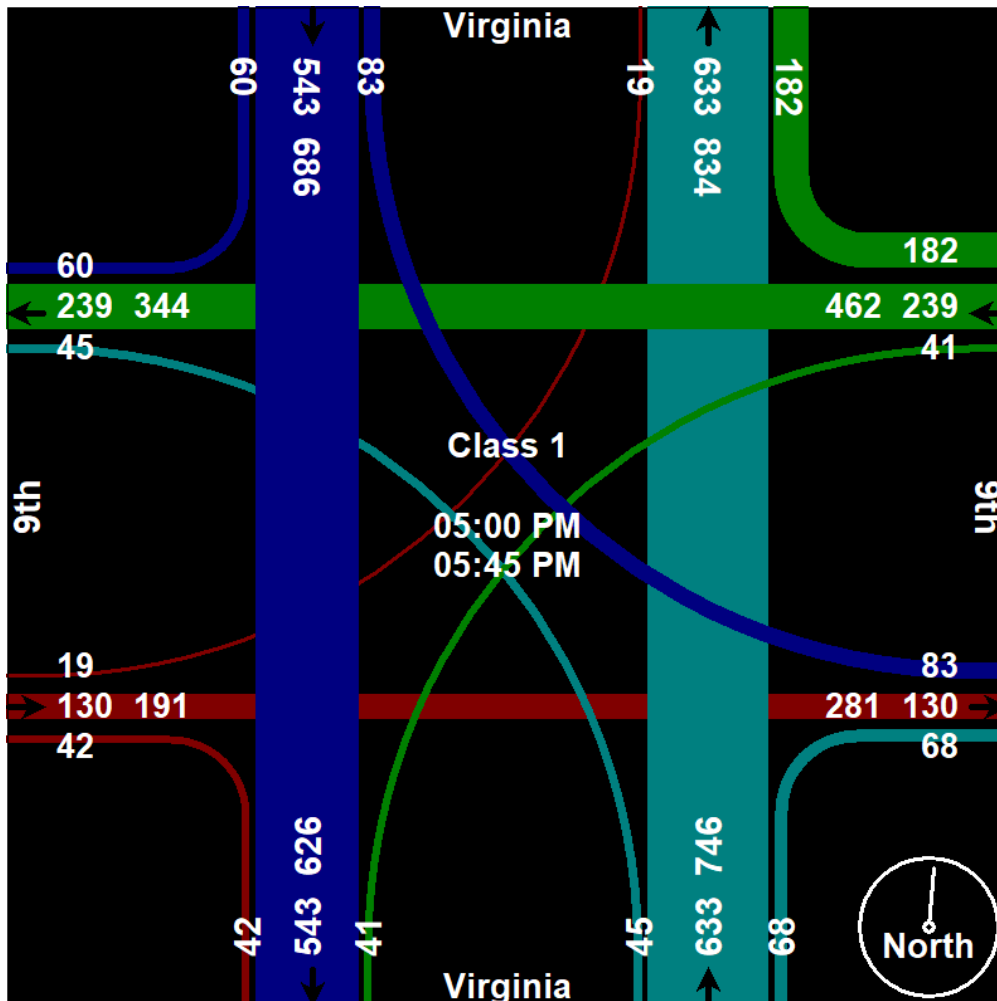


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Start Time	Virginia Southbound					9th Westbound					Virginia Northbound					9th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	16	172	23	9	220	44	70	17	8	139	12	159	9	5	185	9	25	5	12	51	595
05:15 PM	10	127	17	10	164	39	53	13	9	114	17	185	11	11	224	13	31	2	13	59	561
05:30 PM	11	118	22	17	168	53	60	8	10	131	15	144	11	5	175	14	37	8	13	72	546
05:45 PM	23	126	21	13	183	46	56	3	11	116	24	145	14	9	192	6	37	4	13	60	551
Total Volume	60	543	83	49	735	182	239	41	38	500	68	633	45	30	776	42	130	19	51	242	2253
% App. Total	8.2	73.9	11.3	6.7		36.4	47.8	8.2	7.6		8.8	81.6	5.8	3.9		17.4	53.7	7.9	21.1		
PHF	.652	.789	.902	.721	.835	.858	.854	.603	.864	.899	.708	.855	.804	.682	.866	.750	.878	.594	.981	.840	.947



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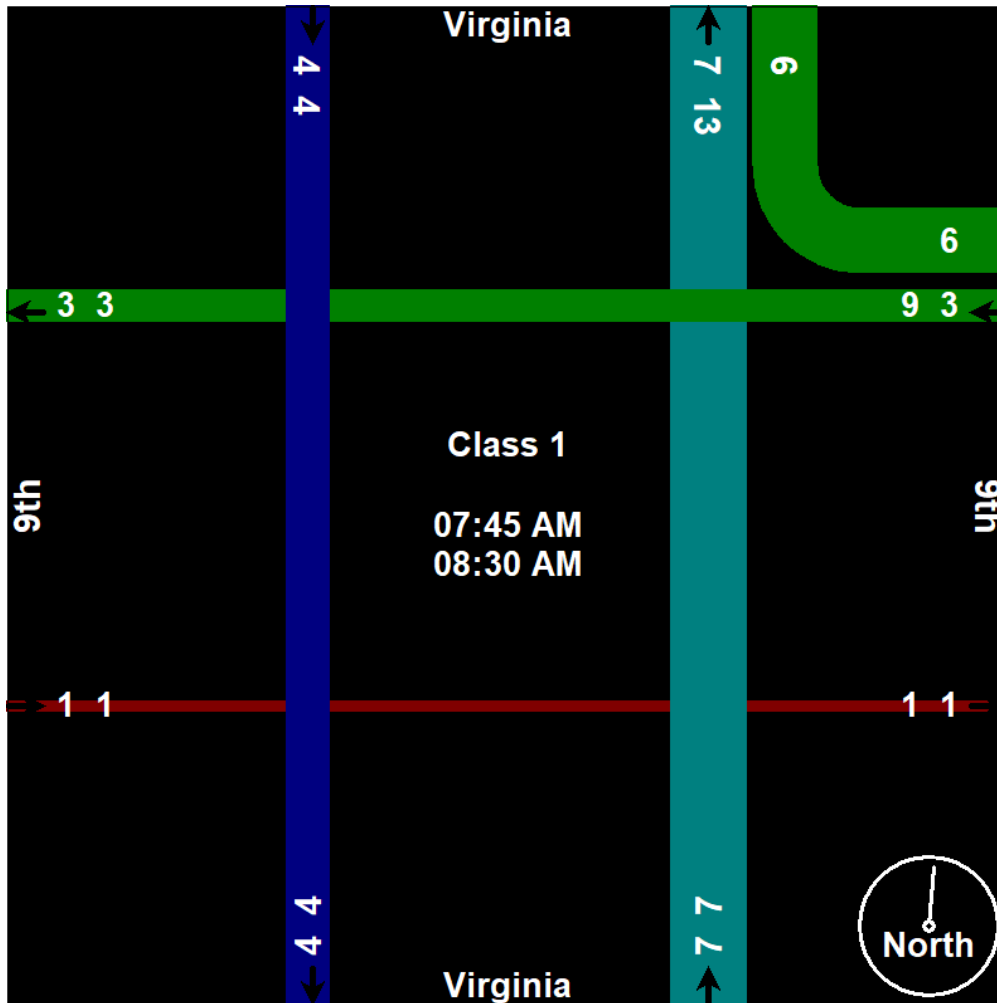
Start Time	Virginia Southbound				9th Westbound				Virginia Northbound				9th Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	2	0	0	1	1	0	0	0	0	0	2	0	1	0	1	8
07:15 AM	0	2	1	0	1	1	0	0	0	1	0	1	0	1	0	1	9
07:30 AM	0	0	0	0	2	0	0	0	0	1	1	1	0	0	0	1	6
07:45 AM	0	3	0	0	2	2	0	0	0	3	0	4	0	1	0	4	19
Total	0	7	1	0	6	4	0	0	0	5	1	8	0	3	0	7	42
08:00 AM	0	0	0	0	0	0	0	0	0	2	0	3	0	0	0	3	8
08:15 AM	0	0	0	0	1	0	0	0	0	1	0	3	0	0	0	3	8
08:30 AM	0	1	0	1	3	1	0	0	0	1	0	0	0	0	0	1	8
08:45 AM	0	0	0	0	0	0	0	0	0	4	0	1	0	1	0	1	7
Total	0	1	0	1	4	1	0	0	0	8	0	7	0	1	0	8	31
*** BREAK ***																	
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	4
04:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	5
04:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	2	0	5	0	0	0	0	0	1	0	2	0	0	0	2	12
05:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
05:30 PM	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	4
05:45 PM	0	0	0	0	0	0	0	2	0	1	0	2	0	0	0	1	6
Total	0	0	0	1	2	0	0	5	0	2	0	2	0	0	0	1	13
Grand Total	0	10	1	7	12	5	0	5	0	16	1	19	0	4	0	18	98
Apprch %	0	55.6	5.6	38.9	54.5	22.7	0	22.7	0	44.4	2.8	52.8	0	18.2	0	81.8	
Total %	0	10.2	1	7.1	12.2	5.1	0	5.1	0	16.3	1	19.4	0	4.1	0	18.4	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : virginia - 9th - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 2

Start Time	Virginia Southbound					9th Westbound					Virginia Northbound					9th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	3	0	0	3	2	2	0	0	4	0	3	0	4	7	0	1	0	4	5	19
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	3	5	0	0	0	3	3	8
08:15 AM	0	0	0	0	0	1	0	0	0	1	0	1	0	3	4	0	0	0	3	3	8
08:30 AM	0	1	0	1	2	3	1	0	0	4	0	1	0	0	1	0	0	0	1	1	8
Total Volume	0	4	0	1	5	6	3	0	0	9	0	7	0	10	17	0	1	0	11	12	43
% App. Total	0	80	0	20		66.7	33.3	0	0		0	41.2	0	58.8		0	8.3	0	91.7		
PHF	.000	.333	.000	.250	.417	.500	.375	.000	.000	.563	.000	.583	.000	.625	.607	.000	.250	.000	.688	.600	.566

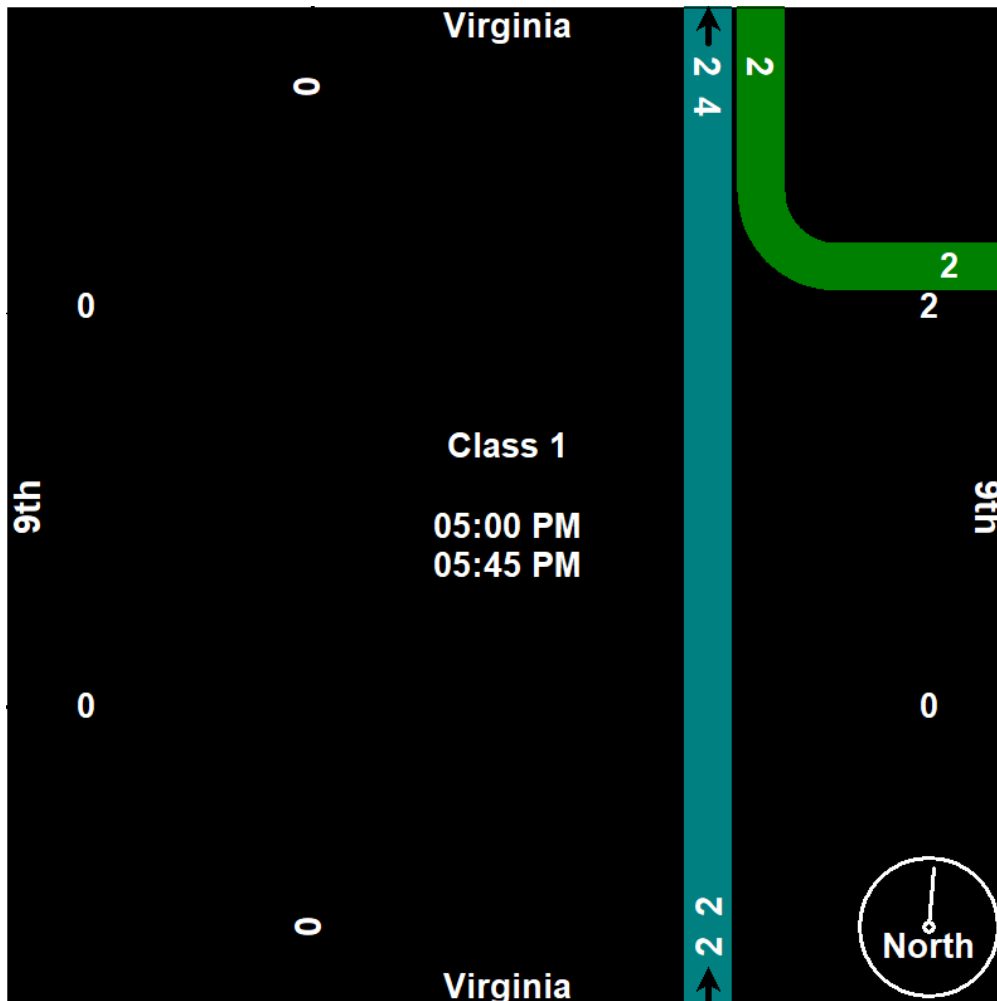


# Silver State Traffic Data Collection, LLC

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 sstraffic@msn.com

File Name : virginia - 9th - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 3

Start Time	Virginia Southbound					9th Westbound					Virginia Northbound					9th Eastbound					Int. Total	
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total		
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 05:00 PM																						
05:00 PM	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
05:30 PM	0	0	0	1	1	1	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	4
05:45 PM	0	0	0	0	0	0	0	0	2	2	0	1	0	2	3	0	0	0	1	1	6	
Total Volume	0	0	0	1	1	2	0	0	5	7	0	2	0	2	4	0	0	0	1	1	13	
% App. Total	0	0	0	100		28.6	0	0	71.4		0	50	0	50		0	0	0	100			
PHF	.000	.000	.000	.250	.250	.500	.000	.000	.625	.583	.000	.500	.000	.250	.333	.000	.000	.000	.250	.250	.542	





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1819 Quarley Place  
 Henderson, Nevada 89014  
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File Name : Center-9th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 1

Groups Printed- Class 1

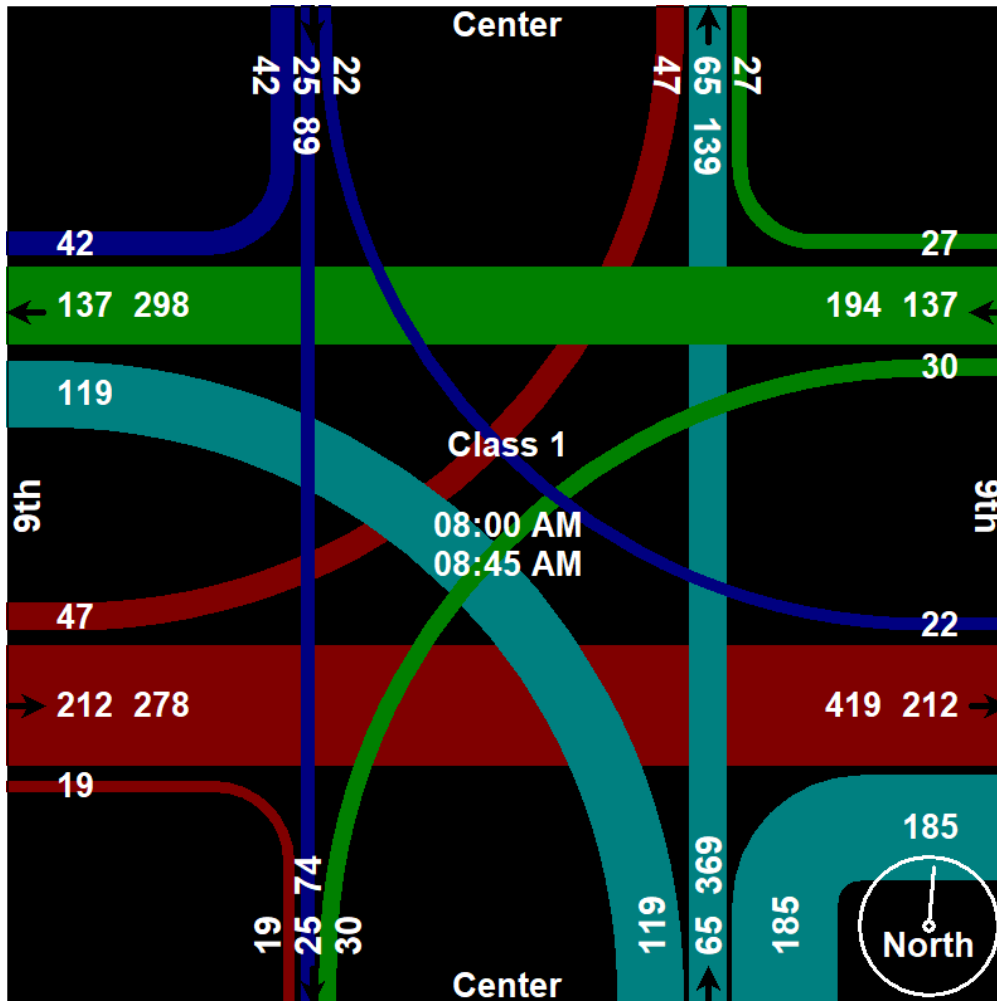
Start Time	Center Southbound				9th Westbound				Center Northbound				9th Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	2	2	2	5	2	3	6	13	10	23	7	4	1	33	5	22	140
07:15 AM	4	4	4	7	4	21	7	15	19	37	16	4	3	36	10	27	218
07:30 AM	2	7	9	11	3	19	8	16	31	35	18	3	6	58	6	17	249
07:45 AM	11	7	1	12	7	37	7	22	48	13	31	6	3	48	3	26	282
Total	19	20	16	35	16	80	28	66	108	108	72	17	13	175	24	92	889
08:00 AM	6	4	1	3	5	18	8	27	37	14	30	4	4	35	10	15	221
08:15 AM	19	5	5	16	3	33	6	19	42	14	27	7	6	37	11	21	271
08:30 AM	2	6	4	17	3	32	9	21	52	14	34	8	3	74	10	23	312
08:45 AM	15	10	12	7	16	54	7	22	54	23	28	9	6	66	16	26	371
Total	42	25	22	43	27	137	30	89	185	65	119	28	19	212	47	85	1175
*** BREAK ***																	
04:00 PM	10	9	2	11	5	40	13	12	22	7	25	13	4	58	5	17	253
04:15 PM	14	8	13	10	7	63	18	15	34	12	26	15	8	77	6	18	344
04:30 PM	14	5	5	6	7	67	19	7	27	4	19	9	7	82	6	21	305
04:45 PM	7	10	0	12	3	37	17	11	17	12	37	18	4	45	5	14	249
Total	45	32	20	39	22	207	67	45	100	35	107	55	23	262	22	70	1151
05:00 PM	25	12	10	8	7	84	17	8	33	8	26	12	10	55	19	23	357
05:15 PM	18	6	10	11	9	64	14	11	37	10	40	7	7	67	5	13	329
05:30 PM	13	7	8	14	6	63	18	7	44	13	27	15	4	60	9	10	318
05:45 PM	12	6	5	12	6	66	16	8	29	8	25	10	5	104	23	12	347
Total	68	31	33	45	28	277	65	34	143	39	118	44	26	286	56	58	1351
Grand Total	174	108	91	162	93	701	190	234	536	247	416	144	81	935	149	305	4566
Apprch %	32.5	20.2	17	30.3	7.6	57.6	15.6	19.2	39.9	18.4	31	10.7	5.5	63.6	10.1	20.7	
Total %	3.8	2.4	2	3.5	2	15.4	4.2	5.1	11.7	5.4	9.1	3.2	1.8	20.5	3.3	6.7	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
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File Name : Center-9th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 2

Start Time	Center Southbound					9th Westbound					Center Northbound					9th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	6	4	1	3	14	5	18	8	27	58	37	14	30	4	85	4	35	10	15	64	221
08:15 AM	19	5	5	16	45	3	33	6	19	61	42	14	27	7	90	6	37	11	21	75	271
08:30 AM	2	6	4	17	29	3	32	9	21	65	52	14	34	8	108	3	74	10	23	110	312
08:45 AM	15	10	12	7	44	16	54	7	22	99	54	23	28	9	114	6	66	16	26	114	371
Total Volume	42	25	22	43	132	27	137	30	89	283	185	65	119	28	397	19	212	47	85	363	1175
% App. Total	31.8	18.9	16.7	32.6		9.5	48.4	10.6	31.4		46.6	16.4	30	7.1		5.2	58.4	12.9	23.4		
PHF	.553	.625	.458	.632	.733	.422	.634	.833	.824	.715	.856	.707	.875	.778	.871	.792	.716	.734	.817	.796	.792



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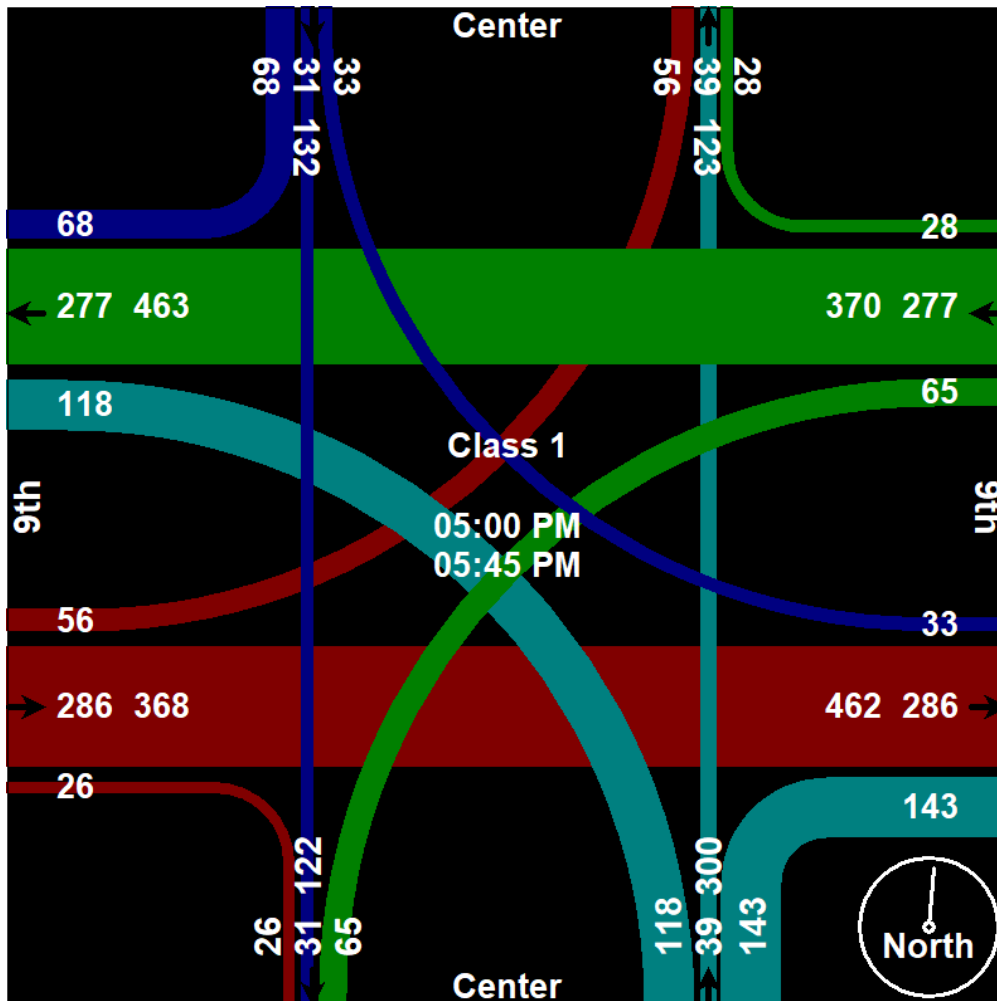
File Name : Center-9th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 3

Start Time	Center Southbound					9th Westbound					Center Northbound					9th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM

05:00 PM	25	12	10	8	55	7	84	17	8	116	33	8	26	12	79	10	55	19	23	107	357
05:15 PM	18	6	10	11	45	9	64	14	11	98	37	10	40	7	94	7	67	5	13	92	329
05:30 PM	13	7	8	14	42	6	63	18	7	94	44	13	27	15	99	4	60	9	10	83	318
05:45 PM	12	6	5	12	35	6	66	16	8	96	29	8	25	10	72	5	104	23	12	144	347
Total Volume	68	31	33	45	177	28	277	65	34	404	143	39	118	44	344	26	286	56	58	426	1351
% App. Total	38.4	17.5	18.6	25.4		6.9	68.6	16.1	8.4		41.6	11.3	34.3	12.8		6.1	67.1	13.1	13.6		
PHF	.680	.646	.825	.804	.805	.778	.824	.903	.773	.871	.813	.750	.738	.733	.869	.650	.688	.609	.630	.740	.946



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Center-9th - Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 1

## Groups Printed- Class 1

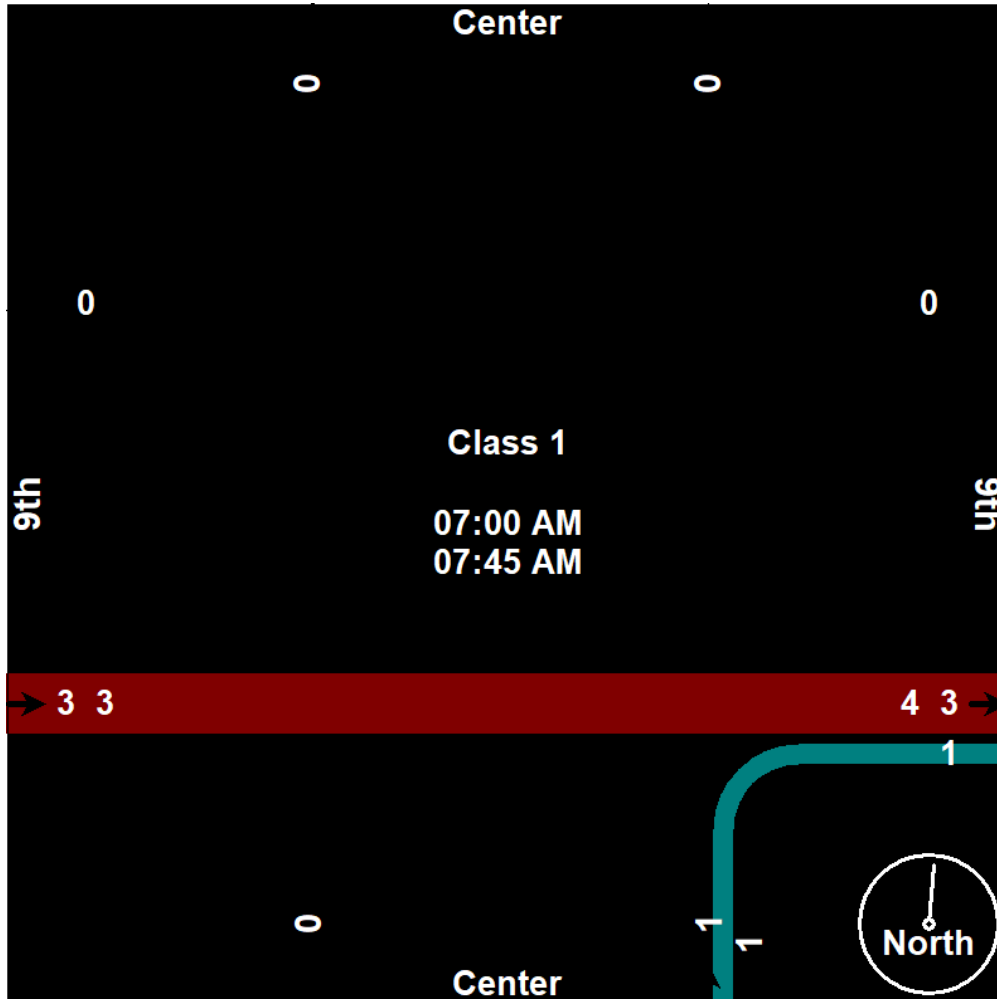
Start Time	Center Southbound				9th Westbound				Center Northbound				9th Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	1	4
07:15 AM	0	0	0	2	0	0	0	1	0	0	0	1	0	1	0	1	6
07:30 AM	0	0	0	1	0	0	0	2	0	0	0	1	0	1	0	1	6
07:45 AM	0	0	0	0	0	0	0	0	1	0	0	3	0	1	0	2	7
Total	0	0	0	3	0	0	0	5	1	0	0	6	0	3	0	5	23
08:00 AM	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	1	4
08:15 AM	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	2	5
08:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	4
Total	0	0	0	1	0	0	0	3	0	0	1	4	0	1	0	5	15
*** BREAK ***																	
04:00 PM	0	0	0	1	0	0	0	1	1	0	1	1	0	0	0	1	6
04:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	3
04:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2
04:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2
Total	0	0	0	2	0	0	0	4	1	0	1	2	0	0	0	3	13
05:00 PM	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	1	4
05:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2
05:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	4
Total	0	0	0	1	0	2	0	1	0	0	1	3	0	0	0	3	11
Grand Total	0	0	0	7	0	2	0	13	2	0	3	15	0	4	0	16	62
Apprch %	0	0	0	100	0	13.3	0	86.7	10	0	15	75	0	20	0	80	
Total %	0	0	0	11.3	0	3.2	0	21	3.2	0	4.8	24.2	0	6.5	0	25.8	

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1819 Quarley Place  
 Henderson, Nevada 89014  
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File Name : Center-9th - Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 2

Start Time	Center Southbound					9th Westbound					Center Northbound					9th Eastbound					Int. Total					
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total						
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:00 AM																										
07:00 AM	0	0	0	0	0	0	0	0	2	2	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	4
07:15 AM	0	0	0	2	2	0	0	0	1	1	0	0	0	1	1	0	1	0	1	1	0	1	0	1	2	6
07:30 AM	0	0	0	1	1	0	0	0	2	2	0	0	0	1	1	0	1	0	1	1	0	1	0	1	2	6
07:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	3	4	0	1	0	2	3	0	1	0	2	3	7
Total Volume	0	0	0	3	3	0	0	0	5	5	1	0	0	6	7	0	3	0	5	8	0	3	0	5	8	23
% App. Total	0	0	0	100		0	0	0	100		14.3	0	0	85.7		0	37.5	0	62.5							
PHF	.000	.000	.000	.375	.375	.000	.000	.000	.625	.625	.250	.000	.000	.500	.438	.000	.750	.000	.625	.667					.821	

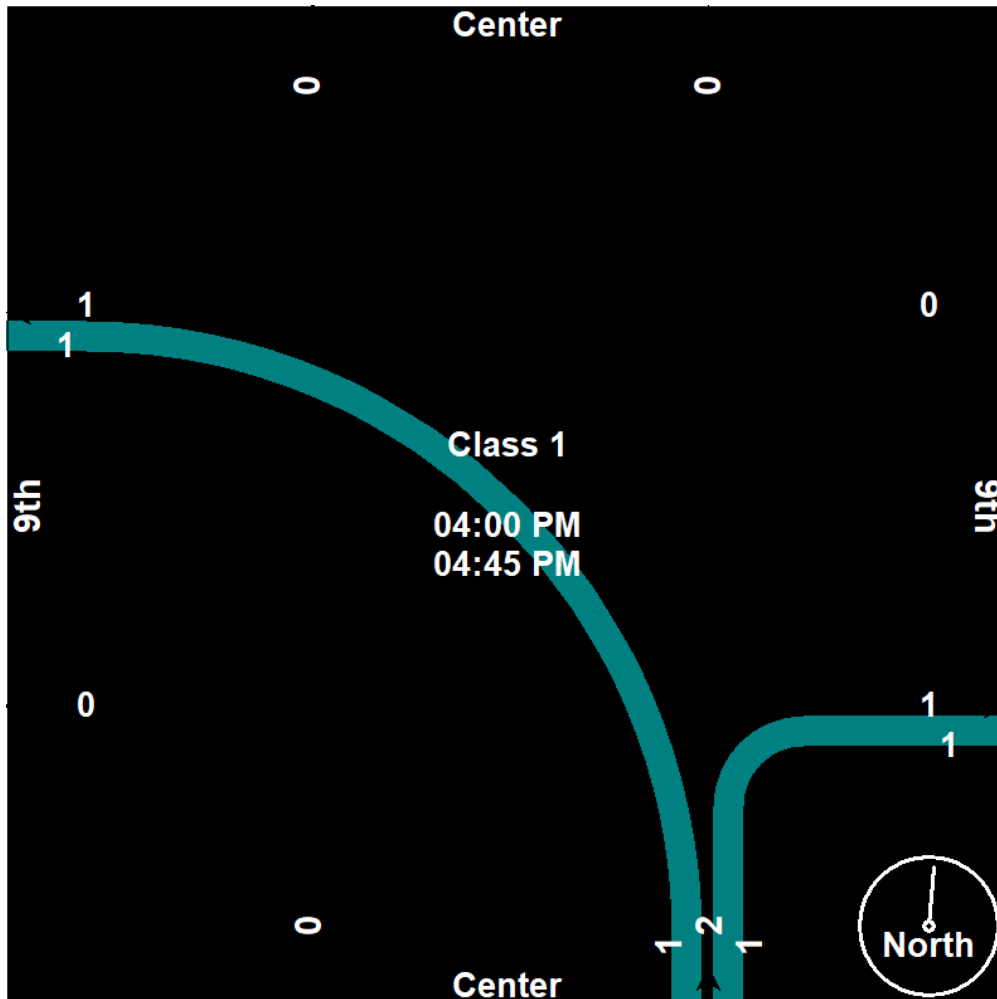


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 sstraffic@msn.com

File Name : Center-9th - Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 3

Start Time	Center Southbound					9th Westbound					Center Northbound					9th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	1	1	0	0	0	1	1	1	0	1	1	3	0	0	0	1	1	6
04:15 PM	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1	3
04:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
04:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	2
Total Volume	0	0	0	2	2	0	0	0	4	4	1	0	1	2	4	0	0	0	3	3	13
% App. Total	0	0	0	100		0	0	0	100		25	0	25	50		0	0	0	100		
PHF	.000	.000	.000	.500	.500	.000	.000	.000	.500	.500	.250	.000	.250	.500	.333	.000	.000	.000	.750	.750	.542



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
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File Name : Evans Ave. - Evans St -9th Ave - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 1

## Groups Printed- Class 1

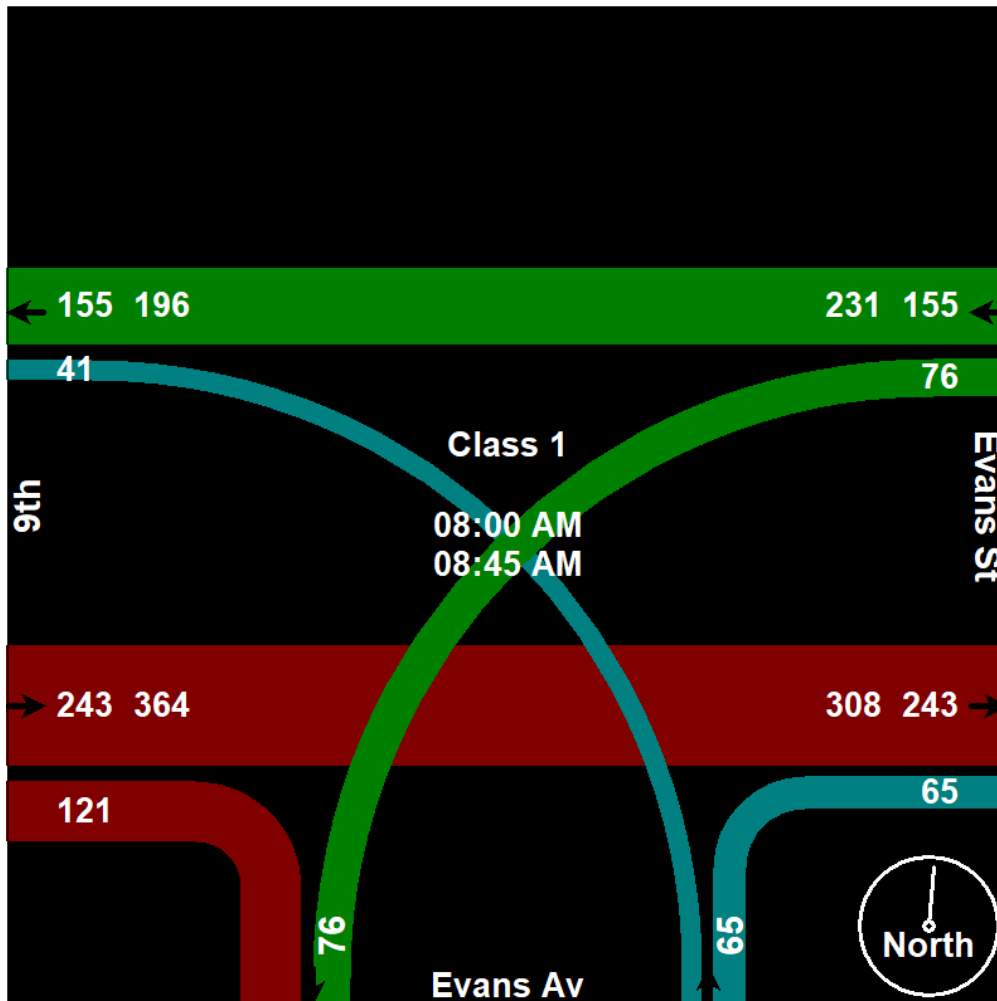
Start Time	Evans St Westbound				Evans Av Northbound				9th Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	21	12	4	10	0	6	3	24	35	0	6	121
07:15 AM	0	36	13	2	10	0	6	2	35	42	0	4	150
07:30 AM	0	23	19	2	8	0	3	0	30	48	0	4	137
07:45 AM	0	30	18	2	12	0	4	2	39	53	0	1	161
Total	0	110	62	10	40	0	19	7	128	178	0	15	569
08:00 AM	0	33	15	1	13	0	13	0	22	55	0	0	152
08:15 AM	0	27	18	3	12	0	6	0	25	54	0	0	145
08:30 AM	0	42	18	1	16	0	10	0	35	58	0	0	180
08:45 AM	0	53	25	4	24	0	12	0	39	76	0	0	233
Total	0	155	76	9	65	0	41	0	121	243	0	0	710
*** BREAK ***													
04:00 PM	0	86	30	2	27	0	27	0	17	68	0	2	259
04:15 PM	0	83	11	0	20	0	19	0	20	93	0	1	247
04:30 PM	0	62	18	1	18	0	23	5	15	51	0	2	195
04:45 PM	0	56	19	2	20	0	12	2	15	54	0	1	181
Total	0	287	78	5	85	0	81	7	67	266	0	6	882
05:00 PM	0	49	17	0	28	0	12	3	17	67	0	1	194
05:15 PM	0	66	16	1	20	0	10	0	13	70	0	4	200
05:30 PM	0	58	10	3	19	0	21	0	15	70	0	6	202
05:45 PM	0	82	16	2	18	0	21	2	19	87	0	10	257
Total	0	255	59	6	85	0	64	5	64	294	0	21	853
Grand Total	0	807	275	30	275	0	205	19	380	981	0	42	3014
Apprch %	0	72.6	24.7	2.7	55.1	0	41.1	3.8	27.1	69.9	0	3	
Total %	0	26.8	9.1	1	9.1	0	6.8	0.6	12.6	32.5	0	1.4	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans Ave. - Evans St -9th Ave - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 2

Start Time	South bound	Evans St Westbound					Evans Av Northbound					9th Eastbound					Int. Total
	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	33	15	1	49	13	0	13	0	26	22	55	0	0	77	152
08:15 AM	0	0	27	18	3	48	12	0	6	0	18	25	54	0	0	79	145
08:30 AM	0	0	42	18	1	61	16	0	10	0	26	35	58	0	0	93	180
08:45 AM	0	0	53	25	4	82	24	0	12	0	36	39	76	0	0	115	233
Total Volume	0	0	155	76	9	240	65	0	41	0	106	121	243	0	0	364	710
% App. Total		0	64.6	31.7	3.8		61.3	0	38.7	0		33.2	66.8	0	0		
PHF	.000	.000	.731	.760	.563	.732	.677	.000	.788	.000	.736	.776	.799	.000	.000	.791	.762



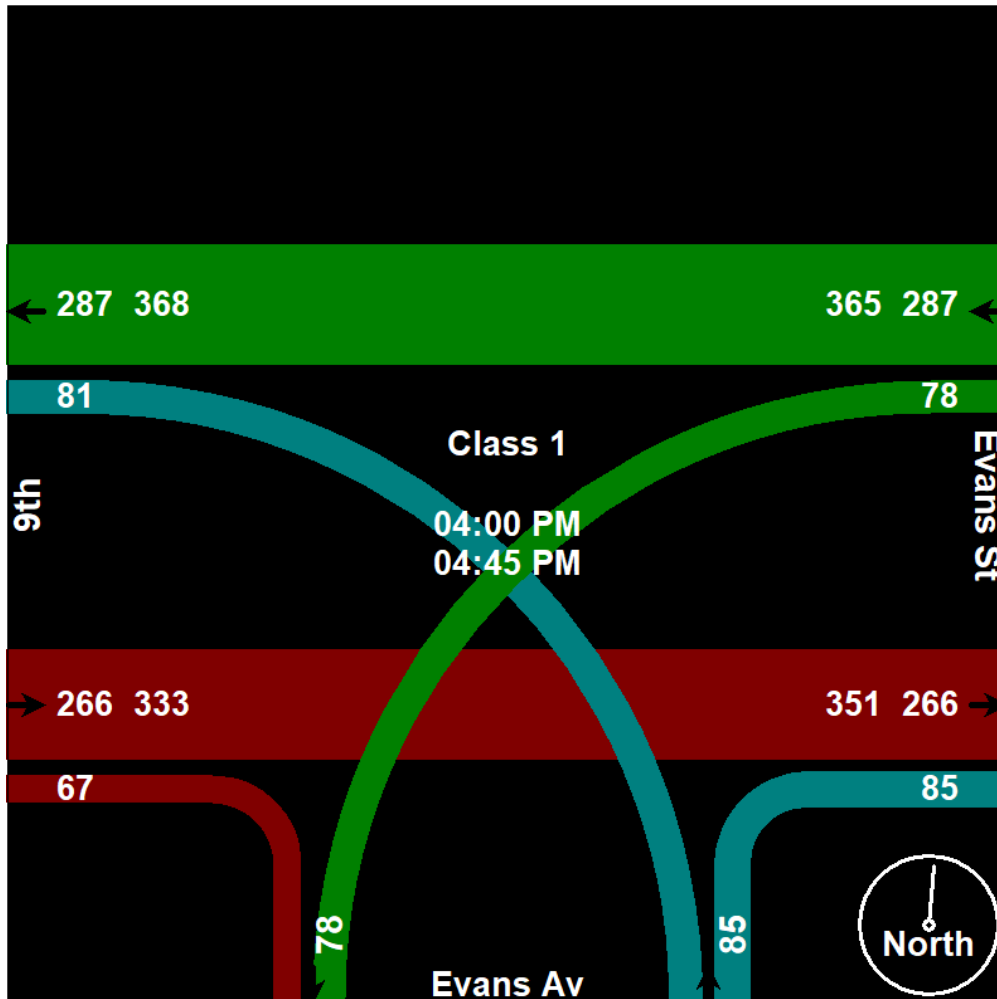


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
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 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans Ave. - Evans St -9th Ave - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 3

Start Time	South bound	Evans St Westbound					Evans Av Northbound					9th Eastbound					Int. Total
	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	86	30	2	118	27	0	27	0	54	17	68	0	2	87	259
04:15 PM	0	0	83	11	0	94	20	0	19	0	39	20	93	0	1	114	247
04:30 PM	0	0	62	18	1	81	18	0	23	5	46	15	51	0	2	68	195
04:45 PM	0	0	56	19	2	77	20	0	12	2	34	15	54	0	1	70	181
Total Volume	0	0	287	78	5	370	85	0	81	7	173	67	266	0	6	339	882
% App. Total	0	0	77.6	21.1	1.4		49.1	0	46.8	4		19.8	78.5	0	1.8		
PHF	.000	.000	.834	.650	.625	.784	.787	.000	.750	.350	.801	.838	.715	.000	.750	.743	.851



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans Ave. - Evans St -9th Ave - Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 1

## Groups Printed- Class 1

Start Time	Evans St Westbound				Evans Av Northbound				9th Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	2	0	0	2	0	0	0	0	1	0	0	5
07:15 AM	0	0	1	0	0	0	0	0	0	2	0	1	4
07:30 AM	0	0	0	2	2	0	0	2	1	3	0	1	11
07:45 AM	0	0	1	0	1	0	0	1	1	0	0	2	6
Total	0	2	2	2	5	0	0	3	2	6	0	4	26
08:00 AM	0	0	2	0	0	0	0	1	0	2	0	1	6
08:15 AM	0	1	0	0	1	0	0	1	0	0	0	1	4
08:30 AM	0	0	1	0	0	0	0	1	0	2	0	4	8
08:45 AM	0	0	0	0	1	0	0	5	0	0	0	3	9
Total	0	1	3	0	2	0	0	8	0	4	0	9	27

\*\*\* BREAK \*\*\*

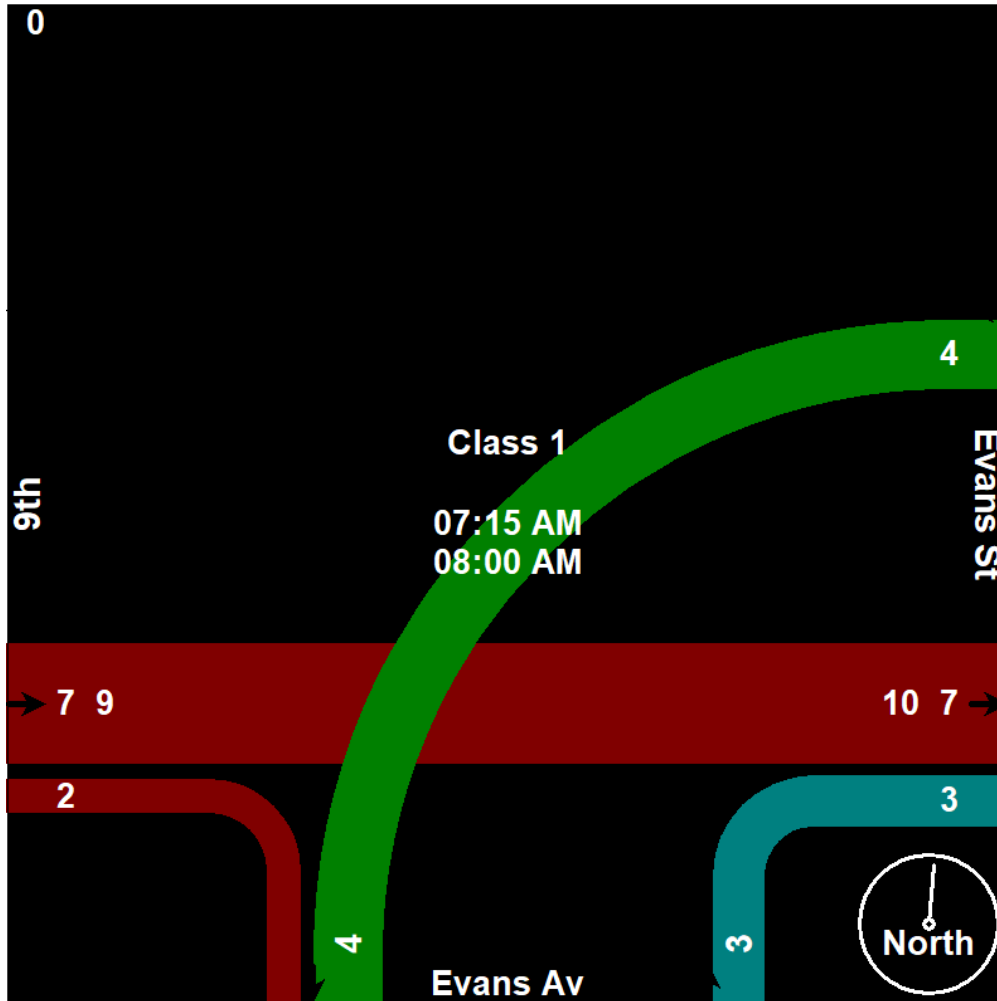
04:00 PM	0	0	0	4	1	0	0	0	0	0	0	1	6
04:15 PM	0	0	0	2	0	0	0	3	0	0	0	1	6
04:30 PM	0	0	0	1	0	0	0	1	0	0	0	2	4
04:45 PM	0	0	0	1	0	0	0	1	0	0	0	0	2
Total	0	0	0	8	1	0	0	5	0	0	0	4	18
05:00 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
05:15 PM	0	0	0	3	0	0	0	1	0	0	0	1	5
05:30 PM	0	0	0	2	0	0	0	2	0	0	0	0	4
05:45 PM	0	0	0	5	0	0	0	0	0	0	0	1	6
Total	0	0	0	10	0	0	0	6	0	0	0	2	18
Grand Total	0	3	5	20	8	0	0	22	2	10	0	19	89
Apprch %	0	10.7	17.9	71.4	26.7	0	0	73.3	6.5	32.3	0	61.3	
Total %	0	3.4	5.6	22.5	9	0	0	24.7	2.2	11.2	0	21.3	

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1819 Quarley Place  
 Henderson, Nevada 89014  
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 sstraffic@msn.com

File Name : Evans Ave. - Evans St -9th Ave - Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 2

Start Time	South bound	Evans St Westbound					Evans Av Northbound					9th Eastbound					Int. Total
	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	1	0	1	0	0	0	0	0	0	2	0	1	3	4
07:30 AM	0	0	0	0	2	2	2	0	0	2	4	1	3	0	1	5	11
07:45 AM	0	0	0	1	0	1	1	0	0	1	2	1	0	0	2	3	6
08:00 AM	0	0	0	2	0	2	0	0	0	1	1	0	2	0	1	3	6
Total Volume	0	0	0	4	2	6	3	0	0	4	7	2	7	0	5	14	27
% App. Total		0	0	66.7	33.3		42.9	0	0	57.1		14.3	50	0	35.7		
PHF	.000	.000	.000	.500	.250	.750	.375	.000	.000	.500	.438	.500	.583	.000	.625	.700	.614

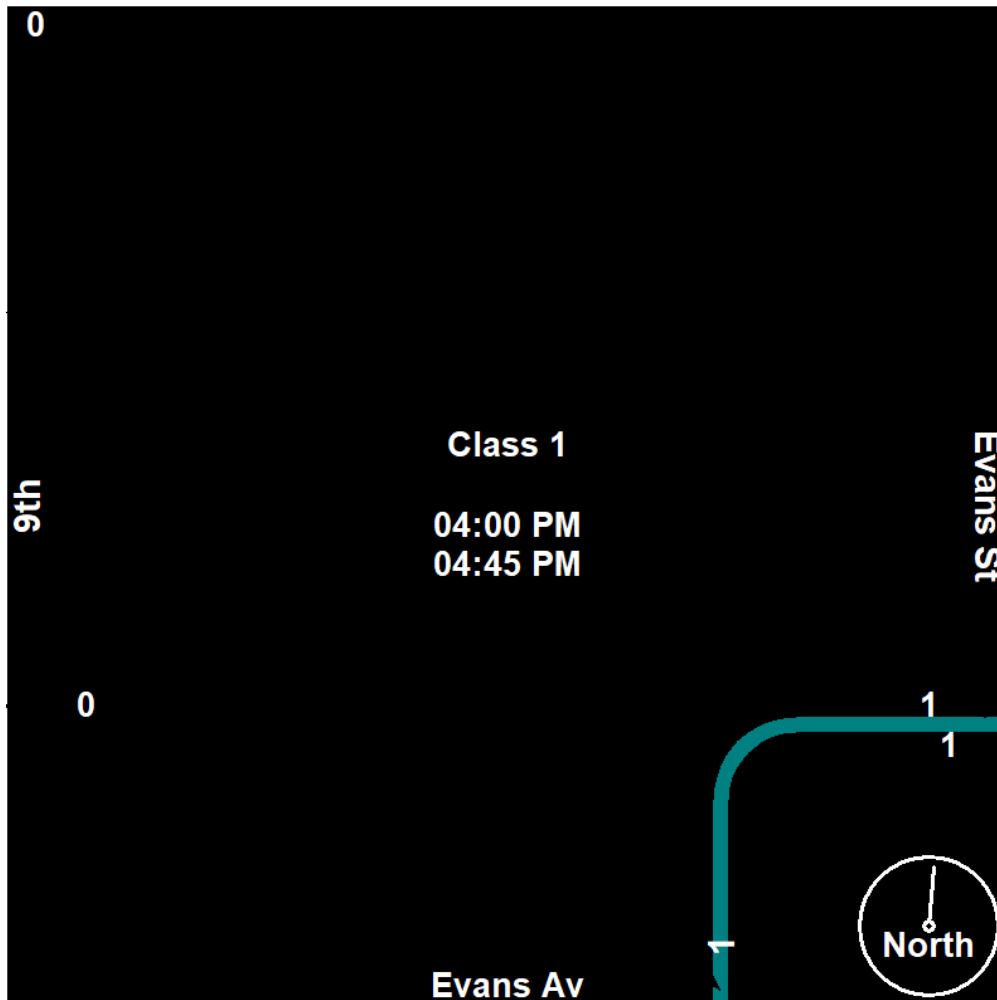


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File Name : Evans Ave. - Evans St -9th Ave - Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 3

Start Time	South bound	Evans St Westbound					Evans Av Northbound					9th Eastbound					Int. Total
	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	4	4	1	0	0	0	1	0	0	0	1	1	6
04:15 PM	0	0	0	0	2	2	0	0	0	3	3	0	0	0	1	1	6
04:30 PM	0	0	0	0	1	1	0	0	0	1	1	0	0	0	2	2	4
04:45 PM	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	2
Total Volume	0	0	0	0	8	8	1	0	0	5	6	0	0	0	4	4	18
% App. Total	0	0	0	0	100		16.7	0	0	83.3		0	0	0	100		
PHF	.000	.000	.000	.000	.500	.500	.250	.000	.000	.417	.500	.000	.000	.000	.500	.500	.750



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans-Record - private vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 1

## Groups Printed- Class 1

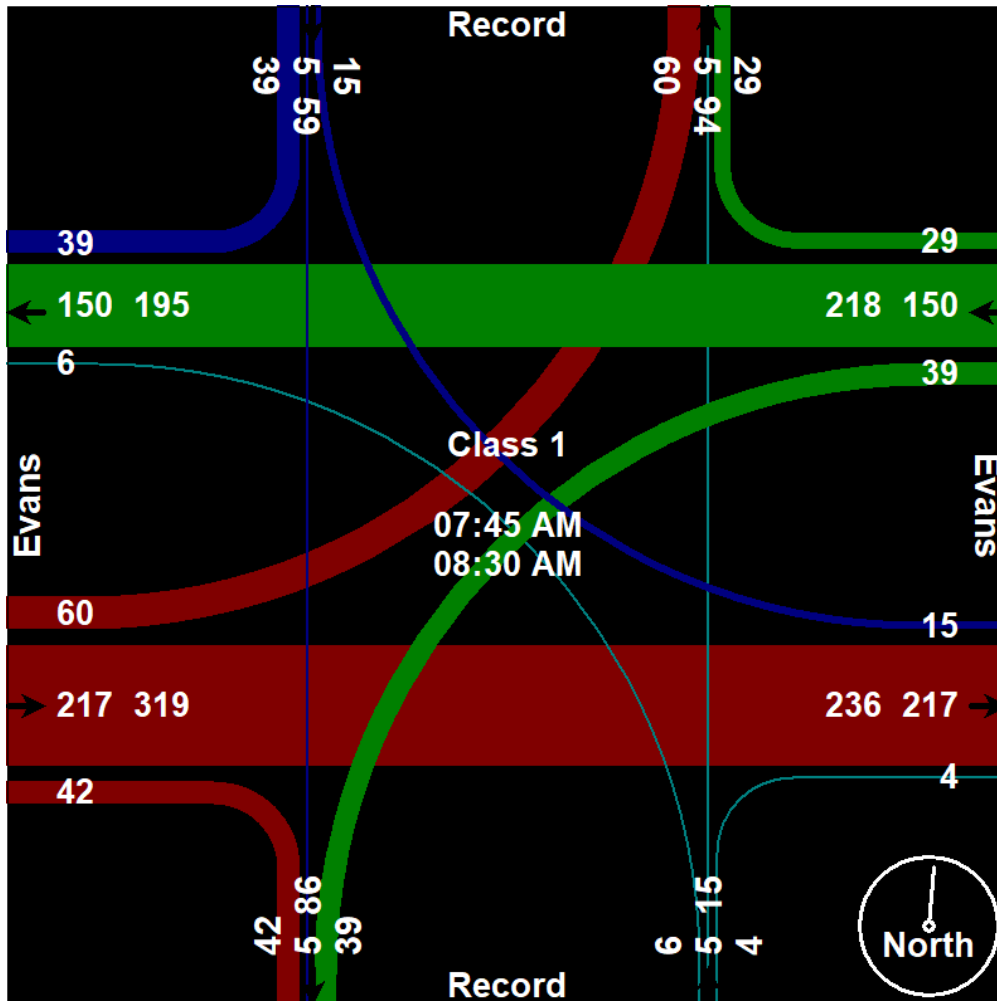
Start Time	Record Southbound				Evans Westbound				Record Northbound				Evans Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	4	3	1	0	1	26	7	0	0	0	1	3	2	18	3	11	80
07:15 AM	5	0	0	0	2	27	5	0	0	2	2	10	6	36	5	35	135
07:30 AM	5	0	0	0	2	33	13	3	1	1	2	7	8	53	11	25	164
07:45 AM	15	2	3	0	11	50	15	6	0	3	0	15	12	73	24	78	307
Total	29	5	4	0	16	136	40	9	1	6	5	35	28	180	43	149	686
08:00 AM	8	1	3	0	6	37	9	4	3	1	2	9	11	43	10	29	176
08:15 AM	10	1	4	0	7	35	6	0	1	0	4	4	8	45	12	28	165
08:30 AM	6	1	5	0	5	28	9	2	0	1	0	8	11	56	14	50	196
08:45 AM	21	4	8	0	14	35	6	3	5	2	3	21	11	56	15	67	271
Total	45	7	20	0	32	135	30	9	9	4	9	42	41	200	51	174	808
*** BREAK ***																	
04:00 PM	18	4	6	0	6	59	5	4	2	1	12	2	4	82	4	33	242
04:15 PM	11	2	4	0	6	71	4	4	4	0	4	28	6	72	5	61	282
04:30 PM	17	2	9	4	9	56	5	3	9	4	6	5	1	55	11	44	240
04:45 PM	15	1	7	6	10	64	6	0	5	2	6	18	8	60	12	64	284
Total	61	9	26	10	31	250	20	11	20	7	28	53	19	269	32	202	1048
05:00 PM	8	1	2	0	8	69	1	0	5	2	6	23	4	89	12	72	302
05:15 PM	20	1	10	2	14	69	7	2	6	0	5	23	4	89	15	62	329
05:30 PM	9	2	3	0	9	76	2	2	1	1	6	12	4	70	11	34	242
05:45 PM	9	3	3	1	5	57	2	3	1	1	5	9	10	79	7	31	226
Total	46	7	18	3	36	271	12	7	13	4	22	67	22	327	45	199	1099
Grand Total	181	28	68	13	115	792	102	36	43	21	64	197	110	976	171	724	3641
Apprch %	62.4	9.7	23.4	4.5	11	75.8	9.8	3.4	13.2	6.5	19.7	60.6	5.6	49.3	8.6	36.5	
Total %	5	0.8	1.9	0.4	3.2	21.8	2.8	1	1.2	0.6	1.8	5.4	3	26.8	4.7	19.9	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
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 sstraffic@msn.com

File Name : Evans-Record - private vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 2

Start Time	Record Southbound					Evans Westbound					Record Northbound					Evans Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	15	2	3	0	20	11	50	15	6	82	0	3	0	15	18	12	73	24	78	187	307
08:00 AM	8	1	3	0	12	6	37	9	4	56	3	1	2	9	15	11	43	10	29	93	176
08:15 AM	10	1	4	0	15	7	35	6	0	48	1	0	4	4	9	8	45	12	28	93	165
08:30 AM	6	1	5	0	12	5	28	9	2	44	0	1	0	8	9	11	56	14	50	131	196
Total Volume	39	5	15	0	59	29	150	39	12	230	4	5	6	36	51	42	217	60	185	504	844
% App. Total	66.1	8.5	25.4	0		12.6	65.2	17	5.2		7.8	9.8	11.8	70.6		8.3	43.1	11.9	36.7		
PHF	.650	.625	.750	.000	.738	.659	.750	.650	.500	.701	.333	.417	.375	.600	.708	.875	.743	.625	.593	.674	.687

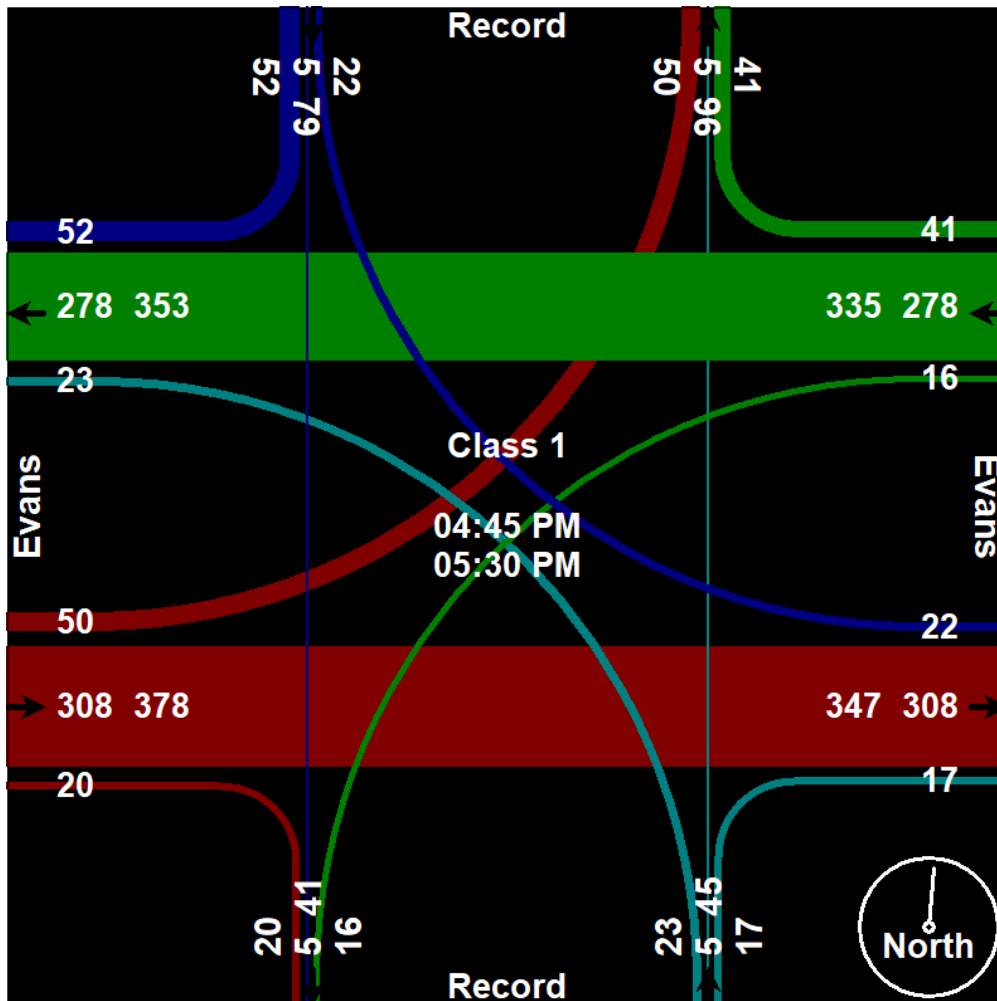


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans-Record - private vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 3

Start Time	Record Southbound					Evans Westbound					Record Northbound					Evans Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	15	1	7	6	29	10	64	6	0	80	5	2	6	18	31	8	60	12	64	144	284
05:00 PM	8	1	2	0	11	8	69	1	0	78	5	2	6	23	36	4	89	12	72	177	302
05:15 PM	<b>20</b>	1	<b>10</b>	2	<b>33</b>	<b>14</b>	69	<b>7</b>	<b>2</b>	<b>92</b>	<b>6</b>	0	5	23	34	4	89	<b>15</b>	62	170	<b>329</b>
05:30 PM	9	<b>2</b>	3	0	14	9	<b>76</b>	2	2	89	1	1	6	12	20	4	70	11	34	119	242
Total Volume	52	5	22	8	87	41	278	16	4	339	17	5	23	76	121	20	308	50	232	610	1157
% App. Total	59.8	5.7	25.3	9.2		12.1	82	4.7	1.2		14	4.1	19	62.8		3.3	50.5	8.2	38		
PHF	.650	.625	.550	.333	.659	.732	.914	.571	.500	.921	.708	.625	.958	.826	.840	.625	.865	.833	.806	.862	.879



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans-Record - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 1

## Groups Printed- Class 1

Start Time	Record Southbound				Evans Westbound				Record Northbound				Evans Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
07:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
Total	0	0	0	0	0	1	0	1	0	0	0	1	1	3	0	0	7
08:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
08:30 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
08:45 AM	0	0	0	0	1	1	0	1	0	0	0	0	0	2	0	0	5
Total	0	0	0	1	1	5	0	1	0	0	0	0	0	4	0	0	12
*** BREAK ***																	
04:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	3
04:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
*** BREAK ***																	
Total	0	0	1	0	2	0	0	0	0	0	0	0	0	1	0	1	5
*** BREAK ***																	
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
*** BREAK ***																	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Grand Total	0	0	1	1	3	6	0	2	0	0	0	1	1	8	0	4	27
Apprch %	0	0	50	50	27.3	54.5	0	18.2	0	0	0	100	7.7	61.5	0	30.8	
Total %	0	0	3.7	3.7	11.1	22.2	0	7.4	0	0	0	3.7	3.7	29.6	0	14.8	

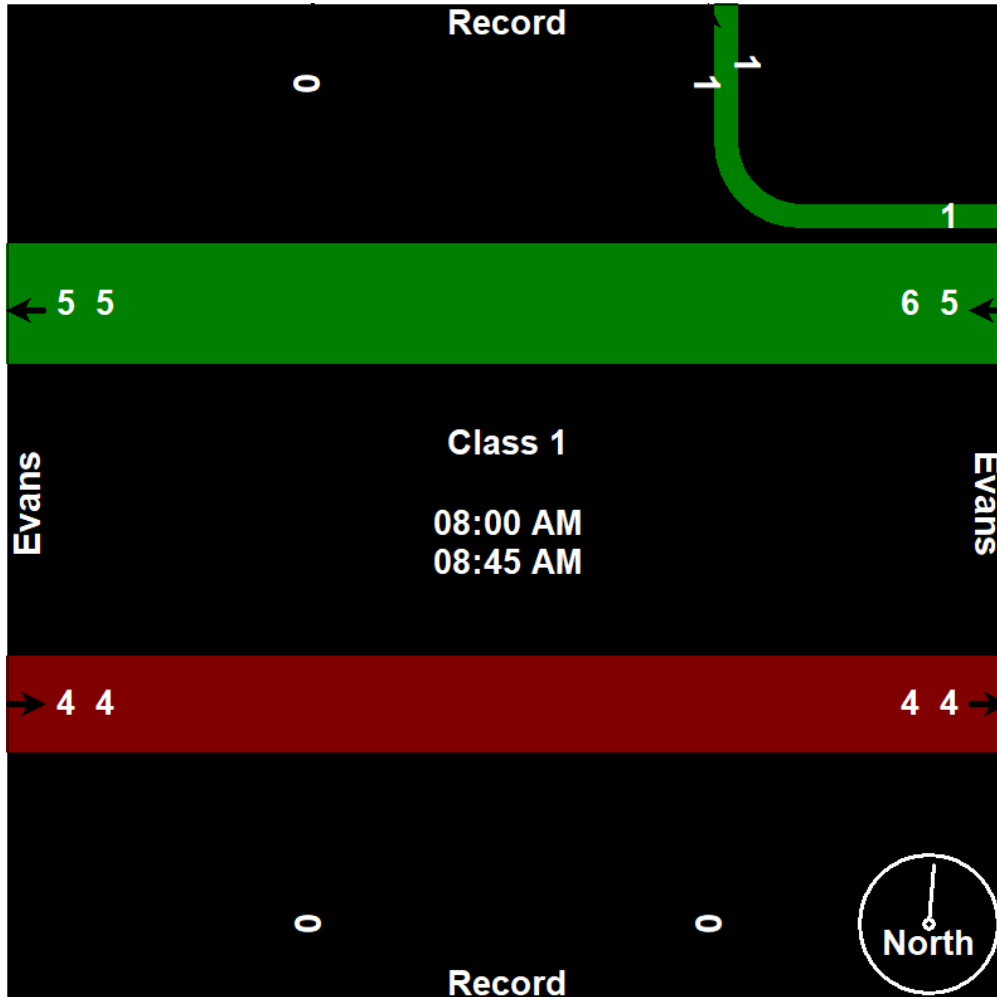


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans-Record - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 2

Start Time	Record Southbound					Evans Westbound					Record Northbound					Evans Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
08:45 AM	0	0	0	0	0	1	1	0	1	3	0	0	0	0	0	0	2	0	0	2	5
Total Volume	0	0	0	1	1	1	5	0	1	7	0	0	0	0	0	0	4	0	0	4	12
% App. Total	0	0	0	100		14.3	71.4	0	14.3		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.250	.250	.250	.417	.000	.250	.583	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.600

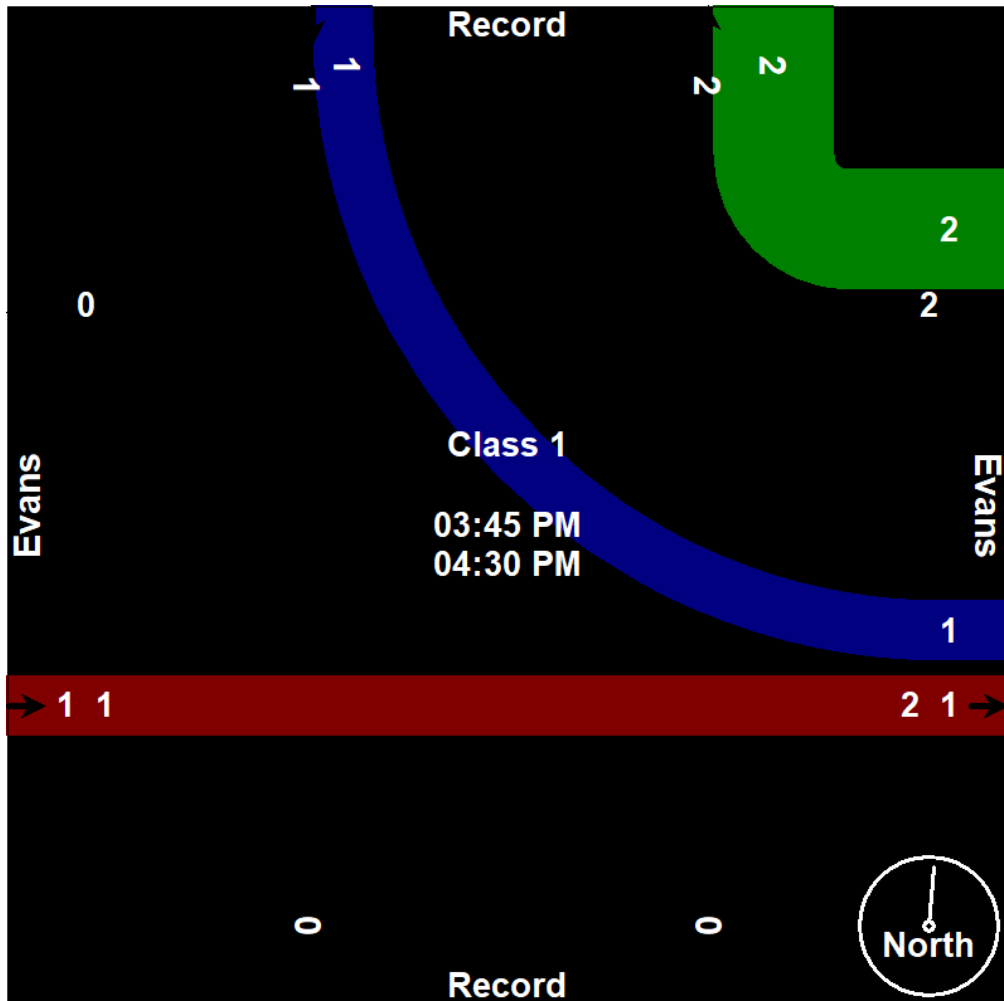


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1819 Quarley Place  
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 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans-Record - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 3

Start Time	Record Southbound					Evans Westbound					Record Northbound					Evans Eastbound					Int. Total	
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total		
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 03:45 PM																						
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	1	3
04:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
Total Volume	0	0	1	0	1	2	0	0	0	2	0	0	0	0	0	0	1	0	1	2	2	5
% App. Total	0	0	100	0		100	0	0	0		0	0	0	0		0	50	0	50			
PHF	.000	.000	.250	.000	.250	.500	.000	.000	.000	.500	.000	.000	.000	.000	.000	.000	.250	.000	.250	.500		.417



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans-Highland - private vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 1

## Groups Printed- Class 1

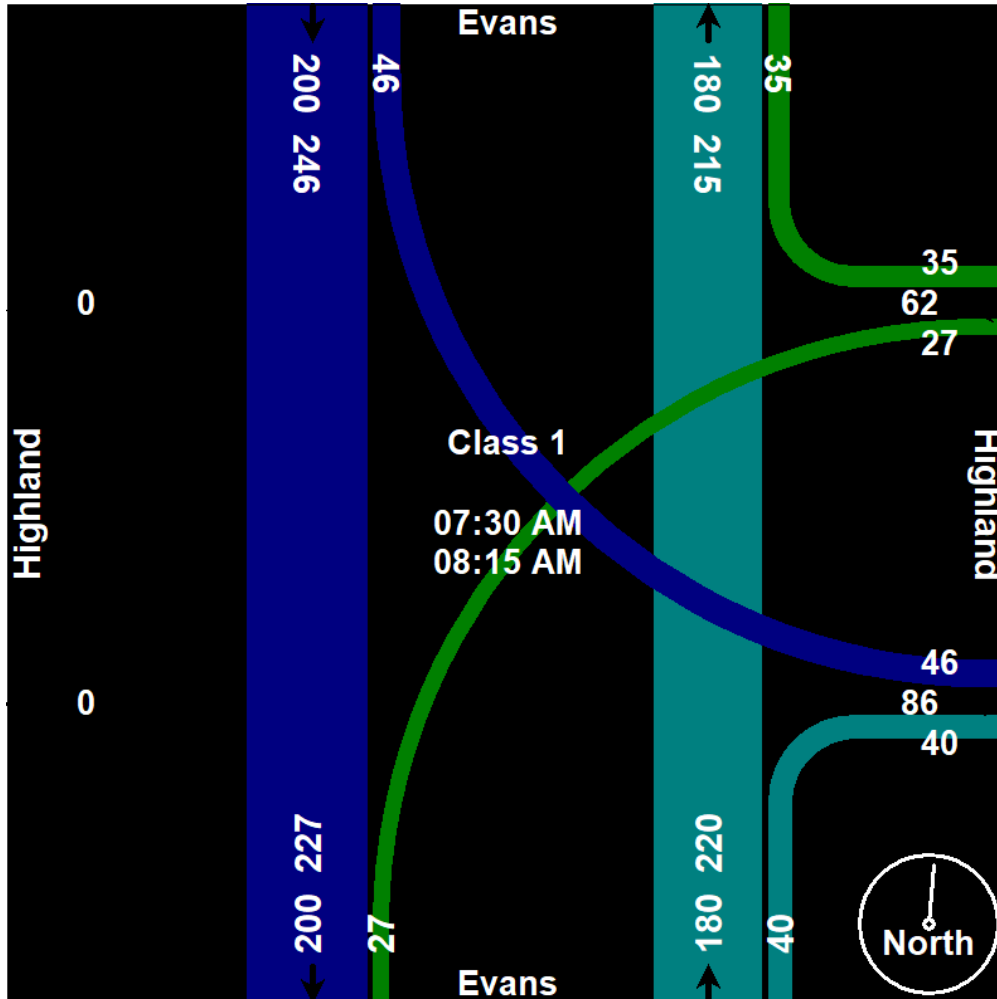
Start Time	Evans Southbound				Highland Westbound				Evans Northbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	32	6	0	3	0	1	3	1	18	0	0	64
07:15 AM	0	31	5	0	1	0	3	1	7	19	0	0	67
07:30 AM	0	43	15	0	5	0	3	6	8	42	0	0	122
07:45 AM	0	69	14	0	16	0	11	4	15	56	0	0	185
Total	0	175	40	0	25	0	18	14	31	135	0	0	438
08:00 AM	0	44	8	0	10	0	8	7	7	42	0	0	126
08:15 AM	0	44	9	0	4	0	5	3	10	40	0	0	115
08:30 AM	0	40	5	0	7	0	2	5	15	45	0	0	119
08:45 AM	0	43	10	0	8	0	12	6	10	54	0	0	143
Total	0	171	32	0	29	0	27	21	42	181	0	0	503
*** BREAK ***													
04:00 PM	0	45	5	0	9	0	20	5	26	72	0	0	182
04:15 PM	0	56	9	0	8	0	19	1	12	71	0	0	176
04:30 PM	0	52	6	0	15	0	12	3	9	67	0	0	164
04:45 PM	0	68	7	0	10	0	14	6	10	61	0	0	176
Total	0	221	27	0	42	0	65	15	57	271	0	0	698
05:00 PM	0	70	13	0	18	0	8	7	20	79	0	0	215
05:15 PM	0	72	18	0	20	0	13	10	17	95	0	0	245
05:30 PM	0	66	7	0	16	0	23	3	16	57	0	0	188
05:45 PM	0	51	6	0	10	0	12	8	18	69	0	0	174
Total	0	259	44	0	64	0	56	28	71	300	0	0	822
Grand Total	0	826	143	0	160	0	166	78	201	887	0	0	2461
Apprch %	0	85.2	14.8	0	39.6	0	41.1	19.3	18.5	81.5	0	0	
Total %	0	33.6	5.8	0	6.5	0	6.7	3.2	8.2	36	0	0	

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File Name : Evans-Highland - private vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 2

Start Time	Evans Southbound					Highland Westbound					Evans Northbound					Eastbound	Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	43	15	0	58	5	0	3	6	14	8	42	0	0	50	0	122
07:45 AM	0	69	14	0	83	16	0	11	4	31	15	56	0	0	71	0	185
08:00 AM	0	44	8	0	52	10	0	8	7	25	7	42	0	0	49	0	126
08:15 AM	0	44	9	0	53	4	0	5	3	12	10	40	0	0	50	0	115
Total Volume	0	200	46	0	246	35	0	27	20	82	40	180	0	0	220	0	548
% App. Total	0	81.3	18.7	0		42.7	0	32.9	24.4		18.2	81.8	0	0			
PHF	.000	.725	.767	.000	.741	.547	.000	.614	.714	.661	.667	.804	.000	.000	.775	.000	.741

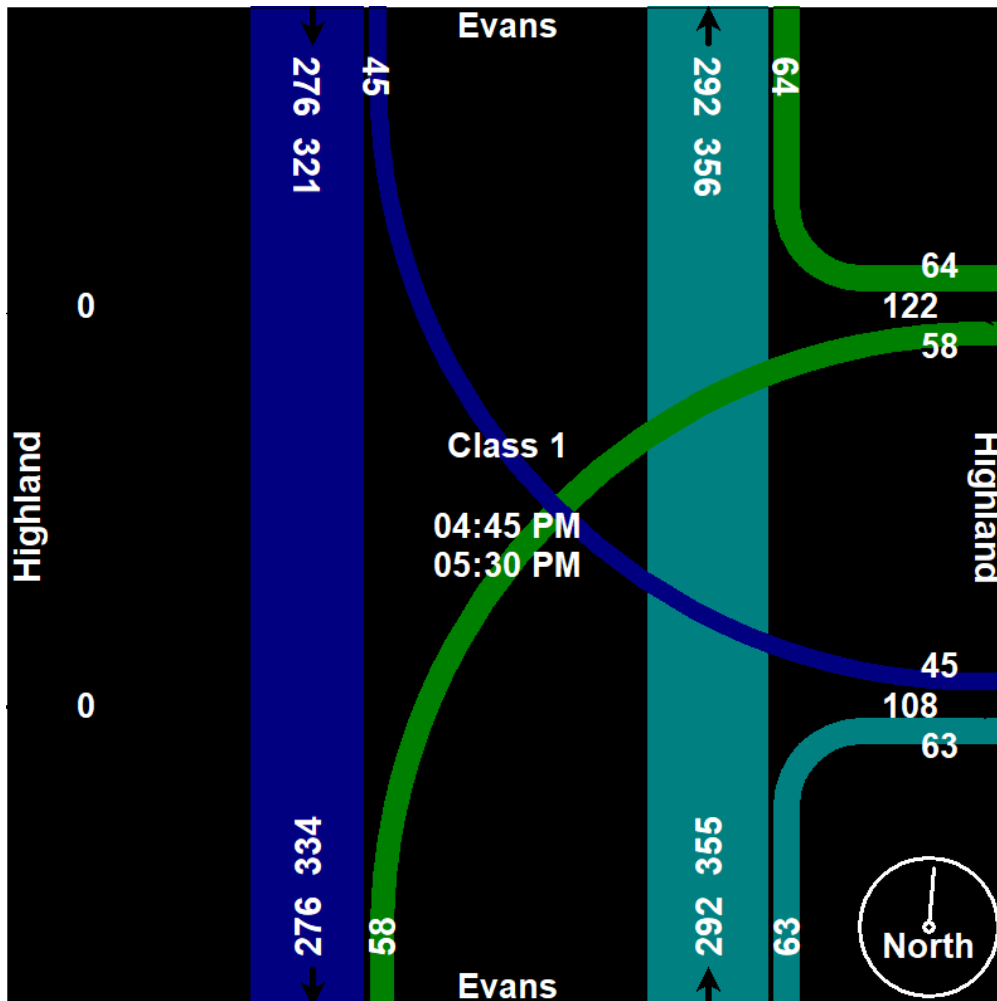


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File Name : Evans-Highland - private vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 3

Start Time	Evans Southbound					Highland Westbound					Evans Northbound					Eastbound	Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total		
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	68	7	0	75	10	0	14	6	30	10	61	0	0	71	0	176
05:00 PM	0	70	13	0	83	18	0	8	7	33	20	79	0	0	99	0	215
05:15 PM	0	<b>72</b>	<b>18</b>	0	<b>90</b>	<b>20</b>	0	13	<b>10</b>	<b>43</b>	17	<b>95</b>	0	0	<b>112</b>	0	<b>245</b>
05:30 PM	0	66	7	0	73	16	0	<b>23</b>	3	42	16	57	0	0	73	0	188
Total Volume	0	276	45	0	321	64	0	58	26	148	63	292	0	0	355	0	824
% App. Total	0	86	14	0		43.2	0	39.2	17.6		17.7	82.3	0	0			
PHF	.000	.958	.625	.000	.892	.800	.000	.630	.650	.860	.788	.768	.000	.000	.792	.000	.841



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File Name : Evans-Highland - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 1

Groups Printed- Class 1

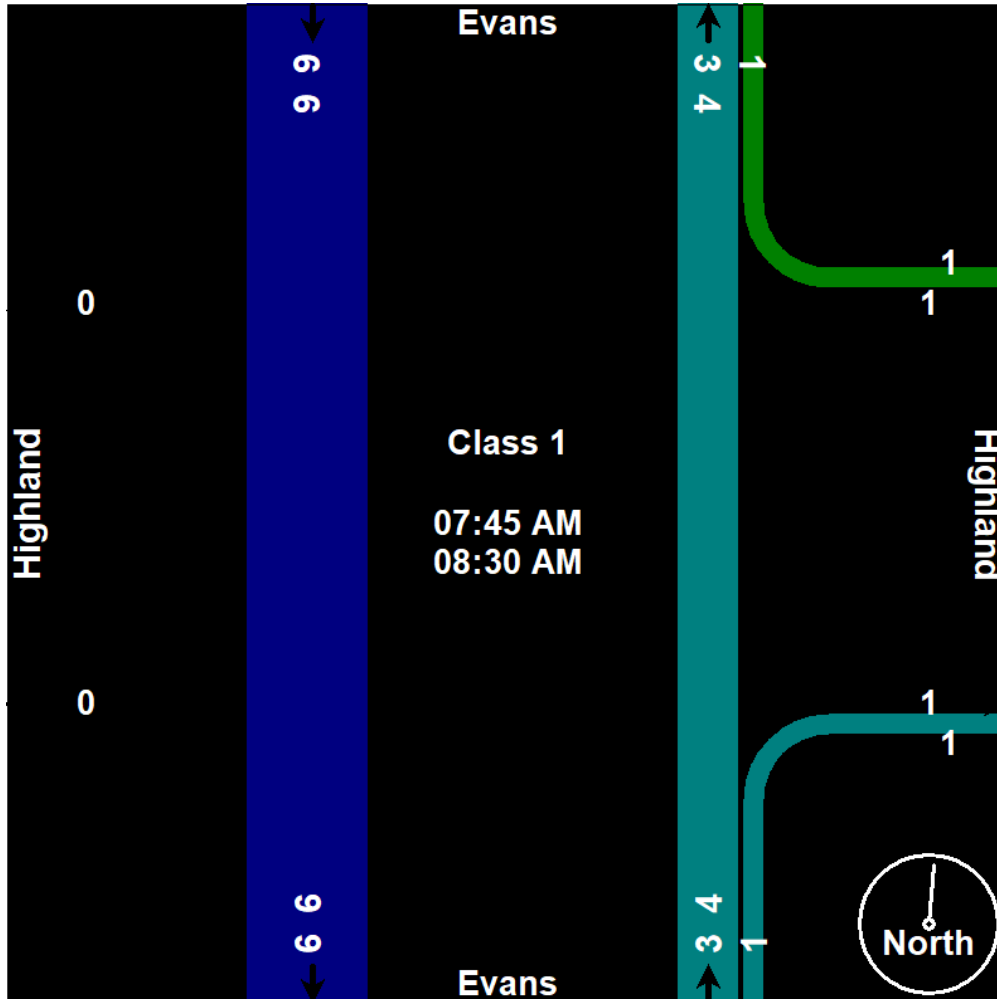
Start Time	Evans Southbound				Highland Westbound				Evans Northbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
07:30 AM	0	2	0	0	0	0	0	0	0	1	0	0	3
07:45 AM	0	2	0	0	0	0	0	2	0	0	0	0	4
Total	0	4	0	0	0	0	0	2	0	3	0	0	9
08:00 AM	0	1	0	0	0	0	0	1	1	0	0	0	3
08:15 AM	0	0	0	0	0	0	0	1	0	2	0	0	3
08:30 AM	0	3	0	0	1	0	0	0	0	1	0	1	6
08:45 AM	0	0	0	0	0	0	1	0	0	2	0	0	3
Total	0	4	0	0	1	0	1	2	1	5	0	1	15
*** BREAK ***													
04:00 PM	0	2	0	0	0	0	1	0	0	0	0	0	3
*** BREAK ***													
04:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	2	0	0	0	0	1	2	0	0	0	0	5
05:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
05:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	3	0	0	0	0	0	3	0	0	0	1	7
Grand Total	0	13	0	0	1	0	2	9	1	8	0	2	36
Apprch %	0	100	0	0	8.3	0	16.7	75	9.1	72.7	0	18.2	
Total %	0	36.1	0	0	2.8	0	5.6	25	2.8	22.2	0	5.6	

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 702-217-1968 - Cell  
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File Name : Evans-Highland - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 2

Start Time	Evans Southbound					Highland Westbound					Evans Northbound					Eastbound	Int. Total	
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total			App. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:45 AM																		
07:45 AM	0	2	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	4
08:00 AM	0	1	0	0	1	0	0	0	1	1	1	0	0	0	1	0	0	3
08:15 AM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	2	0	0	3
08:30 AM	0	3	0	0	3	1	0	0	0	1	0	1	0	1	2	0	0	6
Total Volume	0	6	0	0	6	1	0	0	4	5	1	3	0	1	5	0	0	16
% App. Total	0	100	0	0		20	0	0	80		20	60	0	20				
PHF	.000	.500	.000	.000	.500	.250	.000	.000	.500	.625	.250	.375	.000	.250	.625	.000		.667

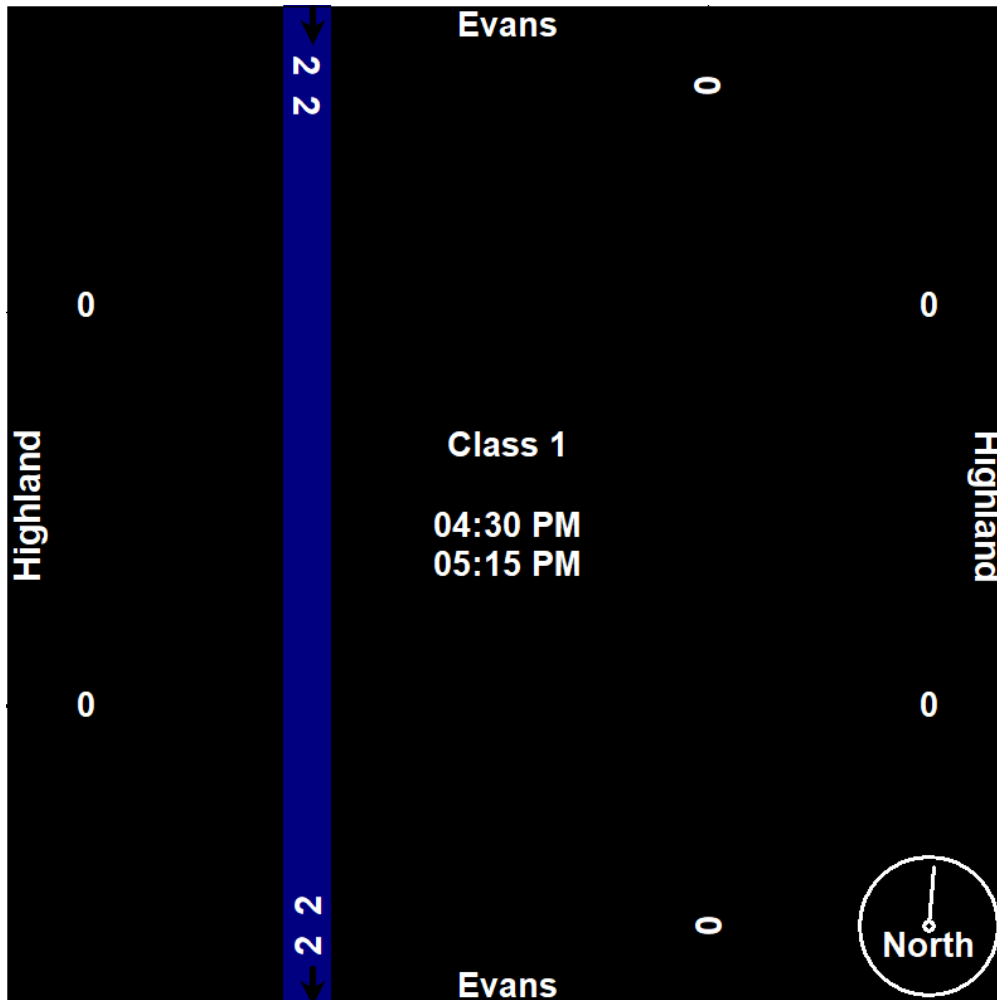


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File Name : Evans-Highland - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 3

Start Time	Evans Southbound					Highland Westbound					Evans Northbound					Eastbound	Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
05:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	3
Total Volume	0	2	0	0	2	0	0	0	5	5	0	0	0	0	0	0	7
% App. Total	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0
PHF	.000	.250	.000	.000	.250	.000	.000	.000	.417	.417	.000	.000	.000	.000	.000	.000	.583





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1819 Quarley Place  
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 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Valley-Highland - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 1

Groups Printed- Class 1

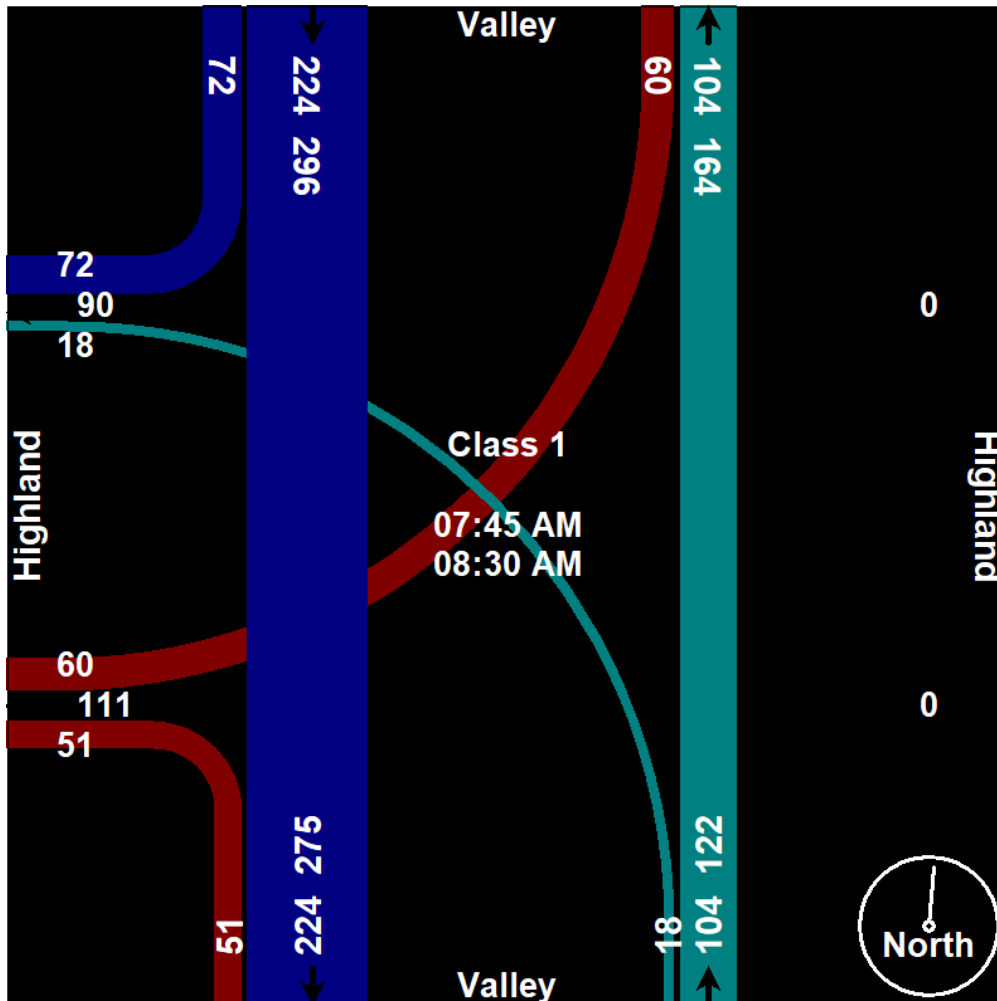
Start Time	Valley Southbound				Valley Northbound				Highland Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	19	49	0	0	0	10	1	0	5	0	10	0	94
07:15 AM	23	46	0	2	0	13	6	1	11	0	4	4	110
07:30 AM	14	45	0	0	0	20	2	0	9	0	8	0	98
07:45 AM	14	79	0	0	0	36	7	0	20	0	16	1	173
Total	70	219	0	2	0	79	16	1	45	0	38	5	475
08:00 AM	20	53	0	1	0	19	2	1	11	0	14	3	124
08:15 AM	18	41	0	0	0	27	3	2	12	0	12	3	118
08:30 AM	20	51	0	2	0	22	6	3	8	0	18	1	131
08:45 AM	43	50	0	3	0	27	5	0	11	0	29	3	171
Total	101	195	0	6	0	95	16	6	42	0	73	10	544
*** BREAK ***													
04:00 PM	34	39	0	0	0	54	8	0	5	0	35	3	178
04:15 PM	28	44	0	0	0	65	10	0	14	0	40	0	201
04:30 PM	15	29	0	0	0	64	7	0	7	0	33	2	157
04:45 PM	31	23	0	0	0	61	9	0	4	0	25	2	155
Total	108	135	0	0	0	244	34	0	30	0	133	7	691
05:00 PM	27	35	0	0	0	82	11	0	10	0	37	0	202
05:15 PM	19	29	0	1	0	71	5	0	7	0	43	3	178
05:30 PM	20	34	0	2	0	53	6	0	6	0	28	0	149
05:45 PM	34	24	0	0	0	61	9	0	6	0	31	0	165
Total	100	122	0	3	0	267	31	0	29	0	139	3	694
Grand Total	379	671	0	11	0	685	97	7	146	0	383	25	2404
Apprch %	35.7	63.2	0	1	0	86.8	12.3	0.9	26.4	0	69.1	4.5	
Total %	15.8	27.9	0	0.5	0	28.5	4	0.3	6.1	0	15.9	1	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
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File Name : Valley-Highland - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 2

Start Time	Valley Southbound					Westbound	Valley Northbound					Highland Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total		App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	14	79	0	0	93	0	0	36	7	0	43	20	0	16	1	37	173
08:00 AM	20	53	0	1	74	0	0	19	2	1	22	11	0	14	3	28	124
08:15 AM	18	41	0	0	59	0	0	27	3	2	32	12	0	12	3	27	118
08:30 AM	20	51	0	2	73	0	0	22	6	3	31	8	0	18	1	27	131
Total Volume	72	224	0	3	299	0	0	104	18	6	128	51	0	60	8	119	546
% App. Total	24.1	74.9	0	1	.804	.000	0	81.2	14.1	4.7	.744	42.9	0	50.4	6.7	.804	.789
PHF	.900	.709	.000	.375	.804	.000	.000	.722	.643	.500	.744	.638	.000	.833	.667	.804	.789

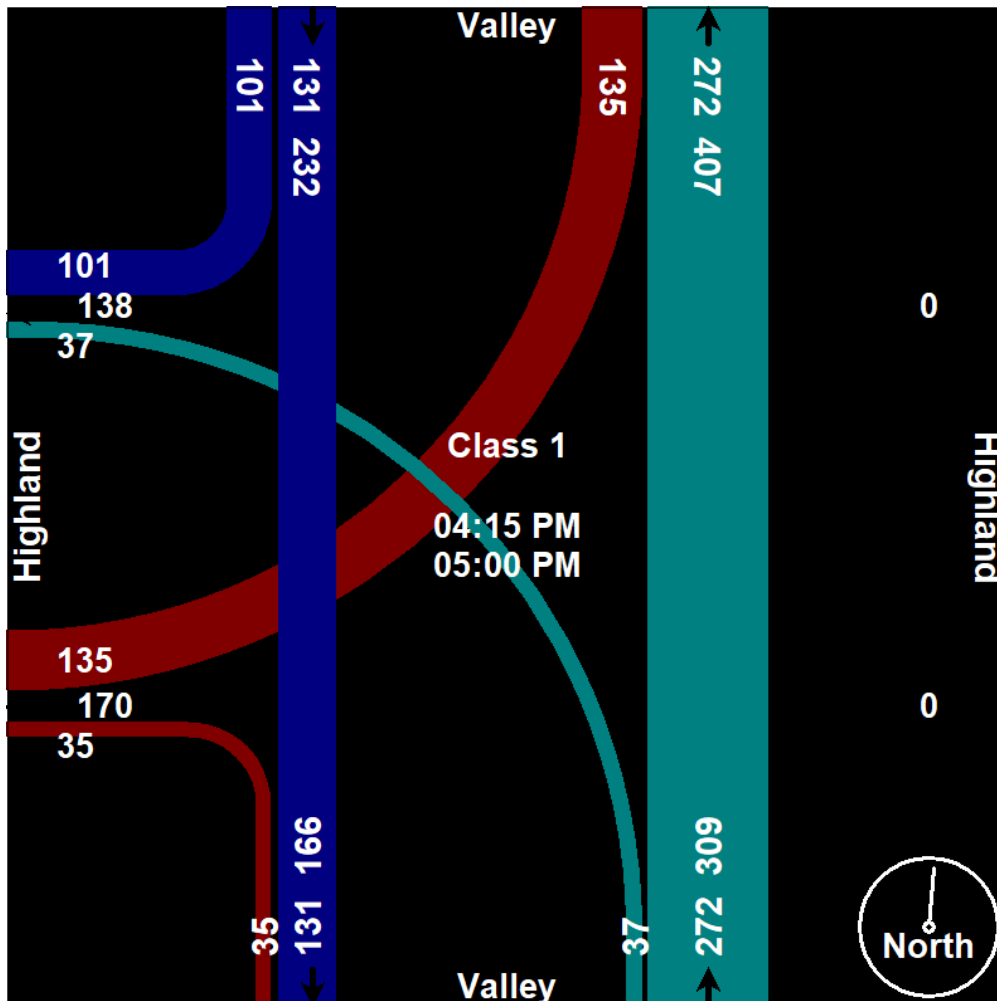


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File Name : Valley-Highland - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 3

Start Time	Valley Southbound					Westbound	Valley Northbound					Highland Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total		App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	28	44	0	0	72	0	0	65	10	0	75	14	0	40	0	54	201
04:30 PM	15	29	0	0	44	0	0	64	7	0	71	7	0	33	2	42	157
04:45 PM	31	23	0	0	54	0	0	61	9	0	70	4	0	25	2	31	155
05:00 PM	27	35	0	0	62	0	0	82	11	0	93	10	0	37	0	47	202
Total Volume	101	131	0	0	232	0	0	272	37	0	309	35	0	135	4	174	715
% App. Total	43.5	56.5	0	0			0	88	12	0		20.1	0	77.6	2.3		
PHF	.815	.744	.000	.000	.806	.000	.000	.829	.841	.000	.831	.625	.000	.844	.500	.806	.885



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File Name : Valley-Highland - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 1

Groups Printed- Class 1

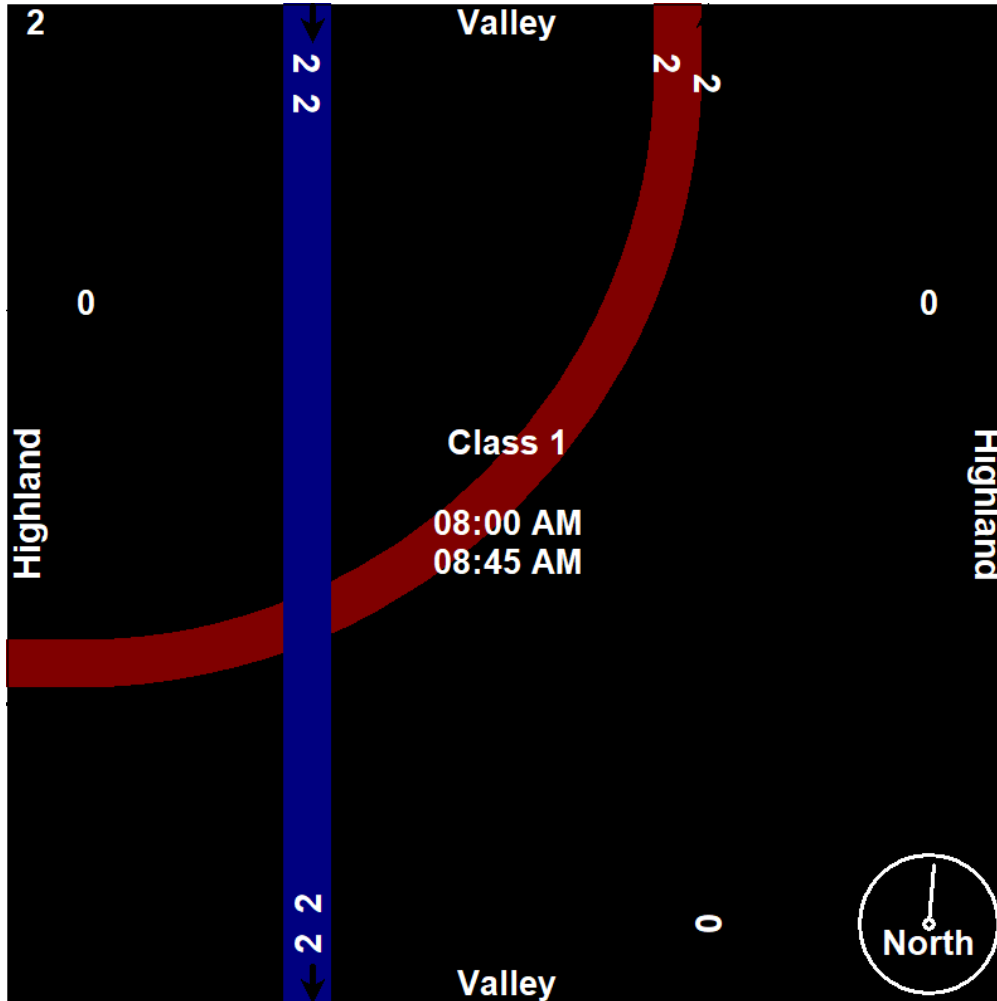
Start Time	Valley Southbound				Valley Northbound				Highland Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	2
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	1	3
07:30 AM	0	2	0	0	0	1	0	0	0	0	0	0	3
07:45 AM	0	0	0	0	0	2	0	0	0	0	1	0	3
Total	0	3	0	1	0	4	1	0	0	0	1	1	11
*** BREAK ***													
08:30 AM	0	1	0	1	0	0	0	3	0	0	1	1	7
08:45 AM	0	1	0	1	0	0	0	2	0	0	1	1	6
Total	0	2	0	2	0	0	0	5	0	0	2	2	13
*** BREAK ***													
04:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
04:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
04:30 PM	0	0	0	0	0	1	0	5	0	0	0	0	6
04:45 PM	0	0	0	1	0	0	0	0	0	0	0	1	2
Total	0	0	0	1	0	1	0	7	0	0	1	1	11
05:00 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
05:15 PM	0	0	0	1	0	0	0	0	0	0	0	1	2
05:30 PM	0	0	0	1	0	0	0	0	0	0	0	1	2
05:45 PM	0	0	0	4	0	0	0	0	0	0	0	4	8
Total	0	1	0	6	0	0	0	1	0	0	0	6	14
Grand Total	0	6	0	10	0	5	1	13	0	0	4	10	49
Apprch %	0	37.5	0	62.5	0	26.3	5.3	68.4	0	0	28.6	71.4	
Total %	0	12.2	0	20.4	0	10.2	2	26.5	0	0	8.2	20.4	

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File Name : Valley-Highland - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 2

Start Time	Valley Southbound					Westbound	Valley Northbound					Highland Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total		App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	1	0	1	2	0	0	0	0	3	3	0	0	1	1	2	7
08:45 AM	0	1	0	1	2	0	0	0	0	2	2	0	0	1	1	2	6
Total Volume	0	2	0	2	4	0	0	0	0	5	5	0	0	2	2	4	13
% App. Total	0	50	0	50		0	0	0	0	100		0	0	50	50		
PHF	.000	.500	.000	.500	.500	.000	.000	.000	.000	.417	.417	.000	.000	.500	.500	.500	.464

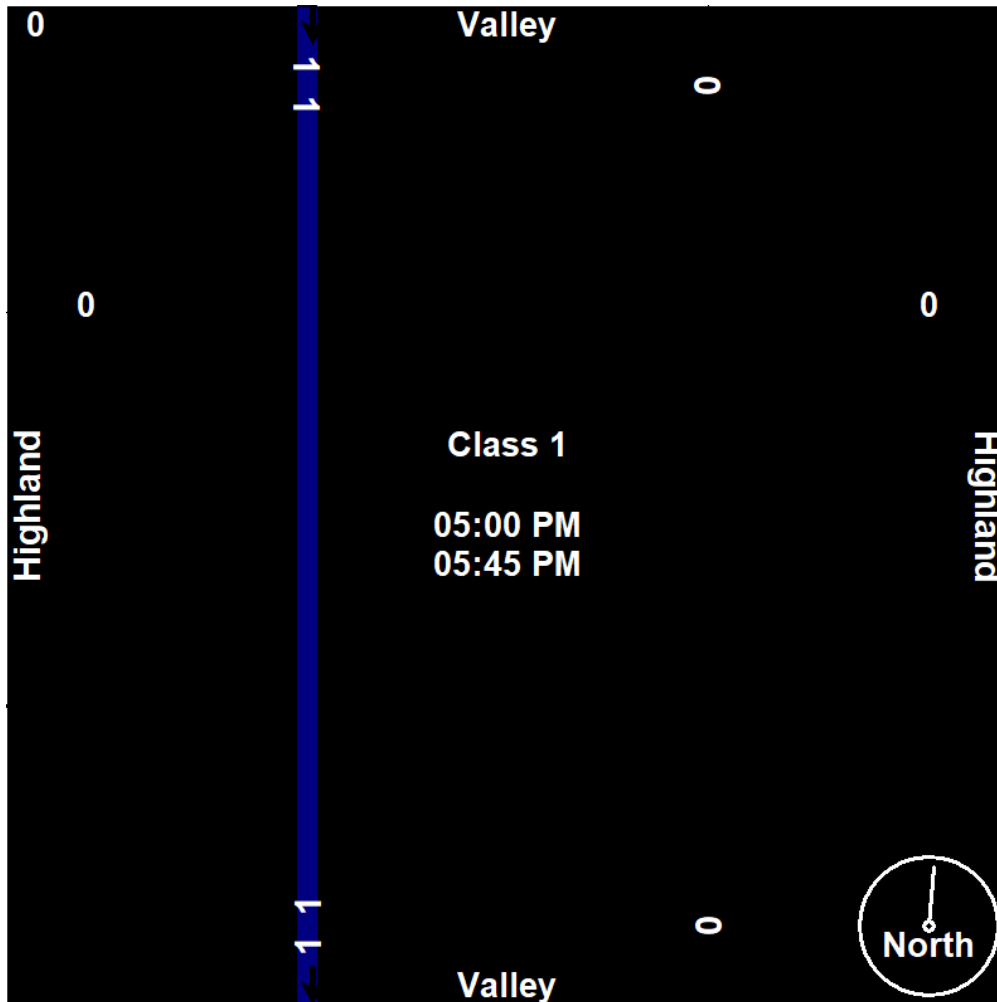


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Valley-Highland - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 3

Start Time	Valley Southbound					Westbound	Valley Northbound					Highland Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total		App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	2
05:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	2
05:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	2
05:45 PM	0	0	0	4	4	0	0	0	0	0	0	0	0	0	4	4	8
Total Volume	0	1	0	6	7	0	0	0	0	1	1	0	0	0	6	6	14
% App. Total	0	14.3	0	85.7		0	0	0	0	100		0	0	0	100		
PHF	.000	.250	.000	.375	.438	.000	.000	.000	.000	.250	.250	.000	.000	.000	.375	.375	.438



# Silver State Traffic Data Collection, LLC

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sstraffic@msn.com

File Name : Valley-Sadlier - private vehicles  
Site Code : 00000000  
Start Date : 4/23/2019  
Page No : 1

Groups Printed- Class 1

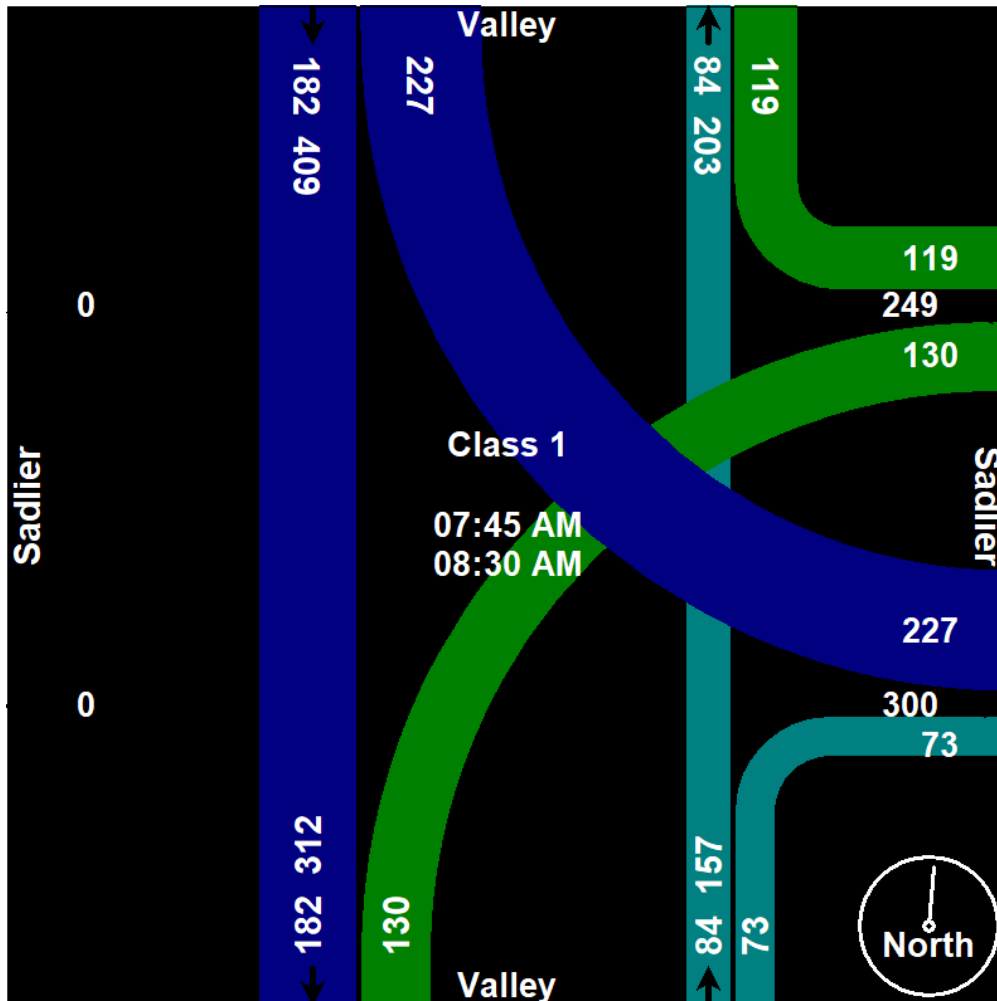
Start Time	Valley Southbound				Sadlier Westbound				Valley Northbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	42	23	6	14	0	26	0	10	9	0	2	132
07:15 AM	0	41	27	3	14	0	32	2	10	7	0	3	139
07:30 AM	0	32	43	0	29	0	28	0	16	14	0	0	162
07:45 AM	0	66	108	1	63	0	28	1	17	31	0	1	316
Total	0	181	201	10	120	0	114	3	53	61	0	6	749
08:00 AM	0	41	66	4	21	0	35	1	18	14	0	1	201
08:15 AM	0	31	25	3	12	0	32	0	15	25	0	0	143
08:30 AM	0	44	28	10	23	0	35	0	23	14	0	4	181
08:45 AM	0	37	27	13	17	0	57	0	30	27	0	0	208
Total	0	153	146	30	73	0	159	1	86	80	0	5	733
*** BREAK ***													
04:00 PM	0	35	20	12	41	0	44	0	39	49	0	1	241
04:15 PM	0	46	39	10	30	0	37	1	63	39	0	3	268
04:30 PM	0	32	44	13	30	0	27	0	52	44	0	2	244
04:45 PM	0	24	31	8	40	0	38	2	43	43	0	0	229
Total	0	137	134	43	141	0	146	3	197	175	0	6	982
05:00 PM	0	38	34	4	47	0	32	0	63	54	0	1	273
05:15 PM	0	30	33	2	42	0	26	0	54	57	0	1	245
05:30 PM	0	32	34	4	41	0	42	0	47	30	0	3	233
05:45 PM	0	29	22	4	30	0	37	0	50	43	0	2	217
Total	0	129	123	14	160	0	137	0	214	184	0	7	968
Grand Total	0	600	604	97	494	0	556	7	550	500	0	24	3432
Apprch %	0	46.1	46.4	7.5	46.7	0	52.6	0.7	51.2	46.6	0	2.2	
Total %	0	17.5	17.6	2.8	14.4	0	16.2	0.2	16	14.6	0	0.7	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
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 sstraffic@msn.com

File Name : Valley-Sadlier - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 2

Start Time	Valley Southbound					Sadlier Westbound					Valley Northbound					Eastbound	Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	App. Total	
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	66	108	1	175	63	0	28	1	92	17	31	0	1	49	0	316
08:00 AM	0	41	66	4	111	21	0	35	1	57	18	14	0	1	33	0	201
08:15 AM	0	31	25	3	59	12	0	32	0	44	15	25	0	0	40	0	143
08:30 AM	0	44	28	10	82	23	0	35	0	58	23	14	0	4	41	0	181
Total Volume	0	182	227	18	427	119	0	130	2	251	73	84	0	6	163	0	841
% App. Total	0	42.6	53.2	4.2		47.4	0	51.8	0.8		44.8	51.5	0	3.7			
PHF	.000	.689	.525	.450	.610	.472	.000	.929	.500	.682	.793	.677	.000	.375	.832	.000	.665



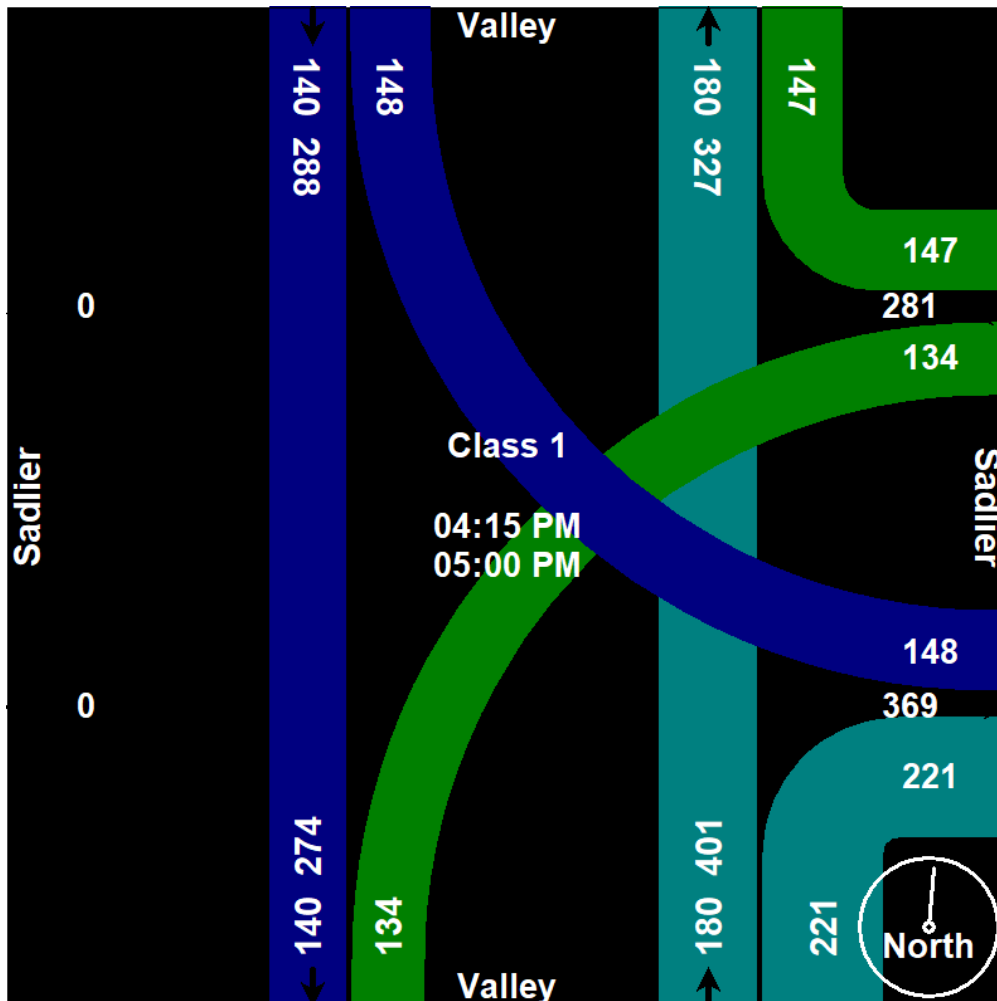


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Valley-Sadlier - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 3

Start Time	Valley Southbound					Sadlier Westbound					Valley Northbound					Eastbound	Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	App. Total	
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	46	39	10	95	30	0	37	1	68	63	39	0	3	105	0	268
04:30 PM	0	32	44	13	89	30	0	27	0	57	52	44	0	2	98	0	244
04:45 PM	0	24	31	8	63	40	0	38	2	80	43	43	0	0	86	0	229
05:00 PM	0	38	34	4	76	47	0	32	0	79	63	54	0	1	118	0	273
Total Volume	0	140	148	35	323	147	0	134	3	284	221	180	0	6	407	0	1014
% App. Total	0	43.3	45.8	10.8		51.8	0	47.2	1.1		54.3	44.2	0	1.5			
PHF	.000	.761	.841	.673	.850	.782	.000	.882	.375	.888	.877	.833	.000	.500	.862	.000	.929



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
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File Name : valley-sadlier - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 1

## Groups Printed- Class 1

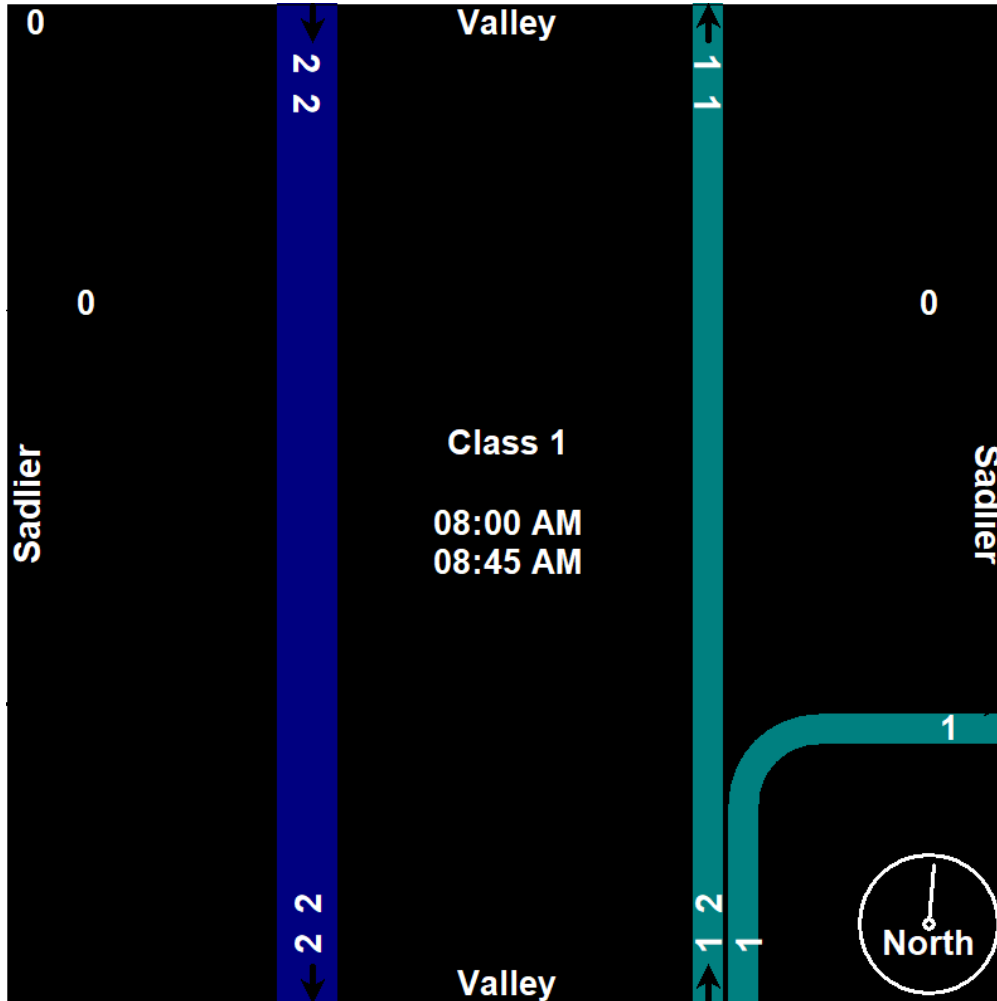
Start Time	Valley Southbound				Sadlier Westbound				Valley Northbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	2
07:30 AM	0	2	0	0	0	0	0	0	1	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	1	2	0	0	3
Total	0	3	0	1	0	0	0	0	2	3	0	0	9
*** BREAK ***													
08:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	2
08:30 AM	0	1	0	1	0	0	0	1	0	1	0	1	5
08:45 AM	0	1	0	2	0	0	0	2	1	0	0	2	8
Total	0	2	0	3	0	0	0	4	1	1	0	4	15
*** BREAK ***													
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
04:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	3	0	1	0	3	7
*** BREAK ***													
Total	0	0	0	1	0	0	0	3	0	2	0	3	9
05:00 PM	0	1	0	0	0	0	0	1	0	0	0	1	3
05:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	4	0	0	0	0	0	0	0	0	4
Total	0	1	0	6	0	0	0	1	0	0	0	1	9
Grand Total	0	6	0	11	0	0	0	8	3	6	0	8	42
Apprch %	0	35.3	0	64.7	0	0	0	100	17.6	35.3	0	47.1	
Total %	0	14.3	0	26.2	0	0	0	19	7.1	14.3	0	19	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : valley-sadlier - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 2

Start Time	Valley Southbound					Sadlier Westbound					Valley Northbound					Eastbound	Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total		
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0
08:30 AM	0	1	0	1	2	0	0	0	1	1	0	1	0	1	2	0	0
08:45 AM	0	1	0	2	3	0	0	0	2	2	1	0	0	2	3	0	0
Total Volume	0	2	0	3	5	0	0	0	4	4	1	1	0	4	6	0	0
% App. Total	0	40	0	60		0	0	0	100		16.7	16.7	0	66.7			
PHF	.000	.500	.000	.375	.417	.000	.000	.000	.500	.500	.250	.250	.000	.500	.500	.000	.469

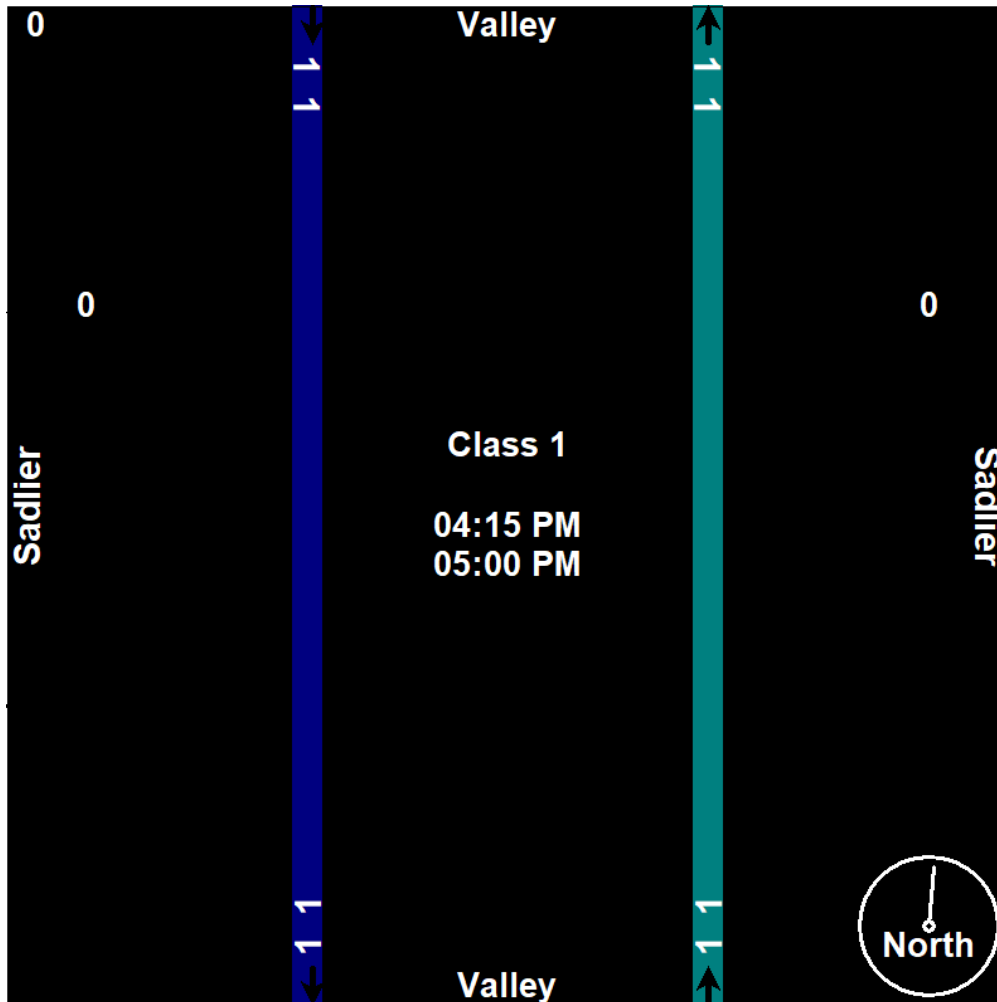


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : valley-sadlier - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 3

Start Time	Valley Southbound					Sadlier Westbound					Valley Northbound					Eastbound	Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total		
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	3	3	0	1	0	3	4	0	7
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	1	0	0	1	0	0	0	1	1	0	0	0	1	1	0	3
Total Volume	0	1	0	1	2	0	0	0	4	4	0	1	0	4	5	0	11
% App. Total	0	50	0	50		0	0	0	100		0	20	0	80			
PHF	.000	.250	.000	.250	.500	.000	.000	.000	.333	.333	.000	.250	.000	.333	.313	.000	.393



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
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File Name : Virginia - 8th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 1

## Groups Printed- Class 1

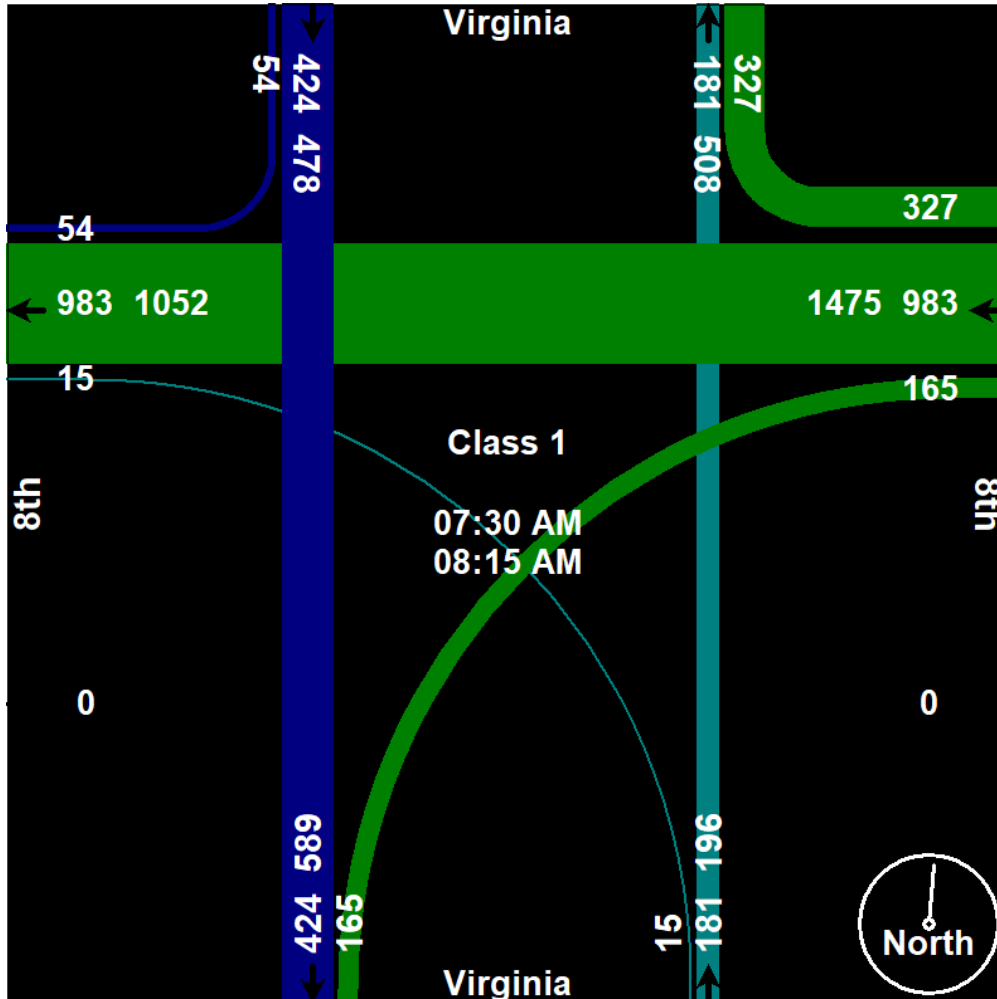
Start Time	Virginia Southbound				8th Westbound				Virginia Northbound				8th Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	13	112	0	0	67	160	29	1	0	51	5	1	0	0	0	5	444
07:15 AM	11	106	0	1	98	225	34	4	0	34	2	3	0	0	0	9	527
07:30 AM	17	152	0	5	75	240	35	14	0	44	2	3	0	0	0	3	590
07:45 AM	17	126	0	1	82	278	42	8	0	45	4	0	0	0	0	2	605
Total	58	496	0	7	322	903	140	27	0	174	13	7	0	0	0	19	2166
08:00 AM	11	84	0	0	72	212	38	5	0	45	7	1	0	0	0	2	477
08:15 AM	9	62	0	2	98	253	50	5	0	47	2	0	0	0	0	4	532
08:30 AM	9	71	0	4	136	198	37	10	0	66	2	2	0	0	0	11	546
08:45 AM	14	88	0	2	125	263	52	5	0	66	5	12	0	0	0	5	637
Total	43	305	0	8	431	926	177	25	0	224	16	15	0	0	0	22	2192
*** BREAK ***																	
04:00 PM	29	122	0	3	60	190	68	17	0	120	38	1	0	0	0	4	652
04:15 PM	30	131	0	9	75	216	80	27	0	101	27	4	0	0	0	30	730
04:30 PM	44	166	0	5	56	189	66	10	0	118	34	0	0	0	0	15	703
04:45 PM	27	104	0	4	53	225	82	12	0	116	28	2	0	0	0	6	659
Total	130	523	0	21	244	820	296	66	0	455	127	7	0	0	0	55	2744
05:00 PM	50	147	0	4	45	228	60	17	0	150	28	3	0	0	0	23	755
05:15 PM	43	111	0	11	79	244	86	16	0	129	32	1	0	0	0	15	767
05:30 PM	26	118	0	2	59	202	81	11	0	123	31	2	0	0	0	12	667
05:45 PM	31	85	0	1	71	214	97	10	0	113	19	2	0	0	0	16	659
Total	150	461	0	18	254	888	324	54	0	515	110	8	0	0	0	66	2848
Grand Total	381	1785	0	54	1251	3537	937	172	0	1368	266	37	0	0	0	162	9950
Apprch %	17.2	80.4	0	2.4	21.2	60	15.9	2.9	0	81.9	15.9	2.2	0	0	0	100	
Total %	3.8	17.9	0	0.5	12.6	35.5	9.4	1.7	0	13.7	2.7	0.4	0	0	0	1.6	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
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 sstraffic@msn.com

File Name : Virginia - 8th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 2

Start Time	Virginia Southbound					8th Westbound					Virginia Northbound					8th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	17	152	0	5	174	75	240	35	14	364	0	44	2	3	49	0	0	0	3	3	590
07:45 AM	17	126	0	1	144	82	278	42	8	410	0	45	4	0	49	0	0	0	2	2	605
08:00 AM	11	84	0	0	95	72	212	38	5	327	0	45	7	1	53	0	0	0	2	2	477
08:15 AM	9	62	0	2	73	98	253	50	5	406	0	47	2	0	49	0	0	0	4	4	532
Total Volume	54	424	0	8	486	327	983	165	32	1507	0	181	15	4	200	0	0	0	11	11	2204
% App. Total	11.1	87.2	0	1.6		21.7	65.2	10.9	2.1		0	90.5	7.5	2		0	0	0	100		
PHF	.794	.697	.000	.400	.698	.834	.884	.825	.571	.919	.000	.963	.536	.333	.943	.000	.000	.000	.688	.688	.911

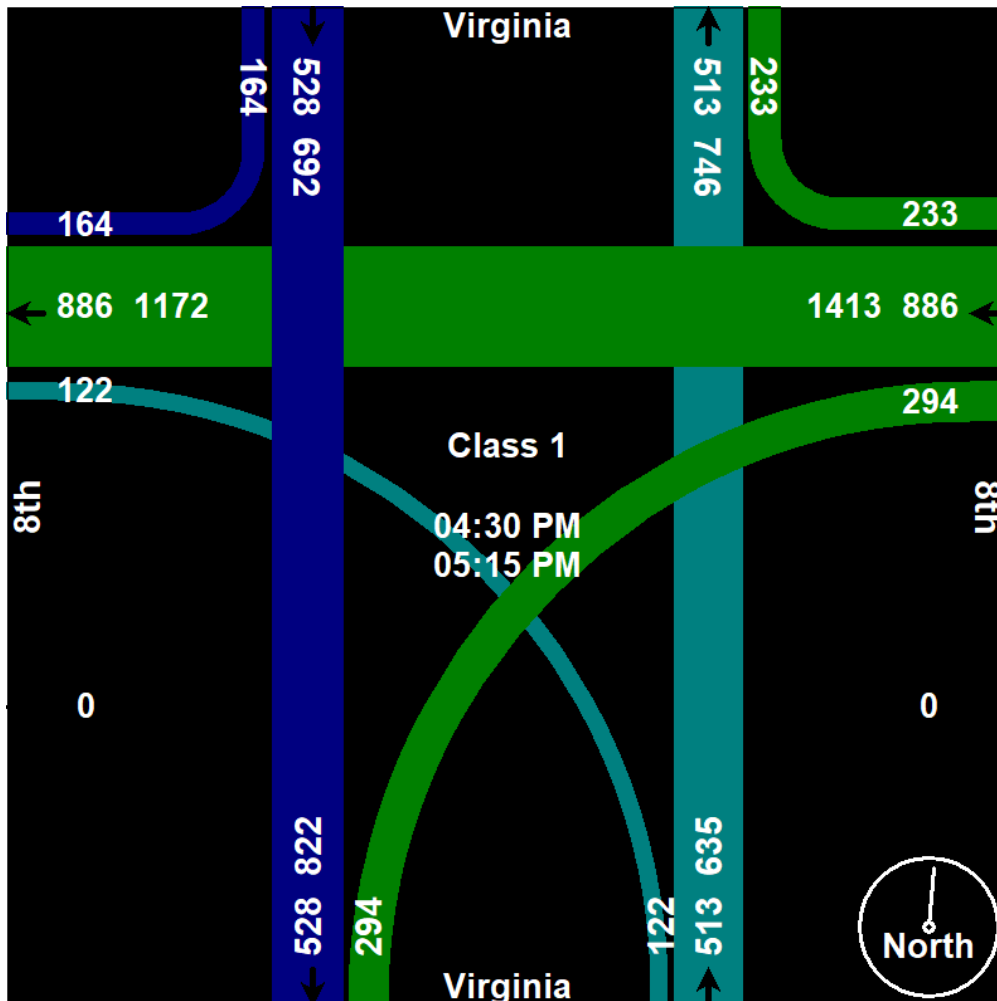


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Virginia - 8th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 3

Start Time	Virginia Southbound					8th Westbound					Virginia Northbound					8th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	44	166	0	5	215	56	189	66	10	321	0	118	34	0	152	0	0	0	15	15	703
04:45 PM	27	104	0	4	135	53	225	82	12	372	0	116	28	2	146	0	0	0	6	6	659
05:00 PM	50	147	0	4	201	45	228	60	17	350	0	150	28	3	181	0	0	0	23	23	755
05:15 PM	43	111	0	11	165	79	244	86	16	425	0	129	32	1	162	0	0	0	15	15	767
Total Volume	164	528	0	24	716	233	886	294	55	1468	0	513	122	6	641	0	0	0	59	59	2884
% App. Total	22.9	73.7	0	3.4		15.9	60.4	20	3.7		0	80	19	0.9		0	0	0	100		
PHF	.820	.795	.000	.545	.833	.737	.908	.855	.809	.864	.000	.855	.897	.500	.885	.000	.000	.000	.641	.641	.940



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Virginia-7th - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 1

## Groups Printed- Class 1

Start Time	Virginia Southbound				7th Westbound				Virginia Northbound				7th Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
07:15 AM	0	3	0	0	0	0	0	1	0	0	0	1	0	0	0	0	5
07:30 AM	0	1	0	0	0	0	0	1	0	1	0	1	0	0	0	0	4
07:45 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	7	0	0	2	0	0	2	1	1	0	2	0	0	0	0	15
08:00 AM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4
08:15 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	4	0	1	0	3	0	0	0	0	8
08:45 AM	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3
Total	0	4	1	0	1	1	0	5	0	2	0	3	0	0	0	0	17
*** BREAK ***																	
04:00 PM	0	0	0	0	0	0	0	4	0	1	0	3	0	0	0	0	8
04:15 PM	0	0	0	5	0	0	0	1	0	0	0	1	0	0	0	5	12
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	2	5
04:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	3	0	6	0	0	0	5	0	1	0	5	0	0	0	7	27
05:00 PM	0	0	0	0	0	0	0	1	0	2	0	1	0	0	0	0	4
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
05:30 PM	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	1	5
05:45 PM	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0	0	4
Total	0	0	0	2	0	0	0	3	0	6	0	2	0	0	0	1	14
Grand Total	0	14	1	8	3	1	0	15	1	10	0	12	0	0	0	8	73
Apprch %	0	60.9	4.3	34.8	15.8	5.3	0	78.9	4.3	43.5	0	52.2	0	0	0	100	
Total %	0	19.2	1.4	11	4.1	1.4	0	20.5	1.4	13.7	0	16.4	0	0	0	11	

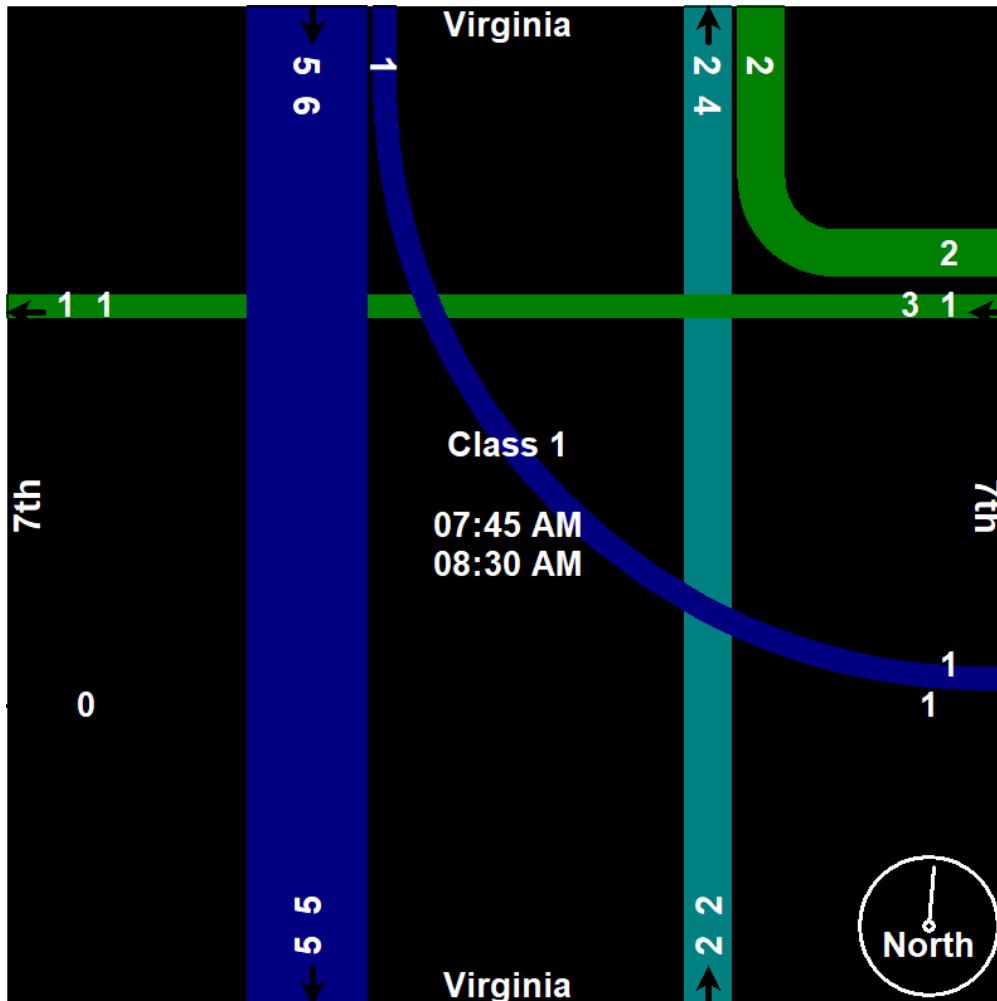


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Virginia-7th - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 2

Start Time	Virginia Southbound					7th Westbound					Virginia Northbound					7th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	2	0	0	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
08:00 AM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
08:15 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	4	4	0	1	0	3	4	0	0	0	0	0	8
Total Volume	0	5	1	0	6	2	1	0	4	7	0	2	0	3	5	0	0	0	0	0	18
% App. Total	0	83.3	16.7	0		28.6	14.3	0	57.1		0	40	0	60		0	0	0	0		
PHF	.000	.417	.250	.000	.500	.250	.250	.000	.250	.438	.000	.500	.000	.250	.313	.000	.000	.000	.000	.000	.563



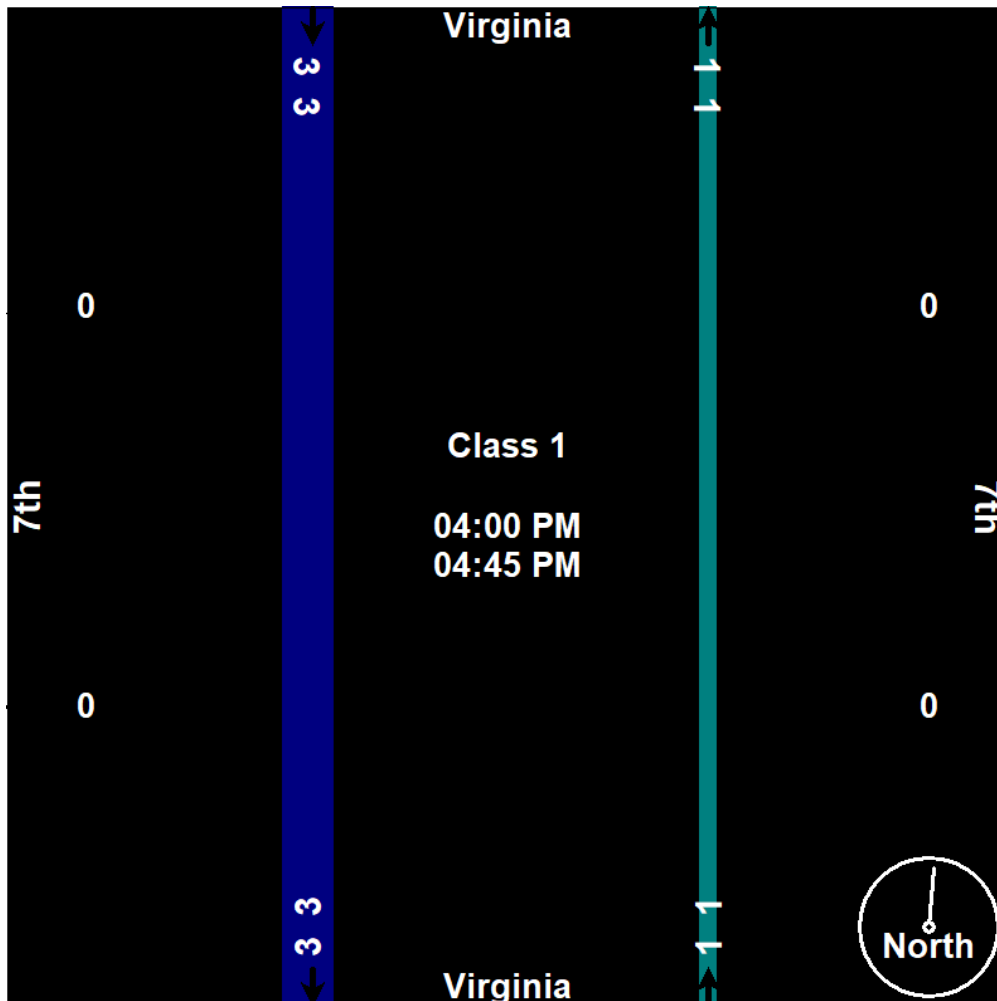
# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
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 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Virginia-7th - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 3

Start Time	Virginia Southbound					7th Westbound					Virginia Northbound					7th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	4	4	0	1	0	3	4	0	0	0	0	0	8
04:15 PM	0	0	0	5	5	0	0	0	1	1	0	0	0	1	1	0	0	0	5	5	12
04:30 PM	0	1	0	1	2	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2	5
04:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	3	0	6	9	0	0	0	5	5	0	1	0	5	6	0	0	0	7	7	27
% App. Total	0	33.3	0	66.7		0	0	0	100		0	16.7	0	83.3		0	0	0	100		
PHF	.000	.375	.000	.300	.450	.000	.000	.000	.313	.313	.000	.250	.000	.417	.375	.000	.000	.000	.350	.350	.563

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:00 PM



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1819 Quarley Place  
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File Name : Center - 8th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 1

Groups Printed- Class 1

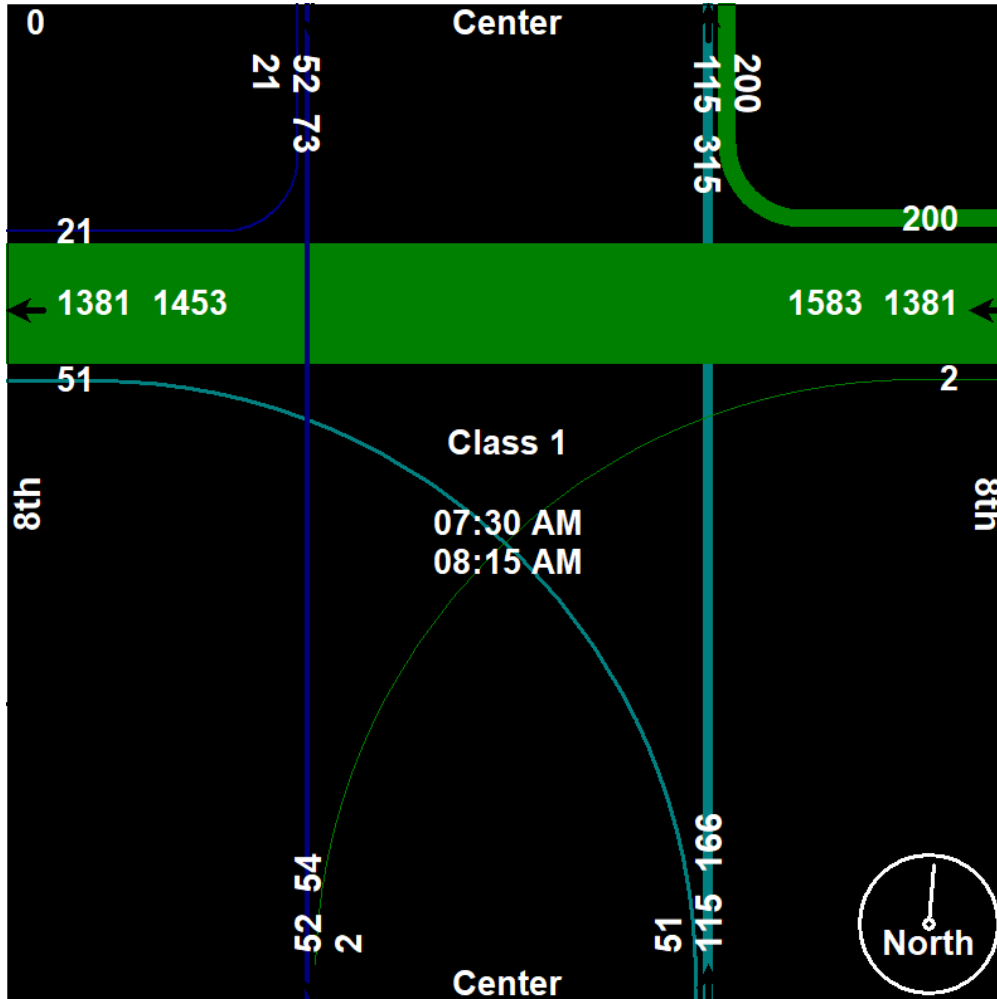
Start Time	Center Southbound				8th Westbound				Center Northbound				8th Eastbound				Int. Total	
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
07:00 AM	2	8	0	1	15	187	0	0	0	14	6	0	0	0	0	0	0	233
07:15 AM	0	8	0	0	42	302	0	1	0	16	8	1	0	0	0	0	0	378
07:30 AM	3	16	0	1	62	383	0	0	0	23	7	0	0	0	0	0	0	495
07:45 AM	8	17	0	0	66	416	1	1	0	38	12	0	0	0	0	0	0	559
Total	13	49	0	2	185	1288	1	2	0	91	33	1	0	0	0	0	0	1665
08:00 AM	4	10	0	1	40	285	1	0	0	36	13	0	0	0	0	0	0	390
08:15 AM	6	9	0	2	32	297	0	1	0	18	19	0	0	0	0	0	0	384
08:30 AM	4	6	0	1	49	334	0	1	0	34	23	0	0	0	0	0	0	452
08:45 AM	5	11	0	1	42	352	1	0	0	39	15	0	0	0	0	0	0	466
Total	19	36	0	5	163	1268	2	2	0	127	70	0	0	0	0	0	0	1692
*** BREAK ***																		
04:00 PM	9	30	0	1	28	242	0	0	0	38	54	0	0	0	0	0	0	402
04:15 PM	8	25	0	3	27	217	3	0	0	39	34	0	0	0	0	0	0	356
04:30 PM	11	15	0	3	27	282	0	1	0	27	58	0	0	0	0	0	0	424
04:45 PM	6	20	0	0	38	260	0	0	0	35	32	0	0	0	0	0	0	391
Total	34	90	0	7	120	1001	3	1	0	139	178	0	0	0	0	0	0	1573
05:00 PM	10	28	0	3	40	234	0	1	0	67	74	0	0	0	0	0	0	457
05:15 PM	13	34	0	0	27	270	1	2	0	49	51	0	0	0	0	0	0	447
05:30 PM	11	17	0	0	42	282	1	0	0	24	60	0	0	0	0	0	0	437
05:45 PM	7	19	0	0	26	239	1	1	0	33	39	1	0	0	0	0	0	366
Total	41	98	0	3	135	1025	3	4	0	173	224	1	0	0	0	0	0	1707
Grand Total	107	273	0	17	603	4582	9	9	0	530	505	2	0	0	0	0	0	6637
Apprch %	27	68.8	0	4.3	11.6	88.1	0.2	0.2	0	51.1	48.7	0.2	0	0	0	0	0	
Total %	1.6	4.1	0	0.3	9.1	69	0.1	0.1	0	8	7.6	0	0	0	0	0	0	

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 702-217-1968 - Cell  
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File Name : Center - 8th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 2

Start Time	Center Southbound					8th Westbound					Center Northbound					8th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	3	16	0	1	20	62	383	0	0	445	0	23	7	0	30	0	0	0	0	0	495
07:45 AM	8	17	0	0	25	66	416	1	1	484	0	38	12	0	50	0	0	0	0	0	559
08:00 AM	4	10	0	1	15	40	285	1	0	326	0	36	13	0	49	0	0	0	0	0	390
08:15 AM	6	9	0	2	17	32	297	0	1	330	0	18	19	0	37	0	0	0	0	0	384
Total Volume	21	52	0	4	77	200	1381	2	2	1585	0	115	51	0	166	0	0	0	0	0	1828
% App. Total	27.3	67.5	0	5.2		12.6	87.1	0.1	0.1		0	69.3	30.7	0		0	0	0	0		
PHF	.656	.765	.000	.500	.770	.758	.830	.500	.500	.819	.000	.757	.671	.000	.830	.000	.000	.000	.000	.000	.818



# Silver State Traffic Data Collection, LLC

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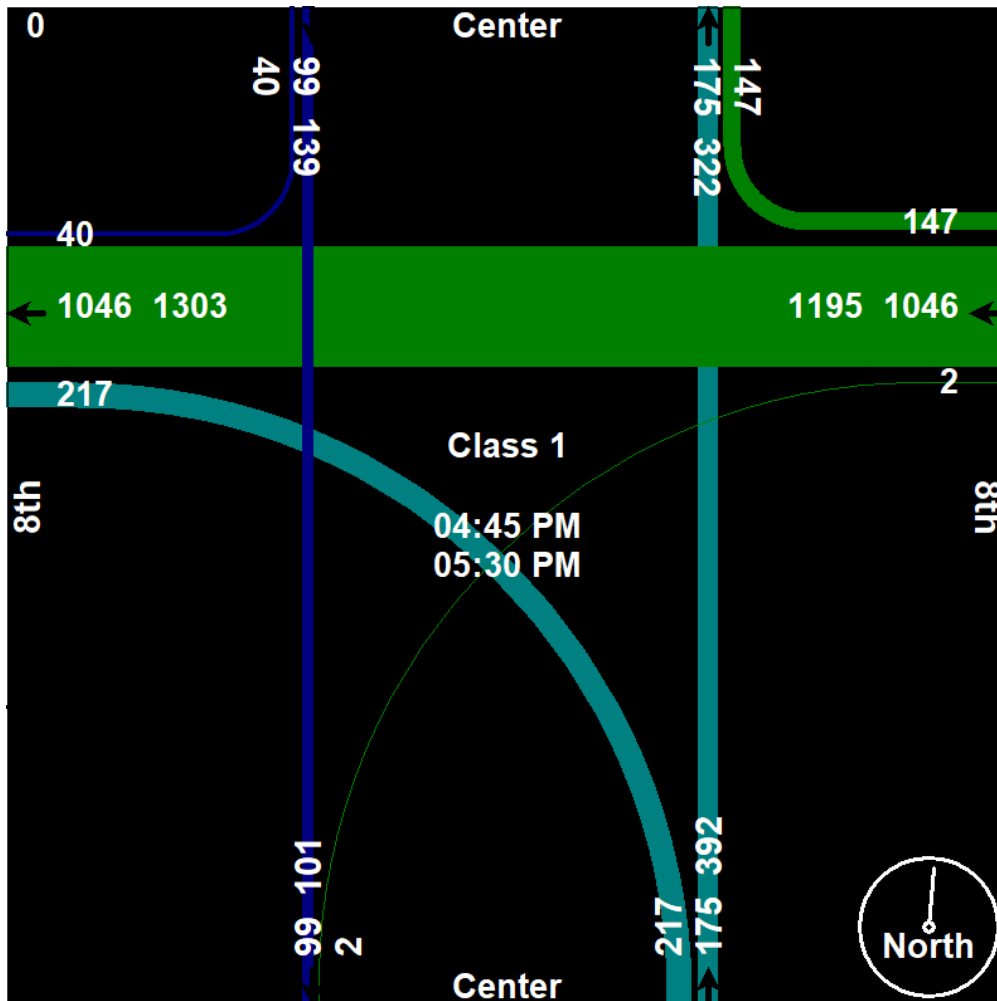
File Name : Center - 8th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 3

Start Time	Center Southbound					8th Westbound					Center Northbound					8th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:45 PM

04:45 PM	6	20	0	0	26	38	260	0	0	298	0	35	32	0	67	0	0	0	0	0	391
05:00 PM	10	28	0	3	41	40	234	0	1	275	0	67	74	0	141	0	0	0	0	0	457
05:15 PM	13	34	0	0	47	27	270	1	2	300	0	49	51	0	100	0	0	0	0	0	447
05:30 PM	11	17	0	0	28	42	282	1	0	325	0	24	60	0	84	0	0	0	0	0	437
Total Volume	40	99	0	3	142	147	1046	2	3	1198	0	175	217	0	392	0	0	0	0	0	1732
% App. Total	28.2	69.7	0	2.1		12.3	87.3	0.2	0.3		0	44.6	55.4	0		0	0	0	0		
PHF	.769	.728	.000	.250	.755	.875	.927	.500	.375	.922	.000	.653	.733	.000	.695	.000	.000	.000	.000	.000	.947



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702-217-1968 - Cell  
sstraffic@msn.com

File Name : Center - 8th - commercial trucks  
Site Code : 00000000  
Start Date : 4/24/2019  
Page No : 1

## Groups Printed- Class 1

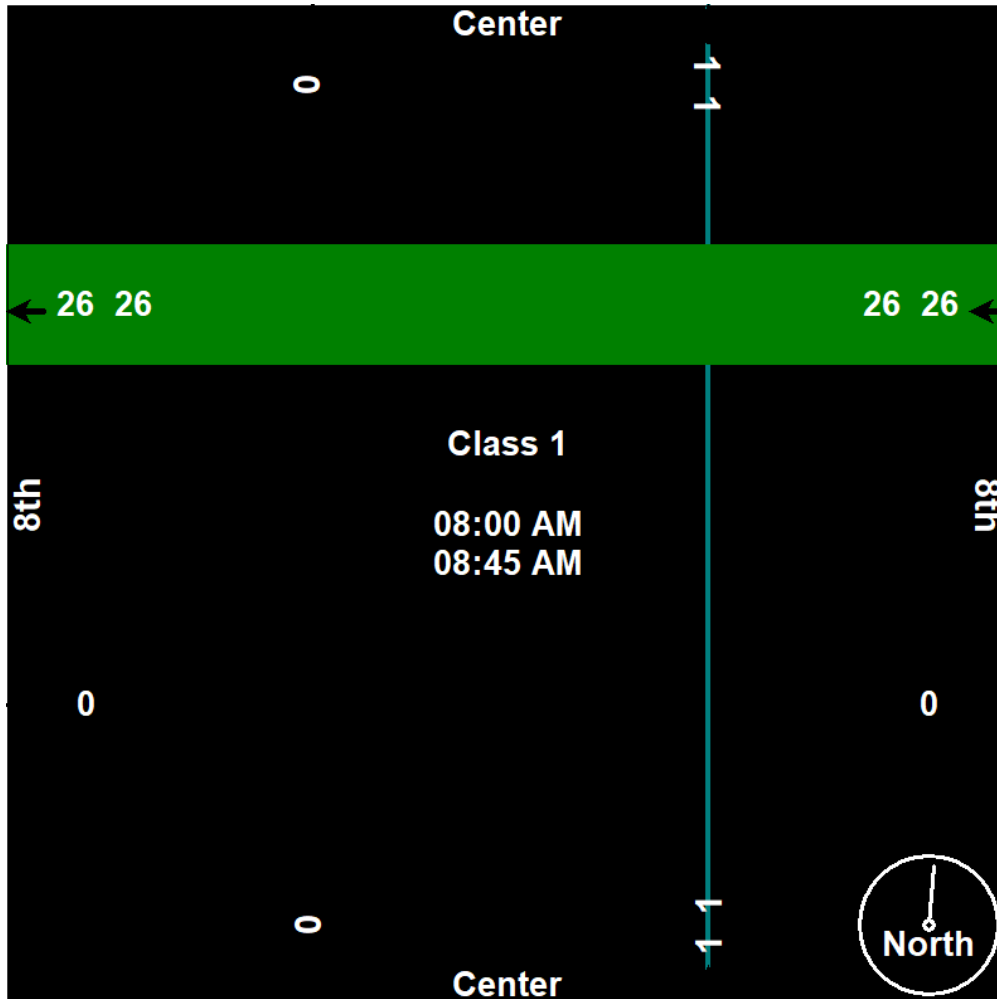
Start Time	Center Southbound				8th Westbound				Center Northbound				8th Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	0	4
07:15 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
07:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	1	3	0	0	0	0	0	2	0	0	0	0	6
Total	0	0	0	1	1	9	0	0	0	0	0	3	0	0	0	0	14
08:00 AM	0	0	0	0	0	4	0	0	0	0	0	1	0	0	0	0	5
08:15 AM	0	0	0	2	0	9	0	0	0	0	0	0	0	0	0	0	11
08:30 AM	0	0	0	0	0	5	0	0	0	0	0	2	0	0	0	0	7
08:45 AM	0	0	0	0	0	8	0	0	0	1	0	1	0	0	0	0	10
Total	0	0	0	2	0	26	0	0	0	1	0	4	0	0	0	0	33
*** BREAK ***																	
04:00 PM	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	4
*** BREAK ***																	
04:30 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
04:45 PM	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2
Total	0	0	0	1	2	4	0	0	0	1	0	1	0	0	0	0	9
05:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
05:15 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2
05:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	1	0	5	0	0	0	1	0	1	0	0	0	0	8
Grand Total	0	0	0	5	3	44	0	0	0	3	0	9	0	0	0	0	64
Apprch %	0	0	0	100	6.4	93.6	0	0	0	25	0	75	0	0	0	0	
Total %	0	0	0	7.8	4.7	68.8	0	0	0	4.7	0	14.1	0	0	0	0	

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 702-217-1968 - Cell  
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File Name : Center - 8th - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 2

Start Time	Center Southbound					8th Westbound					Center Northbound					8th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	1	1	0	0	0	0	0	0
08:15 AM	0	0	0	2	2	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	2	2	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	8	0	0	8	0	1	0	1	2	0	0	0	0	0	0
Total Volume	0	0	0	2	2	0	26	0	0	26	0	1	0	4	5	0	0	0	0	0	0
% App. Total	0	0	0	100		0	100	0	0		0	20	0	80		0	0	0	0		
PHF	.000	.000	.000	.250	.250	.000	.722	.000	.000	.722	.000	.250	.000	.500	.625	.000	.000	.000	.000	.000	.750



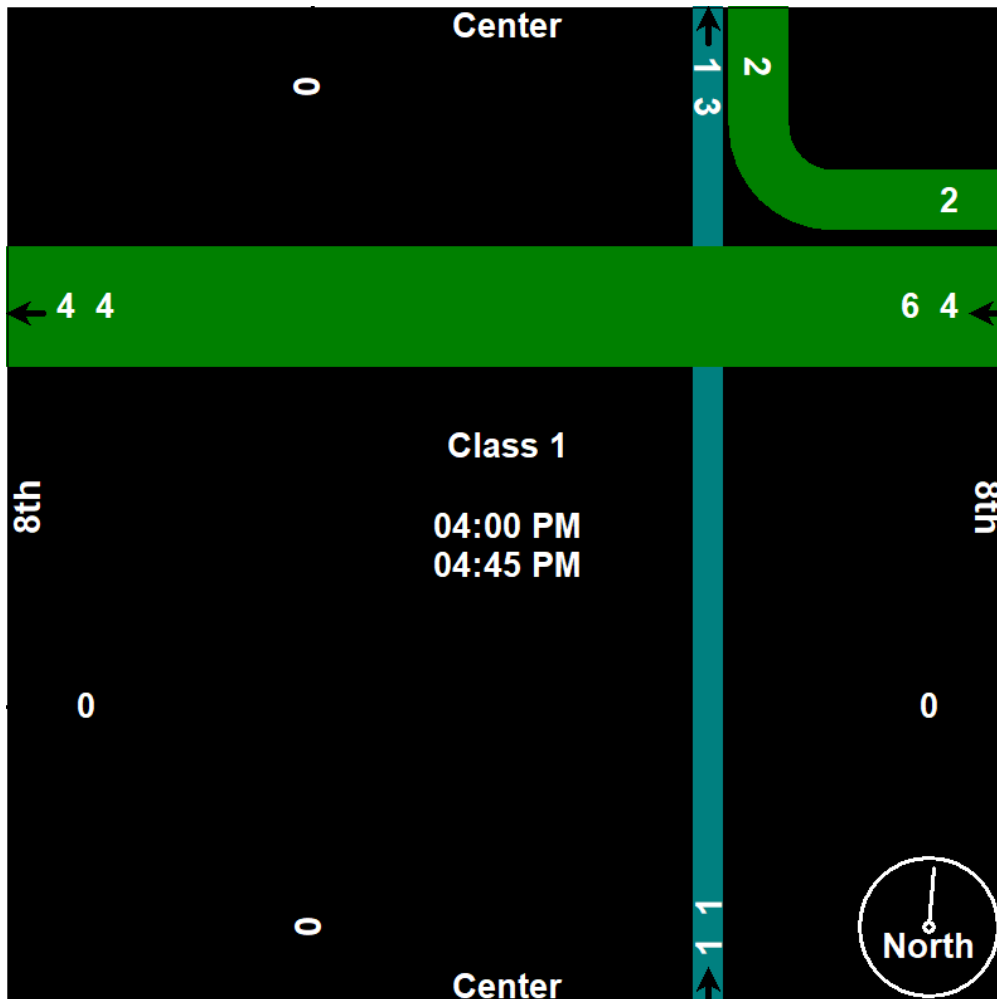
# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
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File Name : Center - 8th - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 3

Start Time	Center Southbound					8th Westbound					Center Northbound					8th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
04:00 PM	0	0	0	1	1	1	1	0	0	2	0	1	0	0	1	0	0	0	0	0	4
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
04:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	0	0	0	2
Total Volume	0	0	0	1	1	2	4	0	0	6	0	1	0	1	2	0	0	0	0	0	9
% App. Total	0	0	0	100		33.3	66.7	0	0		0	50	0	50		0	0	0	0		
PHF	.000	.000	.000	.250	.250	.500	.333	.000	.000	.500	.000	.250	.000	.250	.500	.000	.000	.000	.000	.000	.563

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:00 PM





# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
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 sstraffic@msn.com

File Name : Evans Ave. -9th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 1

## Groups Printed- Class 1

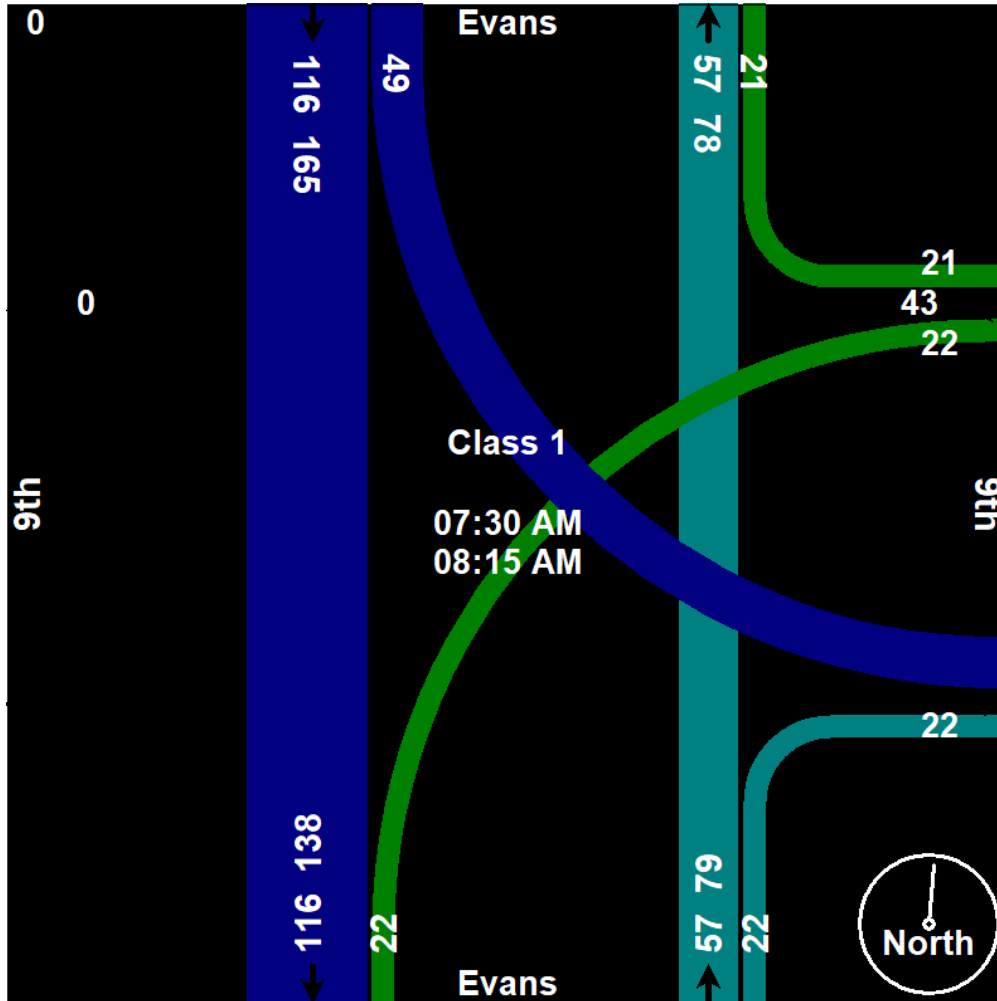
Start Time	Evans Southbound				9th Westbound				Evans Northbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	20	9	5	4	0	0	3	0	7	0	0	48
07:15 AM	0	14	9	5	4	0	2	5	3	5	0	0	47
07:30 AM	0	33	16	8	4	0	7	7	8	7	0	0	90
07:45 AM	0	39	11	3	7	0	6	11	5	23	0	0	105
Total	0	106	45	21	19	0	15	26	16	42	0	0	290
08:00 AM	0	23	9	7	4	0	7	12	5	10	0	0	77
08:15 AM	0	21	13	6	6	0	2	8	4	17	0	0	77
08:30 AM	0	19	10	7	5	0	4	9	5	22	0	0	81
08:45 AM	0	0	0	0	0	0	0	7	0	0	0	0	7
Total	0	63	32	20	15	0	13	36	14	49	0	0	242
*** BREAK ***													
04:00 PM	0	38	11	4	12	0	9	14	3	40	0	0	131
04:15 PM	0	18	14	4	15	0	8	9	7	27	0	0	102
04:30 PM	0	24	8	3	20	0	5	6	4	17	0	0	87
04:45 PM	0	28	7	4	7	0	7	11	0	25	0	0	89
Total	0	108	40	15	54	0	29	40	14	109	0	0	409
05:00 PM	0	24	9	6	8	0	7	14	3	34	0	0	105
05:15 PM	0	26	3	4	7	0	4	5	2	20	0	0	71
05:30 PM	0	14	8	1	14	0	5	6	1	27	0	0	76
05:45 PM	0	25	10	7	8	0	12	13	2	30	0	0	107
Total	0	89	30	18	37	0	28	38	8	111	0	0	359
Grand Total	0	366	147	74	125	0	85	140	52	311	0	0	1300
Apprch %	0	62.4	25	12.6	35.7	0	24.3	40	14.3	85.7	0	0	
Total %	0	28.2	11.3	5.7	9.6	0	6.5	10.8	4	23.9	0	0	

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File Name : Evans Ave. -9th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 2

Start Time	Evans Southbound					9th Westbound					Evans Northbound					Eastbound	Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total		
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	33	16	8	57	4	0	7	7	18	8	7	0	0	15	0	90
07:45 AM	0	39	11	3	53	7	0	6	11	24	5	23	0	0	28	0	105
08:00 AM	0	23	9	7	39	4	0	7	12	23	5	10	0	0	15	0	77
08:15 AM	0	21	13	6	40	6	0	2	8	16	4	17	0	0	21	0	77
Total Volume	0	116	49	24	189	21	0	22	38	81	22	57	0	0	79	0	349
% App. Total	0	61.4	25.9	12.7		25.9	0	27.2	46.9		27.8	72.2	0	0			
PHF	.000	.744	.766	.750	.829	.750	.000	.786	.792	.844	.688	.620	.000	.000	.705	.000	.831

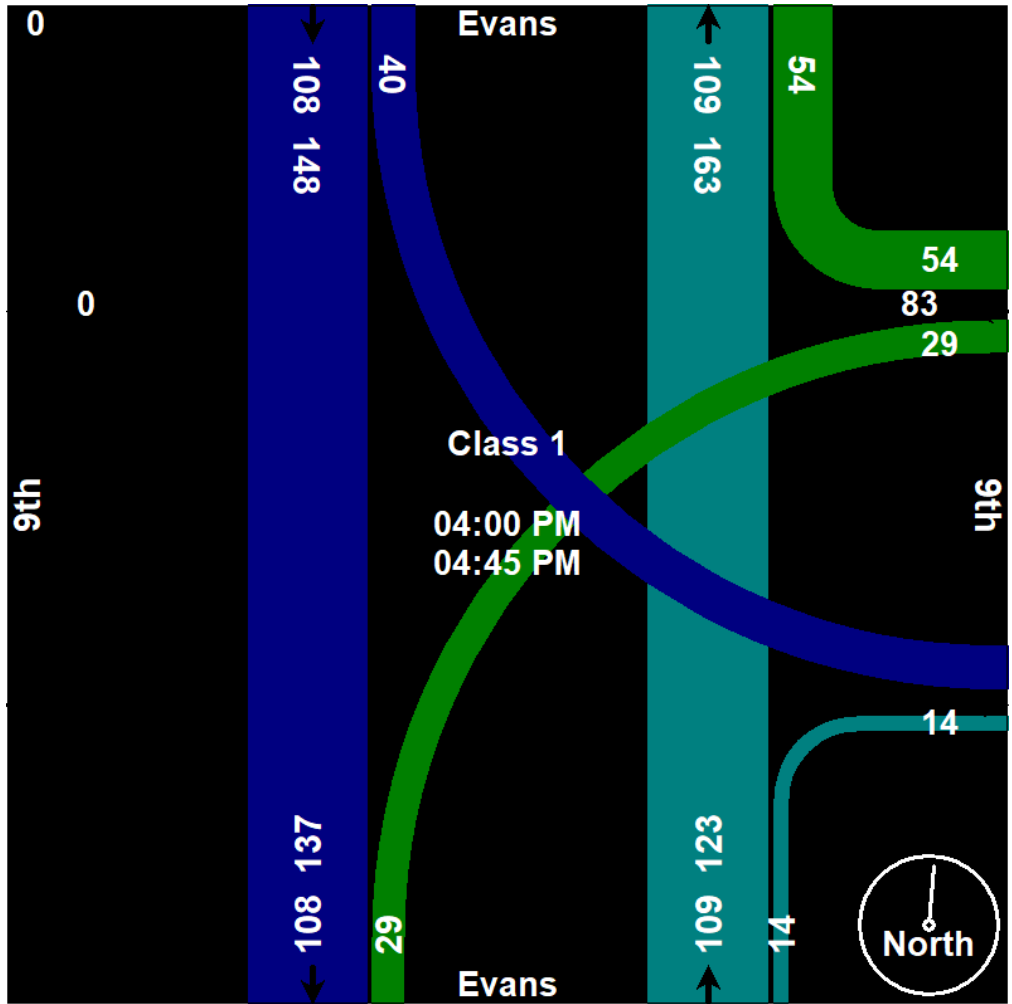


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans Ave. -9th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 3

Start Time	Evans Southbound					9th Westbound					Evans Northbound					Eastbound	Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	38	11	4	53	12	0	9	14	35	3	40	0	0	43	0	131
04:15 PM	0	18	14	4	36	15	0	8	9	32	7	27	0	0	34	0	102
04:30 PM	0	24	8	3	35	20	0	5	6	31	4	17	0	0	21	0	87
04:45 PM	0	28	7	4	39	7	0	7	11	25	0	25	0	0	25	0	89
Total Volume	0	108	40	15	163	54	0	29	40	123	14	109	0	0	123	0	409
% App. Total	0	66.3	24.5	9.2		43.9	0	23.6	32.5		11.4	88.6	0	0			
PHF	.000	.711	.714	.938	.769	.675	.000	.806	.714	.879	.500	.681	.000	.000	.715	.000	.781



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
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 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans Ave. -9th - Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 1

Groups Printed- Class 1

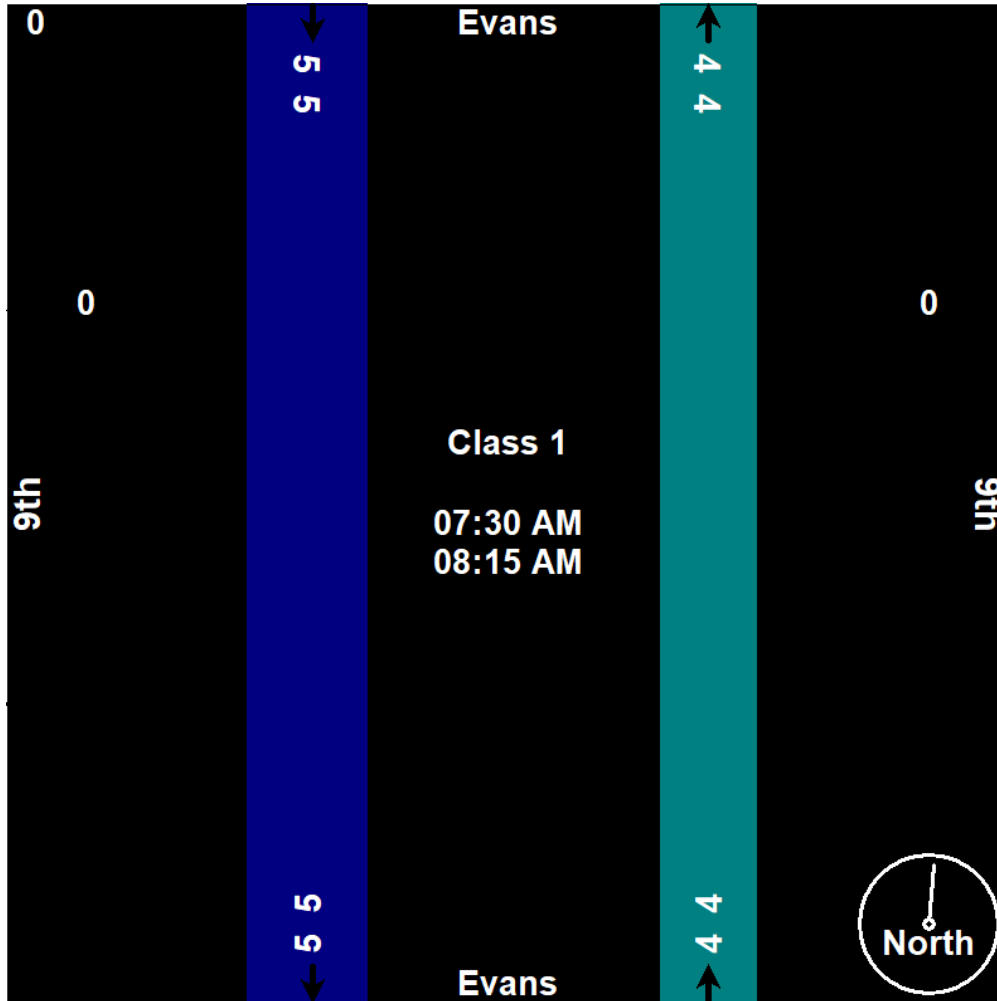
Start Time	Evans Southbound				9th Westbound				Evans Northbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	0	0	0	0	0	0	0	0	2	0	2	4
07:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	1	0	0	0	0	0	2	0	2	0	1	6
07:45 AM	0	2	0	0	0	0	0	1	0	1	0	2	6
Total	0	4	0	0	0	0	0	3	0	5	0	5	17
08:00 AM	0	2	0	0	0	0	0	1	0	0	0	1	4
08:15 AM	0	0	0	0	0	0	0	1	0	1	0	0	2
08:30 AM	0	1	0	0	0	0	0	1	0	0	0	2	4
08:45 AM	0	0	0	0	0	0	0	5	0	1	0	0	6
Total	0	3	0	0	0	0	0	8	0	2	0	3	16
*** BREAK ***													
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	3	4
04:15 PM	0	0	0	0	0	0	0	3	0	0	0	1	4
04:30 PM	0	0	0	0	0	0	0	1	0	0	0	1	2
04:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	5	0	1	0	5	11
05:00 PM	0	0	0	0	0	0	0	3	0	0	0	1	4
05:15 PM	0	0	0	0	0	0	0	1	0	0	0	2	3
05:30 PM	0	0	0	0	0	0	0	2	0	0	0	2	4
*** BREAK ***													
Total	0	0	0	0	0	0	0	6	0	0	0	5	11
Grand Total	0	7	0	0	0	0	0	22	0	8	0	18	55
Apprch %	0	100	0	0	0	0	0	100	0	30.8	0	69.2	
Total %	0	12.7	0	0	0	0	0	40	0	14.5	0	32.7	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
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 sstraffic@msn.com

File Name : Evans Ave. -9th - Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 2

Start Time	Evans Southbound					9th Westbound					Evans Northbound					Eastbound	Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total		
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	1	0	0	1	0	0	0	2	2	0	2	0	1	3	0	6
07:45 AM	0	2	0	0	2	0	0	0	1	1	0	1	0	2	3	0	6
08:00 AM	0	2	0	0	2	0	0	0	1	1	0	0	0	1	1	0	4
08:15 AM	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	2
Total Volume	0	5	0	0	5	0	0	0	5	5	0	4	0	4	8	0	18
% App. Total	0	100	0	0		0	0	0	100		0	50	0	50			
PHF	.000	.625	.000	.000	.625	.000	.000	.000	.625	.625	.000	.500	.000	.500	.667	.000	.750

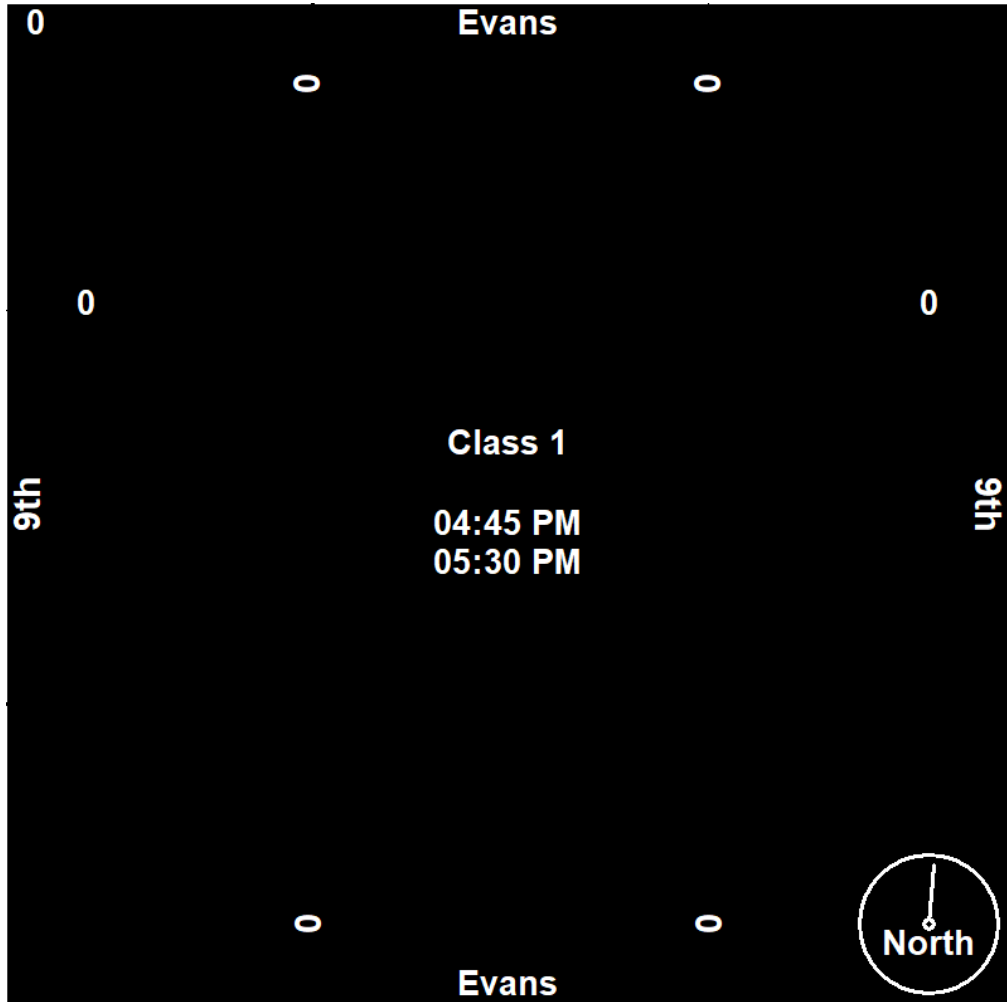


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans Ave. -9th - Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 3

Start Time	Evans Southbound					9th Westbound					Evans Northbound					Eastbound	Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total		
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	3	3	0	0	0	1	1	0	4
05:15 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	3
05:30 PM	0	0	0	0	0	0	0	0	2	2	0	0	0	2	2	0	4
Total Volume	0	0	0	0	0	0	0	0	7	7	0	0	0	5	5	0	12
% App. Total	0	0	0	0	0	0	0	0	100	100	0	0	0	100	100	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.583	.583	.000	.000	.000	.625	.625	.000	.750



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Virginia - Maple - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 1

## Groups Printed- Class 1

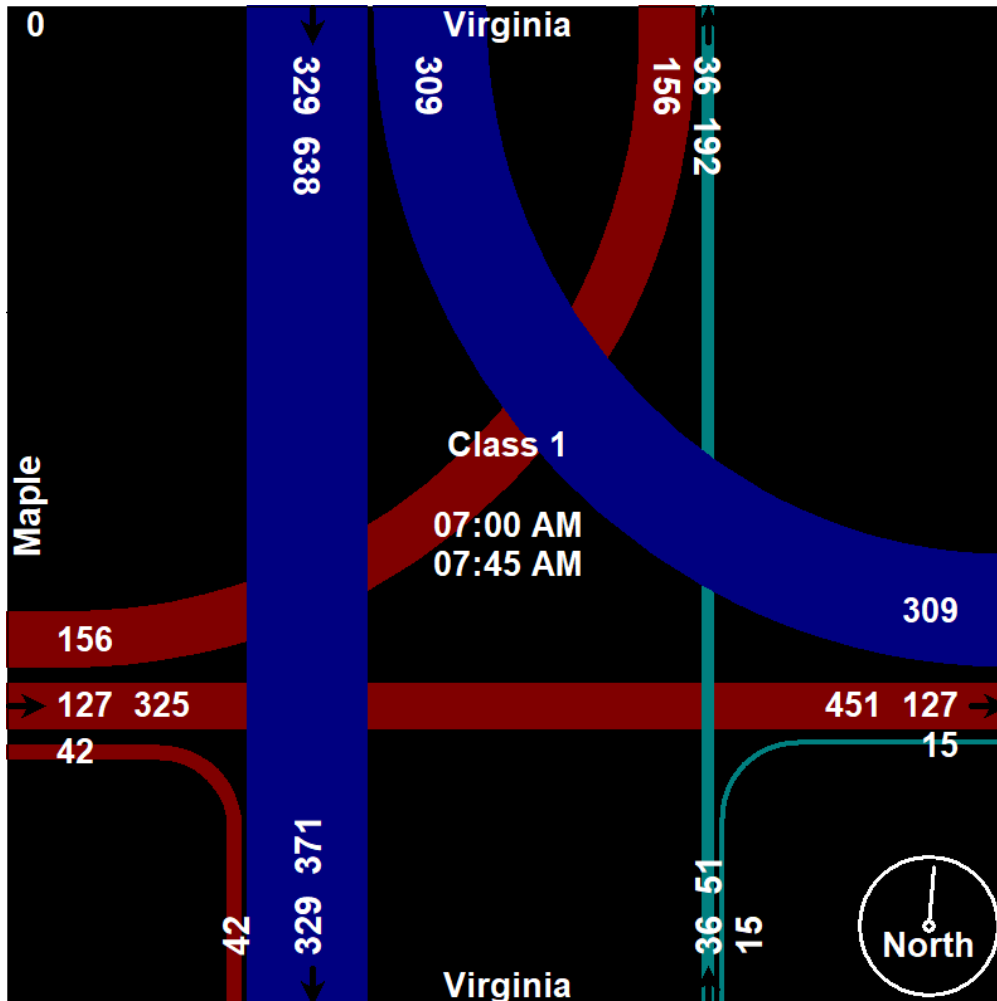
Start Time	Virginia Southbound				Westbound				Virginia Northbound				Maple Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	72	68	3	0	0	0	5	4	11	0	1	4	37	45	7	257
07:15 AM	0	68	77	0	0	0	0	8	7	6	0	0	11	26	32	15	250
07:30 AM	0	93	91	0	0	0	0	9	1	7	0	1	7	38	37	11	295
07:45 AM	0	96	73	0	0	0	0	9	3	12	0	0	20	26	42	5	286
Total	0	329	309	3	0	0	0	31	15	36	0	2	42	127	156	38	1088
08:00 AM	0	79	40	1	0	0	0	4	4	13	0	1	11	29	37	10	229
08:15 AM	0	75	40	4	0	0	0	7	3	10	0	2	8	34	39	11	233
08:30 AM	0	72	32	2	0	0	0	11	4	7	0	1	7	37	61	26	260
08:45 AM	0	81	60	0	0	0	0	9	3	8	0	2	13	38	63	16	293
Total	0	307	172	7	0	0	0	31	14	38	0	6	39	138	200	63	1015
*** BREAK ***																	
04:00 PM	0	119	77	4	0	0	0	3	54	135	0	2	18	33	22	8	475
04:15 PM	0	113	86	23	0	0	0	16	48	111	0	4	12	54	31	47	545
04:30 PM	0	123	108	2	0	0	0	10	41	125	0	0	20	58	18	20	525
04:45 PM	0	109	73	8	0	0	0	12	34	127	0	5	19	61	32	12	492
Total	0	464	344	37	0	0	0	41	177	498	0	11	69	206	103	87	2037
05:00 PM	0	129	70	3	0	0	0	14	56	156	0	4	24	65	11	29	561
05:15 PM	0	122	79	3	0	0	0	27	41	139	0	4	17	61	32	22	547
05:30 PM	0	117	77	7	0	0	0	11	27	120	0	1	18	41	23	20	462
05:45 PM	0	115	63	4	0	0	0	6	35	103	0	5	14	56	37	36	474
Total	0	483	289	17	0	0	0	58	159	518	0	14	73	223	103	107	2044
Grand Total	0	1583	1114	64	0	0	0	161	365	1090	0	33	223	694	562	295	6184
Apprch %	0	57.3	40.3	2.3	0	0	0	100	24.5	73.3	0	2.2	12.6	39.1	31.7	16.6	
Total %	0	25.6	18	1	0	0	0	2.6	5.9	17.6	0	0.5	3.6	11.2	9.1	4.8	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Virginia - Maple - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 2

Start Time	Virginia Southbound					Westbound					Virginia Northbound					Maple Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	72	68	3	143	0	0	0	5	5	4	11	0	1	16	4	37	45	7	93	257
07:15 AM	0	68	77	0	145	0	0	0	8	8	7	6	0	0	13	11	26	32	15	84	250
07:30 AM	0	93	91	0	184	0	0	0	9	9	1	7	0	1	9	7	38	37	11	93	295
07:45 AM	0	96	73	0	169	0	0	0	9	9	3	12	0	0	15	20	26	42	5	93	286
Total Volume	0	329	309	3	641	0	0	0	31	31	15	36	0	2	53	42	127	156	38	363	1088
% App. Total	0	51.3	48.2	0.5		0	0	0	100		28.3	67.9	0	3.8		11.6	35	43	10.5		
PHF	.000	.857	.849	.250	.871	.000	.000	.000	.861	.861	.536	.750	.000	.500	.828	.525	.836	.867	.633	.976	.922



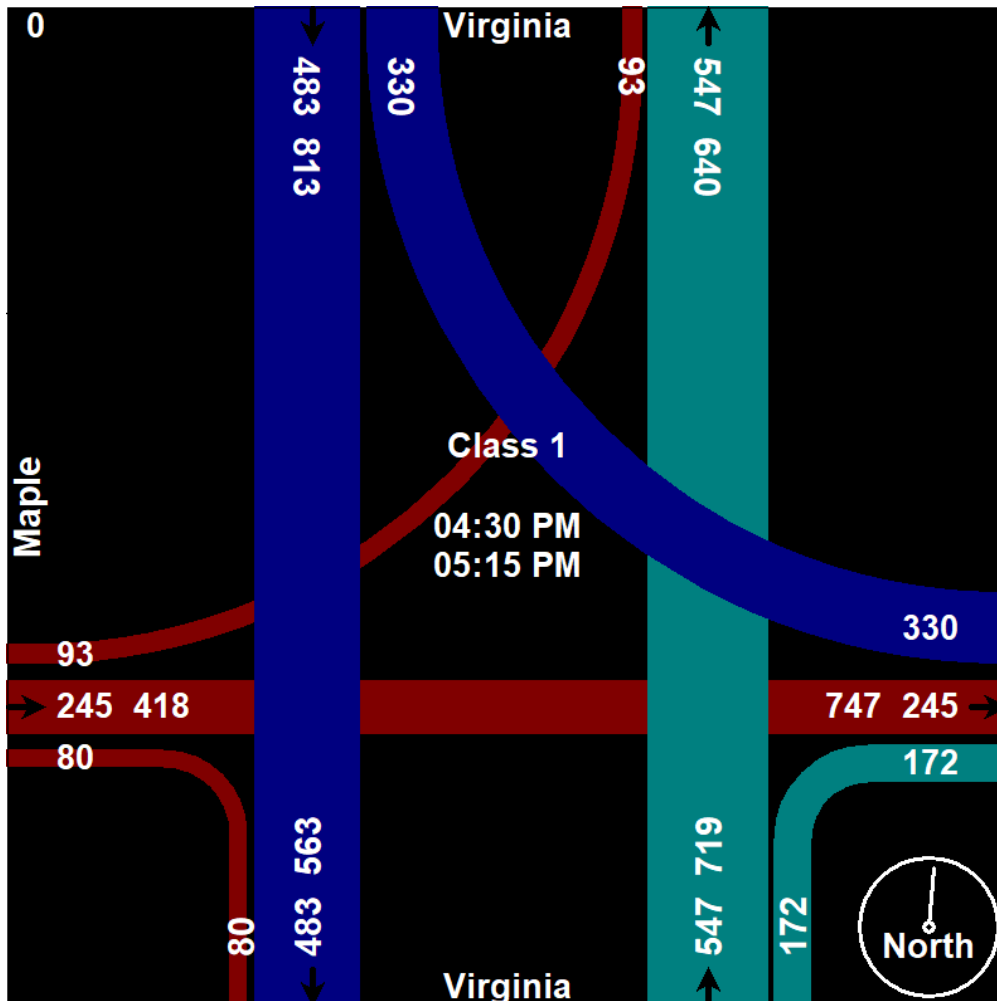


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Virginia - Maple - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 3

Start Time	Virginia Southbound					Westbound					Virginia Northbound					Maple Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	123	<b>108</b>	2	<b>233</b>	0	0	0	10	10	41	125	0	0	166	20	58	18	20	116	525
04:45 PM	0	109	73	<b>8</b>	190	0	0	0	12	12	34	127	0	<b>5</b>	166	19	61	<b>32</b>	12	124	492
05:00 PM	0	<b>129</b>	70	3	202	0	0	0	14	14	<b>56</b>	<b>156</b>	0	4	<b>216</b>	<b>24</b>	<b>65</b>	11	<b>29</b>	129	<b>561</b>
05:15 PM	0	122	79	3	204	0	0	0	<b>27</b>	<b>27</b>	41	139	0	4	184	17	61	32	22	<b>132</b>	547
Total Volume	0	483	330	16	829	0	0	0	63	63	172	547	0	13	732	80	245	93	83	501	2125
% App. Total	0	58.3	39.8	1.9		0	0	0	100		23.5	74.7	0	1.8		16	48.9	18.6	16.6		
PHF	.000	.936	.764	.500	.889	.000	.000	.000	.583	.583	.768	.877	.000	.650	.847	.833	.942	.727	.716	.949	.947



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Virginia - Maple - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 1

## Groups Printed- Class 1

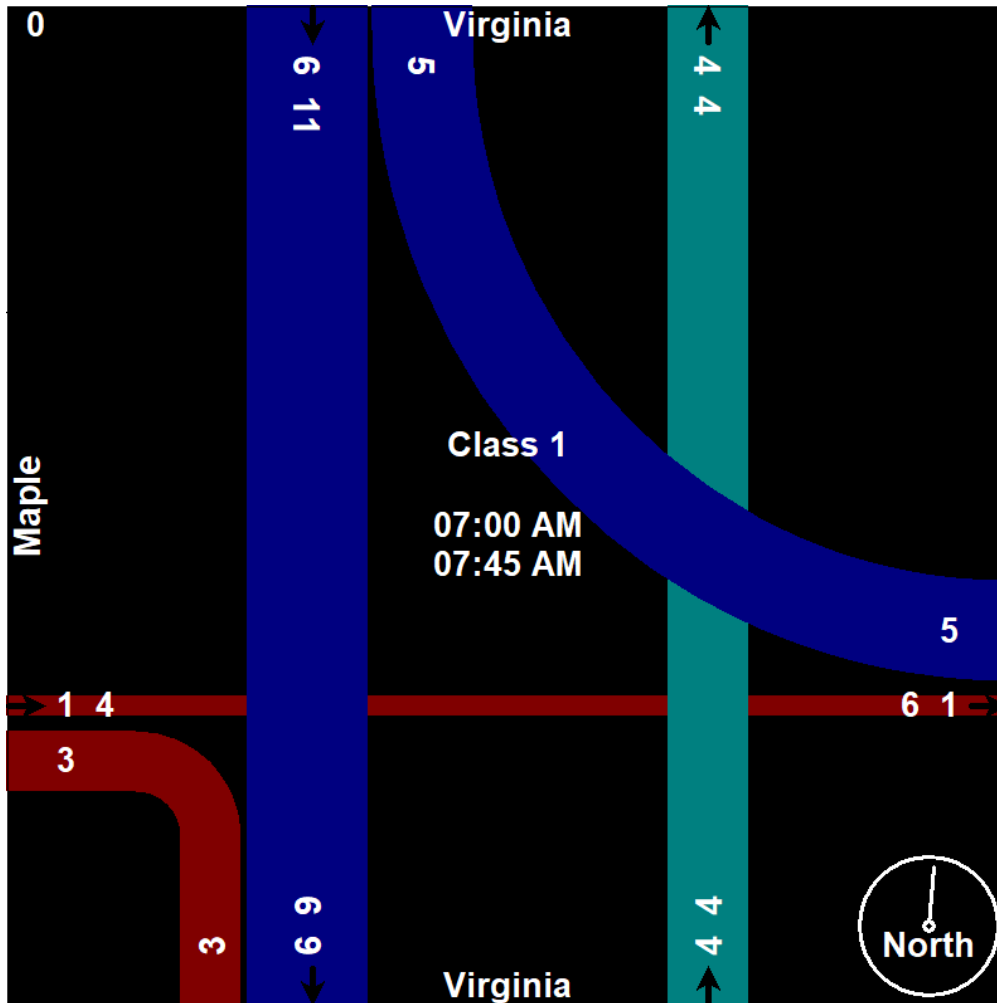
Start Time	Virginia Southbound				Westbound				Virginia Northbound				Maple Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4
07:15 AM	0	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	4
07:30 AM	0	1	0	0	0	0	0	0	0	2	0	0	1	1	0	0	5
07:45 AM	0	2	2	0	0	0	0	0	0	2	0	1	2	0	0	0	9
Total	0	6	5	0	0	0	0	1	0	4	0	2	3	1	0	0	22
08:00 AM	0	1	0	0	0	0	0	0	0	1	0	0	2	0	0	0	4
08:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
08:30 AM	0	0	0	0	0	0	0	3	0	1	0	2	0	0	0	0	6
08:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	3
Total	0	2	0	0	0	0	0	4	0	2	0	3	2	2	0	0	15
*** BREAK ***																	
04:00 PM	0	0	0	1	0	0	0	4	0	1	0	4	0	0	0	1	11
04:15 PM	0	0	0	5	0	0	0	1	0	2	0	1	0	2	0	5	16
04:30 PM	0	1	0	4	0	0	0	0	0	1	0	0	0	0	0	4	10
04:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4
Total	0	3	0	10	0	0	0	5	0	4	0	5	0	4	0	10	41
05:00 PM	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	4
05:15 PM	0	1	0	1	0	0	0	0	1	0	0	0	0	0	1	1	5
05:30 PM	0	0	2	0	0	0	0	1	0	1	0	1	0	1	0	0	6
05:45 PM	0	1	0	0	0	0	0	0	2	1	0	1	0	1	0	0	6
Total	0	2	2	1	0	0	0	2	3	3	1	3	0	2	1	1	21
Grand Total	0	13	7	11	0	0	0	12	3	13	1	13	5	9	1	11	99
Apprch %	0	41.9	22.6	35.5	0	0	0	100	10	43.3	3.3	43.3	19.2	34.6	3.8	42.3	
Total %	0	13.1	7.1	11.1	0	0	0	12.1	3	13.1	1	13.1	5.1	9.1	1	11.1	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
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 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Virginia - Maple - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 2

Start Time	Virginia Southbound					Westbound					Virginia Northbound					Maple Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
07:15 AM	0	1	1	0	2	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	4
07:30 AM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	1	1	0	0	0	5
07:45 AM	0	2	2	0	4	0	0	0	0	0	0	2	0	1	3	2	0	0	0	0	9
Total Volume	0	6	5	0	11	0	0	0	1	1	0	4	0	2	6	3	1	0	0	0	22
% App. Total	0	54.5	45.5	0		0	0	0	100		0	66.7	0	33.3		75	25	0	0		
PHF	.000	.750	.625	.000	.688	.000	.000	.000	.250	.250	.000	.500	.000	.500	.500	.375	.250	.000	.000	.500	.611

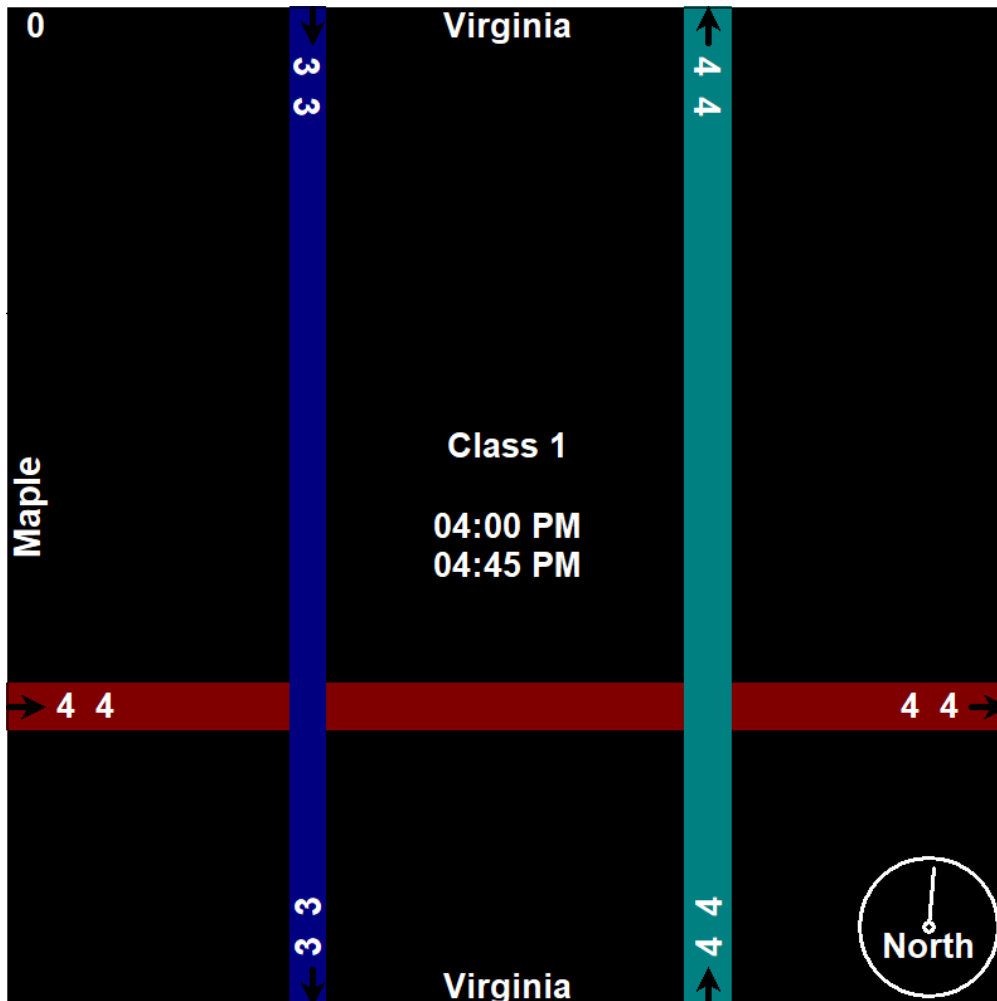


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
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 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Virginia - Maple - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 3

Start Time	Virginia Southbound					Westbound					Virginia Northbound					Maple Eastbound					Int. Total				
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total					
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 04:00 PM																									
04:00 PM	0	0	0	1	1	0	0	0	4	4	0	1	0	4	5	0	0	0	1	1	0	0	0	1	1
04:15 PM	0	0	0	5	5	0	0	0	1	1	0	2	0	1	3	0	2	0	5	7	0	0	0	4	4
04:30 PM	0	1	0	4	5	0	0	0	0	0	0	1	0	0	1	0	0	0	4	4	0	0	0	4	4
04:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	2	2
Total Volume	0	3	0	10	13	0	0	0	5	5	0	4	0	5	9	0	4	0	10	14	0	0	0	14	14
% App. Total	0	23.1	0	76.9		0	0	0	100		0	44.4	0	55.6		0	28.6	0	71.4		0	0	0	100	
PHF	.000	.375	.000	.500	.650	.000	.000	.000	.313	.313	.000	.500	.000	.313	.450	.000	.500	.000	.500	.500	.000	.641			



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Center-Maple - private vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 1

Groups Printed- Class 1

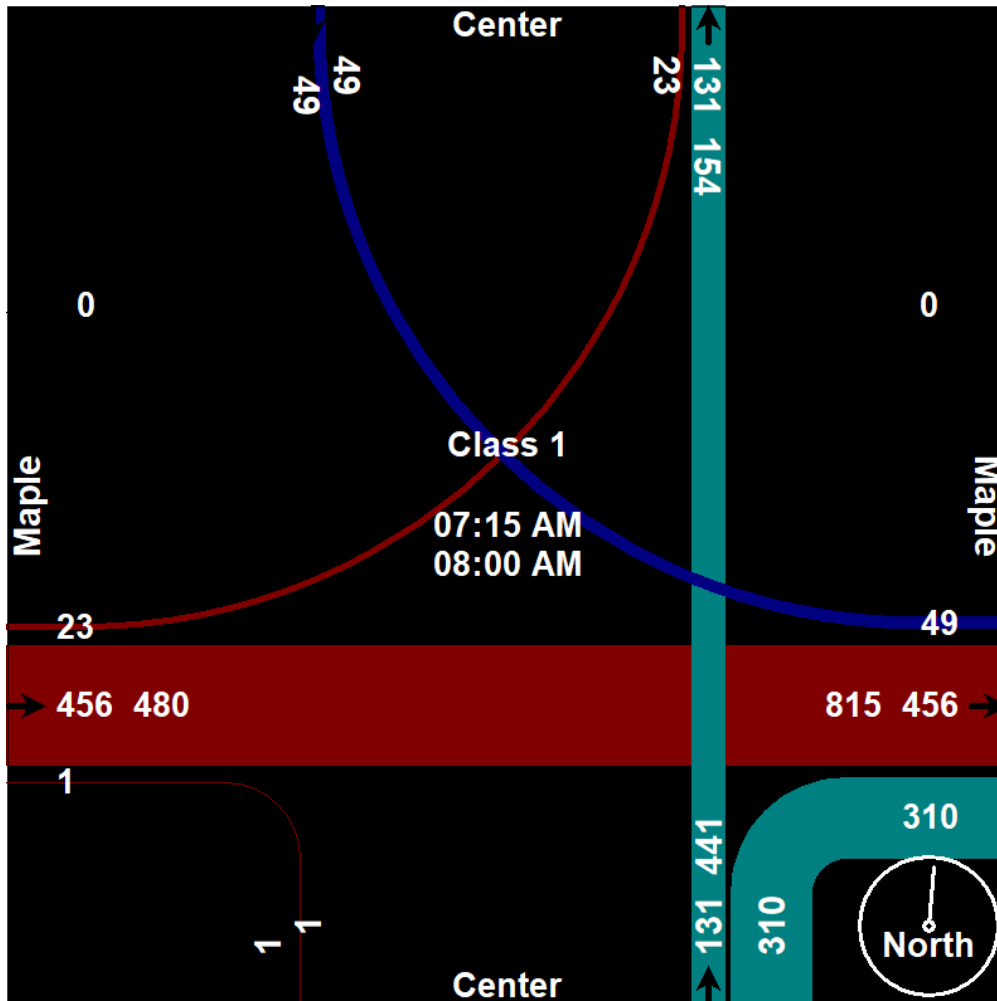
Start Time	Center Southbound				Maple Westbound				Center Northbound				Maple Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	7	0	0	0	0	0	75	11	0	3	0	104	4	5	209
07:15 AM	0	0	8	0	0	0	0	0	93	25	0	0	0	92	4	2	224
07:30 AM	0	0	15	0	0	0	0	0	76	25	0	5	0	138	3	8	270
07:45 AM	0	0	13	1	0	0	0	0	74	44	0	1	0	130	8	8	279
Total	0	0	43	1	0	0	0	0	318	105	0	9	0	464	19	23	982
08:00 AM	0	0	13	0	0	0	0	0	67	37	0	2	1	96	8	4	228
08:15 AM	0	0	8	0	0	0	0	0	84	34	0	2	0	78	7	3	216
08:30 AM	0	0	7	0	0	0	0	0	87	40	0	3	0	91	6	7	241
08:45 AM	0	0	11	0	0	0	0	0	92	51	0	3	1	92	12	8	270
Total	0	0	39	0	0	0	0	0	330	162	0	10	2	357	33	22	955
*** BREAK ***																	
04:00 PM	0	0	36	0	0	0	0	0	175	83	0	6	0	196	8	8	512
04:15 PM	0	0	19	0	0	0	0	0	132	69	0	1	0	164	7	6	398
04:30 PM	0	0	22	1	0	0	0	0	155	85	0	5	0	151	5	11	435
04:45 PM	0	0	16	0	0	0	0	0	140	57	0	6	0	139	5	21	384
Total	0	0	93	1	0	0	0	0	602	294	0	18	0	650	25	46	1729
05:00 PM	0	0	30	1	0	0	0	0	209	132	0	4	0	158	12	11	557
05:15 PM	0	0	30	1	0	0	0	0	167	94	0	4	0	199	7	9	511
05:30 PM	0	0	25	0	0	0	0	0	142	83	0	3	0	168	2	6	429
05:45 PM	0	0	14	0	0	0	0	0	125	66	0	3	1	123	7	4	343
Total	0	0	99	2	0	0	0	0	643	375	0	14	1	648	28	30	1840
Grand Total	0	0	274	4	0	0	0	0	1893	936	0	51	3	2119	105	121	5506
Apprch %	0	0	98.6	1.4	0	0	0	0	65.7	32.5	0	1.8	0.1	90.2	4.5	5.2	
Total %	0	0	5	0.1	0	0	0	0	34.4	17	0	0.9	0.1	38.5	1.9	2.2	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Center-Maple - private vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 2

Start Time	Center Southbound					Maple Westbound					Center Northbound					Maple Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	8	0	8	0	0	0	0	0	93	25	0	0	118	0	92	4	2	98	224
07:30 AM	0	0	15	0	15	0	0	0	0	0	76	25	0	5	106	0	138	3	8	149	270
07:45 AM	0	0	13	1	14	0	0	0	0	0	74	44	0	1	119	0	130	8	8	146	279
08:00 AM	0	0	13	0	13	0	0	0	0	0	67	37	0	2	106	1	96	8	4	109	228
Total Volume	0	0	49	1	50	0	0	0	0	0	310	131	0	8	449	1	456	23	22	502	1001
% App. Total	0	0	98	2		0	0	0	0		69	29.2	0	1.8		0.2	90.8	4.6	4.4		
PHF	.000	.000	.817	.250	.833	.000	.000	.000	.000	.000	.833	.744	.000	.400	.943	.250	.826	.719	.688	.842	.897

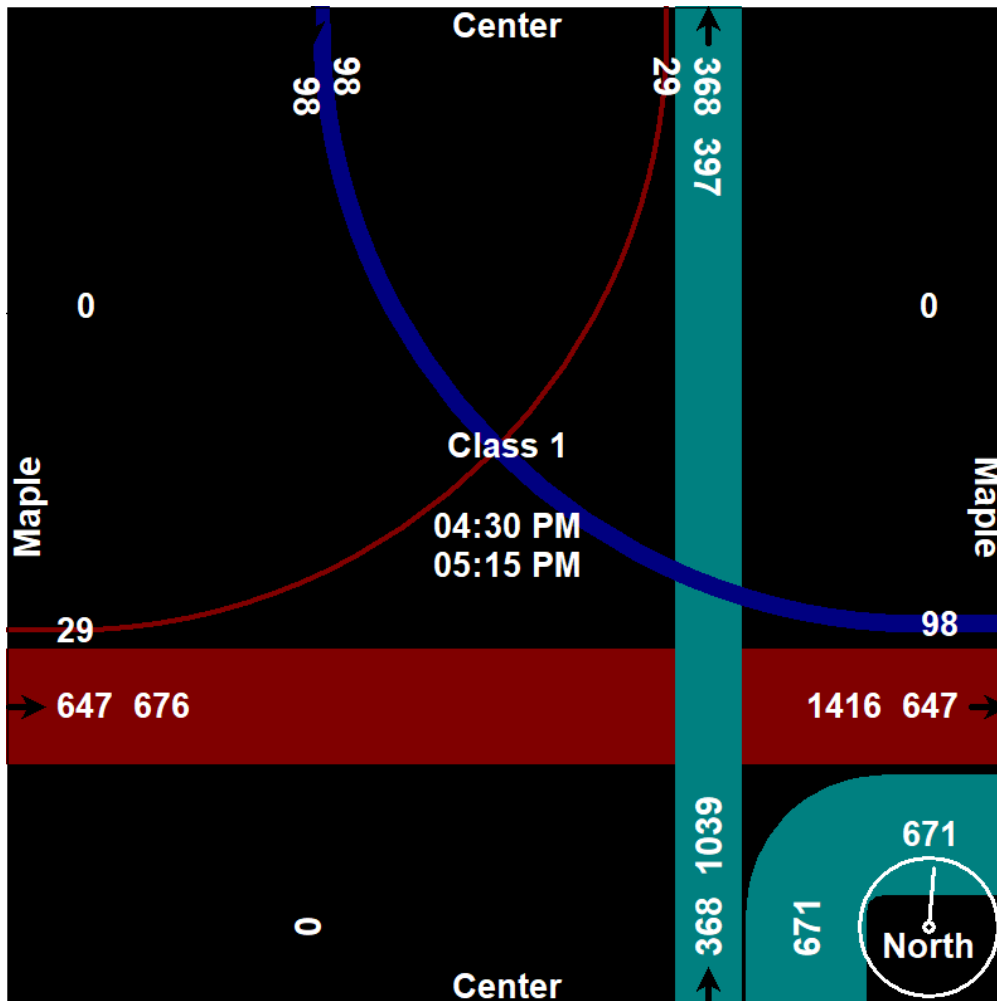


# Silver State Traffic Data Collection, LLC

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File Name : Center-Maple - private vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 3

Start Time	Center Southbound					Maple Westbound					Center Northbound					Maple Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	22	1	23	0	0	0	0	0	155	85	0	5	245	0	151	5	11	167	435
04:45 PM	0	0	16	0	16	0	0	0	0	0	140	57	0	6	203	0	139	5	21	165	384
05:00 PM	0	0	30	1	31	0	0	0	0	0	209	132	0	4	345	0	158	12	11	181	557
05:15 PM	0	0	30	1	31	0	0	0	0	0	167	94	0	4	265	0	199	7	9	215	511
Total Volume	0	0	98	3	101	0	0	0	0	0	671	368	0	19	1058	0	647	29	52	728	1887
% App. Total	0	0	97	3		0	0	0	0		63.4	34.8	0	1.8		0	88.9	4	7.1		
PHF	.000	.000	.817	.750	.815	.000	.000	.000	.000	.000	.803	.697	.000	.792	.767	.000	.813	.604	.619	.847	.847



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1819 Quarley Place  
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 sstraffic@msn.com

File Name : Center-Maple - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 1

## Groups Printed- Class 1

Start Time	Center Southbound				Maple Westbound				Center Northbound				Maple Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	3
*** BREAK ***																	
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	3
Total	0	0	0	0	0	0	0	0	0	0	0	3	0	2	0	2	7
08:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	4
08:15 AM	0	0	0	0	0	0	0	0	2	1	0	1	0	4	0	0	8
08:30 AM	0	0	0	0	0	0	0	0	1	0	0	2	0	2	0	0	5
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	0	4
Total	0	0	0	0	0	0	0	0	4	3	0	4	0	10	0	0	21
*** BREAK ***																	
04:00 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	2	6
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
04:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
Total	0	0	0	0	0	0	0	0	5	0	0	0	0	3	0	3	11
05:00 PM	0	0	0	0	0	0	0	0	2	1	0	1	0	0	0	0	4
*** BREAK ***																	
05:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	0	0	3	1	0	1	0	1	0	0	6
Grand Total	0	0	0	0	0	0	0	0	12	4	0	8	0	16	0	5	45
Apprch %	0	0	0	0	0	0	0	0	50	16.7	0	33.3	0	76.2	0	23.8	
Total %	0	0	0	0	0	0	0	0	26.7	8.9	0	17.8	0	35.6	0	11.1	

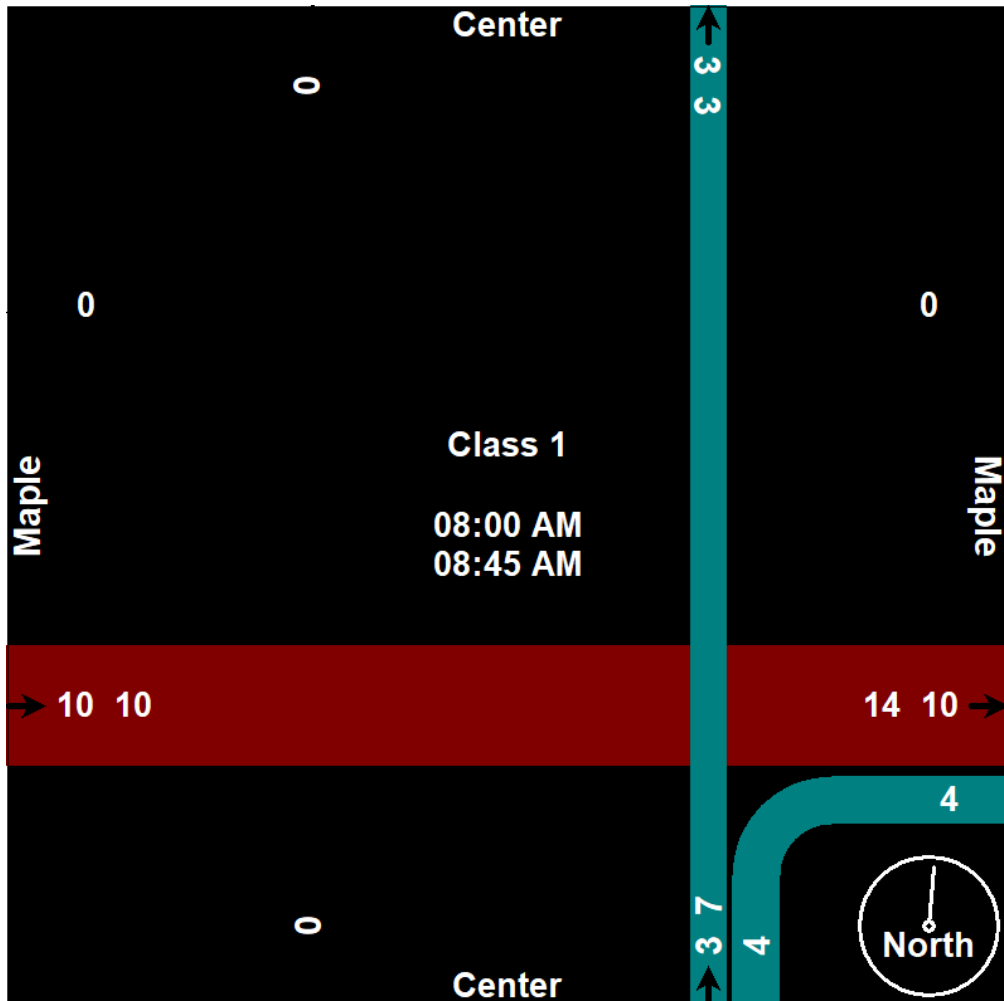


# Silver State Traffic Data Collection, LLC

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File Name : Center-Maple - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 2

Start Time	Center Southbound					Maple Westbound					Center Northbound					Maple Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	2	0	0	2	4
08:15 AM	0	0	0	0	0	0	0	0	0	0	2	1	0	1	4	0	4	0	0	4	8
08:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	2	3	0	2	0	0	2	5
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	2	0	0	2	4
Total Volume	0	0	0	0	0	0	0	0	0	0	4	3	0	4	11	0	10	0	0	10	21
% App. Total	0	0	0	0	0	0	0	0	0	0	36.4	27.3	0	36.4		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.750	.000	.500	.688	.000	.625	.000	.000	.625	.656

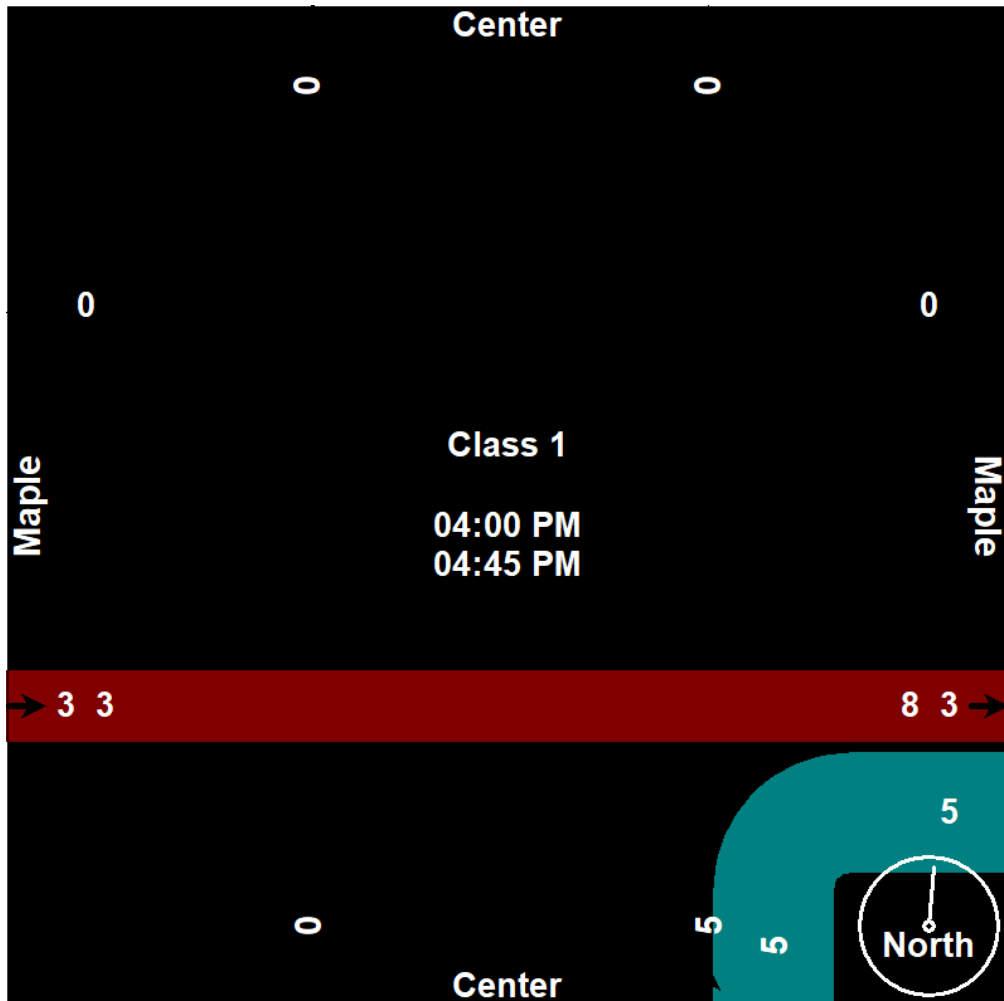


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File Name : Center-Maple - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 3

Start Time	Center Southbound					Maple Westbound					Center Northbound					Maple Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	1	0	2	3	6
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	2
Total Volume	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	3	0	3	6	11
% App. Total	0	0	0	0	0	0	0	0	0	0	100	0	0	0	100	0	50	0	50	100	100
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.417	.000	.000	.000	.417	.000	.750	.000	.375	.500	.458



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1819 Quarley Place  
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File Name : Evans - 8th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 1

## Groups Printed- Class 1

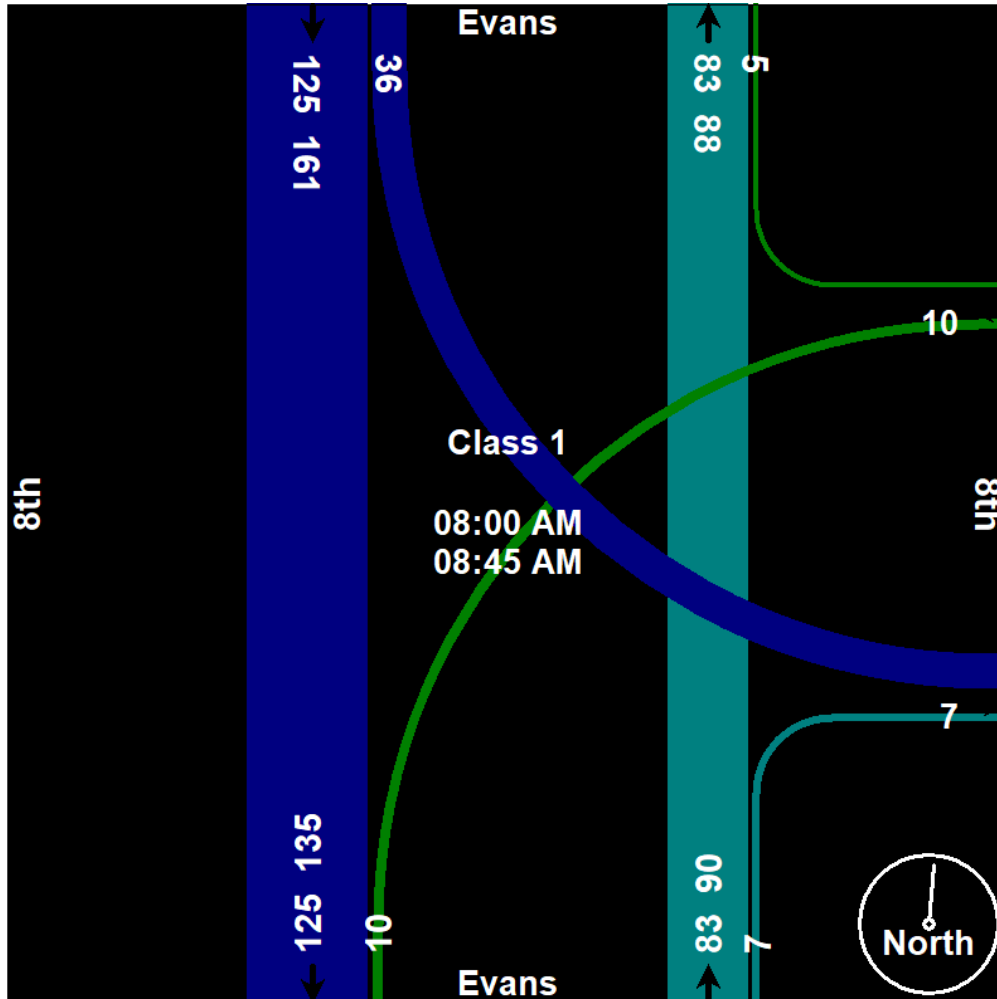
Start Time	Evans Southbound				8th Westbound				Evans Northbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	14	0	0	2	0	0	0	0	16	0	0	32
07:15 AM	0	18	4	0	3	0	1	1	0	13	0	0	40
07:30 AM	0	32	10	0	0	0	2	4	2	19	0	0	69
07:45 AM	0	34	10	0	1	0	2	7	1	20	0	0	75
Total	0	98	24	0	6	0	5	12	3	68	0	0	216
08:00 AM	0	24	3	0	2	0	1	5	1	18	0	0	54
08:15 AM	0	26	4	0	0	0	2	5	2	18	0	0	57
08:30 AM	0	32	15	0	2	0	3	6	1	22	0	0	81
08:45 AM	0	43	14	0	1	0	4	7	3	25	0	0	97
Total	0	125	36	0	5	0	10	23	7	83	0	0	289
*** BREAK ***													
04:00 PM	0	47	0	0	6	0	5	10	3	39	0	0	110
04:15 PM	0	24	1	0	7	0	3	6	3	26	0	0	70
04:30 PM	0	27	0	0	0	0	1	4	1	18	0	0	51
04:45 PM	0	34	0	0	1	0	0	5	1	24	0	0	65
Total	0	132	1	0	14	0	9	25	8	107	0	0	296
05:00 PM	0	27	3	0	3	0	0	9	0	33	0	0	75
05:15 PM	0	28	0	0	1	0	4	8	2	19	0	0	62
05:30 PM	0	19	2	0	2	0	1	4	2	26	0	0	56
05:45 PM	0	42	0	0	6	0	2	6	0	23	0	0	79
Total	0	116	5	0	12	0	7	27	4	101	0	0	272
Grand Total	0	471	66	0	37	0	31	87	22	359	0	0	1073
Apprch %	0	87.7	12.3	0	23.9	0	20	56.1	5.8	94.2	0	0	
Total %	0	43.9	6.2	0	3.4	0	2.9	8.1	2.1	33.5	0	0	

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1819 Quarley Place  
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 sstraffic@msn.com

File Name : Evans - 8th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 2

Start Time	Evans Southbound					8th Westbound					Evans Northbound					Eastbound	Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total		
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	24	3	0	27	2	0	1	5	8	1	18	0	0	19	0	54
08:15 AM	0	26	4	0	30	0	0	2	5	7	2	18	0	0	20	0	57
08:30 AM	0	32	15	0	47	2	0	3	6	11	1	22	0	0	23	0	81
08:45 AM	0	43	14	0	57	1	0	4	7	12	3	25	0	0	28	0	97
Total Volume	0	125	36	0	161	5	0	10	23	38	7	83	0	0	90	0	289
% App. Total	0	77.6	22.4	0		13.2	0	26.3	60.5		7.8	92.2	0	0			
PHF	.000	.727	.600	.000	.706	.625	.000	.625	.821	.792	.583	.830	.000	.000	.804	.000	.745

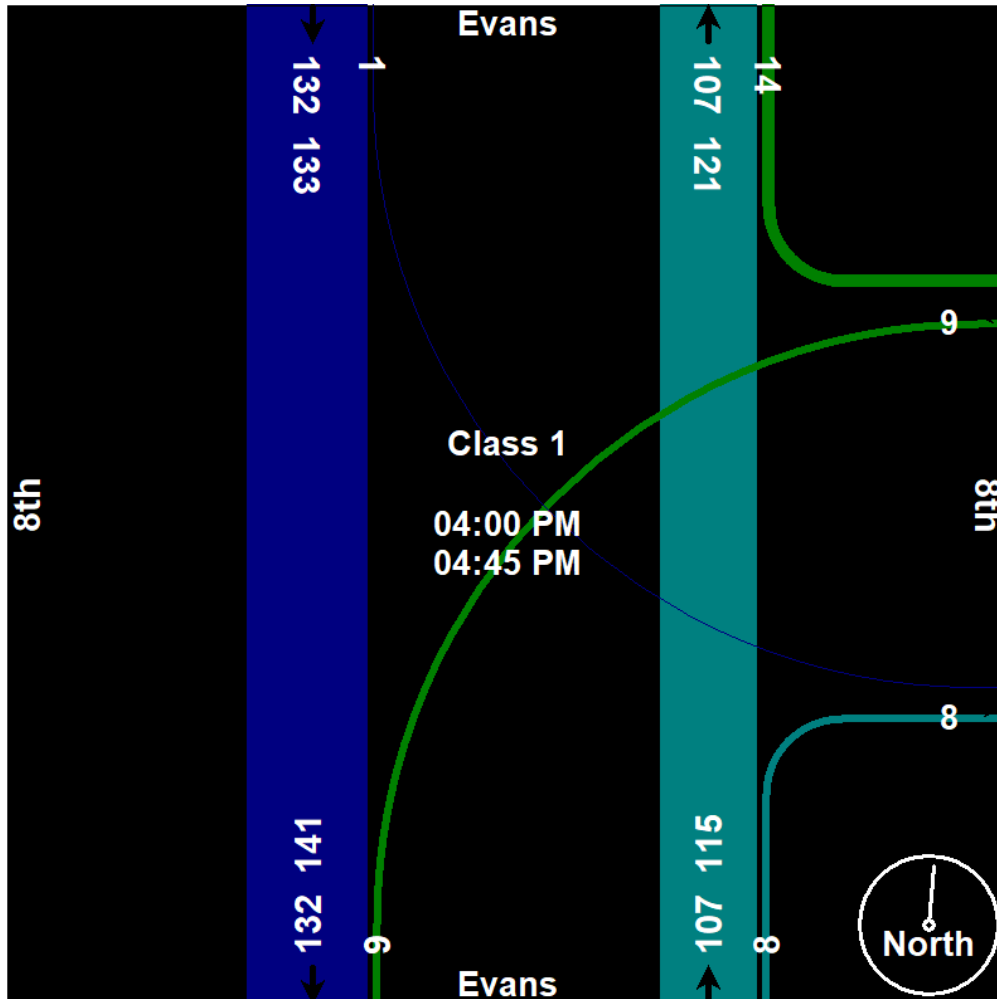


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File Name : Evans - 8th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 3

Start Time	Evans Southbound					8th Westbound					Evans Northbound					Eastbound	Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total		
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	47	0	0	47	6	0	5	10	21	3	39	0	0	42	0	110
04:15 PM	0	24	1	0	25	7	0	3	6	16	3	26	0	0	29	0	70
04:30 PM	0	27	0	0	27	0	0	1	4	5	1	18	0	0	19	0	51
04:45 PM	0	34	0	0	34	1	0	0	5	6	1	24	0	0	25	0	65
Total Volume	0	132	1	0	133	14	0	9	25	48	8	107	0	0	115	0	296
% App. Total	0	99.2	0.8	0		29.2	0	18.8	52.1		7	93	0	0			
PHF	.000	.702	.250	.000	.707	.500	.000	.450	.625	.571	.667	.686	.000	.000	.685	.000	.673



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File Name : Evans - 8th - commercial vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 1

## Groups Printed- Class 1

Start Time	Evans Southbound				8th Westbound				Evans Northbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
07:15 AM	0	1	0	0	0	0	0	1	0	0	0	0	2
07:30 AM	0	3	0	0	0	0	0	0	0	2	0	2	7
07:45 AM	0	1	0	0	0	0	0	0	0	0	0	5	6
Total	0	5	0	0	0	0	0	1	0	3	0	7	16
08:00 AM	0	2	0	0	0	0	0	0	0	0	0	4	6
08:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	2
08:30 AM	0	1	0	0	0	0	0	1	0	0	0	6	8
08:45 AM	0	0	0	0	0	0	0	1	0	1	0	10	12
Total	0	3	0	0	0	0	0	2	0	2	0	21	28

\*\*\* BREAK \*\*\*

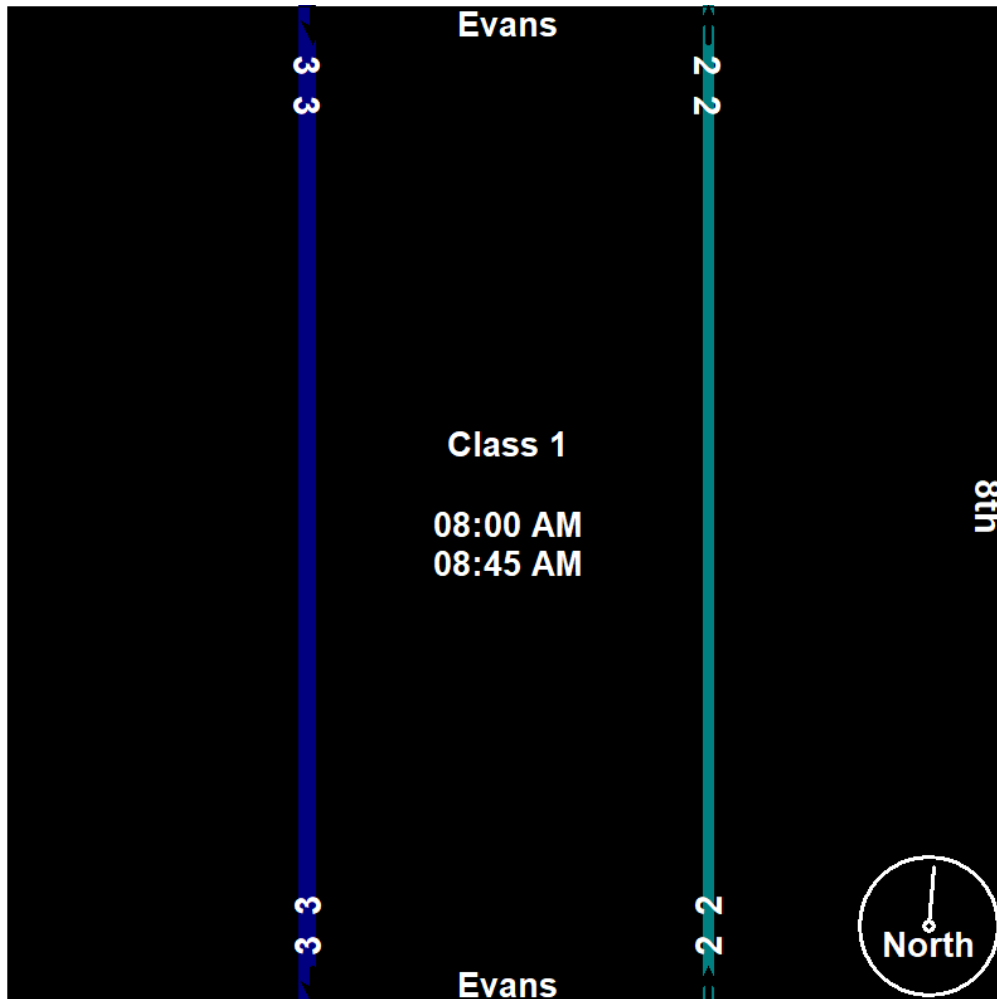
04:00 PM	0	1	0	0	0	0	0	0	0	1	0	1	3
04:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	2
04:45 PM	0	0	0	0	0	0	0	1	0	1	0	1	3
Total	0	2	0	0	0	0	0	1	0	2	0	4	9
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
05:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
05:45 PM	0	1	0	0	0	0	0	0	0	1	0	0	2
Total	0	1	0	0	0	0	0	1	0	1	0	4	7
Grand Total	0	11	0	0	0	0	0	5	0	8	0	36	60
Apprch %	0	100	0	0	0	0	0	100	0	18.2	0	81.8	
Total %	0	18.3	0	0	0	0	0	8.3	0	13.3	0	60	

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File Name : Evans - 8th - commercial vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 2

Start Time	Evans Southbound					8th Westbound					Evans Northbound					Eastbound	Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	4	4	0	6
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	2
08:30 AM	0	1	0	0	1	0	0	0	1	1	0	0	0	6	6	0	8
08:45 AM	0	0	0	0	0	0	0	0	1	1	0	1	0	10	11	0	12
Total Volume	0	3	0	0	3	0	0	0	2	2	0	2	0	21	23	0	28
% App. Total	0	100	0	0		0	0	0	100		0	8.7	0	91.3			
PHF	.000	.375	.000	.000	.375	.000	.000	.000	.500	.500	.000	.500	.000	.525	.523	.000	.583

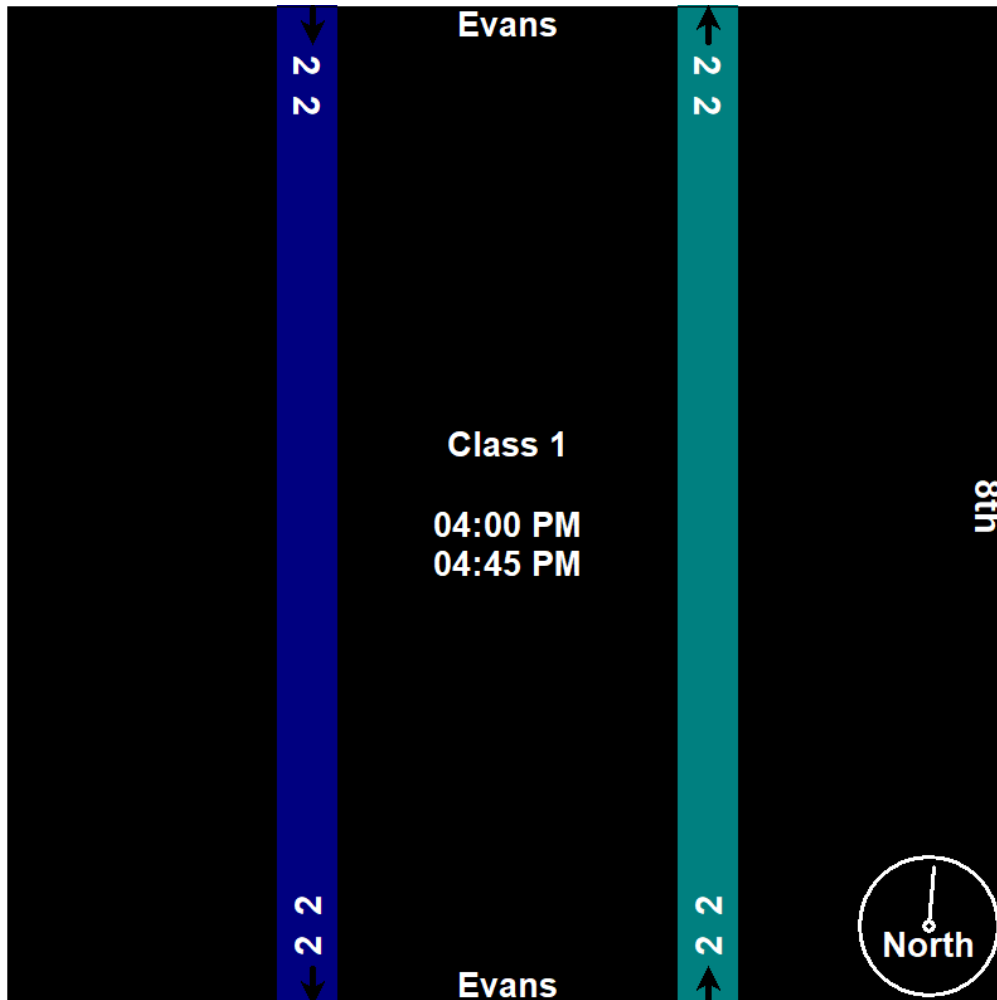


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans - 8th - commercial vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 3

Start Time	Evans Southbound					8th Westbound					Evans Northbound					Eastbound	Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	1	2	0	3
04:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2
04:45 PM	0	0	0	0	0	0	0	0	1	1	0	1	0	1	2	0	3
Total Volume	0	2	0	0	2	0	0	0	1	1	0	2	0	4	6	0	9
% App. Total	0	100	0	0	0	0	0	0	100	0	0	33.3	0	66.7	0	0	0
PHF	.000	.500	.000	.000	.500	.000	.000	.000	.250	.250	.000	.500	.000	.500	.750	.000	.750





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File Name : Virginia-7th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 1

Groups Printed- Class 1

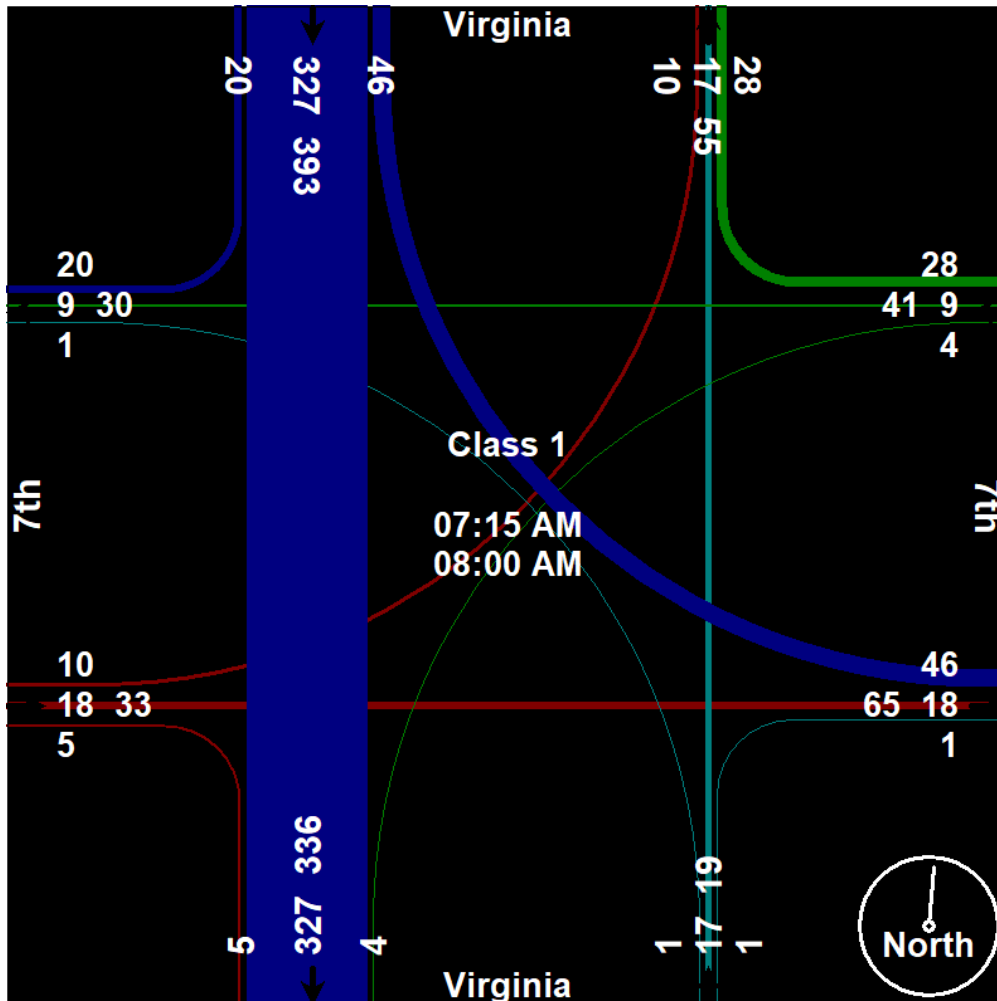
Start Time	Virginia Southbound				7th Westbound				Virginia Northbound				7th Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	6	67	5	2	9	2	1	10	1	3	0	4	1	8	4	9	132
07:15 AM	7	60	10	1	7	3	1	8	1	2	0	2	2	6	5	12	127
07:30 AM	5	92	6	1	3	0	0	5	0	2	1	0	0	6	1	7	129
07:45 AM	4	94	23	3	8	3	0	7	0	7	0	1	2	4	3	6	165
Total	22	313	44	7	27	8	2	30	2	14	1	7	5	24	13	34	553
08:00 AM	4	81	7	2	10	3	3	8	0	6	0	2	1	2	1	9	139
08:15 AM	5	62	12	3	6	4	1	6	0	4	0	0	0	3	3	10	119
08:30 AM	7	67	9	5	4	1	0	8	1	5	0	2	0	7	3	16	135
08:45 AM	5	81	6	1	6	2	1	10	1	6	1	3	0	2	2	14	141
Total	21	291	34	11	26	10	5	32	2	21	1	7	1	14	9	49	534
*** BREAK ***																	
04:00 PM	6	115	7	1	3	3	2	8	10	169	2	4	1	7	5	17	360
04:15 PM	5	122	5	7	7	2	5	22	19	158	3	3	2	4	2	46	412
04:30 PM	2	121	10	1	4	1	5	14	10	151	7	8	3	5	2	23	367
04:45 PM	4	134	1	1	3	2	2	14	7	163	5	5	3	7	6	20	377
Total	17	492	23	10	17	8	14	58	46	641	17	20	9	23	15	106	1516
05:00 PM	4	135	6	2	2	3	5	14	11	194	1	2	5	6	6	25	421
05:15 PM	5	133	5	0	8	1	2	23	8	175	3	4	1	4	2	17	391
05:30 PM	4	128	4	3	2	2	2	9	5	130	1	2	2	4	2	20	320
05:45 PM	5	128	3	2	9	2	1	7	8	129	4	1	0	3	3	32	337
Total	18	524	18	7	21	8	10	53	32	628	9	9	8	17	13	94	1469
Grand Total	78	1620	119	35	91	34	31	173	82	1304	28	43	23	78	50	283	4072
Apprch %	4.2	87.5	6.4	1.9	27.7	10.3	9.4	52.6	5.6	89.5	1.9	3	5.3	18	11.5	65.2	
Total %	1.9	39.8	2.9	0.9	2.2	0.8	0.8	4.2	2	32	0.7	1.1	0.6	1.9	1.2	6.9	

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File Name : Virginia-7th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 2

Start Time	Virginia Southbound					7th Westbound					Virginia Northbound					7th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	7	60	10	1	78	7	3	1	8	19	1	2	0	2	5	2	6	5	12	25	127
07:30 AM	5	92	6	1	104	3	0	0	5	8	0	2	1	0	3	0	6	1	7	14	129
07:45 AM	4	94	23	3	124	8	3	0	7	18	0	7	0	1	8	2	4	3	6	15	165
08:00 AM	4	81	7	2	94	10	3	3	8	24	0	6	0	2	8	1	2	1	9	13	139
Total Volume	20	327	46	7	400	28	9	4	28	69	1	17	1	5	24	5	18	10	34	67	560
% App. Total	5	81.8	11.5	1.8		40.6	13	5.8	40.6		4.2	70.8	4.2	20.8		7.5	26.9	14.9	50.7		
PHF	.714	.870	.500	.583	.806	.700	.750	.333	.875	.719	.250	.607	.250	.625	.750	.625	.750	.500	.708	.670	.848

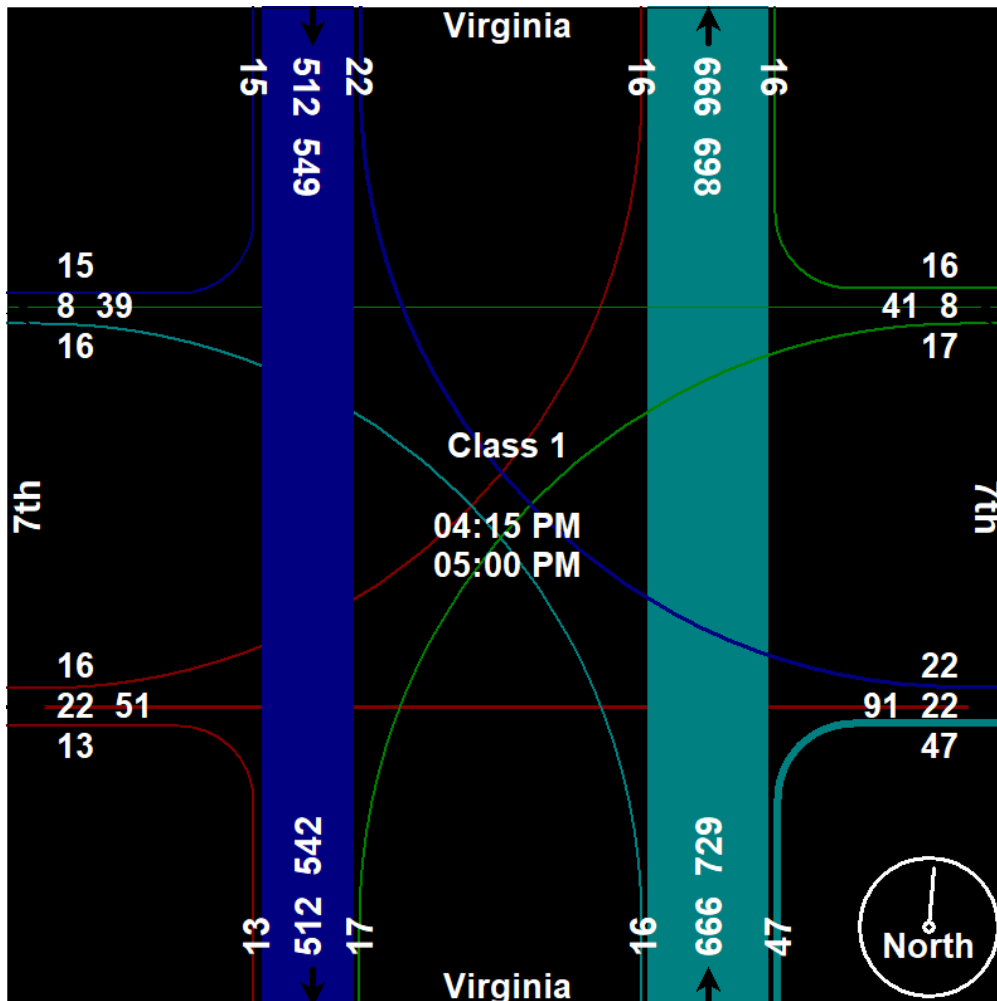


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Virginia-7th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 3

Start Time	Virginia Southbound					7th Westbound					Virginia Northbound					7th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	5	122	5	7	139	7	2	5	22	36	19	158	3	3	183	2	4	2	46	54	412
04:30 PM	2	121	10	1	134	4	1	5	14	24	10	151	7	8	176	3	5	2	23	33	367
04:45 PM	4	134	1	1	140	3	2	2	14	21	7	163	5	5	180	3	7	6	20	36	377
05:00 PM	4	135	6	2	147	2	3	5	14	24	11	194	1	2	208	5	6	6	25	42	421
Total Volume	15	512	22	11	560	16	8	17	64	105	47	666	16	18	747	13	22	16	114	165	1577
% App. Total	2.7	91.4	3.9	2		15.2	7.6	16.2	61		6.3	89.2	2.1	2.4		7.9	13.3	9.7	69.1		
PHF	.750	.948	.550	.393	.952	.571	.667	.850	.727	.729	.618	.858	.571	.563	.898	.650	.786	.667	.620	.764	.936



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File Name : virginia-7th - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 1

## Groups Printed- Class 1

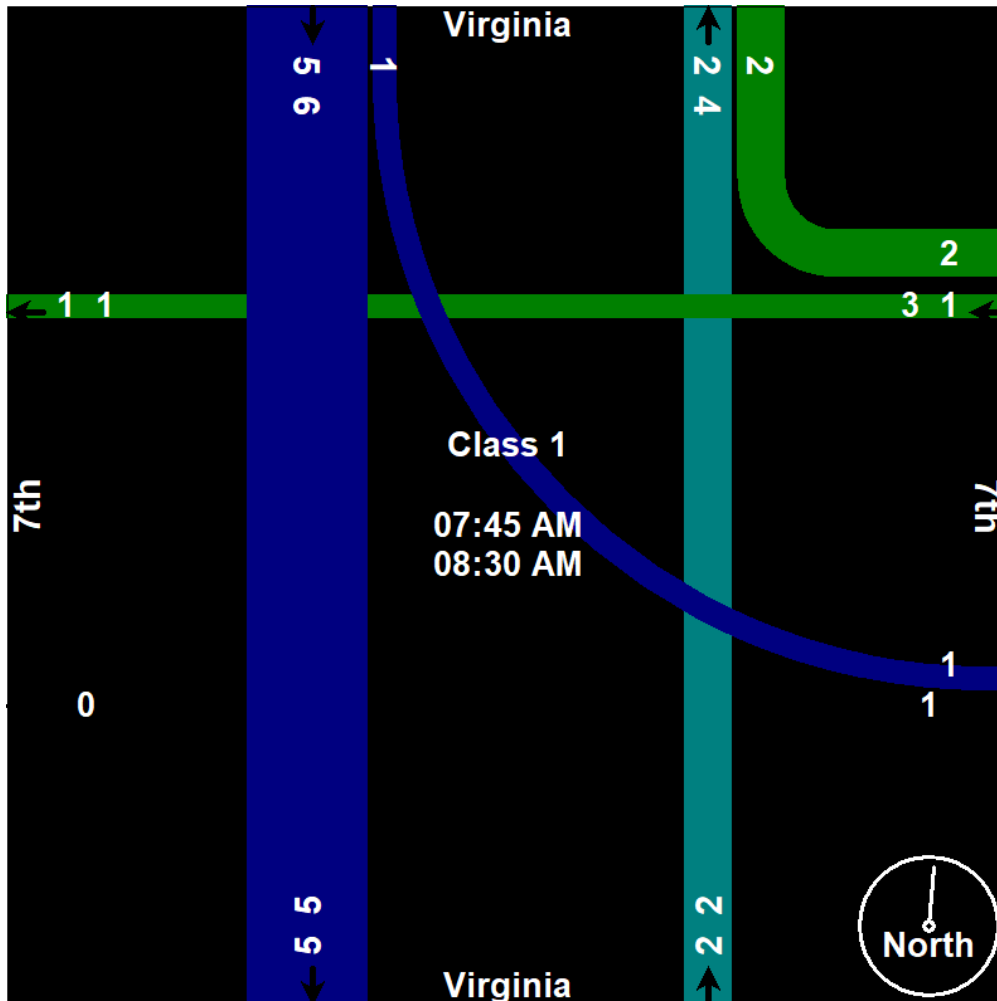
Start Time	Virginia Southbound				7th Westbound				Virginia Northbound				7th Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
07:15 AM	0	3	0	0	0	0	0	1	0	0	0	1	0	0	0	0	5
07:30 AM	0	1	0	0	0	0	0	1	0	1	0	1	0	0	0	0	4
07:45 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	7	0	0	2	0	0	2	1	1	0	2	0	0	0	0	15
08:00 AM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4
08:15 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	4	0	1	0	3	0	0	0	0	8
08:45 AM	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3
Total	0	4	1	0	1	1	0	5	0	2	0	3	0	0	0	0	17
*** BREAK ***																	
04:00 PM	0	0	0	0	0	0	0	4	0	1	0	3	0	0	0	0	8
04:15 PM	0	0	0	5	0	0	0	1	0	0	0	1	0	0	0	5	12
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	2	5
04:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	3	0	6	0	0	0	5	0	1	0	5	0	0	0	7	27
05:00 PM	0	0	0	0	0	0	0	1	0	2	0	1	0	0	0	0	4
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
05:30 PM	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	1	5
05:45 PM	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0	0	4
Total	0	0	0	2	0	0	0	3	0	6	0	2	0	0	0	1	14
Grand Total	0	14	1	8	3	1	0	15	1	10	0	12	0	0	0	8	73
Apprch %	0	60.9	4.3	34.8	15.8	5.3	0	78.9	4.3	43.5	0	52.2	0	0	0	100	
Total %	0	19.2	1.4	11	4.1	1.4	0	20.5	1.4	13.7	0	16.4	0	0	0	11	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
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 702-217-1968 - Cell  
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File Name : virginia-7th - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 2

Start Time	Virginia Southbound					7th Westbound					Virginia Northbound					7th Eastbound					Int. Total	
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total		
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 07:45 AM																						
07:45 AM	0	2	0	0	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4
08:00 AM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4
08:15 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	4	4	0	1	0	0	3	4	0	0	0	0	0	8
Total Volume	0	5	1	0	6	2	1	0	4	7	0	2	0	3	5	0	0	0	0	0	0	18
% App. Total	0	83.3	16.7	0		28.6	14.3	0	57.1		0	40	0	60		0	0	0	0		0	
PHF	.000	.417	.250	.000	.500	.250	.250	.000	.250	.438	.000	.500	.000	.250	.313	.000	.000	.000	.000	.000	.000	.563



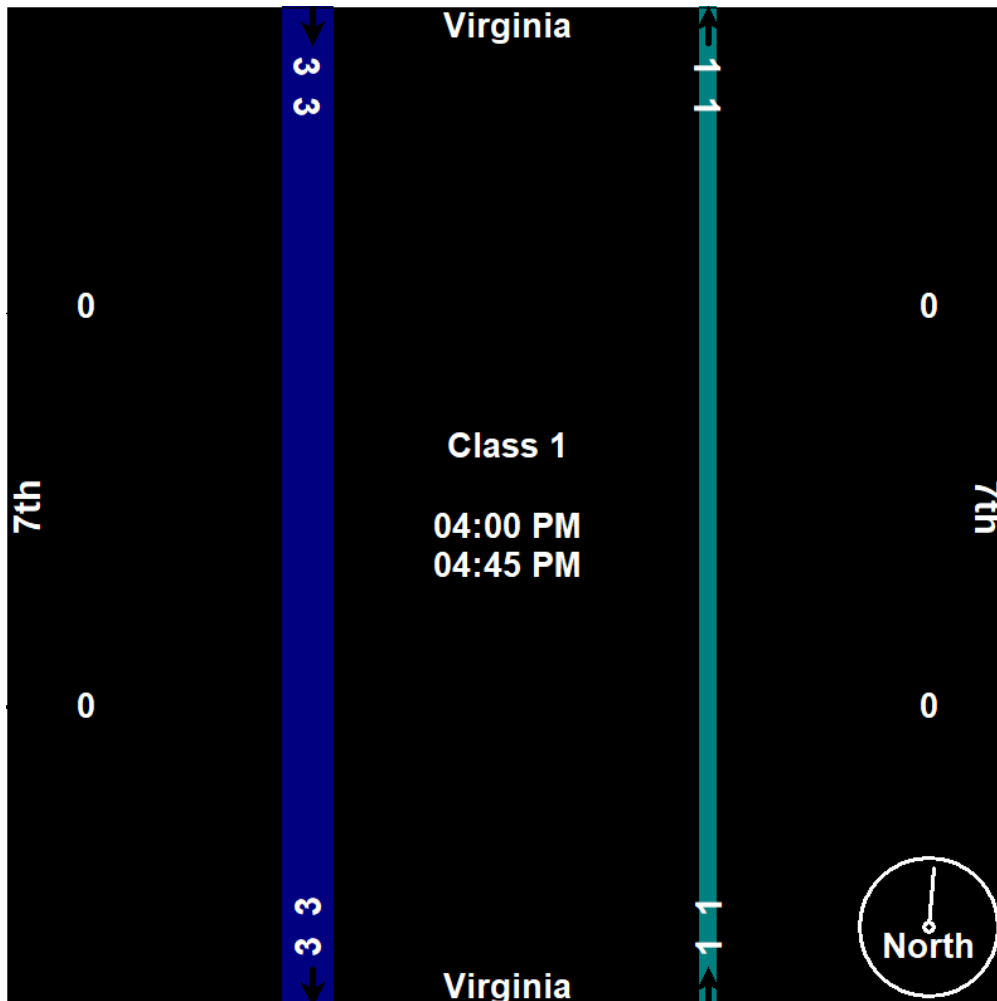
# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : virginia-7th - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 3

Start Time	Virginia Southbound					7th Westbound					Virginia Northbound					7th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	4	4	0	1	0	3	4	0	0	0	0	0	8
04:15 PM	0	0	0	5	5	0	0	0	1	1	0	0	0	1	1	0	0	0	5	5	12
04:30 PM	0	1	0	1	2	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2	5
04:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	3	0	6	9	0	0	0	5	5	0	1	0	5	6	0	0	0	7	7	27
% App. Total	0	33.3	0	66.7		0	0	0	100		0	16.7	0	83.3		0	0	0	100		
PHF	.000	.375	.000	.300	.450	.000	.000	.000	.313	.313	.000	.250	.000	.417	.375	.000	.000	.000	.350	.350	.563

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:00 PM



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
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File Name : Center - 7th - Private Vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 1

## Groups Printed- Class 1

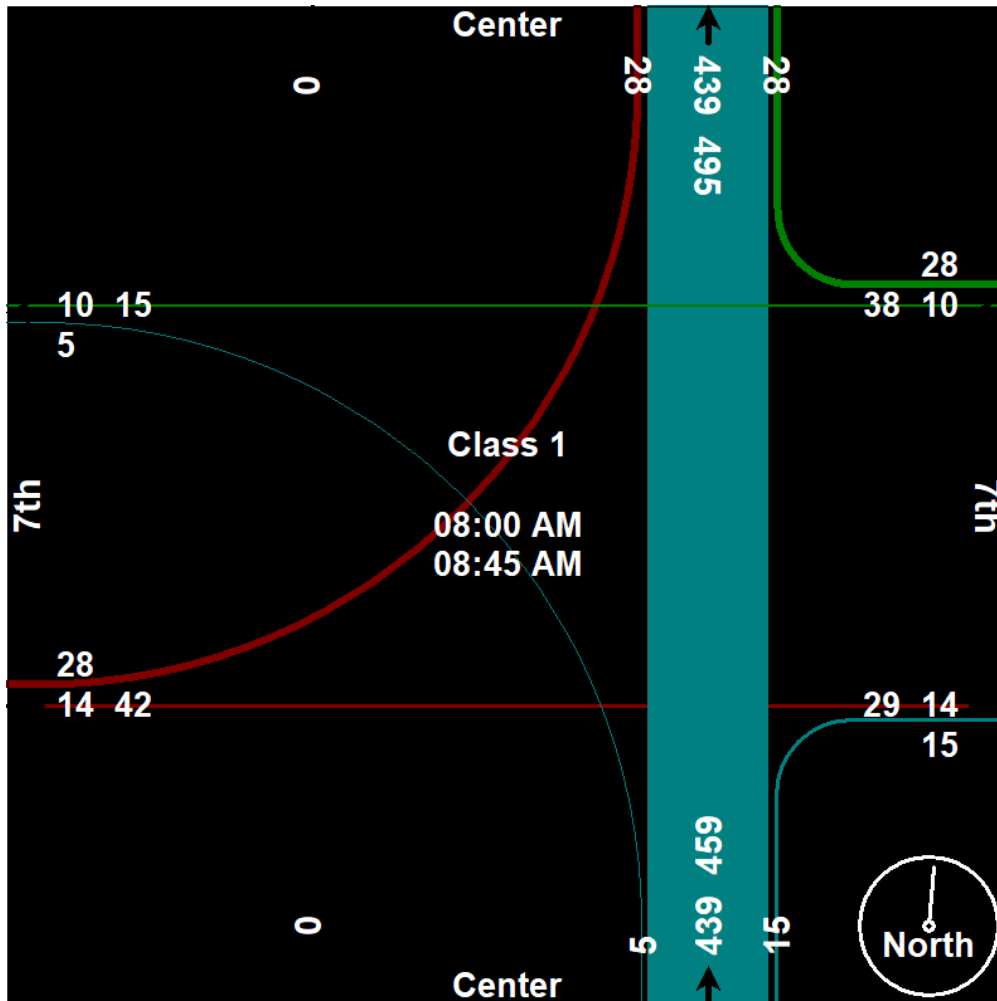
Start Time	Center Southbound				7th Westbound				Center Northbound				7th Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	8	1	0	0	4	68	0	2	0	2	13	2	100
07:15 AM	0	0	0	0	6	0	0	0	2	91	0	2	0	1	15	3	120
07:30 AM	0	0	0	0	5	1	0	0	1	91	1	2	0	2	6	1	110
07:45 AM	0	0	0	0	6	1	0	1	5	105	4	1	0	6	7	2	138
Total	0	0	0	0	25	3	0	1	12	355	5	7	0	11	41	8	468
08:00 AM	0	0	0	0	1	2	0	0	1	96	0	0	0	3	9	2	114
08:15 AM	0	0	0	0	4	2	0	0	5	113	1	5	0	3	4	3	140
08:30 AM	0	0	0	0	9	5	0	2	4	107	2	3	0	6	7	4	149
08:45 AM	0	0	0	0	14	1	0	4	5	123	2	1	0	2	8	2	162
Total	0	0	0	0	28	10	0	6	15	439	5	9	0	14	28	11	565
*** BREAK ***																	
04:00 PM	0	0	0	0	13	3	0	1	2	220	8	3	0	3	6	4	263
04:15 PM	0	0	0	0	14	5	0	3	0	188	2	4	0	5	12	3	236
04:30 PM	0	0	0	0	6	3	0	1	1	202	2	2	0	7	9	5	238
04:45 PM	0	0	0	0	12	3	0	5	1	186	5	11	0	5	18	14	260
Total	0	0	0	0	45	14	0	10	4	796	17	20	0	20	45	26	997
05:00 PM	0	0	0	0	14	1	0	2	2	288	4	8	0	4	9	8	340
05:15 PM	0	0	0	0	14	2	0	2	5	240	2	10	0	9	13	7	304
05:30 PM	0	0	0	0	10	7	0	1	0	188	3	4	0	8	10	6	237
05:45 PM	0	0	0	0	9	7	0	0	1	177	2	4	0	5	20	1	226
Total	0	0	0	0	47	17	0	5	8	893	11	26	0	26	52	22	1107
Grand Total	0	0	0	0	145	44	0	22	39	2483	38	62	0	71	166	67	3137
Apprch %	0	0	0	0	68.7	20.9	0	10.4	1.5	94.7	1.4	2.4	0	23.4	54.6	22	
Total %	0	0	0	0	4.6	1.4	0	0.7	1.2	79.2	1.2	2	0	2.3	5.3	2.1	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
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 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Center - 7th - Private Vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 2

Start Time	Center Southbound					7th Westbound					Center Northbound					7th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	1	2	0	0	3	1	96	0	0	97	0	3	9	2	14	114
08:15 AM	0	0	0	0	0	4	2	0	0	6	5	113	1	5	124	0	3	4	3	10	140
08:30 AM	0	0	0	0	0	9	5	0	2	16	4	107	2	3	116	0	6	7	4	17	149
08:45 AM	0	0	0	0	0	14	1	0	4	19	5	123	2	1	131	0	2	8	2	12	162
Total Volume	0	0	0	0	0	28	10	0	6	44	15	439	5	9	468	0	14	28	11	53	565
% App. Total	0	0	0	0	0	63.6	22.7	0	13.6		3.2	93.8	1.1	1.9		0	26.4	52.8	20.8		
PHF	.000	.000	.000	.000	.000	.500	.500	.000	.375	.579	.750	.892	.625	.450	.893	.000	.583	.778	.688	.779	.872



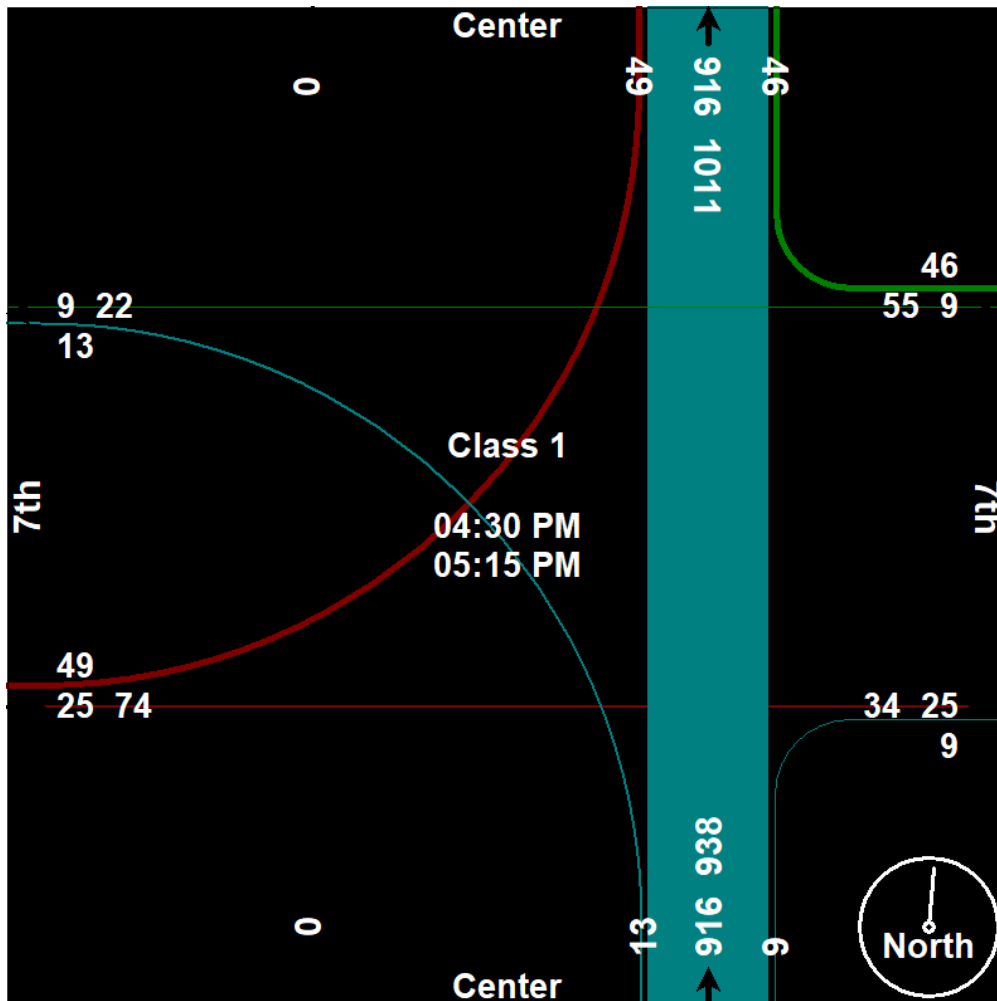


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
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 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Center - 7th - Private Vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 3

Start Time	Center Southbound					7th Westbound					Center Northbound					7th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	6	3	0	1	10	1	202	2	2	207	0	7	9	5	21	238
04:45 PM	0	0	0	0	0	12	3	0	5	20	1	186	5	11	203	0	5	18	14	37	260
05:00 PM	0	0	0	0	0	14	1	0	2	17	2	288	4	8	302	0	4	9	8	21	340
05:15 PM	0	0	0	0	0	14	2	0	2	18	5	240	2	10	257	0	9	13	7	29	304
Total Volume	0	0	0	0	0	46	9	0	10	65	9	916	13	31	969	0	25	49	34	108	1142
% App. Total	0	0	0	0	0	70.8	13.8	0	15.4		0.9	94.5	1.3	3.2		0	23.1	45.4	31.5		
PHF	.000	.000	.000	.000	.000	.821	.750	.000	.500	.813	.450	.795	.650	.705	.802	.000	.694	.681	.607	.730	.840



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Center - 7th - Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 1

## Groups Printed- Class 1

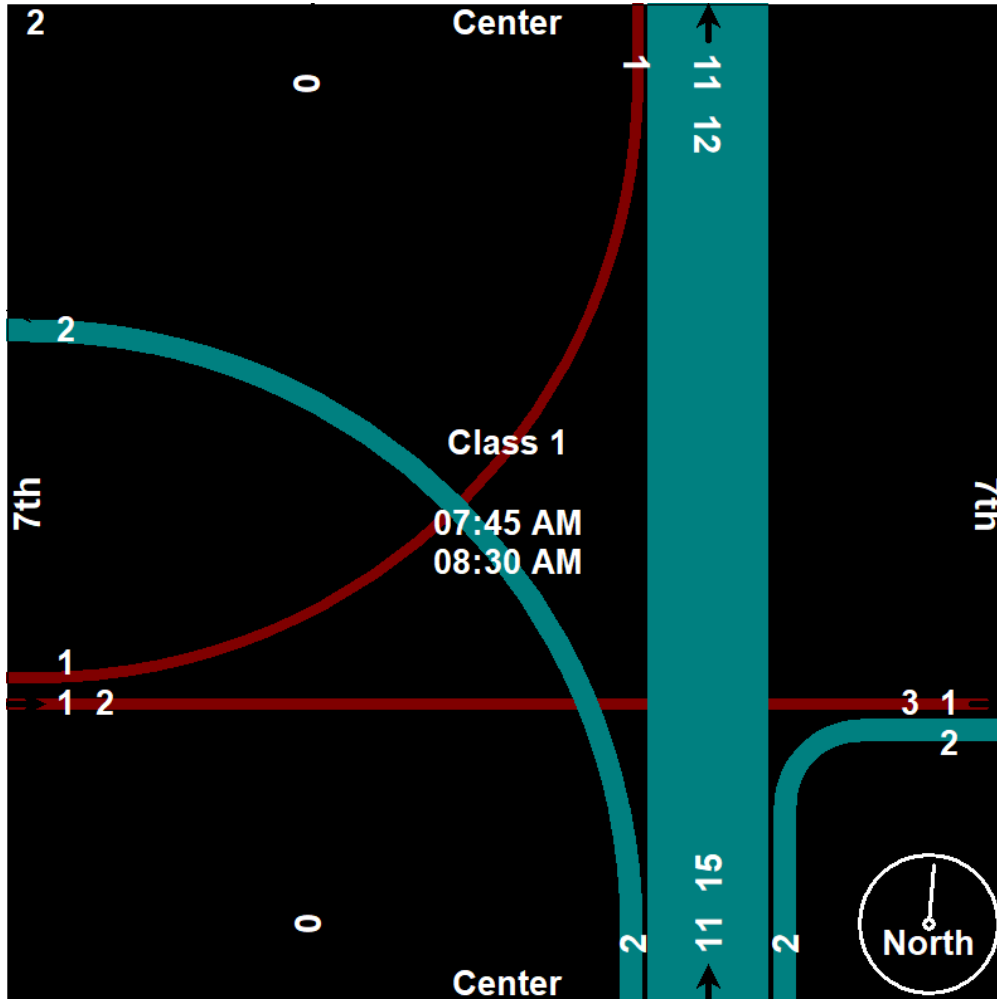
Start Time	Center Southbound				7th Westbound				Center Northbound				7th Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	4
07:15 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
07:30 AM	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	4
07:45 AM	0	0	0	0	0	0	0	1	0	3	0	3	0	0	0	1	8
Total	0	0	0	0	0	0	0	2	1	10	0	5	0	0	0	1	19
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	3
08:15 AM	0	0	0	0	0	0	0	0	1	4	1	0	0	0	1	0	7
08:30 AM	0	0	0	0	0	0	0	0	1	3	1	2	0	1	0	0	8
08:45 AM	0	0	0	0	1	0	0	0	0	1	1	3	0	0	0	1	7
Total	0	0	0	0	1	0	0	0	2	9	3	7	0	1	1	1	25
*** BREAK ***																	
04:00 PM	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	0	5
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	6	0	2	0	0	0	1	9
05:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	5	0	1	0	0	0	0	6
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	1	8	0	2	0	0	0	0	11
Grand Total	0	0	0	0	1	0	0	2	4	33	3	16	0	1	1	3	64
Apprch %	0	0	0	0	33.3	0	0	66.7	7.1	58.9	5.4	28.6	0	20	20	60	
Total %	0	0	0	0	1.6	0	0	3.1	6.2	51.6	4.7	25	0	1.6	1.6	4.7	

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File Name : Center - 7th - Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 2

Start Time	Center Southbound					7th Westbound					Center Northbound					7th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	0	0	1	1	0	3	0	3	6	0	0	0	1	1	8
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	2	3	0	0	0	0	0	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	1	4	1	0	6	0	0	1	0	1	7
08:30 AM	0	0	0	0	0	0	0	0	0	0	1	3	1	2	7	0	1	0	0	1	8
Total Volume	0	0	0	0	0	0	0	0	1	1	2	11	2	7	22	0	1	1	1	3	26
% App. Total	0	0	0	0	0	0	0	0	100		9.1	50	9.1	31.8		0	33.3	33.3	33.3		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.500	.688	.500	.583	.786	.000	.250	.250	.250	.750	.813

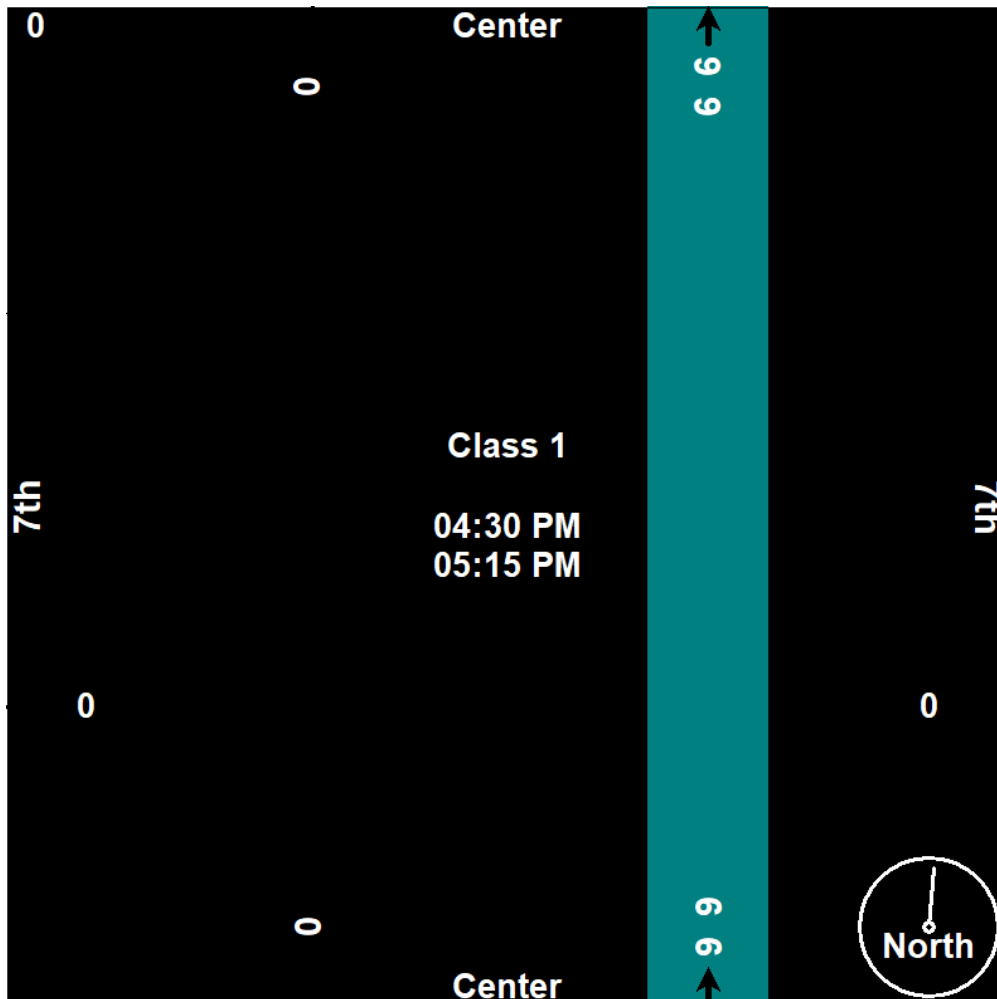


# Silver State Traffic Data Collection, LLC

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File Name : Center - 7th - Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 3

Start Time	Center Southbound					7th Westbound					Center Northbound					7th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	5	0	1	6	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	9	0	2	11	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	81.8	0	18.2		0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.450	.000	.500	.458	.000	.000	.000	.000	.000	.458



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1819 Quarley Place  
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 sstraffic@msn.com

File Name : Virginia - 6th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 1

## Groups Printed- Class 1

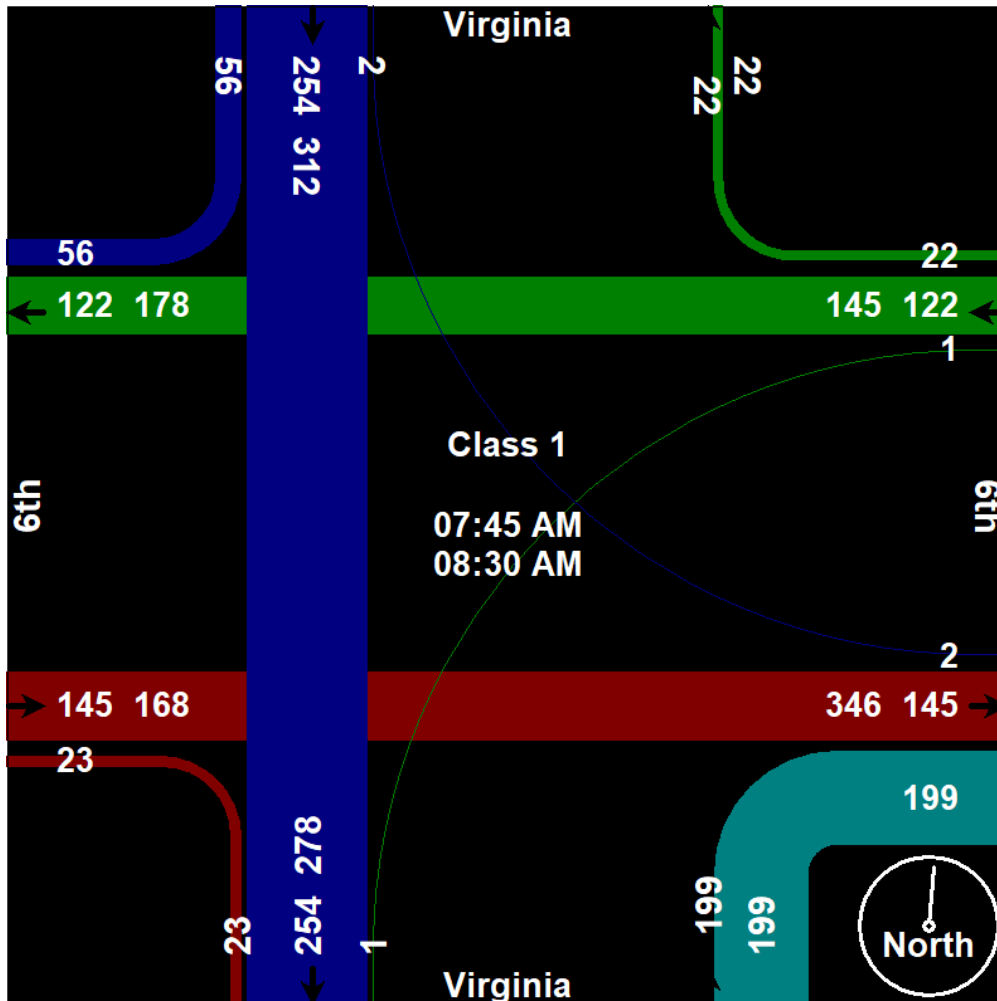
Start Time	Virginia Southbound				6th Westbound				Virginia Northbound				6th Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	13	53	2	0	4	13	0	0	43	0	0	4	4	37	0	6	179
07:15 AM	9	50	0	0	1	25	0	5	45	0	0	5	3	26	1	0	170
07:30 AM	11	79	0	2	2	25	0	4	38	0	0	1	2	38	0	0	202
07:45 AM	10	87	0	2	8	33	1	2	61	0	0	1	3	30	0	1	239
Total	43	269	2	4	15	96	1	11	187	0	0	11	12	131	1	7	790
08:00 AM	11	68	1	2	5	29	0	2	46	0	0	4	4	47	0	5	224
08:15 AM	13	56	0	6	4	30	0	3	49	0	0	4	3	37	0	2	207
08:30 AM	22	43	1	4	5	30	0	7	43	0	0	3	13	31	0	1	203
08:45 AM	15	67	0	2	5	31	0	2	56	0	0	6	20	23	0	5	232
Total	61	234	2	14	19	120	0	14	194	0	0	17	40	138	0	13	866
*** BREAK ***																	
04:00 PM	15	96	8	0	13	39	4	8	4	114	7	0	8	66	55	12	449
04:15 PM	18	95	11	5	7	30	5	17	6	118	10	3	8	57	60	36	486
04:30 PM	15	109	7	3	16	32	7	11	6	94	9	9	5	76	58	34	491
04:45 PM	24	99	10	4	12	43	7	10	4	103	13	5	10	72	55	27	498
Total	72	399	36	12	48	144	23	46	20	429	39	17	31	271	228	109	1924
05:00 PM	21	105	22	2	16	40	2	17	6	137	8	5	7	93	73	25	579
05:15 PM	28	89	17	10	13	41	4	17	3	120	12	5	8	67	49	19	502
05:30 PM	17	98	6	3	10	39	6	11	3	94	11	2	3	35	36	53	427
05:45 PM	21	102	5	1	9	36	6	12	6	95	13	3	6	39	35	27	416
Total	87	394	50	16	48	156	18	57	18	446	44	15	24	234	193	124	1924
Grand Total	263	1296	90	46	130	516	42	128	419	875	83	60	107	774	422	253	5504
Apprch %	15.5	76.5	5.3	2.7	15.9	63.2	5.1	15.7	29.2	60.9	5.8	4.2	6.9	49.7	27.1	16.3	
Total %	4.8	23.5	1.6	0.8	2.4	9.4	0.8	2.3	7.6	15.9	1.5	1.1	1.9	14.1	7.7	4.6	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Virginia - 6th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 2

Start Time	Virginia Southbound					6th Westbound					Virginia Northbound					6th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	10	87	0	2	99	8	33	1	2	44	61	0	0	1	62	3	30	0	1	34	239
08:00 AM	11	68	1	2	82	5	29	0	2	36	46	0	0	4	50	4	47	0	5	56	224
08:15 AM	13	56	0	6	75	4	30	0	3	37	49	0	0	4	53	3	37	0	2	42	207
08:30 AM	22	43	1	4	70	5	30	0	7	42	43	0	0	3	46	13	31	0	1	45	203
Total Volume	56	254	2	14	326	22	122	1	14	159	199	0	0	12	211	23	145	0	9	177	873
% App. Total	17.2	77.9	0.6	4.3		13.8	76.7	0.6	8.8		94.3	0	0	5.7		13	81.9	0	5.1		
PHF	.636	.730	.500	.583	.823	.688	.924	.250	.500	.903	.816	.000	.000	.750	.851	.442	.771	.000	.450	.790	.913

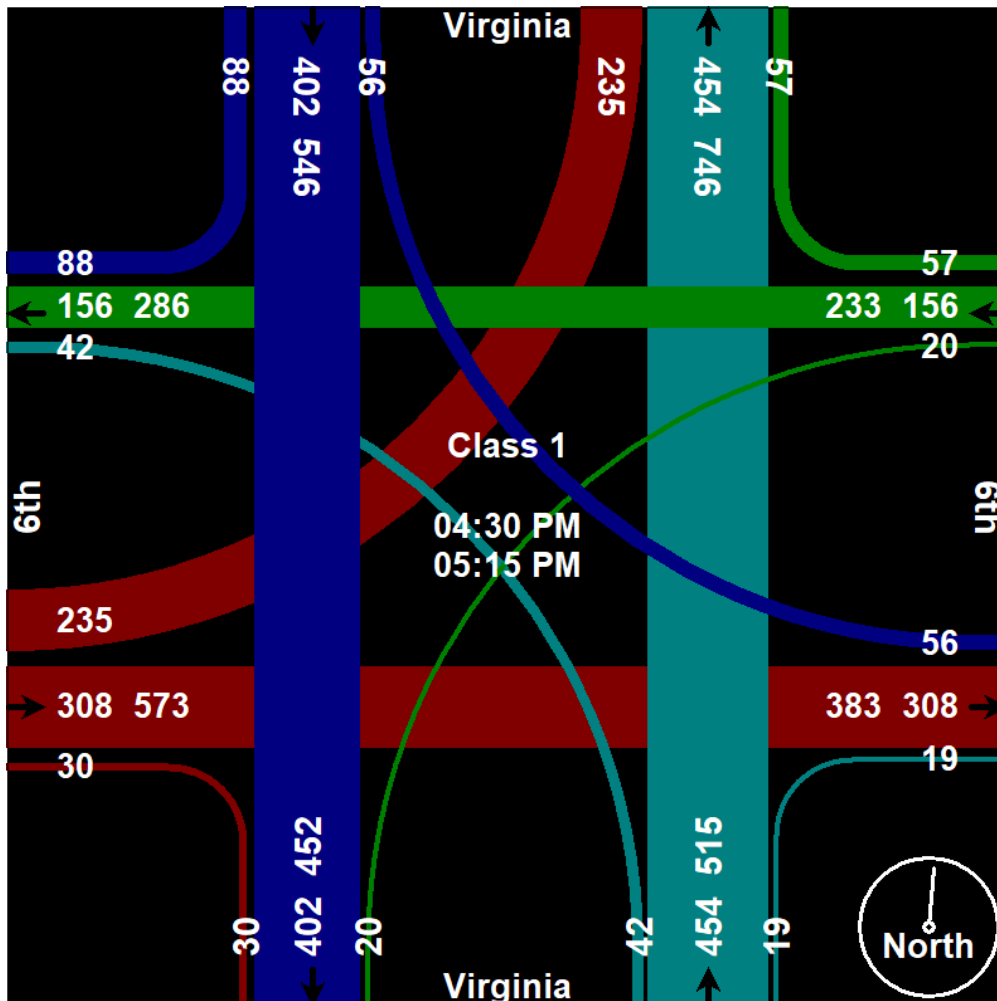


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Virginia - 6th - private vehicles  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 3

Start Time	Virginia Southbound					6th Westbound					Virginia Northbound					6th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	15	109	7	3	134	16	32	7	11	66	6	94	9	9	118	5	76	58	34	173	491
04:45 PM	24	99	10	4	137	12	43	7	10	72	4	103	13	5	125	10	72	55	27	164	498
05:00 PM	21	105	22	2	150	16	40	2	17	75	6	137	8	5	156	7	93	73	25	198	579
05:15 PM	28	89	17	10	144	13	41	4	17	75	3	120	12	5	140	8	67	49	19	143	502
Total Volume	88	402	56	19	565	57	156	20	55	288	19	454	42	24	539	30	308	235	105	678	2070
% App. Total	15.6	71.2	9.9	3.4		19.8	54.2	6.9	19.1		3.5	84.2	7.8	4.5		4.4	45.4	34.7	15.5		
PHF	.786	.922	.636	.475	.942	.891	.907	.714	.809	.960	.792	.828	.808	.667	.864	.750	.828	.805	.772	.856	.894



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
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 sstraffic@msn.com

File Name : Virginia - 6th - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 1

Groups Printed- Class 1

Start Time	Virginia Southbound				6th Westbound				Virginia Northbound				6th Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4
07:15 AM	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	3
07:30 AM	0	1	0	0	1	3	0	0	3	0	0	0	0	1	0	0	9
07:45 AM	0	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	6
Total	0	7	0	0	2	4	0	0	7	0	0	0	1	1	0	0	22
08:00 AM	0	3	0	0	2	1	0	0	0	0	0	0	0	0	0	0	6
08:15 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
08:30 AM	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	3
08:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	1	1	0	0	4
Total	0	4	0	1	3	2	0	0	4	0	0	0	1	1	0	0	16
*** BREAK ***																	
04:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	0	4
04:15 PM	0	0	0	5	0	0	0	0	0	0	0	2	0	1	0	0	8
04:30 PM	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	5
04:45 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
Total	1	4	0	6	0	0	0	1	1	1	0	2	0	3	1	0	20
05:00 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	3
*** BREAK ***																	
05:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2
05:45 PM	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	3
Total	0	0	0	2	0	0	0	0	0	2	1	0	0	0	3	0	8
Grand Total	1	15	0	9	5	6	0	1	12	3	1	2	2	5	4	0	66
Apprch %	4	60	0	36	41.7	50	0	8.3	66.7	16.7	5.6	11.1	18.2	45.5	36.4	0	
Total %	1.5	22.7	0	13.6	7.6	9.1	0	1.5	18.2	4.5	1.5	3	3	7.6	6.1	0	

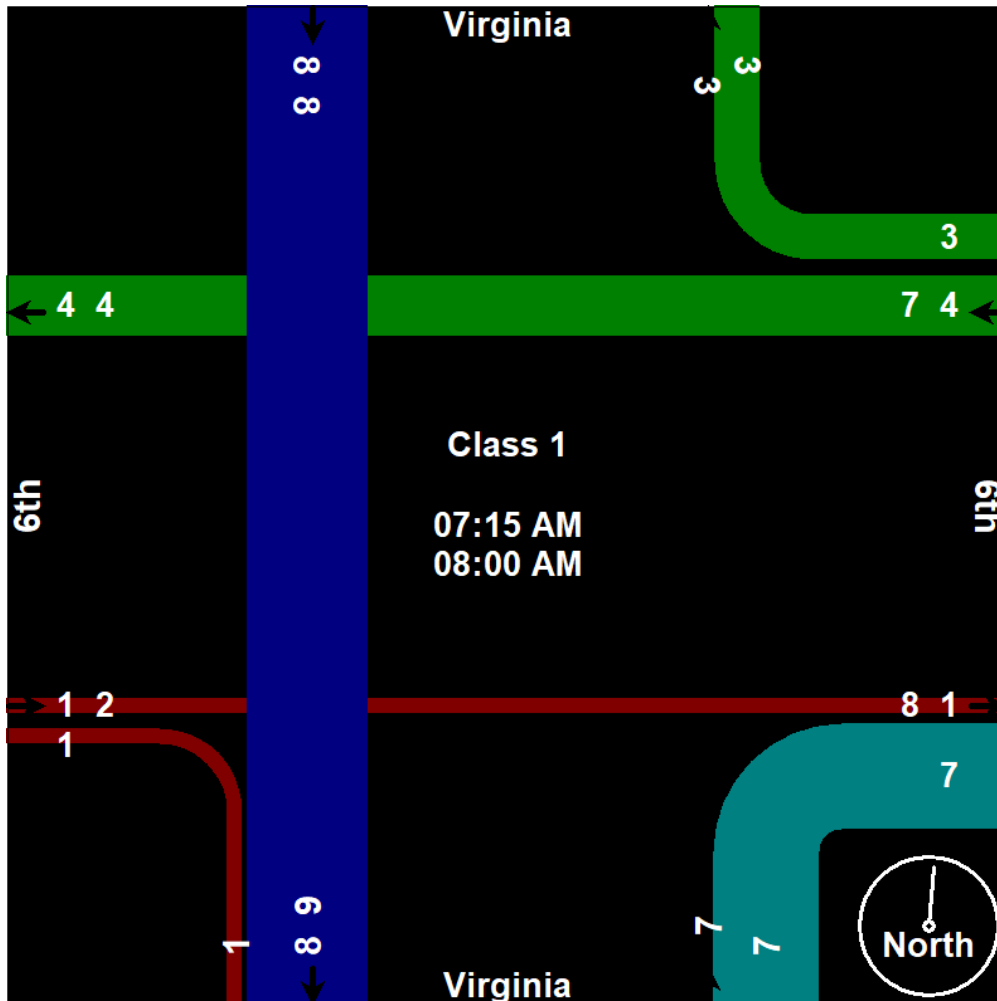


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
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 sstraffic@msn.com

File Name : Virginia - 6th - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 2

Start Time	Virginia Southbound					6th Westbound					Virginia Northbound					6th Eastbound					Int. Total	
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total		
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 07:15 AM																						
07:15 AM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	1	3
07:30 AM	0	1	0	0	1	1	3	0	0	4	3	0	0	0	3	0	1	0	0	1	0	9
07:45 AM	0	3	0	0	3	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	6
08:00 AM	0	3	0	0	3	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	6
Total Volume	0	8	0	0	8	3	4	0	0	7	7	0	0	0	7	1	1	0	0	2	1	24
% App. Total	0	100	0	0		42.9	57.1	0	0		100	0	0	0		50	50	0	0		0	
PHF	.000	.667	.000	.000	.667	.375	.333	.000	.000	.438	.583	.000	.000	.000	.583	.250	.250	.000	.000	.500		.667

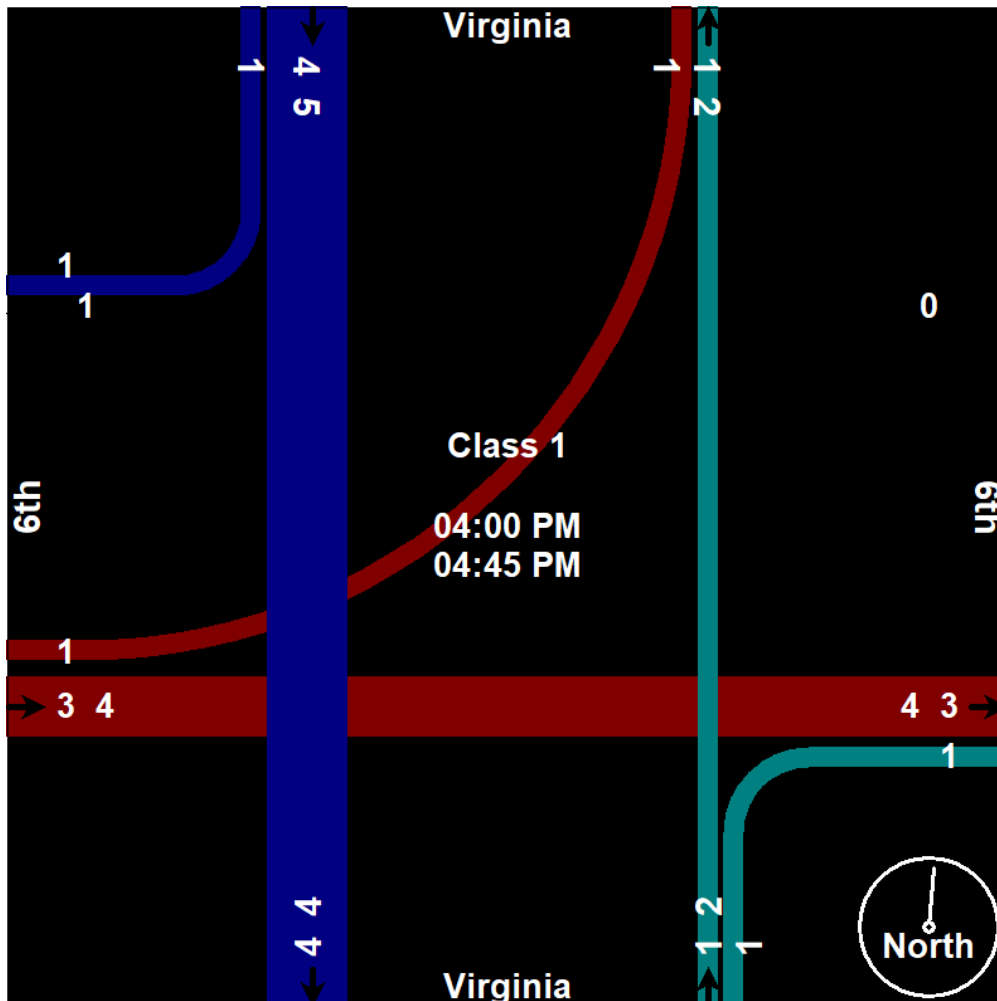


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File Name : Virginia - 6th - commercial trucks  
 Site Code : 00000000  
 Start Date : 4/25/2019  
 Page No : 3

Start Time	Virginia Southbound					6th Westbound					Virginia Northbound					6th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	4
04:15 PM	0	0	0	5	5	0	0	0	0	0	0	0	0	2	2	0	1	0	0	1	8
04:30 PM	1	1	0	1	3	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	5
04:45 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Total Volume	1	4	0	6	11	0	0	0	1	1	1	1	0	2	4	0	3	1	0	4	20
% App. Total	9.1	36.4	0	54.5		0	0	0	100		25	25	0	50		0	75	25	0		
PHF	.250	.500	.000	.300	.550	.000	.000	.000	.250	.250	.250	.250	.000	.250	.500	.000	.375	.250	.000	.333	.625



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File Name : Center-6th -Private Vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 1

## Groups Printed- Class 1

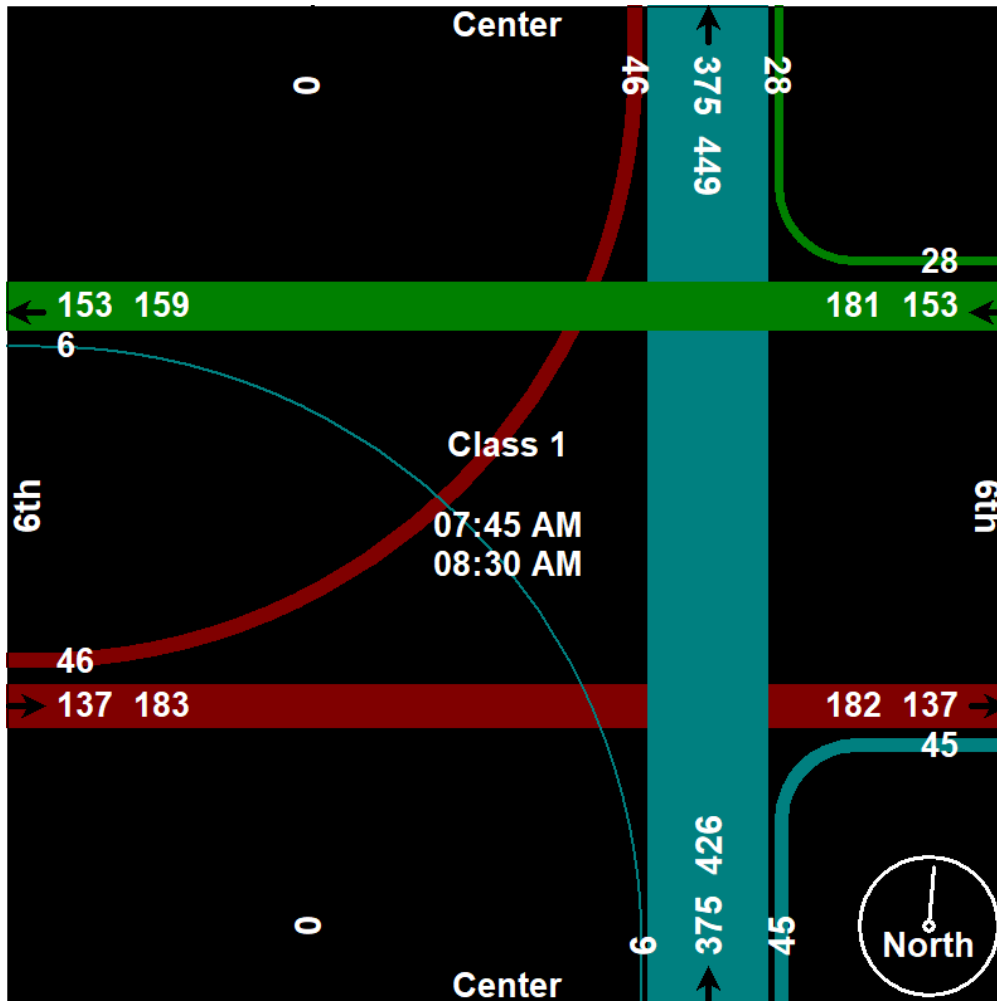
Start Time	Center Southbound				6th Westbound				Center Northbound				6th Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	0	3	19	0	2	7	57	0	3	0	14	16	4	125
07:15 AM	0	0	0	0	7	27	0	3	12	78	1	3	0	30	13	0	174
07:30 AM	0	0	0	0	2	29	0	1	11	82	3	2	0	28	7	1	166
07:45 AM	0	0	0	0	8	39	0	1	22	96	2	0	0	49	11	1	229
Total	0	0	0	0	20	114	0	7	52	313	6	8	0	121	47	6	694
08:00 AM	0	0	0	0	4	48	0	5	7	85	1	3	0	31	10	0	194
08:15 AM	0	0	0	0	7	25	0	4	6	93	1	2	0	26	16	0	180
08:30 AM	0	0	0	0	9	41	0	4	10	101	2	1	0	31	9	0	208
08:45 AM	0	0	0	0	4	36	0	5	7	101	4	9	0	27	18	0	211
Total	0	0	0	0	24	150	0	18	30	380	8	15	0	115	53	0	793
*** BREAK ***																	
04:00 PM	0	0	0	0	17	39	0	2	9	173	2	1	0	57	42	0	342
04:15 PM	0	0	0	0	11	55	0	5	18	144	3	5	0	43	30	4	318
04:30 PM	0	0	0	0	9	52	0	1	13	177	5	2	0	55	19	2	335
04:45 PM	0	0	0	0	13	68	0	9	13	156	2	3	0	59	33	4	360
Total	0	0	0	0	50	214	0	17	53	650	12	11	0	214	124	10	1355
05:00 PM	0	0	0	0	12	60	0	3	22	257	4	2	0	85	36	1	482
05:15 PM	0	0	0	0	23	76	0	4	18	194	3	2	0	56	23	0	399
05:30 PM	0	0	0	0	14	46	0	2	13	173	3	1	0	26	13	1	292
05:45 PM	0	0	0	0	12	30	0	2	15	145	2	4	0	42	20	4	276
Total	0	0	0	0	61	212	0	11	68	769	12	9	0	209	92	6	1449
Grand Total	0	0	0	0	155	690	0	53	203	2112	38	43	0	659	316	22	4291
Apprch %	0	0	0	0	17.3	76.8	0	5.9	8.5	88.1	1.6	1.8	0	66.1	31.7	2.2	
Total %	0	0	0	0	3.6	16.1	0	1.2	4.7	49.2	0.9	1	0	15.4	7.4	0.5	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Center-6th -Private Vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 2

Start Time	Center Southbound					6th Westbound					Center Northbound					6th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	8	39	0	1	48	22	96	2	0	120	0	49	11	1	61	229
08:00 AM	0	0	0	0	0	4	48	0	5	57	7	85	1	3	96	0	31	10	0	41	194
08:15 AM	0	0	0	0	0	7	25	0	4	36	6	93	1	2	102	0	26	16	0	42	180
08:30 AM	0	0	0	0	0	9	41	0	4	54	10	101	2	1	114	0	31	9	0	40	208
Total Volume	0	0	0	0	0	28	153	0	14	195	45	375	6	6	432	0	137	46	1	184	811
% App. Total	0	0	0	0	0	14.4	78.5	0	7.2		10.4	86.8	1.4	1.4		0	74.5	25	0.5		
PHF	.000	.000	.000	.000	.000	.778	.797	.000	.700	.855	.511	.928	.750	.500	.900	.000	.699	.719	.250	.754	.885

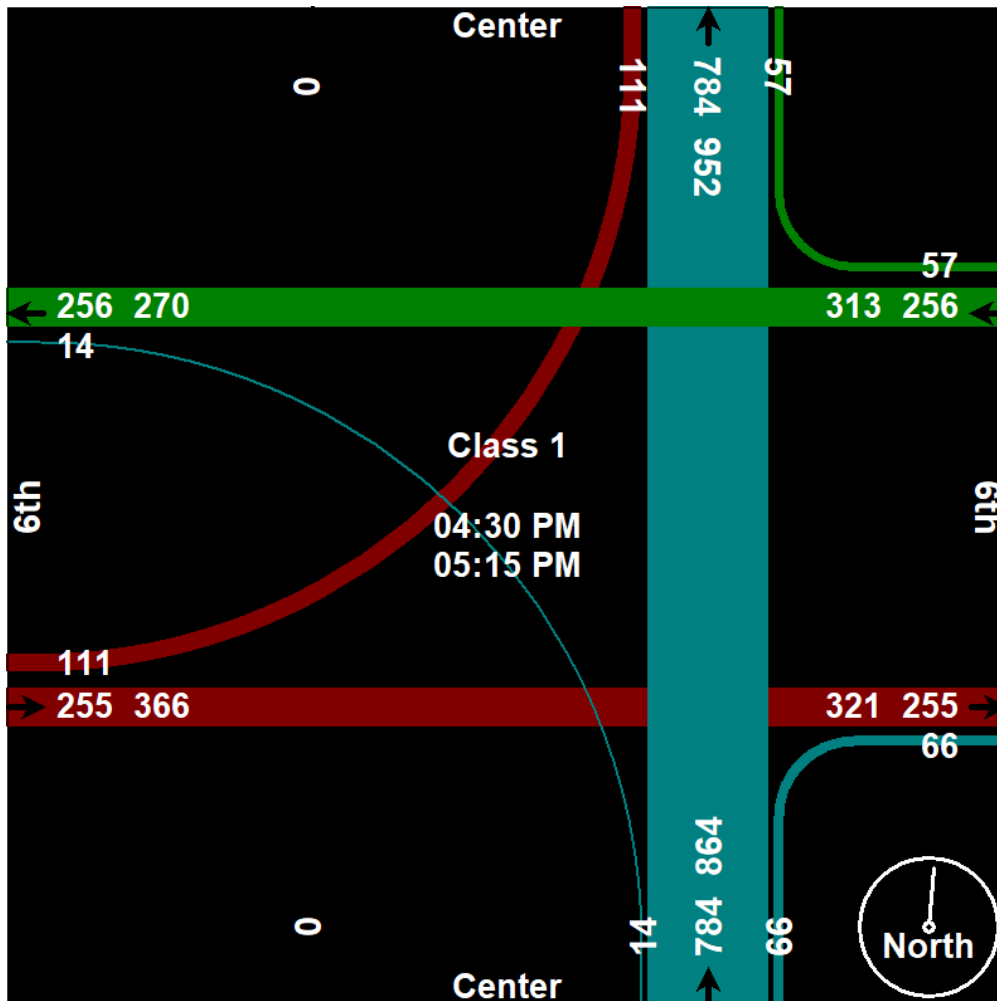


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Center-6th -Private Vehicles  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 3

Start Time	Center Southbound					6th Westbound					Center Northbound					6th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	9	52	0	1	62	13	177	5	2	197	0	55	19	2	76	335
04:45 PM	0	0	0	0	0	13	68	0	9	90	13	156	2	3	174	0	59	33	4	96	360
05:00 PM	0	0	0	0	0	12	60	0	3	75	22	257	4	2	285	0	85	36	1	122	482
05:15 PM	0	0	0	0	0	23	76	0	4	103	18	194	3	2	217	0	56	23	0	79	399
Total Volume	0	0	0	0	0	57	256	0	17	330	66	784	14	9	873	0	255	111	7	373	1576
% App. Total	0	0	0	0	0	17.3	77.6	0	5.2		7.6	89.8	1.6	1		0	68.4	29.8	1.9		
PHF	.000	.000	.000	.000	.000	.620	.842	.000	.472	.801	.750	.763	.700	.750	.766	.000	.750	.771	.438	.764	.817



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Center-6th -Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 1

Groups Printed- Class 1

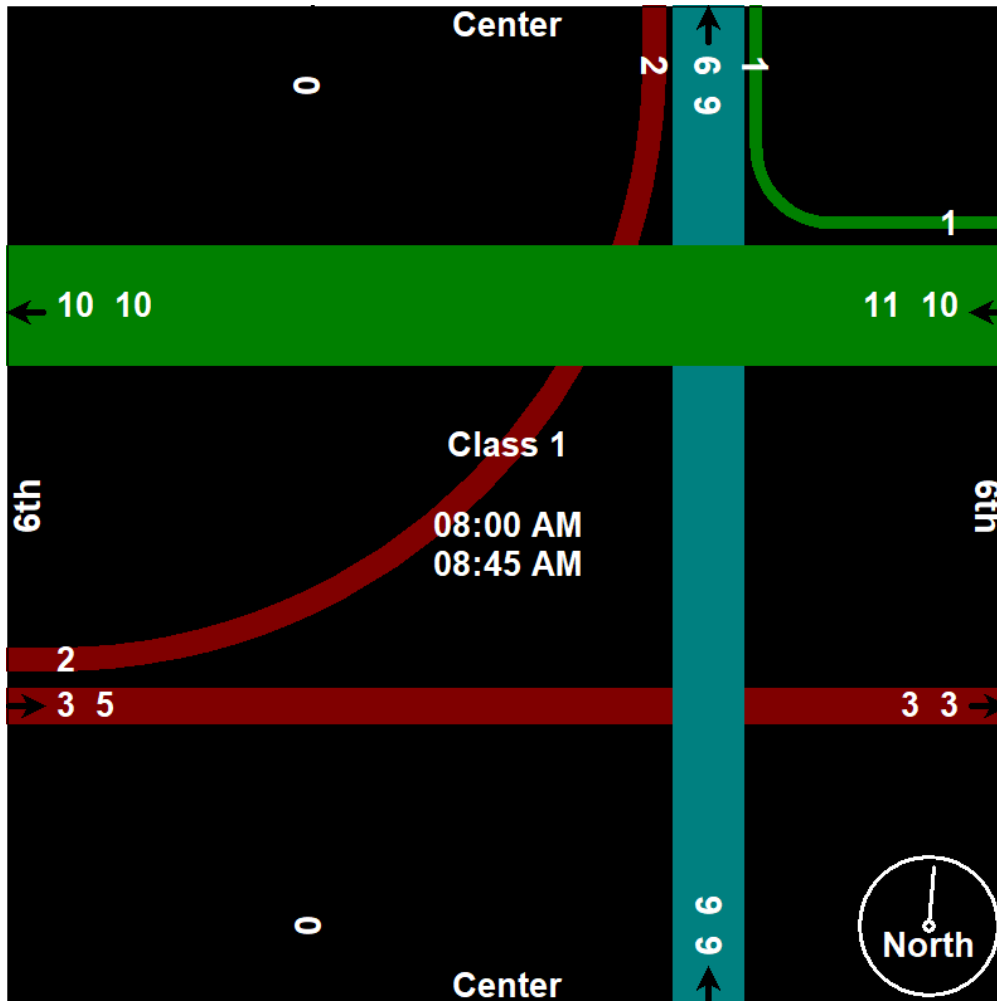
Start Time	Center Southbound				6th Westbound				Center Northbound				6th Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	0	0	0	0	2	0	1	0	1	0	1	0	1	1	0	7
07:15 AM	0	0	0	0	1	2	0	0	0	0	0	1	0	0	0	0	4
07:30 AM	0	0	0	0	0	3	0	0	0	1	0	0	0	1	1	1	7
07:45 AM	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	4
Total	0	0	0	0	1	7	0	1	0	3	1	3	0	2	3	1	22
08:00 AM	0	0	0	0	1	2	0	0	0	1	0	0	0	0	0	2	6
08:15 AM	0	0	0	0	0	1	0	0	0	4	0	0	0	1	1	1	8
08:30 AM	0	0	0	0	0	4	0	0	0	1	0	2	0	0	0	0	7
08:45 AM	0	0	0	0	0	3	0	0	0	0	0	1	0	2	1	0	7
Total	0	0	0	0	1	10	0	0	0	6	0	3	0	3	2	3	28
*** BREAK ***																	
04:00 PM	0	0	0	0	0	0	0	1	1	2	0	0	0	1	2	2	9
04:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
Total	0	0	0	0	0	0	0	1	2	4	0	1	0	2	2	2	14
05:00 PM	0	0	0	0	1	0	0	0	0	3	0	1	0	0	0	0	5
05:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	3
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
05:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
Total	0	0	0	0	1	0	0	0	2	5	0	2	0	0	0	2	12
Grand Total	0	0	0	0	3	17	0	2	4	18	1	9	0	7	7	8	76
Apprch %	0	0	0	0	13.6	77.3	0	9.1	12.5	56.2	3.1	28.1	0	31.8	31.8	36.4	
Total %	0	0	0	0	3.9	22.4	0	2.6	5.3	23.7	1.3	11.8	0	9.2	9.2	10.5	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Center-6th -Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 2

Start Time	Center Southbound					6th Westbound					Center Northbound					6th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	1	2	0	0	3	0	1	0	0	1	0	0	0	2	2	6
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	4	0	0	4	0	1	1	1	3	8
08:30 AM	0	0	0	0	0	0	4	0	0	4	0	1	0	2	3	0	0	0	0	0	7
08:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	1	1	0	2	1	0	3	7
Total Volume	0	0	0	0	0	1	10	0	0	11	0	6	0	3	9	0	3	2	3	8	28
% App. Total	0	0	0	0	0	9.1	90.9	0	0		0	66.7	0	33.3		0	37.5	25	37.5		
PHF	.000	.000	.000	.000	.000	.250	.625	.000	.000	.688	.000	.375	.000	.375	.563	.000	.375	.500	.375	.667	.875

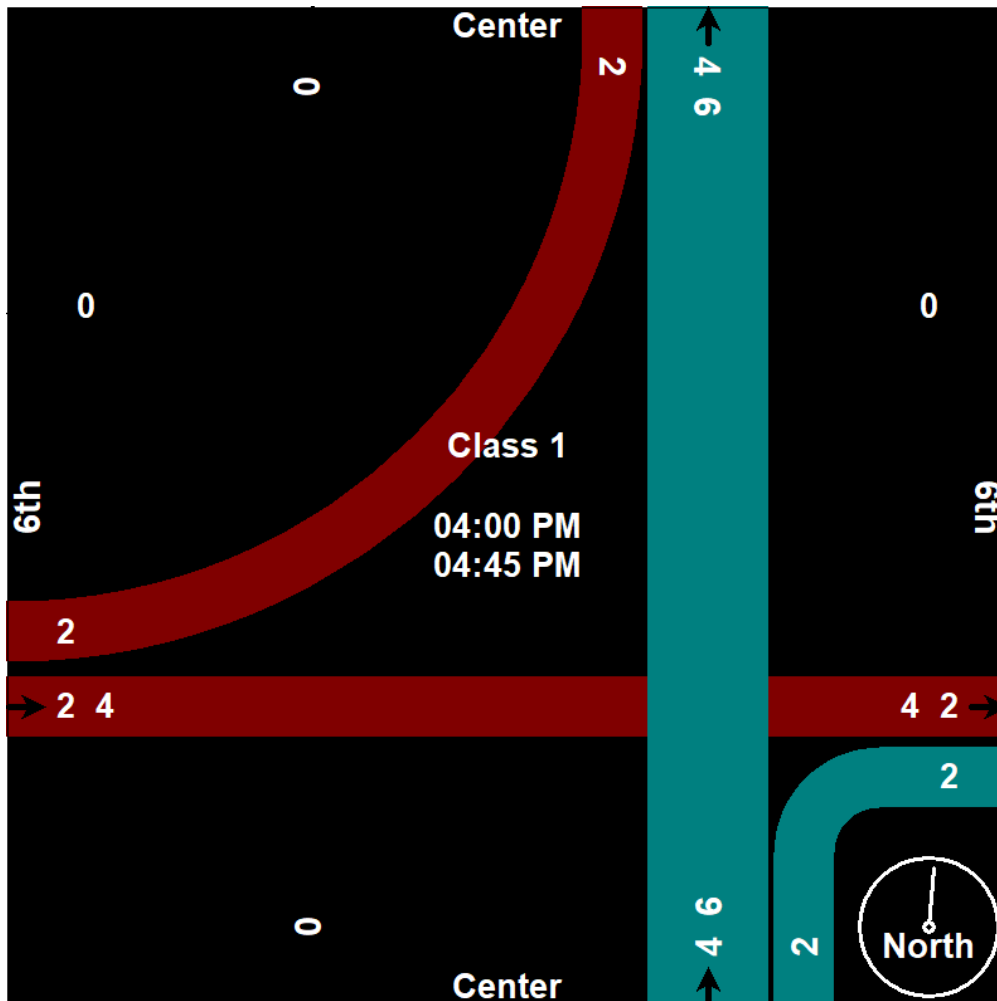


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Center-6th -Commercial Trucks  
 Site Code : 00000000  
 Start Date : 4/24/2019  
 Page No : 3

Start Time	Center Southbound					6th Westbound					Center Northbound					6th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	1	1	1	2	0	0	3	0	1	2	2	5	9
04:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	1	1	2	4	0	1	7	0	2	2	2	6	14
% App. Total	0	0	0	0	0	0	0	0	100		28.6	57.1	0	14.3		0	33.3	33.3	33.3		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.500	.500	.000	.250	.583	.000	.500	.250	.250	.300	.389





# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
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File Name : Evans-6th-private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 1

Groups Printed- Class 1

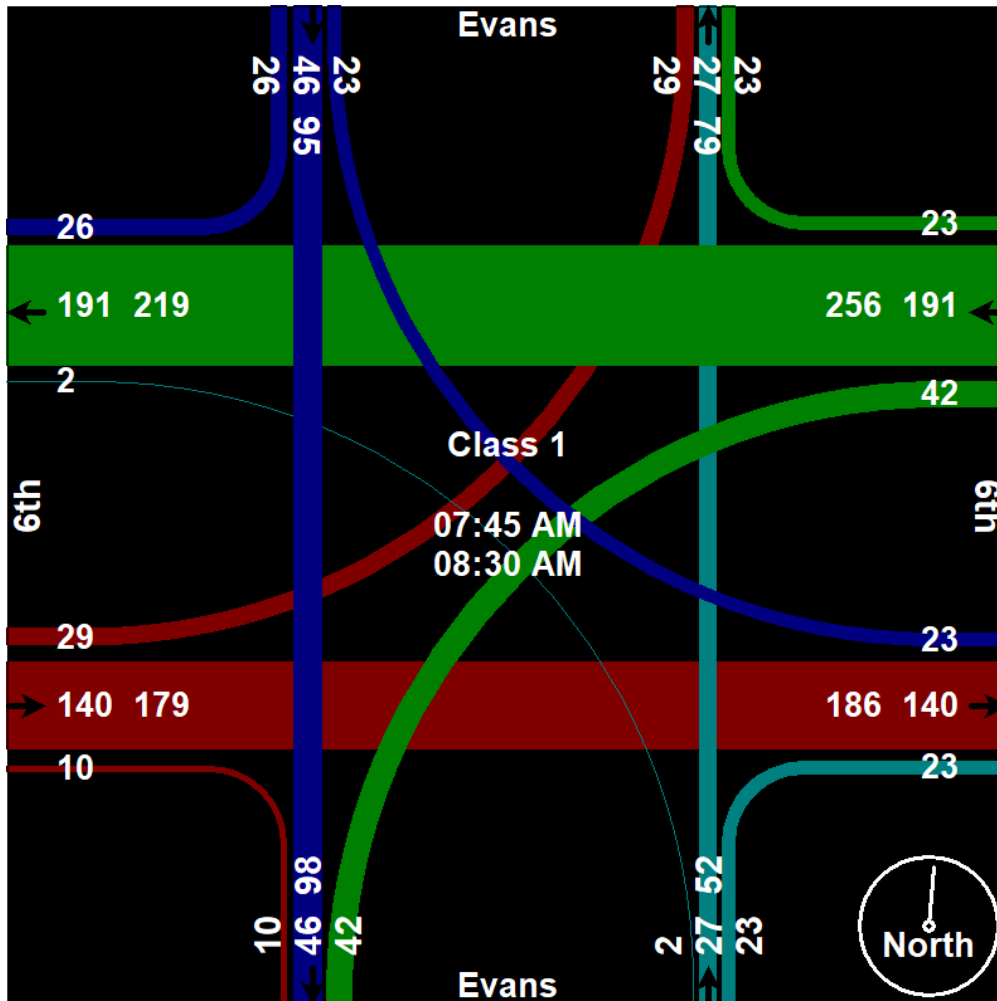
Start Time	Evans Southbound				6th Westbound				Evans Northbound				6th Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	4	7	1	2	2	28	9	1	2	4	1	0	3	29	9	5	107
07:15 AM	1	8	5	0	4	31	6	0	5	3	2	0	1	31	3	3	103
07:30 AM	5	18	6	5	3	43	7	1	5	8	0	6	1	44	11	1	164
07:45 AM	8	21	6	2	4	63	8	2	7	8	0	0	3	36	6	3	177
Total	18	54	18	9	13	165	30	4	19	23	3	6	8	140	29	12	551
08:00 AM	5	5	7	2	8	44	16	0	4	5	1	0	2	40	11	1	151
08:15 AM	6	10	6	2	5	38	6	1	3	9	0	2	1	28	2	6	125
08:30 AM	7	10	4	6	6	46	12	3	9	5	1	1	4	36	10	9	169
08:45 AM	7	11	11	2	3	31	7	0	6	9	2	2	2	36	15	7	151
Total	25	36	28	12	22	159	41	4	22	28	4	5	9	140	38	23	596
*** BREAK ***																	
04:00 PM	16	20	5	7	3	46	6	6	6	13	3	1	2	83	18	8	243
04:15 PM	6	11	6	3	4	47	7	1	7	9	2	2	3	62	7	9	186
04:30 PM	6	16	10	2	0	49	11	3	12	7	2	3	2	78	6	8	215
04:45 PM	4	21	4	3	3	55	7	3	6	16	3	2	0	67	1	7	202
Total	32	68	25	15	10	197	31	13	31	45	10	8	7	290	32	32	846
05:00 PM	14	7	8	7	5	72	8	2	7	14	3	4	3	91	13	14	272
05:15 PM	9	8	6	2	5	55	11	1	9	10	2	1	0	73	3	8	203
05:30 PM	4	11	1	3	5	43	7	0	4	10	0	3	2	49	9	1	152
05:45 PM	10	17	5	4	1	35	4	1	9	6	4	3	1	42	12	6	160
Total	37	43	20	16	16	205	30	4	29	40	9	11	6	255	37	29	787
Grand Total	112	201	91	52	61	726	132	25	101	136	26	30	30	825	136	96	2780
Apprch %	24.6	44.1	20	11.4	6.5	76.9	14	2.6	34.5	46.4	8.9	10.2	2.8	75.9	12.5	8.8	
Total %	4	7.2	3.3	1.9	2.2	26.1	4.7	0.9	3.6	4.9	0.9	1.1	1.1	29.7	4.9	3.5	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
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 sstraffic@msn.com

File Name : Evans-6th-private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 2

Start Time	Evans Southbound					6th Westbound					Evans Northbound					6th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	8	21	6	2	37	4	63	8	2	77	7	8	0	0	15	3	36	6	3	48	177
08:00 AM	5	5	7	2	19	8	44	16	0	68	4	5	1	0	10	2	40	11	1	54	151
08:15 AM	6	10	6	2	24	5	38	6	1	50	3	9	0	2	14	1	28	2	6	37	125
08:30 AM	7	10	4	6	27	6	46	12	3	67	9	5	1	1	16	4	36	10	9	59	169
Total Volume	26	46	23	12	107	23	191	42	6	262	23	27	2	3	55	10	140	29	19	198	622
% App. Total	24.3	43	21.5	11.2		8.8	72.9	16	2.3		41.8	49.1	3.6	5.5		5.1	70.7	14.6	9.6		
PHF	.813	.548	.821	.500	.723	.719	.758	.656	.500	.851	.639	.750	.500	.375	.859	.625	.875	.659	.528	.839	.879

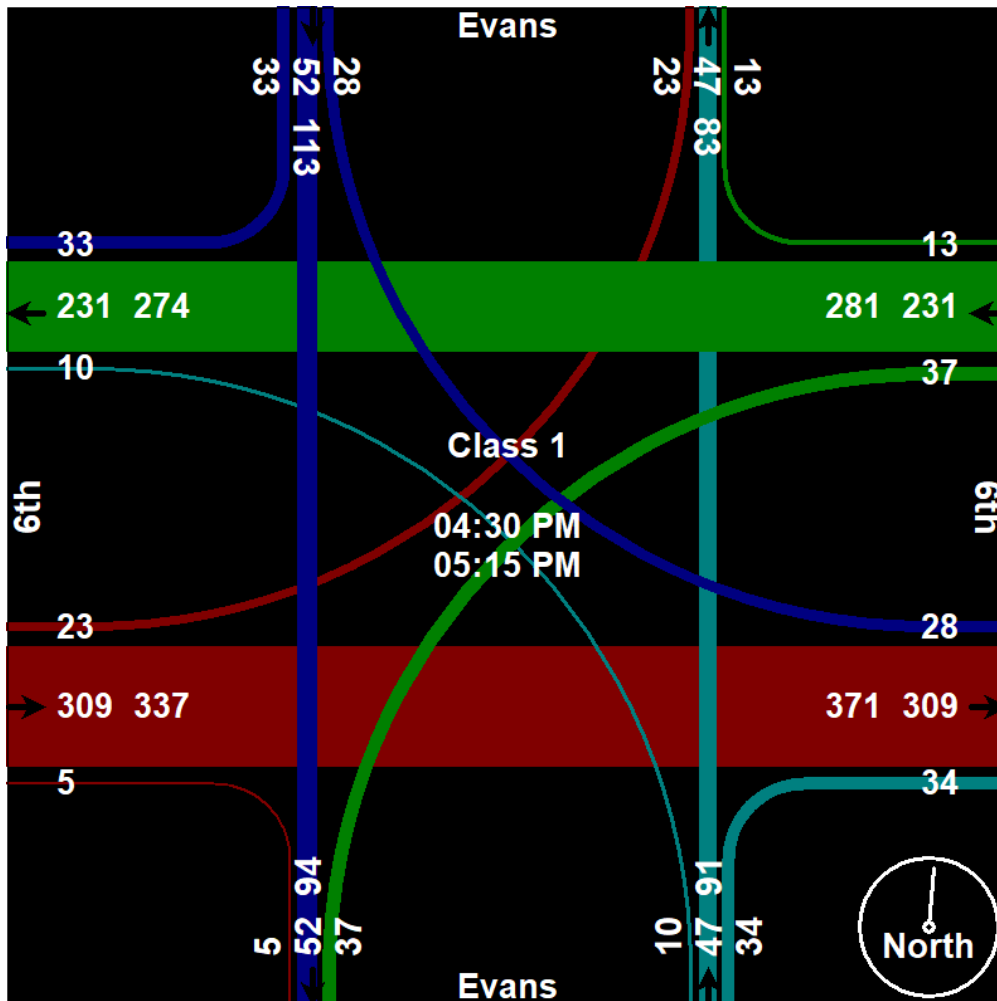


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans-6th-private vehicles  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 3

Start Time	Evans Southbound					6th Westbound					Evans Northbound					6th Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	6	16	10	2	34	0	49	11	3	63	12	7	2	3	24	2	78	6	8	94	215
04:45 PM	4	21	4	3	32	3	55	7	3	68	6	16	3	2	27	0	67	1	7	75	202
05:00 PM	14	7	8	7	36	5	72	8	2	87	7	14	3	4	28	3	91	13	14	121	272
05:15 PM	9	8	6	2	25	5	55	11	1	72	9	10	2	1	22	0	73	3	8	84	203
Total Volume	33	52	28	14	127	13	231	37	9	290	34	47	10	10	101	5	309	23	37	374	892
% App. Total	26	40.9	22	11		4.5	79.7	12.8	3.1		33.7	46.5	9.9	9.9		1.3	82.6	6.1	9.9		
PHF	.589	.619	.700	.500	.882	.650	.802	.841	.750	.833	.708	.734	.833	.625	.902	.417	.849	.442	.661	.773	.820



# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans-6th-commercial trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 1

## Groups Printed- Class 1

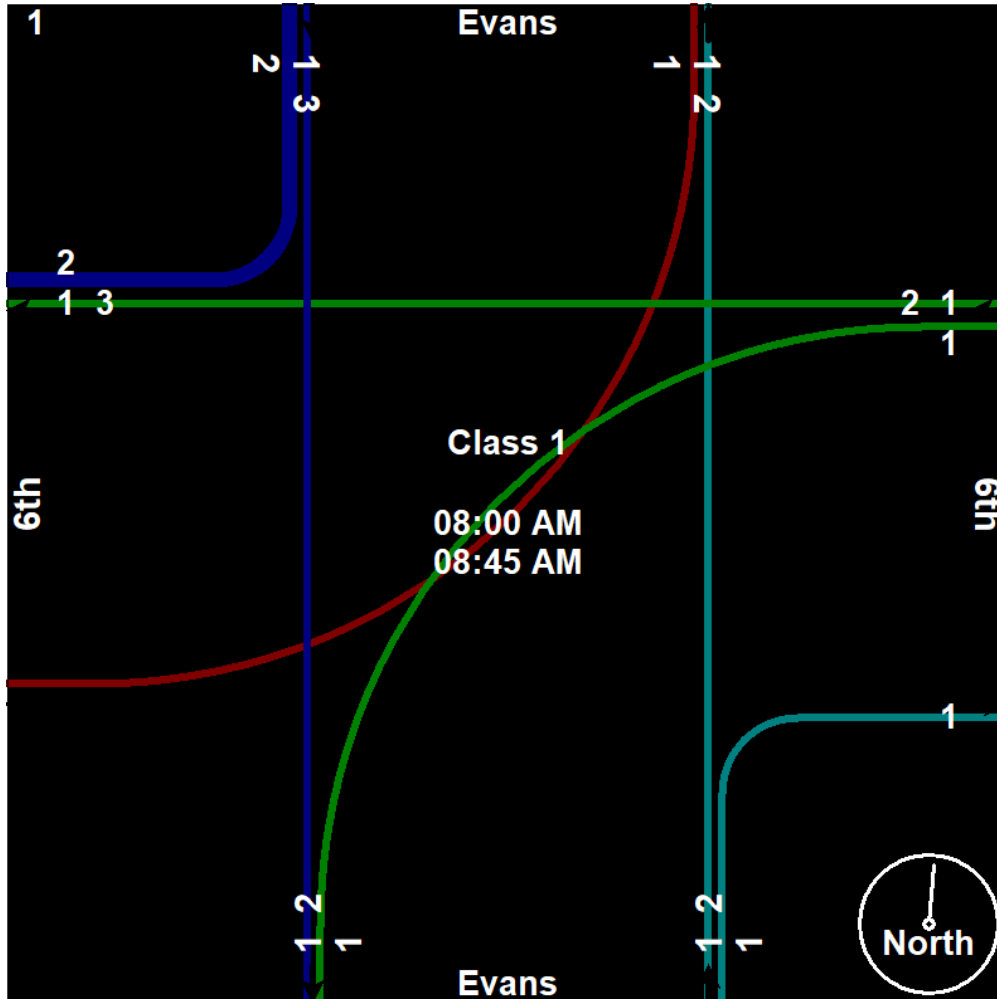
Start Time	Evans Southbound				6th Westbound				Evans Northbound				6th Eastbound				Int. Total
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	
07:00 AM	0	0	0	0	0	2	1	0	0	0	0	0	0	1	1	1	6
07:15 AM	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	5
07:30 AM	0	1	0	0	0	0	0	2	0	0	0	0	0	1	2	1	7
07:45 AM	2	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	4
Total	3	1	0	0	0	3	2	3	1	0	0	0	0	2	3	4	22
08:00 AM	1	1	0	0	0	0	0	2	0	0	0	0	0	0	0	1	5
08:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
08:30 AM	1	0	0	0	0	1	1	5	1	0	0	0	0	0	0	1	10
08:45 AM	0	0	0	1	0	0	0	9	0	0	0	0	0	0	1	1	12
Total	2	1	0	1	0	1	1	16	1	1	0	0	0	0	1	3	28
*** BREAK ***																	
04:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	6	8
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
04:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	3
04:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	4
Total	0	0	0	0	0	1	0	3	0	1	0	0	0	0	0	14	19
05:00 PM	0	0	0	0	0	0	1	3	0	1	0	0	0	0	0	5	10
05:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	5	6
05:30 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	9	13
05:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	7	9
Total	0	0	0	0	0	0	1	7	0	1	0	3	0	0	0	26	38
Grand Total	5	2	0	1	0	5	4	29	2	3	0	3	0	2	4	47	107
Apprch %	62.5	25	0	12.5	0	13.2	10.5	76.3	25	37.5	0	37.5	0	3.8	7.5	88.7	
Total %	4.7	1.9	0	0.9	0	4.7	3.7	27.1	1.9	2.8	0	2.8	0	1.9	3.7	43.9	

# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
 Henderson, Nevada 89014  
 702-898-1968 - Office  
 702-217-1968 - Cell  
 sstraffic@msn.com

File Name : Evans-6th-commercial trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 2

Start Time	Evans Southbound					6th Westbound					Evans Northbound					6th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	1	1	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1	5
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
08:30 AM	1	0	0	0	1	0	1	1	5	7	1	0	0	0	1	0	0	0	1	1	10
08:45 AM	0	0	0	1	1	0	0	0	9	9	0	0	0	0	0	0	0	0	1	1	2
Total Volume	2	1	0	1	4	0	1	1	16	18	1	1	0	0	2	0	0	1	3	4	28
% App. Total	50	25	0	25		0	5.6	5.6	88.9		50	50	0	0		0	0	25	75		
PHF	.500	.250	.000	.250	.500	.000	.250	.250	.444	.500	.250	.250	.000	.000	.500	.000	.000	.250	.750	.500	.583

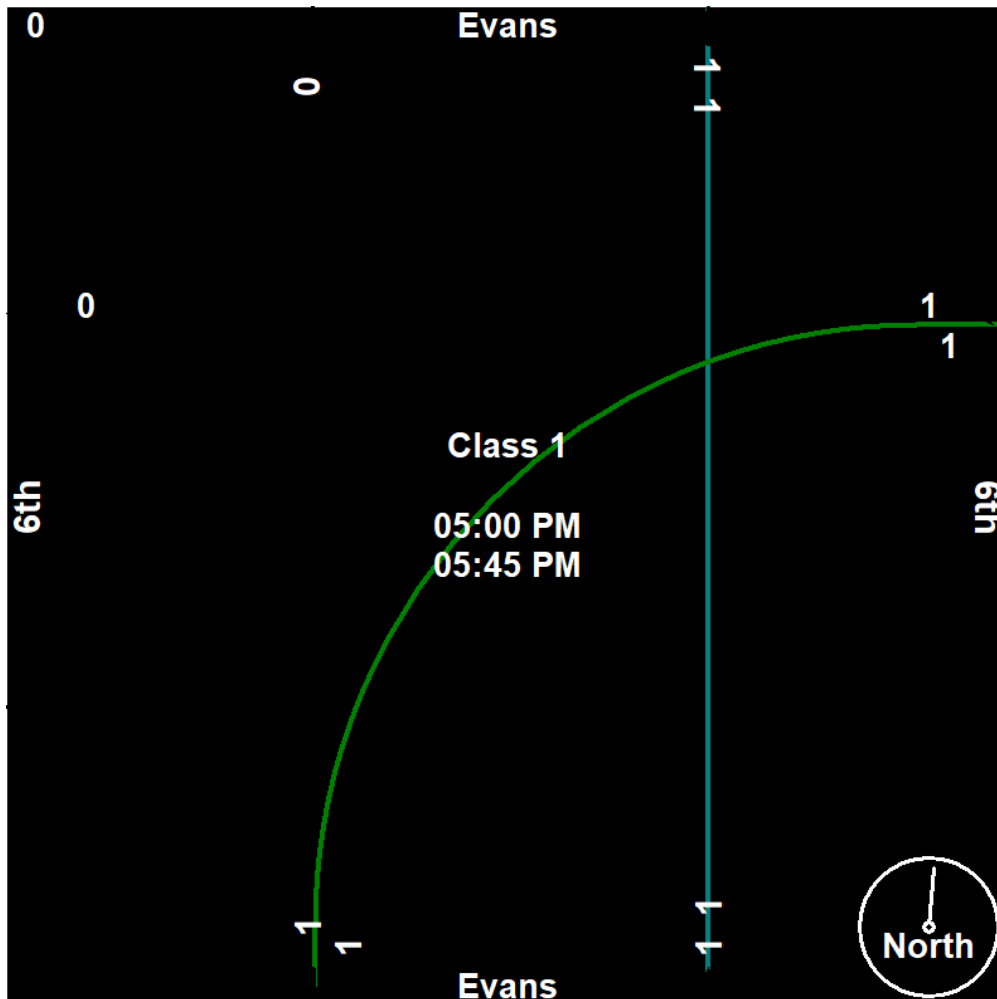


# Silver State Traffic Data Collection, LLC

1819 Quarley Place  
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File Name : Evans-6th-commercial trucks  
 Site Code : 00000000  
 Start Date : 4/23/2019  
 Page No : 3

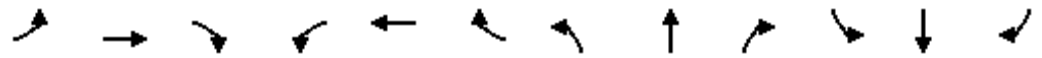
Start Time	Evans Southbound					6th Westbound					Evans Northbound					6th Eastbound					Int. Total
	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	Right	Thru	Left	Bikes	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	0	0	1	3	4	0	1	0	0	1	0	0	0	5	5	10
05:15 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	5	5	6
05:30 PM	0	0	0	0	0	0	0	0	2	2	0	0	0	2	2	0	0	0	9	9	13
05:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	7	7	9
Total Volume	0	0	0	0	0	0	0	1	7	8	0	1	0	3	4	0	0	0	26	26	38
% App. Total	0	0	0	0	0	0	0	12.5	87.5		0	25	0	75		0	0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.583	.500	.000	.250	.000	.375	.500	.000	.000	.000	.722	.722	.731



**APPENDIX B**  
**EXISTING LOS ANALYSIS**

HCM 6th Signalized Intersection Summary  
 1: Sierra Street & University Terrace/9th Street

12/09/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↑	↗
Traffic Volume (veh/h)	69	135	34	49	41	22	31	154	16	38	656	94
Future Volume (veh/h)	69	135	34	49	41	22	31	154	16	38	656	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.94	0.98		0.98	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	169	42	73	61	33	44	220	23	42	721	103
Peak Hour Factor	0.80	0.80	0.80	0.67	0.67	0.67	0.70	0.70	0.70	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	256	283	70	165	225	122	411	1328	1120	822	1328	1096
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	1279	1424	354	1148	1131	612	665	1870	1577	1134	1870	1544
Grp Volume(v), veh/h	86	0	211	73	0	94	44	220	23	42	721	103
Grp Sat Flow(s),veh/h/ln	1279	0	1778	1148	0	1743	665	1870	1577	1134	1870	1544
Q Serve(g_s), s	7.3	0.0	12.9	7.4	0.0	5.5	4.0	4.6	0.5	1.5	21.8	2.5
Cycle Q Clear(g_c), s	12.8	0.0	12.9	20.3	0.0	5.5	25.8	4.6	0.5	6.2	21.8	2.5
Prop In Lane	1.00		0.20	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	0	354	165	0	347	411	1328	1120	822	1328	1096
V/C Ratio(X)	0.34	0.00	0.60	0.44	0.00	0.27	0.11	0.17	0.02	0.05	0.54	0.09
Avail Cap(c_a), veh/h	352	0	488	253	0	481	411	1328	1120	822	1328	1096
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	0.88	0.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	0.0	43.7	52.9	0.0	40.7	14.3	5.7	5.1	6.7	8.2	5.4
Incr Delay (d2), s/veh	0.8	0.0	1.6	1.6	0.0	0.4	0.5	0.3	0.0	0.1	1.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	5.9	2.2	0.0	2.4	0.7	1.8	0.2	0.4	8.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.9	0.0	45.3	54.6	0.0	41.1	14.8	6.0	5.1	6.8	9.8	5.6
LnGrp LOS	D	A	D	D	A	D	B	A	A	A	A	A
Approach Vol, veh/h		297			167			287			866	
Approach Delay, s/veh		45.8			47.0			7.3			9.1	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		91.0		29.0		91.0		29.0				
Change Period (Y+Rc), s		5.8		5.1		5.8		* 5.1				
Max Green Setting (Gmax), s		76.2		32.9		76.2		* 33				
Max Q Clear Time (g_c+I1), s		27.8		14.9		23.8		22.3				
Green Ext Time (p_c), s		1.9		1.4		6.9		0.5				

Intersection Summary

HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Notes























\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



# HCM 6th Signalized Intersection Summary

## 2: Virginia Street & 9th Street

12/09/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	114	29	20	101	193	19	564	65	68	290	31
Future Volume (veh/h)	29	114	29	20	101	193	19	564	65	68	290	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.94	0.99		0.92	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	170	43	25	125	238	23	688	79	91	387	41
Peak Hour Factor	0.67	0.67	0.67	0.81	0.81	0.81	0.82	0.82	0.82	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	245	390	49	215	347	600	1222	885	378	1222	1006
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	121	938	1493	52	821	1327	957	1870	1355	701	1870	1538
Grp Volume(v), veh/h	213	0	43	150	0	238	23	688	79	91	387	41
Grp Sat Flow(s),veh/h/ln	1059	0	1493	873	0	1327	957	1870	1355	701	1870	1538
Q Serve(g_s), s	6.3	0.0	2.6	1.6	0.0	19.4	1.3	24.2	2.6	9.8	10.8	1.1
Cycle Q Clear(g_c), s	25.8	0.0	2.6	27.2	0.0	19.4	12.0	24.2	2.6	33.8	10.8	1.1
Prop In Lane	0.20		1.00	0.17		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	0	390	263	0	347	600	1222	885	378	1222	1006
V/C Ratio(X)	0.68	0.00	0.11	0.57	0.00	0.69	0.04	0.56	0.09	0.24	0.32	0.04
Avail Cap(c_a), veh/h	625	0	683	596	0	607	600	1222	885	378	1222	1006
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.80	0.00	0.80	1.00	0.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	0.0	33.7	36.8	0.0	39.9	11.7	11.4	7.6	20.6	9.1	7.4
Incr Delay (d2), s/veh	2.1	0.0	0.1	1.9	0.0	2.4	0.1	1.8	0.2	1.5	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	1.0	3.7	0.0	6.5	0.3	10.0	0.8	1.8	4.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	0.0	33.8	38.7	0.0	42.3	11.8	13.2	7.8	22.1	9.8	7.5
LnGrp LOS	D	A	C	D	A	D	B	B	A	C	A	A
Approach Vol, veh/h		256			388			790			519	
Approach Delay, s/veh		41.5			40.9			12.6			11.7	
Approach LOS		D			D			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		83.3		36.7		83.3		36.7				
Change Period (Y+Rc), s		5.1		5.1		5.1		5.1				
Max Green Setting (Gmax), s		54.9		54.9		54.9		54.9				
Max Q Clear Time (g_c+I1), s		26.2		27.8		35.8		29.2				
Green Ext Time (p_c), s		5.8		1.5		3.2		2.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			21.8									
HCM 6th LOS			C									

HCM 6th AWSC  
3: Center Street & 9th Street

12/09/2019

Intersection	
Intersection Delay, s/veh	16.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	47	213	19	30	137	27	120	65	185	22	25	42
Future Vol, veh/h	47	213	19	30	137	27	120	65	185	22	25	42
Peak Hour Factor	0.78	0.78	0.78	0.63	0.63	0.63	0.86	0.86	0.86	0.60	0.60	0.60
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	273	24	48	217	43	140	76	215	37	42	70
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	19.9	17.2	15.3	11.9
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	17%	15%	100%	0%
Vol Thru, %	0%	26%	76%	71%	0%	37%
Vol Right, %	0%	74%	7%	14%	0%	63%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	120	250	279	194	22	67
LT Vol	120	0	47	30	22	0
Through Vol	0	65	213	137	0	25
RT Vol	0	185	19	27	0	42
Lane Flow Rate	140	291	358	308	37	112
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.292	0.524	0.634	0.551	0.083	0.222
Departure Headway (Hd)	7.532	6.486	6.376	6.446	8.117	7.147
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	477	555	565	557	440	500
Service Time	5.285	4.239	4.427	4.501	5.883	4.913
HCM Lane V/C Ratio	0.294	0.524	0.634	0.553	0.084	0.224
HCM Control Delay	13.4	16.2	19.9	17.2	11.6	12
HCM Lane LOS	B	C	C	C	B	B
HCM 95th-tile Q	1.2	3	4.4	3.3	0.3	0.8

HCM 6th TWSC  
4: Evans Avenue & 9th Street

12/09/2019

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	↔
Traffic Vol, veh/h	247	121	79	156	41	67
Future Vol, veh/h	247	121	79	156	41	67
Conflicting Peds, #/hr	0	0	0	0	0	36
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	65	-	0	145
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	75	75	73	73
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	309	151	105	208	56	92

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	460	0	803
Stage 1	-	-	-	-	385
Stage 2	-	-	-	-	418
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1101	-	353
Stage 1	-	-	-	-	688
Stage 2	-	-	-	-	664
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1101	-	319
Mov Cap-2 Maneuver	-	-	-	-	319
Stage 1	-	-	-	-	688
Stage 2	-	-	-	-	601

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	319	610	-	-	1101	-
HCM Lane V/C Ratio	0.176	0.15	-	-	0.096	-
HCM Control Delay (s)	18.7	11.9	-	-	8.6	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	0.5	-	-	0.3	-

HCM 6th AWSC  
5: Record Street & Evans Avenue

12/09/2019

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	60	219	43	39	154	29	6	5	4	15	5	39
Future Vol, veh/h	60	219	43	39	154	29	6	5	4	15	5	39
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.63	0.63	0.63	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	300	59	53	211	40	10	8	6	20	7	53
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	11.9	10.4	9	9.1
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	40%	100%	0%	100%	0%	25%
Vol Thru, %	33%	0%	84%	0%	84%	8%
Vol Right, %	27%	0%	16%	0%	16%	66%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	60	262	39	183	59
LT Vol	6	60	0	39	0	15
Through Vol	5	0	219	0	154	5
RT Vol	4	0	43	0	29	39
Lane Flow Rate	24	82	359	53	251	80
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.037	0.128	0.495	0.085	0.355	0.117
Departure Headway (Hd)	5.658	5.586	4.967	5.712	5.097	5.285
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	627	640	725	625	702	674
Service Time	3.741	3.334	2.715	3.465	2.85	3.352
HCM Lane V/C Ratio	0.038	0.128	0.495	0.085	0.358	0.119
HCM Control Delay	9	9.2	12.5	9	10.7	9.1
HCM Lane LOS	A	A	B	A	B	A
HCM 95th-tile Q	0.1	0.4	2.8	0.3	1.6	0.4

HCM 6th TWSC  
6: Evans Avenue & Highland Avenue

12/09/2019

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	27	35	183	41	46	205
Future Vol, veh/h	27	35	183	41	46	205
Conflicting Peds, #/hr	20	0	0	20	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	57	57	79	79	74	74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	61	232	52	62	277

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	699	278	0	0	304
Stage 1	278	-	-	-	-
Stage 2	421	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	406	761	-	-	1257
Stage 1	769	-	-	-	-
Stage 2	662	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	368	747	-	-	1233
Mov Cap-2 Maneuver	368	-	-	-	-
Stage 1	754	-	-	-	-
Stage 2	611	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	516	1233
HCM Lane V/C Ratio	-	-	0.211	0.05
HCM Control Delay (s)	-	-	13.8	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.8	0.2

HCM 6th TWSC  
7: Valley Road & Highland Avenue

12/09/2019

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	62	51	18	106	225	72
Future Vol, veh/h	62	51	18	106	225	72
Conflicting Peds, #/hr	3	14	8	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	69	69	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	67	26	154	281	90

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	546	351	382	0	-	0
Stage 1	337	-	-	-	-	-
Stage 2	209	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	499	692	1176	-	-	-
Stage 1	723	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	479	676	1164	-	-	-
Mov Cap-2 Maneuver	559	-	-	-	-	-
Stage 1	700	-	-	-	-	-
Stage 2	818	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1164	-	606	-	-
HCM Lane V/C Ratio	0.022	-	0.245	-	-
HCM Control Delay (s)	8.2	-	12.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1	-	-

HCM 6th TWSC  
8: Valley Road & Sadlier Way

12/09/2019

Intersection						
Int Delay, s/veh	20.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↖		↘	↗
Traffic Vol, veh/h	130	119	87	74	227	183
Future Vol, veh/h	130	119	87	74	227	183
Conflicting Peds, #/hr	18	6	0	8	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	79	79	59	59
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	191	175	110	94	385	310

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1263	171	0	0	212
Stage 1	165	-	-	-	-
Stage 2	1098	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	~ 187	873	-	-	1358
Stage 1	864	-	-	-	-
Stage 2	319	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 130	861	-	-	1348
Mov Cap-2 Maneuver	195	-	-	-	-
Stage 1	857	-	-	-	-
Stage 2	224	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	62	0	4.8
HCM LOS	F		





















Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	195	861	1348
HCM Lane V/C Ratio	-	-	0.98	0.203	0.285
HCM Control Delay (s)	-	-	109.4	10.2	8.7
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	8.2	0.8	1.2

Notes  
 ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

# HCM 6th Signalized Intersection Summary

## 9: Virginia Street & 8th Street

12/09/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  			 			 	
Traffic Volume (veh/h)	0	0	0	167	992	331	70	295	0	0	427	56
Future Volume (veh/h)	0	0	0	167	992	331	70	295	0	0	427	56
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				182	1078	360	74	314	0	0	601	79
Peak Hour Factor				0.92	0.92	0.92	0.94	0.94	0.94	0.71	0.71	0.71
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				295	1848	639	227	1336	0	0	875	115
Arrive On Green				0.18	0.18	0.18	0.09	0.75	0.00	0.00	0.29	0.29
Sat Flow, veh/h				546	3423	1184	1781	3647	0	0	3077	391
Grp Volume(v), veh/h				615	517	489	74	314	0	0	357	323
Grp Sat Flow(s),veh/h/ln				1843	1702	1608	1781	1777	0	0	1777	1598
Q Serve(g_s), s				37.0	33.3	33.3	3.3	3.2	0.0	0.0	21.3	21.5
Cycle Q Clear(g_c), s				37.0	33.3	33.3	3.3	3.2	0.0	0.0	21.3	21.5
Prop In Lane				0.30		0.74	1.00		0.00	0.00		0.24
Lane Grp Cap(c), veh/h				995	919	868	227	1336	0	0	521	469
V/C Ratio(X)				0.62	0.56	0.56	0.33	0.24	0.00	0.00	0.69	0.69
Avail Cap(c_a), veh/h				995	919	868	303	1336	0	0	521	469
HCM Platoon Ratio				0.33	0.33	0.33	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				0.77	0.77	0.77	0.98	0.98	0.00	0.00	0.97	0.97
Uniform Delay (d), s/veh				37.9	36.3	36.4	27.2	9.7	0.0	0.0	37.5	37.5
Incr Delay (d2), s/veh				2.2	1.9	2.0	0.8	0.4	0.0	0.0	7.0	7.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				18.9	15.7	14.9	1.4	1.2	0.0	0.0	10.2	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				40.1	38.3	38.4	28.0	10.1	0.0	0.0	44.5	45.3
LnGrp LOS				D	D	D	C	B	A	A	D	D
Approach Vol, veh/h					1620			388			680	
Approach Delay, s/veh					39.0			13.5			44.9	
Approach LOS					D			B			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.0			9.9	40.1		70.0				
Change Period (Y+Rc), s		4.9			4.5	4.9		5.2				
Max Green Setting (Gmax), s		45.1			10.5	30.1		64.8				
Max Q Clear Time (g_c+I1), s		5.2			5.3	23.5		39.0				
Green Ext Time (p_c), s		2.2			0.1	2.3		13.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											36.8	
HCM 6th LOS											D	



HCM 6th Signalized Intersection Summary  
 10: Center Street & 8th Street/I-80 WB Off-Ramp

12/09/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑			↑	↑
Traffic Volume (veh/h)	0	0	0	2	1397	201	51	115	0	0	52	21
Future Volume (veh/h)	0	0	0	2	1397	201	51	115	0	0	52	21
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.98	0.99		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No		No			
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				2	1704	245	61	139	0	0	71	29
Peak Hour Factor				0.82	0.82	0.82	0.83	0.83	0.83	0.73	0.73	0.73
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				4	3481	517	227	608	0	0	304	256
Arrive On Green				0.75	0.75	0.75	0.05	0.05	0.00	0.00	0.16	0.16
Sat Flow, veh/h				5	4616	686	1288	3741	0	0	1870	1573
Grp Volume(v), veh/h				728	603	620	61	139	0	0	71	29
Grp Sat Flow(s),veh/h/ln				1870	1702	1734	1288	1870	0	0	1870	1573
Q Serve(g_s), s				18.8	16.2	16.4	5.5	4.3	0.0	0.0	4.0	1.9
Cycle Q Clear(g_c), s				18.8	16.2	16.4	9.5	4.3	0.0	0.0	4.0	1.9
Prop In Lane				0.00		0.40	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1410	1284	1308	227	608	0	0	304	256
V/C Ratio(X)				0.52	0.47	0.47	0.27	0.23	0.00	0.00	0.23	0.11
Avail Cap(c_a), veh/h				1410	1284	1308	227	608	0	0	324	273
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	1.00	1.00	0.82	0.82	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				5.9	5.6	5.6	54.0	49.6	0.0	0.0	43.7	42.9
Incr Delay (d2), s/veh				1.4	1.2	1.2	2.4	0.7	0.0	0.0	0.4	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.8	5.4	5.6	2.1	2.1	0.0	0.0	1.9	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				7.3	6.9	6.9	56.4	50.3	0.0	0.0	44.1	43.1
LnGrp LOS				A	A	A	E	D	A	A	D	D
Approach Vol, veh/h					1951			200			100	
Approach Delay, s/veh					7.0			52.1			43.8	
Approach LOS					A			D			D	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		24.7				24.7		95.3				
Change Period (Y+Rc), s		* 5.2				* 5.2		4.8				
Max Green Setting (Gmax), s		* 20				* 21		65.2				
Max Q Clear Time (g_c+I1), s		11.5				6.0		20.8				
Green Ext Time (p_c), s		0.6				0.3		22.1				

Intersection Summary

HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

Notes

- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
11: Evans Avenue & 9th Street

12/09/2019

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	21	61	22	49	121
Future Vol, veh/h	22	21	61	22	49	121
Conflicting Peds, #/hr	0	62	0	38	38	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	72	72	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	25	85	31	60	148

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	407	201	0	0	154
Stage 1	139	-	-	-	-
Stage 2	268	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	600	840	-	-	1426
Stage 1	888	-	-	-	-
Stage 2	777	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	551	762	-	-	1374
Mov Cap-2 Maneuver	551	-	-	-	-
Stage 1	856	-	-	-	-
Stage 2	740	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	2.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	637	1374
HCM Lane V/C Ratio	-	-	0.081	0.043
HCM Control Delay (s)	-	-	11.2	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1

HCM 6th Signalized Intersection Summary  
 12: Virginia Street & Maple Street

12/09/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑						↑↑		↘	↑↑	
Traffic Volume (veh/h)	156	128	45	0	0	0	0	209	66	314	335	0
Future Volume (veh/h)	156	128	45	0	0	0	0	209	66	314	335	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	171	141	49				0	258	81	357	381	0
Peak Hour Factor	0.91	0.91	0.91				0.81	0.81	0.81	0.88	0.88	0.88
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	595	845	281				0	1435	439	776	2479	0
Arrive On Green	0.33	0.33	0.33				0.00	0.54	0.54	0.24	1.00	0.00
Sat Flow, veh/h	1781	2528	842				0	2752	812	1781	3647	0
Grp Volume(v), veh/h	171	93	97				0	170	169	357	381	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1668				0	1777	1694	1781	1777	0
Q Serve(g_s), s	8.5	4.6	4.9				0.0	5.8	6.1	11.2	0.0	0.0
Cycle Q Clear(g_c), s	8.5	4.6	4.9				0.0	5.8	6.1	11.2	0.0	0.0
Prop In Lane	1.00		0.50				0.00		0.48	1.00		0.00
Lane Grp Cap(c), veh/h	595	569	557				0	959	915	776	2479	0
V/C Ratio(X)	0.29	0.16	0.17				0.00	0.18	0.18	0.46	0.15	0.00
Avail Cap(c_a), veh/h	595	569	557				0	959	915	1014	2479	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	1.00	1.00	0.61	0.61	0.00
Uniform Delay (d), s/veh	29.4	28.1	28.2				0.0	14.0	14.1	7.4	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.6	0.7				0.0	0.4	0.4	0.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	2.0	2.1				0.0	2.5	2.4	3.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.6	28.8	28.9				0.0	14.5	14.6	7.6	0.1	0.0
LnGrp LOS	C	C	C				A	B	B	A	A	A
Approach Vol, veh/h		361						339			738	
Approach Delay, s/veh		29.7						14.5			3.7	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2		4				6				
Phs Duration (G+Y+Rc), s	18.8	70.2		45.0				89.0				
Change Period (Y+Rc), s	4.5	4.9		4.9				* 4.9				
Max Green Setting (Gmax), s	30.5	35.1		40.1				* 71				
Max Q Clear Time (g_c+I1), s	13.2	8.1		10.5				2.0				
Green Ext Time (p_c), s	1.0	2.1		2.3				2.8				

Intersection Summary

HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

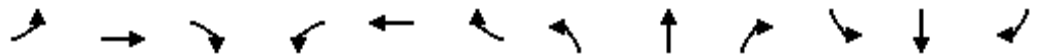
Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 13: Center Street & Maple Street/I-80 EB On-Ramp

12/09/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑						↑↑	↗	↘		
Traffic Volume (veh/h)	23	459	0	0	0	0	0	132	311	49	0	0
Future Volume (veh/h)	23	459	0	0	0	0	0	132	311	49	0	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	0				0	1870	1870	1870	0	0
Adj Flow Rate, veh/h	27	540	0				0	142	334	60	0	0
Peak Hour Factor	0.85	0.85	0.85				0.93	0.93	0.93	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	0				0	2	2	2	0	0
Cap, veh/h	1222	2437	0				0	262	431	89	0	0
Arrive On Green	0.69	0.69	0.00				0.00	0.14	0.14	0.05	0.00	0.00
Sat Flow, veh/h	1781	3647	0				0	1870	3080	1781	60	
Grp Volume(v), veh/h	27	540	0				0	142	334	60	63.5	
Grp Sat Flow(s),veh/h/ln	1781	1777	0				0	1870	1540	1781	E	
Q Serve(g_s), s	0.6	6.8	0.0				0.0	8.5	12.6	4.0		
Cycle Q Clear(g_c), s	0.6	6.8	0.0				0.0	8.5	12.6	4.0		
Prop In Lane	1.00		0.00				0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1222	2437	0				0	262	431	89		
V/C Ratio(X)	0.02	0.22	0.00				0.00	0.54	0.77	0.67		
Avail Cap(c_a), veh/h	1222	2437	0				0	620	1021	156		
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00		
Upstream Filter(l)	0.93	0.93	0.00				0.00	1.00	1.00	0.88		
Uniform Delay (d), s/veh	6.0	7.0	0.0				0.0	48.0	49.8	56.0		
Incr Delay (d2), s/veh	0.0	0.2	0.0				0.0	1.7	3.0	7.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	2.5	0.0				0.0	4.1	5.0	2.0		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.0	7.2	0.0				0.0	49.8	52.8	63.5		
LnGrp LOS	A	A	A				A	D	D	E		
Approach Vol, veh/h		567						476				
Approach Delay, s/veh		7.1						51.9				
Approach LOS		A						D				
Timer - Assigned Phs	1	2		4								
Phs Duration (G+Y+Rc), s	10.5	22.0		87.5								
Change Period (Y+Rc), s	4.5	* 5.2		* 5.2								
Max Green Setting (Gmax), s	10.5	* 40		* 55								
Max Q Clear Time (g_c+l1), s	6.0	14.6		2.6								
Green Ext Time (p_c), s	0.0	2.2		0.0								

### Intersection Summary

HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

### Notes

User approved volume balancing among the lanes for turning movement.

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
 14: Evans Avenue & 8th Street

12/09/2019

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	5	85	7	36	128
Future Vol, veh/h	10	5	85	7	36	128
Conflicting Peds, #/hr	0	23	0	23	23	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	79	79	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	7	108	9	50	178

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	414	159	0	0	140
Stage 1	136	-	-	-	-
Stage 2	278	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	595	886	-	-	1443
Stage 1	890	-	-	-	-
Stage 2	769	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	559	848	-	-	1411
Mov Cap-2 Maneuver	559	-	-	-	-
Stage 1	870	-	-	-	-
Stage 2	739	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	631	1411
HCM Lane V/C Ratio	-	-	0.032	0.035
HCM Control Delay (s)	-	-	10.9	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	10	18	5	4	9	30	6	261	14	46	336	20
Future Vol, veh/h	10	18	5	4	9	30	6	261	14	46	336	20
Conflicting Peds, #/hr	7	0	39	5	0	35	34	0	33	28	0	41
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	67	67	67	75	75	75	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	29	8	6	13	45	8	348	19	56	410	24

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	807	991	297	778	994	252	475	0	0	400	0	0
Stage 1	575	575	-	407	407	-	-	-	-	-	-	-
Stage 2	232	416	-	371	587	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	273	245	699	286	244	748	1083	-	-	1155	-	-
Stage 1	470	501	-	592	596	-	-	-	-	-	-	-
Stage 2	750	590	-	622	495	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	216	215	647	227	214	700	1041	-	-	1119	-	-
Mov Cap-2 Maneuver	216	215	-	227	214	-	-	-	-	-	-	-
Stage 1	448	457	-	569	573	-	-	-	-	-	-	-
Stage 2	658	567	-	527	452	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	24.1		15.1		0.2		1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1041	-	-	240	419	1119	-	-
HCM Lane V/C Ratio	0.008	-	-	0.218	0.153	0.05	-	-
HCM Control Delay (s)	8.5	-	-	24.1	15.1	8.4	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.5	0.2	-	-

HCM 6th TWSC  
16: Center Street & 7th Street

12/09/2019

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔↔↔	↔↔↔				
Traffic Vol, veh/h	29	15	0	0	10	29	8	448	17	0	0	0
Future Vol, veh/h	29	15	0	0	10	29	8	448	17	0	0	0
Conflicting Peds, #/hr	0	0	20	9	0	6	11	0	15	6	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	61	61	61	90	90	90	25	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	19	0	0	16	48	9	498	19	0	0	0

Major/Minor	Minor2		Minor1		Major1					
Conflicting Flow All	242	561	-	-	552	280	11	0	0	
Stage 1	11	11	-	-	541	-	-	-	-	
Stage 2	231	550	-	-	11	-	-	-	-	
Critical Hdwy	6.44	6.54	-	-	6.54	7.14	5.34	-	-	
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-	
Critical Hdwy Stg 2	6.74	5.54	-	-	-	-	-	-	-	
Follow-up Hdwy	3.82	4.02	-	-	4.02	3.92	3.12	-	-	
Pot Cap-1 Maneuver	693	435	0	0	440	611	1141	-	-	
Stage 1	-	-	0	0	519	-	-	-	-	
Stage 2	690	514	0	0	-	-	-	-	-	
Platoon blocked, %								-	-	
Mov Cap-1 Maneuver	608	420	-	-	425	602	1129	-	-	
Mov Cap-2 Maneuver	608	420	-	-	425	-	-	-	-	
Stage 1	-	-	-	-	506	-	-	-	-	
Stage 2	608	501	-	-	-	-	-	-	-	

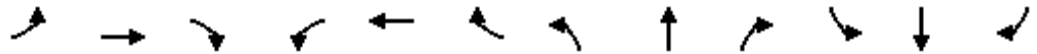
Approach	EB		WB		NB	
HCM Control Delay, s	12.6		12.5		0.1	
HCM LOS	B		B			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1
Capacity (veh/h)	1129	-	-	528	544
HCM Lane V/C Ratio	0.008	-	-	0.105	0.118
HCM Control Delay (s)	8.2	0	-	12.6	12.5
HCM Lane LOS	A	A	-	B	B
HCM 95th %tile Q(veh)	0	-	-	0.4	0.4

# HCM 6th Signalized Intersection Summary

## 17: 6th Street & Virginia Street

12/09/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	68	89	9	12	96	35	17	178	8	35	253	56
Future Volume (veh/h)	68	89	9	12	96	35	17	178	8	35	253	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.97	0.98		0.96	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	84	110	11	14	112	41	22	225	10	41	294	65
Peak Hour Factor	0.81	0.81	0.81	0.86	0.86	0.86	0.79	0.79	0.79	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	588	58	268	462	160	766	2450	108	862	2049	446
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	1200	3257	321	1241	2559	887	1018	3465	153	1139	2897	630
Grp Volume(v), veh/h	84	59	62	14	76	77	22	115	120	41	179	180
Grp Sat Flow(s),veh/h/ln	1200	1777	1801	1241	1777	1669	1018	1777	1841	1139	1777	1751
Q Serve(g_s), s	5.8	2.5	2.6	0.9	3.3	3.6	0.6	1.8	1.8	1.1	2.9	3.0
Cycle Q Clear(g_c), s	9.4	2.5	2.6	3.5	3.3	3.6	3.7	1.8	1.8	2.9	2.9	3.0
Prop In Lane	1.00		0.18	1.00		0.53	1.00		0.08	1.00		0.36
Lane Grp Cap(c), veh/h	249	321	325	268	321	301	766	1257	1302	862	1257	1238
V/C Ratio(X)	0.34	0.18	0.19	0.05	0.24	0.26	0.03	0.09	0.09	0.05	0.14	0.15
Avail Cap(c_a), veh/h	496	687	696	524	687	645	766	1257	1302	862	1257	1238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	31.3	31.3	32.8	31.6	31.7	4.9	4.1	4.1	4.6	4.3	4.3
Incr Delay (d2), s/veh	0.8	0.3	0.3	0.1	0.4	0.4	0.1	0.1	0.1	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.1	1.2	0.3	1.4	1.5	0.1	0.6	0.6	0.2	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	31.5	31.6	32.8	31.9	32.1	5.0	4.3	4.3	4.7	4.5	4.5
LnGrp LOS	D	C	C	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		205			167			257			400	
Approach Delay, s/veh		33.6			32.1			4.3			4.6	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.5		21.5		68.5		21.5				
Change Period (Y+Rc), s		4.9		* 5.2		4.9		* 5.2				
Max Green Setting (Gmax), s		45.1		* 35		45.1		* 35				
Max Q Clear Time (g_c+I1), s		5.7		11.4		5.0		5.6				
Green Ext Time (p_c), s		1.5		0.9		2.5		0.9				

### Intersection Summary

HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



# HCM 6th Signalized Intersection Summary

## 18: 6th Street & Center Street

12/09/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕↕				
Traffic Volume (veh/h)	48	138	0	0	160	29	7	382	45	0	0	0
Future Volume (veh/h)	48	138	0	0	160	29	7	382	45	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.90	0.90	1.00	0.90			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	63	182	0	0	186	34	8	429	51			
Peak Hour Factor	0.76	0.76	0.76	0.86	0.86	0.86	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	169	428	0	0	494	88	52	2949	356			
Arrive On Green	0.17	0.17	0.00	0.00	0.17	0.17	0.68	0.68	0.68			
Sat Flow, veh/h	458	2551	0	0	2939	508	77	4361	527			
Grp Volume(v), veh/h	129	116	0	0	114	106	174	160	153			
Grp Sat Flow(s),veh/h/ln	1307	1617	0	0	1777	1577	1679	1702	1583			
Q Serve(g_s), s	2.3	3.8	0.0	0.0	3.4	3.6	2.2	2.0	2.1			
Cycle Q Clear(g_c), s	5.9	3.8	0.0	0.0	3.4	3.6	2.2	2.0	2.1			
Prop In Lane	0.49		0.00	0.00		0.32	0.05		0.33			
Lane Grp Cap(c), veh/h	316	280	0	0	308	274	1136	1151	1071			
V/C Ratio(X)	0.41	0.41	0.00	0.00	0.37	0.39	0.15	0.14	0.14			
Avail Cap(c_a), veh/h	1034	1093	0	0	1202	1066	1136	1151	1071			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	22.7	22.0	0.0	0.0	21.9	21.9	3.5	3.5	3.5			
Incr Delay (d2), s/veh	0.8	1.0	0.0	0.0	0.7	0.9	0.3	0.3	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.7	1.4	0.0	0.0	1.4	1.3	0.6	0.5	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	23.0	0.0	0.0	22.6	22.8	3.8	3.7	3.8			
LnGrp LOS	C	C	A	A	C	C	A	A	A			
Approach Vol, veh/h		245			220			488				
Approach Delay, s/veh		23.3			22.7			3.8				
Approach LOS		C			C			A				
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		45.0		14.9				14.9				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.5		40.5				40.5				
Max Q Clear Time (g_c+l1), s		4.2		7.9				5.6				
Green Ext Time (p_c), s		3.1		1.5				1.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				13.2								
HCM 6th LOS				B								

HCM 6th TWSC  
19: Evans Avenue & 6th Street

12/09/2019

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	32	149	7	37	189	20	1	31	19	25	56	27
Future Vol, veh/h	32	149	7	37	189	20	1	31	19	25	56	27
Conflicting Peds, #/hr	11	0	19	8	0	15	11	0	12	4	0	22
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	81	81	81	85	85	85	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	186	9	46	233	25	1	36	22	34	77	37

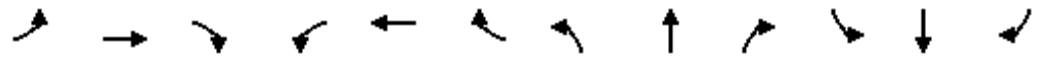
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	273	0	0	214	0	0	559	655	129	556	647	166
Stage 1	-	-	-	-	-	-	290	290	-	353	353	-
Stage 2	-	-	-	-	-	-	269	365	-	203	294	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1287	-	-	1353	-	-	412	384	897	414	388	849
Stage 1	-	-	-	-	-	-	694	671	-	637	629	-
Stage 2	-	-	-	-	-	-	713	622	-	780	668	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1269	-	-	1329	-	-	297	344	871	341	348	819
Mov Cap-2 Maneuver	-	-	-	-	-	-	297	344	-	341	348	-
Stage 1	-	-	-	-	-	-	658	636	-	606	595	-
Stage 2	-	-	-	-	-	-	557	588	-	683	633	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			1.3			14.4			19		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	442	1269	-	-	1329	-	-	404
HCM Lane V/C Ratio	0.136	0.032	-	-	0.034	-	-	0.366
HCM Control Delay (s)	14.4	7.9	0.1	-	7.8	0.1	-	19
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.1	-	-	1.6

HCM 6th Signalized Intersection Summary  
 1: Sierra Street & University Terrace/9th Street

12/09/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	118	55	113	134	69	43	272	13	36	525	84
Future Volume (veh/h)	168	118	55	113	134	69	43	272	13	36	525	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.90	0.94		0.95	1.00		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	185	130	60	122	144	74	46	292	14	39	565	90
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	320	363	168	331	356	183	376	1061	872	600	1061	873
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1130	1166	538	1116	1143	587	777	1870	1538	1066	1870	1539
Grp Volume(v), veh/h	185	0	190	122	0	218	46	292	14	39	565	90
Grp Sat Flow(s),veh/h/ln	1130	0	1705	1116	0	1730	777	1870	1538	1066	1870	1539
Q Serve(g_s), s	13.9	0.0	7.8	8.6	0.0	8.9	3.5	7.2	0.4	1.8	16.8	2.4
Cycle Q Clear(g_c), s	22.8	0.0	7.8	16.3	0.0	8.9	20.4	7.2	0.4	9.0	16.8	2.4
Prop In Lane	1.00		0.32	1.00		0.34	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	320	0	531	331	0	539	376	1061	872	600	1061	873
V/C Ratio(X)	0.58	0.00	0.36	0.37	0.00	0.40	0.12	0.28	0.02	0.07	0.53	0.10
Avail Cap(c_a), veh/h	368	0	604	382	0	617	376	1061	872	600	1061	873
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	0.76	0.00	0.76	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	0.0	24.0	30.3	0.0	24.4	18.4	10.0	8.5	12.3	12.1	8.9
Incr Delay (d2), s/veh	1.7	0.0	0.4	0.5	0.0	0.4	0.7	0.6	0.0	0.2	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	3.1	2.3	0.0	3.6	0.7	2.9	0.1	0.4	7.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	0.0	24.4	30.9	0.0	24.8	19.0	10.6	8.5	12.5	14.0	9.2
LnGrp LOS	D	A	C	C	A	C	B	B	A	B	B	A
Approach Vol, veh/h		375			340			352			694	
Approach Delay, s/veh		29.7			27.0			11.6			13.3	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		56.9		33.1		56.9		33.1				
Change Period (Y+Rc), s		5.8		5.1		5.8		* 5.1				
Max Green Setting (Gmax), s		47.2		31.9		47.2		* 32				
Max Q Clear Time (g_c+I1), s		22.4		24.8		18.8		18.3				
Green Ext Time (p_c), s		2.1		1.1		4.6		1.5				

Intersection Summary

HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B























Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 2: Virginia Street & 9th Street

12/09/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	130	42	41	239	184	45	635	68	83	543	60
Future Volume (veh/h)	19	130	42	41	239	184	45	635	68	83	543	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.91	0.97		0.90	1.00		0.92	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	160	52	47	272	209	52	730	78	102	670	74
Peak Hour Factor	0.81	0.81	0.81	0.88	0.88	0.88	0.87	0.87	0.87	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	393	420	71	368	340	355	1165	820	317	1165	928
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	97	1344	1435	124	1258	1161	716	1870	1318	675	1870	1491
Grp Volume(v), veh/h	183	0	52	287	0	241	52	730	78	102	670	74
Grp Sat Flow(s),veh/h/ln	1441	0	1435	1202	0	1341	716	1870	1318	675	1870	1491
Q Serve(g_s), s	0.8	0.0	3.2	10.1	0.0	18.6	5.5	29.0	2.8	13.2	25.3	2.4
Cycle Q Clear(g_c), s	19.4	0.0	3.2	29.6	0.0	18.6	30.7	29.0	2.8	42.1	25.3	2.4
Prop In Lane	0.13		1.00	0.16		0.87	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	455	0	420	386	0	392	355	1165	820	317	1165	928
V/C Ratio(X)	0.40	0.00	0.12	0.74	0.00	0.62	0.15	0.63	0.10	0.32	0.58	0.08
Avail Cap(c_a), veh/h	727	0	656	666	0	613	355	1165	820	317	1165	928
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.94	0.00	0.94	1.00	0.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	0.0	31.2	40.5	0.0	36.6	22.3	14.0	9.1	27.0	13.3	9.0
Incr Delay (d2), s/veh	0.5	0.0	0.1	2.8	0.0	1.6	0.8	2.4	0.2	0.6	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	1.1	8.4	0.0	6.3	1.0	12.4	0.9	2.2	10.3	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	0.0	31.3	43.3	0.0	38.2	23.1	16.4	9.3	27.6	14.0	9.0
LnGrp LOS	C	A	C	D	A	D	C	B	A	C	B	A
Approach Vol, veh/h		235			528			860			846	
Approach Delay, s/veh		33.4			41.0			16.2			15.2	
Approach LOS		C			D			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		79.8		40.2		79.8		40.2				
Change Period (Y+Rc), s		5.1		5.1		5.1		5.1				
Max Green Setting (Gmax), s		54.9		54.9		54.9		54.9				
Max Q Clear Time (g_c+I1), s		32.7		21.4		44.1		31.6				
Green Ext Time (p_c), s		6.2		1.4		4.3		3.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				22.8								
HCM 6th LOS				C								

HCM 6th AWSC  
3: Center Street & 9th Street

12/09/2019

Intersection	
Intersection Delay, s/veh	46.7
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	56	286	26	65	279	28	119	39	143	33	31	68
Future Vol, veh/h	56	286	26	65	279	28	119	39	143	33	31	68
Peak Hour Factor	0.70	0.70	0.70	0.85	0.85	0.85	0.86	0.86	0.86	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	80	409	37	76	328	33	138	45	166	47	44	97
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	79.8	44.3	17	15
HCM LOS	F	E	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	15%	17%	100%	0%
Vol Thru, %	0%	21%	78%	75%	0%	31%
Vol Right, %	0%	79%	7%	8%	0%	69%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	119	182	368	372	33	99
LT Vol	119	0	56	65	33	0
Through Vol	0	39	286	279	0	31
RT Vol	0	143	26	28	0	68
Lane Flow Rate	138	212	526	438	47	141
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.339	0.46	1.047	0.882	0.122	0.329
Departure Headway (Hd)	9.114	8.018	7.168	7.422	9.611	8.584
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	397	453	510	490	375	421
Service Time	6.814	5.718	5.161	5.422	7.311	6.284
HCM Lane V/C Ratio	0.348	0.468	1.031	0.894	0.125	0.335
HCM Control Delay	16.4	17.4	79.8	44.3	13.6	15.4
HCM Lane LOS	C	C	F	E	B	C
HCM 95th-tile Q	1.5	2.4	15.6	9.6	0.4	1.4

Intersection						
Int Delay, s/veh	4.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	↔
Traffic Vol, veh/h	266	67	78	287	81	86
Future Vol, veh/h	266	67	78	287	81	86
Conflicting Peds, #/hr	0	0	0	0	0	40
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	65	-	0	145
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	79	79	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	359	91	99	363	107	113

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	450	0	966
Stage 1	-	-	-	-	405
Stage 2	-	-	-	-	561
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1110	-	282
Stage 1	-	-	-	-	673
Stage 2	-	-	-	-	571
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1110	-	257
Mov Cap-2 Maneuver	-	-	-	-	257
Stage 1	-	-	-	-	673
Stage 2	-	-	-	-	520

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	20.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	257	590	-	-	1110	-
HCM Lane V/C Ratio	0.415	0.192	-	-	0.089	-
HCM Control Delay (s)	28.6	12.5	-	-	8.6	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1.9	0.7	-	-	0.3	-

HCM 6th AWSC  
5: Record Street & Evans Avenue

12/09/2019

Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	50	308	20	16	278	41	23	5	17	22	5	52
Future Vol, veh/h	50	308	20	16	278	41	23	5	17	22	5	52
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.87	0.87	0.87	0.64	0.64	0.64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	57	350	23	17	299	44	26	6	20	34	8	81
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	14.2	13.8	9.7	10.1
HCM LOS	B	B	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	51%	100%	0%	100%	0%	28%
Vol Thru, %	11%	0%	94%	0%	87%	6%
Vol Right, %	38%	0%	6%	0%	13%	66%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	45	50	328	16	319	79
LT Vol	23	50	0	16	0	22
Through Vol	5	0	308	0	278	5
RT Vol	17	0	20	0	41	52
Lane Flow Rate	52	57	373	17	343	123
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.087	0.094	0.562	0.029	0.52	0.195
Departure Headway (Hd)	6.064	5.972	5.424	6.057	5.461	5.674
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	590	601	667	592	662	632
Service Time	4.109	3.696	3.148	3.783	3.186	3.711
HCM Lane V/C Ratio	0.088	0.095	0.559	0.029	0.518	0.195
HCM Control Delay	9.7	9.3	14.9	9	14	10.1
HCM Lane LOS	A	A	B	A	B	B
HCM 95th-tile Q	0.3	0.3	3.5	0.1	3	0.7

HCM 6th TWSC  
6: Evans Avenue & Highland Avenue

12/09/2019

Intersection						
Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	58	64	292	63	45	278
Future Vol, veh/h	58	64	292	63	45	278
Conflicting Peds, #/hr	26	0	0	26	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	79	79	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	74	82	370	80	50	309

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	871	436	0	0	476
Stage 1	436	-	-	-	-
Stage 2	435	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	322	620	-	-	1086
Stage 1	652	-	-	-	-
Stage 2	653	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	289	605	-	-	1059
Mov Cap-2 Maneuver	289	-	-	-	-
Stage 1	636	-	-	-	-
Stage 2	601	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.8	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	398	1059
HCM Lane V/C Ratio	-	-	0.393	0.047
HCM Control Delay (s)	-	-	19.8	8.6
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.8	0.1



HCM 6th TWSC  
7: Valley Road & Highland Avenue

12/09/2019

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	135	35	37	273	132	101
Future Vol, veh/h	135	35	37	273	132	101
Conflicting Peds, #/hr	0	4	4	0	0	4
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	83	83	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	171	44	45	329	163	125

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	649	234	292	0	-	0
Stage 1	230	-	-	-	-	-
Stage 2	419	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	434	805	1270	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	415	799	1265	-	-	-
Mov Cap-2 Maneuver	512	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	661	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.6	0.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1265	-	553	-	-
HCM Lane V/C Ratio	0.035	-	0.389	-	-
HCM Control Delay (s)	8	-	15.6	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.8	-	-

HCM 6th TWSC  
8: Valley Road & Sadlier Way

12/09/2019

Intersection						
Int Delay, s/veh	6.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	134	147	181	221	148	141
Future Vol, veh/h	134	147	181	221	148	141
Conflicting Peds, #/hr	35	6	0	9	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	86	86	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	151	165	210	257	174	166

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	897	354	0	0	476
Stage 1	348	-	-	-	-
Stage 2	549	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	310	690	-	-	1086
Stage 1	715	-	-	-	-
Stage 2	579	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	249	680	-	-	1077
Mov Cap-2 Maneuver	363	-	-	-	-
Stage 1	709	-	-	-	-
Stage 2	469	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.7	0	4.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	363	680	1077	-
HCM Lane V/C Ratio	-	-	0.415	0.243	0.162	-
HCM Control Delay (s)	-	-	21.8	12	9	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2	0.9	0.6	-

# HCM 6th Signalized Intersection Summary

## 9: Virginia Street & 8th Street

12/09/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑		↑	↑↑			↑↑	
Traffic Volume (veh/h)	0	0	0	299	891	233	122	513	0	0	530	164
Future Volume (veh/h)	0	0	0	299	891	233	122	513	0	0	530	164
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	1.00		1.00	1.00		0.92
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				344	1024	268	137	576	0	0	639	198
Peak Hour Factor				0.87	0.87	0.87	0.89	0.89	0.89	0.83	0.83	0.83
Percent Heavy Veh, %				0	2	0	2	2	2	0	2	2
Cap, veh/h				471	1505	403	263	1632	0	0	881	273
Arrive On Green				0.15	0.15	0.15	0.13	0.92	0.00	0.00	0.36	0.36
Sat Flow, veh/h				1023	3267	874	1781	3647	0	0	2569	766
Grp Volume(v), veh/h				612	521	503	137	576	0	0	458	379
Grp Sat Flow(s),veh/h/ln				1819	1702	1643	1781	1777	0	0	1777	1464
Q Serve(g_s), s				38.5	34.6	34.7	5.7	2.4	0.0	0.0	26.9	27.0
Cycle Q Clear(g_c), s				38.5	34.6	34.7	5.7	2.4	0.0	0.0	26.9	27.0
Prop In Lane				0.56		0.53	1.00		0.00	0.00		0.52
Lane Grp Cap(c), veh/h				838	784	757	263	1632	0	0	632	521
V/C Ratio(X)				0.73	0.66	0.67	0.52	0.35	0.00	0.00	0.72	0.73
Avail Cap(c_a), veh/h				838	784	757	376	1632	0	0	632	521
HCM Platoon Ratio				0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(l)				0.57	0.57	0.57	0.55	0.55	0.00	0.00	0.86	0.86
Uniform Delay (d), s/veh				43.8	42.1	42.1	23.1	2.7	0.0	0.0	33.5	33.6
Incr Delay (d2), s/veh				3.2	2.5	2.6	0.9	0.3	0.0	0.0	6.1	7.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				19.5	16.4	15.9	2.2	0.7	0.0	0.0	12.6	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				47.0	44.7	44.8	24.0	3.1	0.0	0.0	39.7	41.0
LnGrp LOS				D	D	D	C	A	A	A	D	D
Approach Vol, veh/h					1636			713			837	
Approach Delay, s/veh					45.6			7.1			40.3	
Approach LOS					D			A			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		60.0			12.4	47.6		60.0				
Change Period (Y+Rc), s		4.9			4.5	4.9		4.7				
Max Green Setting (Gmax), s		55.1			15.5	35.1		55.3				
Max Q Clear Time (g_c+l1), s		4.4			7.7	29.0		40.5				
Green Ext Time (p_c), s		4.5			0.2	2.8		9.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											35.6	
HCM 6th LOS											D	

HCM 6th Signalized Intersection Summary  
 10: Center Street & 8th Street/I-80 WB Off-Ramp

12/09/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑			↑	↑
Traffic Volume (veh/h)	0	0	0	2	1048	148	217	176	0	0	99	40
Future Volume (veh/h)	0	0	0	2	1048	148	217	176	0	0	99	40
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				2	1139	161	316	252	0	0	134	54
Peak Hour Factor				0.92	0.92	0.92	0.69	0.69	0.69	0.74	0.74	0.74
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				5	3293	484	461	382	0	0	382	322
Arrive On Green				0.71	0.71	0.71	0.07	0.07	0.00	0.00	0.20	0.20
Sat Flow, veh/h				8	4622	679	2385	1870	0	0	1870	1578
Grp Volume(v), veh/h				487	403	412	316	252	0	0	134	54
Grp Sat Flow(s),veh/h/ln				1870	1702	1736	1193	1870	0	0	1870	1578
Q Serve(g_s), s				12.1	10.7	10.7	15.8	15.8	0.0	0.0	7.4	3.4
Cycle Q Clear(g_c), s				12.1	10.7	10.7	23.2	15.8	0.0	0.0	7.4	3.4
Prop In Lane				0.00		0.39	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1332	1213	1237	461	382	0	0	382	322
V/C Ratio(X)				0.37	0.33	0.33	0.69	0.66	0.00	0.00	0.35	0.17
Avail Cap(c_a), veh/h				1332	1213	1237	461	382	0	0	382	322
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	1.00	1.00	0.48	0.48	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				6.7	6.5	6.5	59.0	51.9	0.0	0.0	40.9	39.3
Incr Delay (d2), s/veh				0.8	0.7	0.7	4.0	4.3	0.0	0.0	0.5	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	3.8	3.9	5.3	8.4	0.0	0.0	3.5	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				7.5	7.2	7.2	63.0	56.2	0.0	0.0	41.5	39.6
LnGrp LOS				A	A	A	E	E	A	A	D	D
Approach Vol, veh/h					1302			568			188	
Approach Delay, s/veh					7.3			60.0			40.9	
Approach LOS					A			E			D	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		29.7				29.7		90.3				
Change Period (Y+Rc), s		* 5.2				* 5.2		4.8				
Max Green Setting (Gmax), s		* 25				* 21		60.2				
Max Q Clear Time (g_c+I1), s		25.2				9.4		14.1				
Green Ext Time (p_c), s		0.0				0.6		11.4				

Intersection Summary

HCM 6th Ctrl Delay	24.9
HCM 6th LOS	C

Notes

- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
11: Evans Avenue & 9th Street

12/09/2019

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	54	110	14	40	108
Future Vol, veh/h	29	54	110	14	40	108
Conflicting Peds, #/hr	0	55	0	40	40	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	70	70	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	65	157	20	53	142

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	455	262	0	0	217
Stage 1	207	-	-	-	-
Stage 2	248	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	563	777	-	-	1353
Stage 1	828	-	-	-	-
Stage 2	793	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	518	708	-	-	1301
Mov Cap-2 Maneuver	518	-	-	-	-
Stage 1	797	-	-	-	-
Stage 2	758	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	628	1301
HCM Lane V/C Ratio	-	-	0.159	0.04
HCM Control Delay (s)	-	-	11.8	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1

HCM 6th Signalized Intersection Summary  
 12: Virginia Street & Maple Street

12/09/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔↔						↕↕		↘	↕↕	
Traffic Volume (veh/h)	94	247	80	0	0	0	1	549	173	330	487	0
Future Volume (veh/h)	94	247	80	0	0	0	1	549	173	330	487	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.83				0.97		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900				1870	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	102	268	87				1	654	206	375	553	0
Peak Hour Factor	0.92	0.92	0.92				0.84	0.84	0.84	0.88	0.88	0.88
Percent Heavy Veh, %	0	2	0				2	2	2	2	2	0
Cap, veh/h	199	557	171				30	1128	354	672	2605	0
Arrive On Green	0.19	0.19	0.19				0.44	0.44	0.44	0.51	1.00	0.00
Sat Flow, veh/h	1076	3006	924				0	2555	803	1781	3647	0
Grp Volume(v), veh/h	172	145	140				479	0	382	375	553	0
Grp Sat Flow(s),veh/h/ln	1817	1702	1488				1870	0	1489	1781	1777	0
Q Serve(g_s), s	10.2	9.1	10.2				0.0	0.0	23.1	8.3	0.0	0.0
Cycle Q Clear(g_c), s	10.2	9.1	10.2				23.1	0.0	23.1	8.3	0.0	0.0
Prop In Lane	0.59		0.62				0.00		0.54	1.00		0.00
Lane Grp Cap(c), veh/h	337	315	276				855	0	657	672	2605	0
V/C Ratio(X)	0.51	0.46	0.51				0.56	0.00	0.58	0.56	0.21	0.00
Avail Cap(c_a), veh/h	501	469	410				855	0	657	672	2605	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				1.00	0.00	1.00	0.55	0.55	0.00
Uniform Delay (d), s/veh	44.0	43.5	44.0				25.2	0.0	25.2	6.9	0.0	0.0
Incr Delay (d2), s/veh	1.2	1.0	1.4				2.6	0.0	3.7	1.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	3.9	3.9				10.8	0.0	8.8	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	44.6	45.4				27.8	0.0	28.9	8.7	0.1	0.0
LnGrp LOS	D	D	D				C	A	C	A	A	A
Approach Vol, veh/h		457						861			928	
Approach Delay, s/veh		45.1						28.3			3.6	
Approach LOS		D						C			A	
Timer - Assigned Phs	1	2		4				6				
Phs Duration (G+Y+Rc), s	35.0	57.9		27.1				92.9				
Change Period (Y+Rc), s	4.5	4.9		4.9				* 4.9				
Max Green Setting (Gmax), s	30.5	42.1		33.1				* 78				
Max Q Clear Time (g_c+l1), s	10.3	25.1		12.2				2.0				
Green Ext Time (p_c), s	1.1	5.4		2.8				4.4				

Intersection Summary

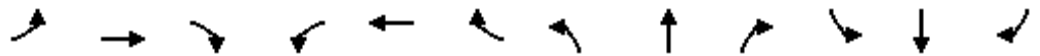
HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary  
 13: Center Street & Maple Street/I-80 EB On-Ramp

12/09/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑						↑↑	↗	↘		
Traffic Volume (veh/h)	26	665	0	0	0	0	0	367	662	101	0	0
Future Volume (veh/h)	26	665	0	0	0	0	0	367	662	101	0	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	0				0	1870	1870	1870	0	0
Adj Flow Rate, veh/h	32	811	0				0	483	871	123	0	0
Peak Hour Factor	0.82	0.82	0.82				0.76	0.76	0.76	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	0				0	2	2	2	0	0
Cap, veh/h	825	1646	0				0	612	1007	152	0	0
Arrive On Green	0.46	0.46	0.00				0.00	0.33	0.33	0.09	0.00	0.00
Sat Flow, veh/h	1781	3647	0				0	1870	3078	1781	123	
Grp Volume(v), veh/h	32	811	0				0	483	871	123	62.9	
Grp Sat Flow(s),veh/h/ln	1781	1777	0				0	1870	1539	1781	E	
Q Serve(g_s), s	1.2	19.0	0.0				0.0	28.1	31.9	8.1		
Cycle Q Clear(g_c), s	1.2	19.0	0.0				0.0	28.1	31.9	8.1		
Prop In Lane	1.00		0.00				0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	825	1646	0				0	612	1007	152		
V/C Ratio(X)	0.04	0.49	0.00				0.00	0.79	0.87	0.81		
Avail Cap(c_a), veh/h	825	1646	0				0	698	1149	230		
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00		
Upstream Filter(l)	0.79	0.79	0.00				0.00	1.00	1.00	0.74		
Uniform Delay (d), s/veh	17.6	22.4	0.0				0.0	36.6	37.9	53.9		
Incr Delay (d2), s/veh	0.1	0.8	0.0				0.0	5.4	6.4	9.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	8.1	0.0				0.0	13.6	12.8	4.0		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	23.2	0.0				0.0	42.0	44.3	62.9		
LnGrp LOS	B	C	A				A	D	D	E		
Approach Vol, veh/h		843						1354				
Approach Delay, s/veh		23.0						43.5				
Approach LOS		C						D				
Timer - Assigned Phs	1	2		4								
Phs Duration (G+Y+Rc), s	14.8	44.5		60.8								
Change Period (Y+Rc), s	4.5	* 5.2		* 5.2								
Max Green Setting (Gmax), s	15.5	* 45		* 45								
Max Q Clear Time (g_c+l1), s	10.1	33.9		3.2								
Green Ext Time (p_c), s	0.1	5.4		0.0								

Intersection Summary

HCM 6th Ctrl Delay	37.1
HCM 6th LOS	D

Notes

- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
 14: Evans Avenue & 8th Street

12/09/2019

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	T
Traffic Vol, veh/h	9	14	109	8	1	134
Future Vol, veh/h	9	14	109	8	1	134
Conflicting Peds, #/hr	0	25	0	25	25	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	52	52	68	68	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	27	160	12	1	191

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	384	216	0	0	197
Stage 1	191	-	-	-	-
Stage 2	193	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	619	824	-	-	1376
Stage 1	841	-	-	-	-
Stage 2	840	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	604	785	-	-	1343
Mov Cap-2 Maneuver	604	-	-	-	-
Stage 1	821	-	-	-	-
Stage 2	839	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	703	1343
HCM Lane V/C Ratio	-	-	0.063	0.001
HCM Control Delay (s)	-	-	10.5	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0



HCM 6th TWSC  
15: Virginia Street & 7th Street

12/09/2019

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	16	22	12	14	7	17	16	686	36	22	526	15
Future Vol, veh/h	16	22	12	14	7	17	16	686	36	22	526	15
Conflicting Peds, #/hr	4	0	104	19	0	69	85	0	84	65	0	89
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	86	86	86	89	89	89	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	30	16	16	8	20	18	771	40	23	542	15

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1180	1616	472	1347	1603	559	646	0	0	895	0	0
Stage 1	685	685	-	911	911	-	-	-	-	-	-	-
Stage 2	495	931	-	436	692	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	146	103	538	110	105	472	935	-	-	754	-	-
Stage 1	404	447	-	295	351	-	-	-	-	-	-	-
Stage 2	525	344	-	569	443	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	106	82	444	61	84	406	856	-	-	694	-	-
Mov Cap-2 Maneuver	106	82	-	61	84	-	-	-	-	-	-	-
Stage 1	362	396	-	266	316	-	-	-	-	-	-	-
Stage 2	445	310	-	442	392	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	77.1		60.5		0.2			0.4		
HCM LOS	F		F							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	856	-	-	112	107	694	-	-
HCM Lane V/C Ratio	0.021	-	-	0.603	0.413	0.033	-	-
HCM Control Delay (s)	9.3	-	-	77.1	60.5	10.4	-	-
HCM Lane LOS	A	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3	1.7	0.1	-	-

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔↔↔				
Traffic Vol, veh/h	49	25	0	0	9	46	13	925	9	0	0	0
Future Vol, veh/h	49	25	0	0	9	46	13	925	9	0	0	0
Conflicting Peds, #/hr	0	0	65	31	0	10	34	0	41	10	0	34
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	86	86	86	80	80	80	25	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	31	0	0	10	53	16	1156	11	0	0	0

Major/Minor	Minor2		Minor1		Major1				
Conflicting Flow All	543	1274	-	-	1269	635	34	0	0
Stage 1	34	34	-	-	1235	-	-	-	-
Stage 2	509	1240	-	-	34	-	-	-	-
Critical Hdwy	6.44	6.54	-	-	6.54	7.14	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	-	-	4.02	3.92	3.12	-	-
Pot Cap-1 Maneuver	469	166	0	0	167	361	1113	-	-
Stage 1	-	-	0	0	247	-	-	-	-
Stage 2	470	245	0	0	-	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	352	148	-	-	149	347	1077	-	-
Mov Cap-2 Maneuver	352	148	-	-	149	-	-	-	-
Stage 1	-	-	-	-	227	-	-	-	-
Stage 2	363	226	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	29.1	21.2	0.2
HCM LOS	D	C	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1
Capacity (veh/h)	1077	-	-	240	285
HCM Lane V/C Ratio	0.015	-	-	0.385	0.224
HCM Control Delay (s)	8.4	0.1	-	29.1	21.2
HCM Lane LOS	A	A	-	D	C
HCM 95th %tile Q(veh)	0	-	-	1.7	0.8

# HCM 6th Signalized Intersection Summary

## 17: 6th Street & Virginia Street

12/09/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↘		↗	↗↘		↗	↗↘		↗	↗↘	
Traffic Volume (veh/h)	236	308	30	20	156	57	43	456	20	56	405	89
Future Volume (veh/h)	236	308	30	20	156	57	43	456	20	56	405	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.89	0.95		0.92	0.98		0.93	0.98		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	288	376	37	21	166	61	51	536	24	60	435	96
Peak Hour Factor	0.82	0.82	0.82	0.94	0.94	0.94	0.85	0.85	0.85	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	404	1104	108	316	863	300	475	1884	84	466	1560	340
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	1107	3229	315	929	2526	878	853	3452	154	835	2858	623
Grp Volume(v), veh/h	288	205	208	21	114	113	51	275	285	60	269	262
Grp Sat Flow(s),veh/h/ln	1107	1777	1766	929	1777	1627	853	1777	1829	835	1777	1704
Q Serve(g_s), s	22.4	7.7	7.9	1.6	4.1	4.4	3.1	7.5	7.5	3.7	7.3	7.4
Cycle Q Clear(g_c), s	26.8	7.7	7.9	9.4	4.1	4.4	10.5	7.5	7.5	11.3	7.3	7.4
Prop In Lane	1.00		0.18	1.00		0.54	1.00		0.08	1.00		0.37
Lane Grp Cap(c), veh/h	404	607	604	316	607	556	475	970	998	466	970	930
V/C Ratio(X)	0.71	0.34	0.34	0.07	0.19	0.20	0.11	0.28	0.29	0.13	0.28	0.28
Avail Cap(c_a), veh/h	454	687	683	358	687	629	475	970	998	466	970	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	22.0	22.1	25.6	20.8	20.9	13.8	11.0	11.0	14.0	10.9	11.0
Incr Delay (d2), s/veh	4.6	0.3	0.3	0.1	0.1	0.2	0.5	0.7	0.7	0.6	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	3.2	3.3	0.3	1.7	1.7	0.6	3.0	3.1	0.8	2.9	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	22.4	22.4	25.7	21.0	21.1	14.2	11.7	11.7	14.6	11.6	11.7
LnGrp LOS	C	C	C	C	C	C	B	B	B	B	B	B
Approach Vol, veh/h		701			248			611			591	
Approach Delay, s/veh		27.6			21.4			11.9			12.0	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.0		36.0		54.0		36.0				
Change Period (Y+Rc), s		4.9		* 5.2		4.9		* 5.2				
Max Green Setting (Gmax), s		45.1		* 35		45.1		* 35				
Max Q Clear Time (g_c+l1), s		12.5		28.8		13.3		11.4				
Green Ext Time (p_c), s		4.1		2.0		4.0		1.4				

### Intersection Summary

HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 18: 6th Street & Center Street

12/09/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕↕				
Traffic Volume (veh/h)	111	255	0	0	256	58	14	789	67	0	0	0
Future Volume (veh/h)	111	255	0	0	256	58	14	789	67	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.90	0.90	1.00	0.90			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	146	336	0	0	324	73	18	1038	88			
Peak Hour Factor	0.76	0.76	0.76	0.79	0.79	0.79	0.76	0.76	0.76			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	254	635	0	0	870	193	41	2520	221			
Arrive On Green	0.32	0.32	0.00	0.00	0.32	0.32	0.56	0.56	0.56			
Sat Flow, veh/h	540	2080	0	0	2827	606	74	4517	396			
Grp Volume(v), veh/h	225	257	0	0	209	188	410	378	357			
Grp Sat Flow(s),veh/h/ln	919	1617	0	0	1777	1563	1680	1702	1605			
Q Serve(g_s), s	11.2	9.4	0.0	0.0	6.6	6.8	10.4	9.2	9.2			
Cycle Q Clear(g_c), s	17.9	9.4	0.0	0.0	6.6	6.8	10.4	9.2	9.2			
Prop In Lane	0.65		0.00	0.00		0.39	0.04		0.25			
Lane Grp Cap(c), veh/h	374	515	0	0	566	497	937	949	895			
V/C Ratio(X)	0.60	0.50	0.00	0.00	0.37	0.38	0.44	0.40	0.40			
Avail Cap(c_a), veh/h	656	902	0	0	991	872	937	949	895			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	24.7	20.1	0.0	0.0	19.1	19.2	9.4	9.1	9.1			
Incr Delay (d2), s/veh	1.5	0.8	0.0	0.0	0.4	0.5	1.5	1.2	1.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.6	3.4	0.0	0.0	2.6	2.4	3.7	3.3	3.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.2	20.8	0.0	0.0	19.5	19.7	10.9	10.4	10.5			
LnGrp LOS	C	C	A	A	B	B	B	B	B			
Approach Vol, veh/h		482			397			1144				
Approach Delay, s/veh		23.3			19.6			10.6				
Approach LOS		C			B			B				
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		45.0		27.6				27.6				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.5		40.5				40.5				
Max Q Clear Time (g_c+l1), s		12.4		19.9				8.8				
Green Ext Time (p_c), s		8.4		3.2				2.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				15.4								
HCM 6th LOS				B								

HCM 6th TWSC  
19: Evans Avenue & 6th Street

12/09/2019

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	23	309	5	38	231	13	10	49	34	28	52	33
Future Vol, veh/h	23	309	5	38	231	13	10	49	34	28	52	33
Conflicting Peds, #/hr	14	0	47	10	0	23	37	0	19	9	0	51
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	82	82	82	93	93	93	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	391	6	46	282	16	11	53	37	32	59	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	321	0	0	444	0	0	813	912	265	704	907	223
Stage 1	-	-	-	-	-	-	499	499	-	405	405	-
Stage 2	-	-	-	-	-	-	314	413	-	299	502	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1236	-	-	1112	-	-	270	272	733	324	274	780
Stage 1	-	-	-	-	-	-	522	542	-	593	597	-
Stage 2	-	-	-	-	-	-	671	592	-	685	540	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1209	-	-	1062	-	-	176	233	688	229	235	726
Mov Cap-2 Maneuver	-	-	-	-	-	-	176	233	-	229	235	-
Stage 1	-	-	-	-	-	-	483	501	-	562	553	-
Stage 2	-	-	-	-	-	-	513	549	-	552	500	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			1.3			23.4			26.9		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	294	1209	-	-	1062	-	-	290
HCM Lane V/C Ratio	0.34	0.024	-	-	0.044	-	-	0.443
HCM Control Delay (s)	23.4	8.1	0.1	-	8.5	0.2	-	26.9
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	1.5	0.1	-	-	0.1	-	-	2.2

**APPENDIX C**  
**BICYCLE LTS CALCULATIONS**

## BICYCLE LEVEL OF TRAFFIC STRESS

To supplement the LOS analysis conducted for vehicles in the study area, a bicycle Level of Traffic Stress (LTS) analysis was conducted as described in this section.

The Mineta Transportation Institute published a Low-Stress Bicycling and Network Connectivity analysis, which establishes a methodology for evaluating the LTS for bicyclists riding on a designated bicycle facility based on specific factors for roadway segments and intersection approaches. The Mineta Transportation Institute document used the City of San Jose as a test case for applying this methodology. This methodology designates a LTS for roadways and intersections on a scale of LTS $\geq$ 1 (lowest stress) to LTS $\geq$ 4 (highest stress):

- **LTS $\geq$ 1** facilities present little traffic stress and demand little attention from bicyclists. They are suitable for almost all bicyclists and attractive enough for a relaxing bike ride.
- **LTS $\geq$ 2** facilities are suitable to most adult bicyclists but demand more attention than might be expected from children.
- **LTS $\geq$ 3** starts to introduce a stress level that not all adult bicyclists feel comfortable with.
- **LTS $\geq$ 4** is the highest level of stress and may be used by experienced bicyclists or not used at all.

The following criteria are used to establish the LTS ranking:

- Roadway classifications
- Roadway speeds (posted)
- Bicycle facility type
- Bike lane widths
- Parking lane width

LTS is a widely accepted measure which also classifies bicycle riders into four types based on their tolerance for traffic. **Table 1** defines the four LTS levels in terms of suitable rider types and the bicycling experience. A score of 1 represents the lowest level of stress/highest suitability, while a score of 4 represents the highest level of stress/least suitability.

**Table 1 – Level of Traffic Stress**

Level of Traffic Stress	Suitable Rider Type
LTS 1	“Interested but Concerned” - Adults and Children
LTS 2	“Interested but Concerned” - Adults Only
LTS 3	“Enthusied and Confident” - Adults Only
LTS 4	“Strong and Fearless” - Adults Only

Per the methodology guidance, both directions of a roadway segment are independently assigned a score between LTS $\geq$ 1 and LTS $\geq$ 4 based on the criteria shown in **Table 2** through **Table 4**. Where a table cell shows a result of “(no effect)”, the resulting LTS for that situation is equal to the lower adjacent LTS. The level of traffic stress assigned to a location reflects the worst score of applicable criteria. For example, if a segment street width matches criteria for LTS $\geq$ 1, its

prevailing speed matches  $LTS \geq 2$ , and its bike lane blockage matches  $LTS \geq 3$ , then the segment as whole has  $LTS \geq 3$ .

Data on roadway classifications, speeds, bicycle facility type, and intersection control were compiled using field observations of roadway segments for classified roadways in the study focus area. This information was supplemented with measurement estimates and documentation of bike lane configurations at intersections taken from aerial imagery and was field-verified.

A detailed table summarizing the LTS inputs for each segment and associated scores are included in **Appendix C**.

**Table 2 – Criteria for Bike Lanes Alongside a Parking Lane**

	$LTS \geq 1$	$LTS \geq 2$	$LTS \geq 3$	$LTS \geq 4$
Street width * (through lanes per direction)	1	(no effect)	2 or more	(no effect)
Sum of bike lane and parking lane width	15 ft. or more	14 or 14.5 ft. *	13.5 ft. or less	(no effect)
Speed limit of prevailing speed	25 mph or less	30 mph	35 mph	40 mph
Bike lane blockage	Rare	(no effect)	Frequent	(no effect)

Note: (no effect) = factor does not trigger an increase to this level of traffic stress

\* If speed limit < 25 mph or Class = residential, then any width is acceptable for  $LTS \geq 2$

**Table 3 – Criteria for Bike Lanes NOT Alongside a Parking Lane**

	$LTS \geq 1$	$LTS \geq 2$	$LTS \geq 3$	$LTS \geq 4$
Street width (through lanes per direction)	1	(no effect)	2 or more	(no effect)
Bike lane width (includes marked buffer and paved gutter)	6 ft. or more	5.5 ft. or less	(no effect)	(no effect)
Speed limit or prevailing speed	30 mph or less	(no effect)	35 mph	40 mph or more
Bike lane blockage	Rare	(no effect)	Frequent	(no effect)

Note: (no effect) = factor does not trigger an increase to this level of traffic stress

**Table 4 – Criteria of Level of Traffic Stress in Mixed Traffic**

Speed Limit	Street Width		
	2 - 3 Lanes	4 - 5 Lanes	6+ Lanes
Up to 25 mph	LTS 1* or 2*	LTS 3	LTS 4
30 mph	LTS 2* or 3*	LTS 4	LTS 4
35 + mph	LTS 4	LTS 4	LTS 4

\*Use lower value for streets without marked centerlines or classified as residential with fewer than 3 lanes; use higher values otherwise

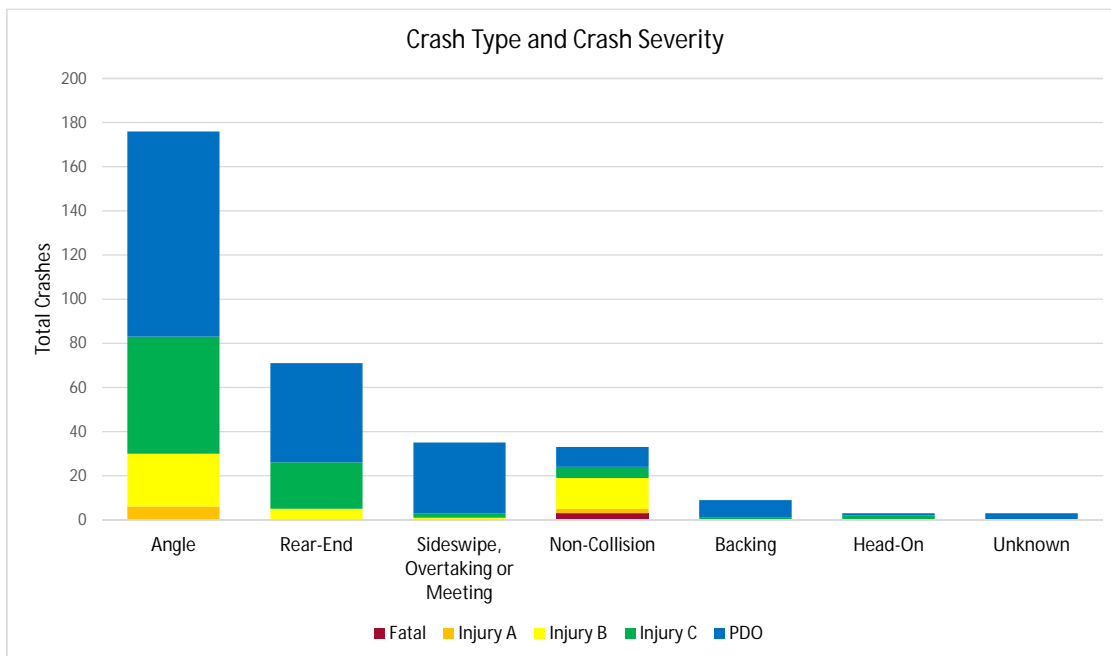


**APPENDIX D**  
**CRASH DATA**

Area Crash Analysis  
01 JAN 15 - 31 DEC 17  
University Study Area

Overall Crash Data			Pedestrian		Pedal Cycle		Motorcycle		Bus	
<i>Fatal</i>	3	0.9%	3	21.4%	0	0.0%	0	0.0%	0	0.0%
<i>Injury A</i>	8	2.4%	2	14.3%	0	0.0%	1	8.3%	0	0.0%
<i>Injury B</i>	44	13.3%	7	50.0%	4	80.0%	5	41.7%	0	0.0%
<i>Injury C</i>	84	25.5%	2	14.3%	1	20.0%	2	16.7%	0	0.0%
<i>Property Damage Only (PDO)</i>	191	57.9%	0	0.0%	0	0.0%	4	33.3%	0	0.0%
<b>Total</b>	<b>330</b>	<b>100%</b>	<b>14</b>	<b>4.2%</b>	<b>5</b>	<b>1.5%</b>	<b>12</b>	<b>3.6%</b>	<b>0</b>	<b>0.0%</b>

Crash Type							
	Fatal and Injury					PDO	Total
	<i>Fatal</i>	<i>Injury A</i>	<i>Injury B</i>	<i>Injury C</i>	<i>Sum</i>		
<i>Angle</i>	0	6	24	53	83	93	176
	0.0%	3.4%	13.6%	30.1%	47.2%	52.8%	53.3%
<i>Rear-End</i>	0	0	5	21	26	45	71
	0.0%	0.0%	7.0%	29.6%	36.6%	63.4%	21.5%
<i>Sideswipe, Overtaking or Meeting</i>	0	0	1	2	3	32	35
	0.0%	0.0%	2.9%	5.7%	8.6%	91.4%	10.6%
<i>Non-Collision</i>	3	2	14	5	24	9	33
	9.1%	6.1%	42.4%	15.2%	72.7%	27.3%	10.0%
<i>Backing</i>	0	0	0	1	1	8	9
	0.0%	0.0%	0.0%	11.1%	11.1%	88.9%	2.7%
<i>Head-On</i>	0	0	0	2	2	1	3
	0.0%	0.0%	0.0%	66.7%	66.7%	33.3%	0.9%
<i>Unknown</i>	0	0	0	0	0	3	3
	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.9%
<b>Total Crashes</b>	<b>3</b>	<b>8</b>	<b>44</b>	<b>84</b>	<b>139</b>	<b>191</b>	<b>330</b>

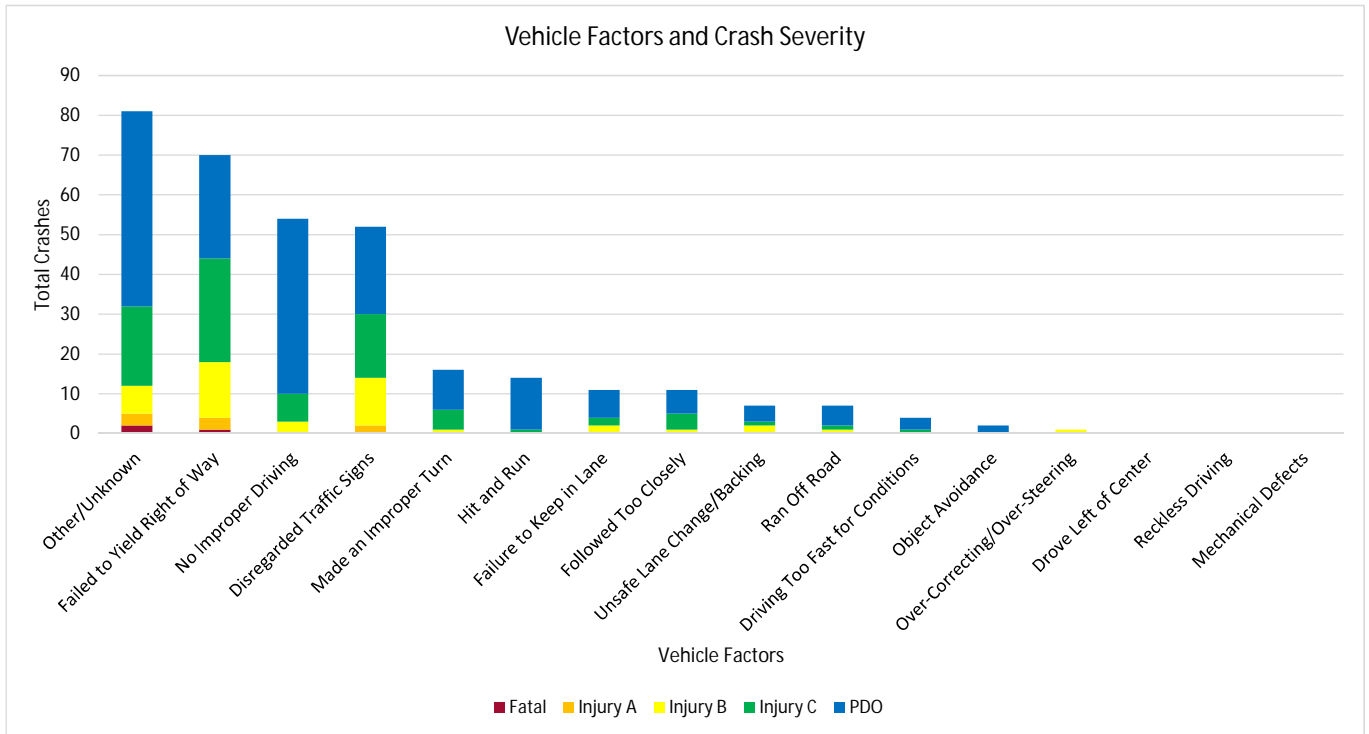


Area Crash Analysis  
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Vehicle Factors*							
	Fatal and Injury					PDO	Total
	Fatal	Injury A	Injury B	Injury C	Sum		
<i>Other/Unknown</i>	2 2.5%	3 3.7%	7 8.6%	20 24.7%	32 39.5%	49 60.5%	81 24.5%
<i>Failed to Yield Right of Way</i>	1 1.4%	3 4.3%	14 20.0%	26 37.1%	44 62.9%	26 37.1%	70 21.2%
<i>No Improper Driving</i>	0 0.0%	0 0.0%	3 5.6%	7 13.0%	10 18.5%	44 81.5%	54 16.4%
<i>Disregarded Traffic Signs</i>	0 0.0%	2 3.8%	12 23.1%	16 30.8%	30 57.7%	22 42.3%	52 15.8%
<i>Made an Improper Turn</i>	0 0.0%	0 0.0%	1 6.3%	5 31.3%	6 37.5%	10 62.5%	16 4.8%
<i>Hit and Run</i>	0 0.0%	0 0.0%	0 0.0%	1 7.1%	1 7.1%	13 92.9%	14 4.2%
<i>Failure to Keep in Lane</i>	0 0.0%	0 0.0%	2 18.2%	2 18.2%	4 36.4%	7 63.6%	11 3.3%
<i>Followed Too Closely</i>	0 0.0%	0 0.0%	1 9.1%	4 36.4%	5 45.5%	6 54.5%	11 3.3%
<i>Unsafe Lane Change/Backing</i>	0 0.0%	0 0.0%	2 28.6%	1 14.3%	3 42.9%	4 57.1%	7 2.1%
<i>Ran Off Road</i>	0 0.0%	0 0.0%	1 14.3%	1 14.3%	2 28.6%	5 71.4%	7 2.1%
<i>Driving Too Fast for Conditions</i>	0 0.0%	0 0.0%	0 0.0%	1 25.0%	1 25.0%	3 75.0%	4 1.2%
<i>Object Avoidance</i>	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	2 100.0%	2 0.6%
<i>Over-Correcting/Over-Steering</i>	0 0.0%	0 0.0%	1 100.0%	0 0.0%	1 100.0%	0 0.0%	1 0.3%
<i>Drove Left of Center</i>	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
<i>Reckless Driving</i>	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
<i>Mechanical Defects</i>	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
<i>Exceeded Speed Limit</i>	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
<i>Wrong Way</i>	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
<i>Driverless Vehicle</i>	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
<b>Total Instances</b>	<b>3</b>	<b>8</b>	<b>44</b>	<b>84</b>	<b>139</b>	<b>191</b>	<b>330</b>
<b>Total Crashes</b>	<b>3</b>	<b>8</b>	<b>44</b>	<b>84</b>	<b>139</b>	<b>191</b>	<b>330</b>

\*Note: Vehicle factors are based on Vehicle 1 (V1) inputs. Blank entries are included in the Other/Unknown factor.

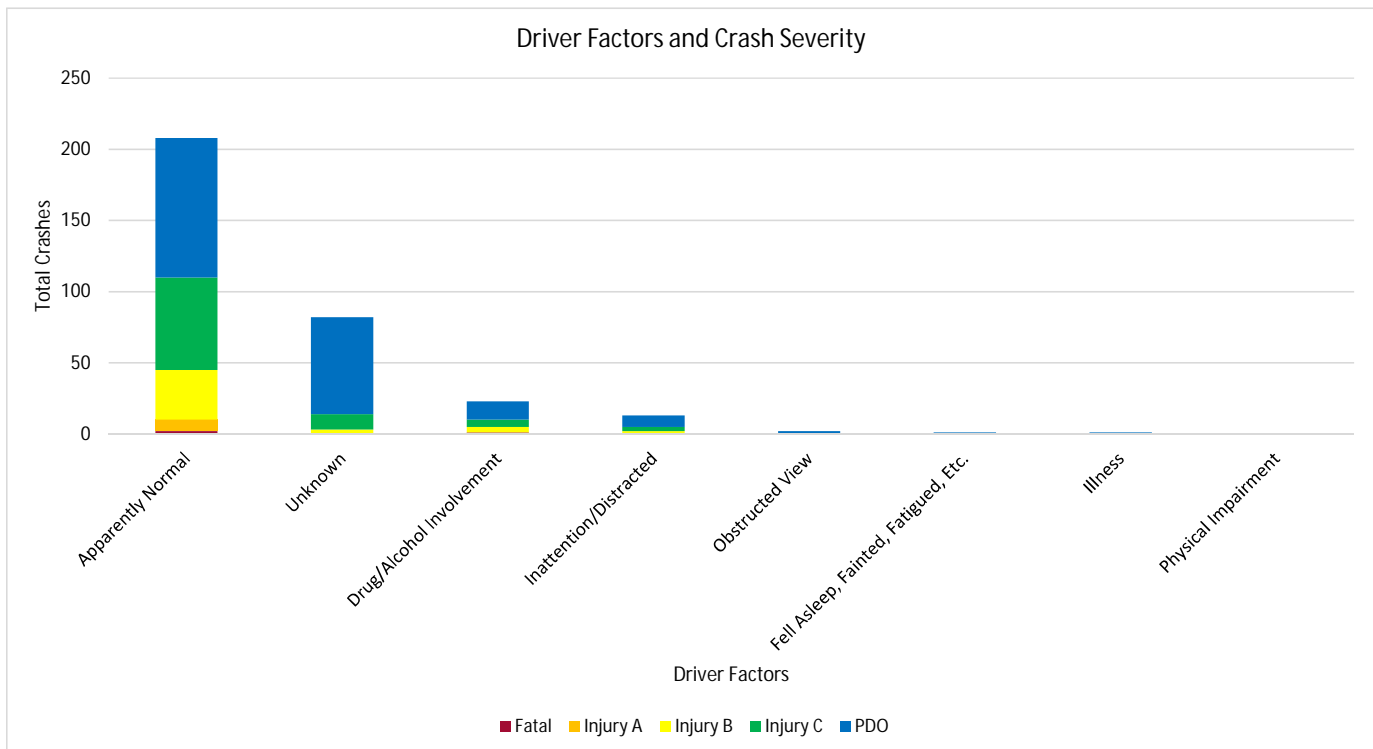
Area Crash Analysis  
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Driver Factors*							
	Fatal and Injury					PDO	Total
	Fatal	Injury A	Injury B	Injury C	Sum		
Apparently Normal	2	8	35	65	110	98	208
	1.0%	3.8%	16.8%	31.3%	52.9%	47.1%	63.0%
Unknown	0	0	3	11	14	68	82
	0.0%	0.0%	3.7%	13.4%	17.1%	82.9%	24.8%
Drug/Alcohol Involvement	1	0	4	5	10	13	23
	4.3%	0.0%	17.4%	21.7%	43.5%	56.5%	7.0%
Inattention/Distracted	0	0	2	3	5	8	13
	0.0%	0.0%	15.4%	23.1%	38.5%	61.5%	3.9%
Obstructed View	0	0	0	0	0	2	2
	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.6%
Fell Asleep, Fainted, Fatigued, Etc.	0	0	0	0	0	1	1
	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.3%
Illness	0	0	0	0	0	1	1
	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.3%
Physical Impairment	0	0	0	0	0	0	0
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Instances	3	8	44	84	139	191	330
Total Crashes	3	8	44	84	139	191	330

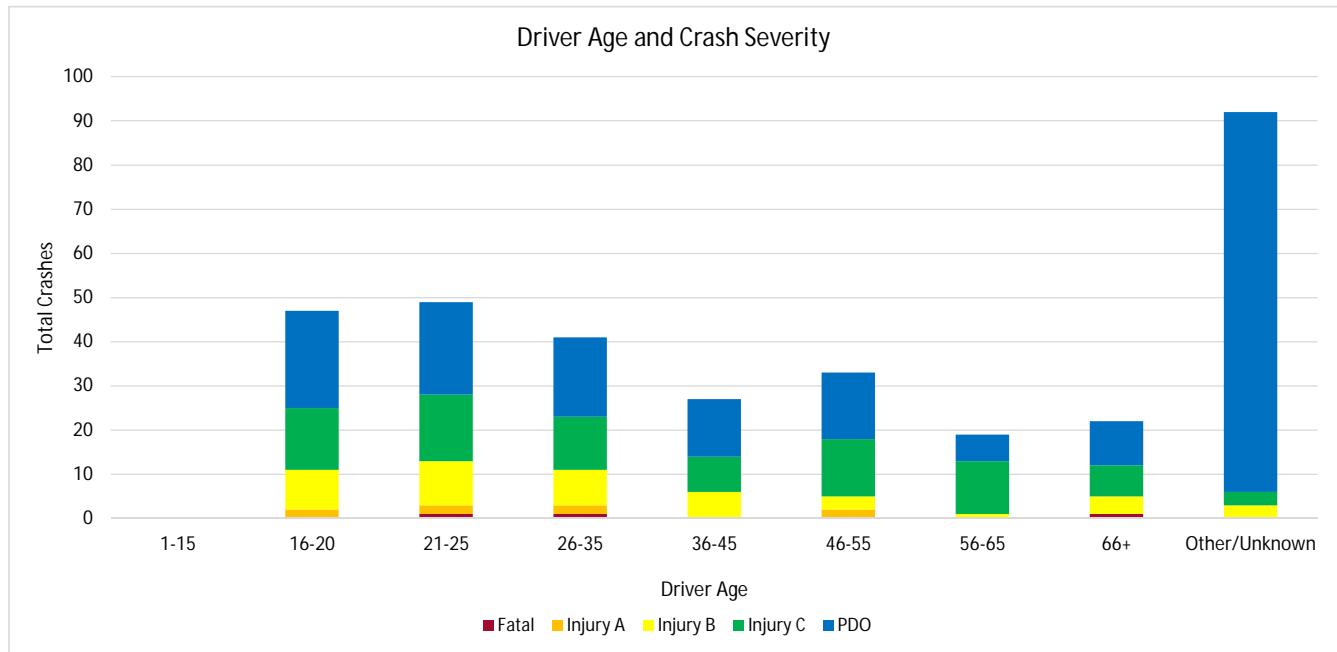
\*Note: Driver factors are based on Vehicle 1 (V1) inputs. Blank entries are included in the Other/Unknown factor.



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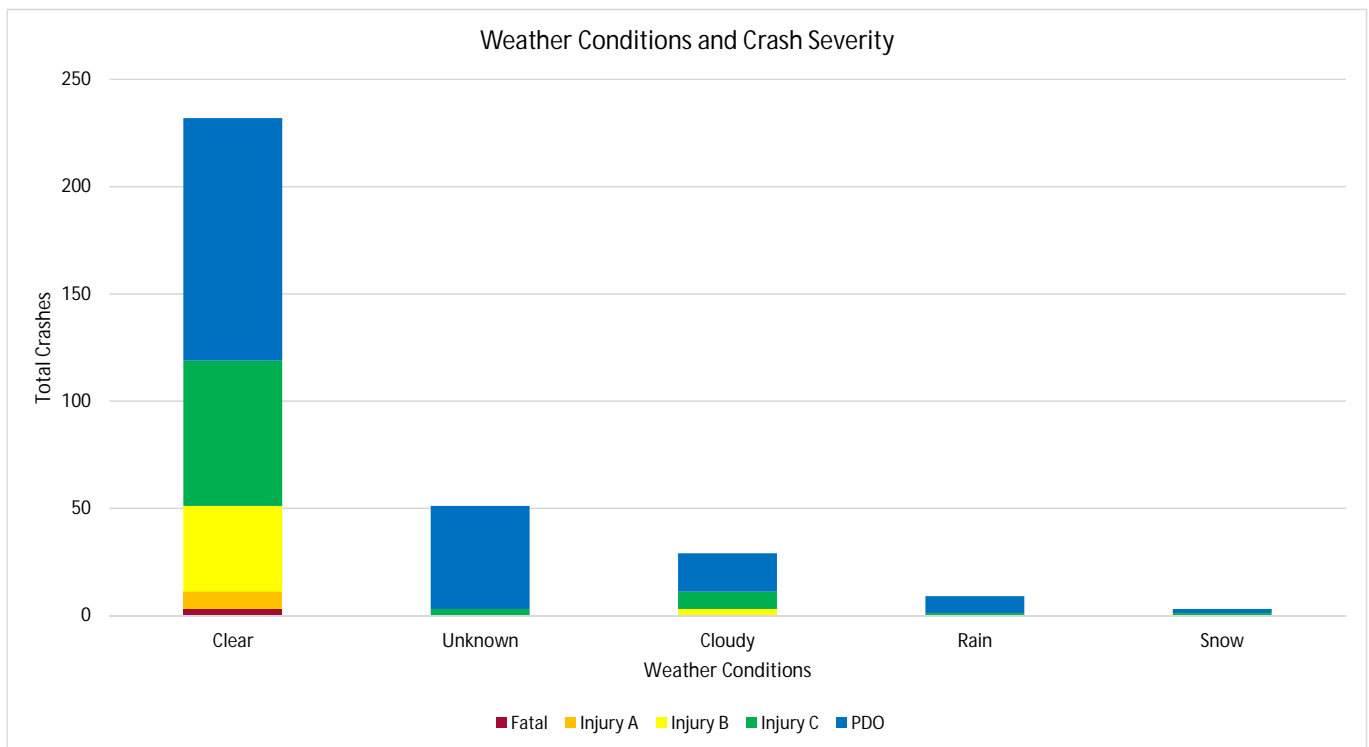
		Driver Age*					PDO	Total
		Fatal and Injury						
		Fatal	Injury A	Injury B	Injury C	Sum		
1-15		0	0	0	0	0	0	0
		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
16-20		0	2	9	14	25	22	47
		0.0%	4.3%	19.1%	29.8%	53.2%	46.8%	14.2%
21-25		1	2	10	15	28	21	49
		2.0%	4.1%	20.4%	30.6%	57.1%	42.9%	14.8%
26-35		1	2	8	12	23	18	41
		2.4%	4.9%	19.5%	29.3%	56.1%	43.9%	12.4%
36-45		0	0	6	8	14	13	27
		0.0%	0.0%	22.2%	29.6%	51.9%	48.1%	8.2%
46-55		0	2	3	13	18	15	33
		0.0%	6.1%	9.1%	39.4%	54.5%	45.5%	10.0%
56-65		0	0	1	12	13	6	19
		0.0%	0.0%	5.3%	63.2%	68.4%	31.6%	5.8%
66+		1	0	4	7	12	10	22
		4.5%	0.0%	18.2%	31.8%	54.5%	45.5%	6.7%
Other/Unknown		0	0	3	3	6	86	92
		0.0%	0.0%	3.3%	3.3%	6.5%	93.5%	27.9%
Total Crashes		3	8	44	84	139	191	330

\*Note: Driver age is based on Vehicle 1 (V1) input. Blank entries are included in the Other/Unknown category.



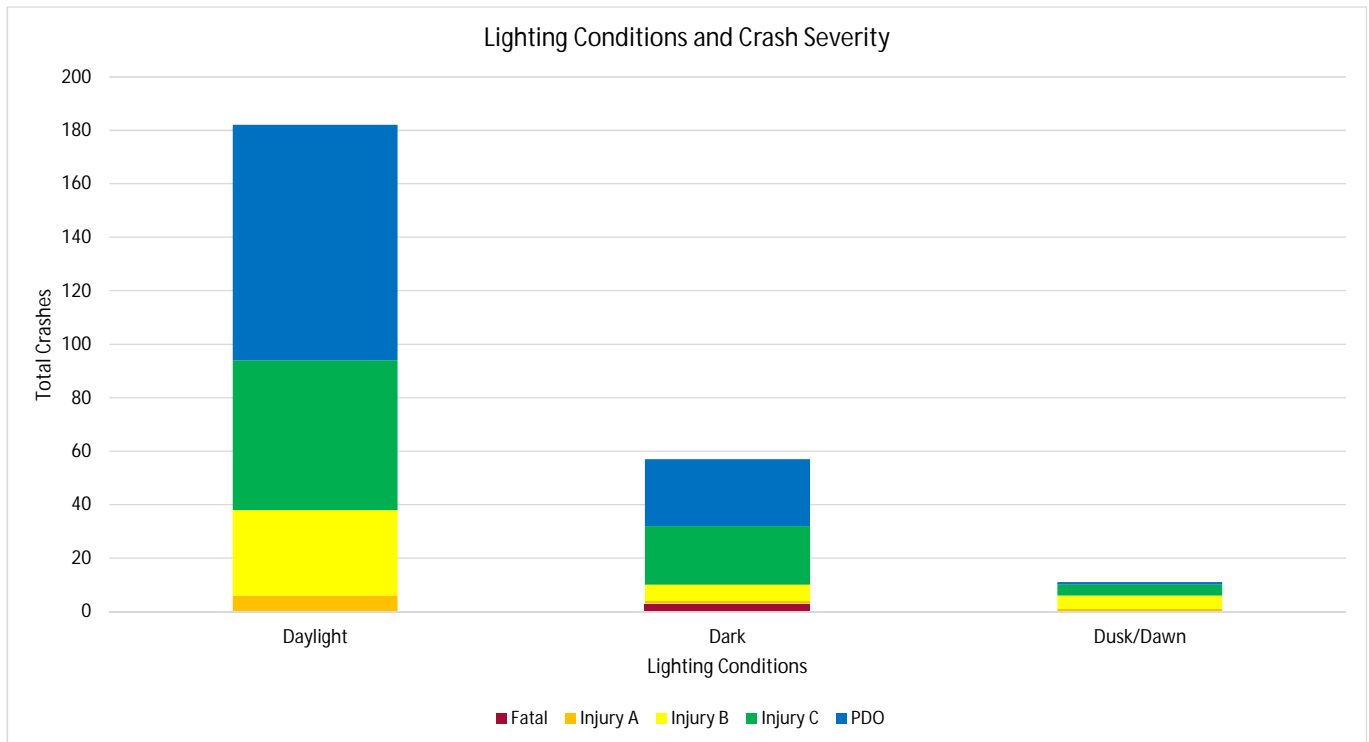
Area Crash Analysis  
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Weather Conditions							
	Fatal and Injury					PDO	Total
	Fatal	Injury A	Injury B	Injury C	Sum		
Clear	3	8	40	68	119	113	232
	1.3%	3.4%	17.2%	29.3%	51.3%	48.7%	70.3%
Unknown	0	0	0	3	3	48	51
	0.0%	0.0%	0.0%	5.9%	5.9%	94.1%	15.5%
Cloudy	0	0	3	8	11	18	29
	0.0%	0.0%	10.3%	27.6%	37.9%	62.1%	8.8%
Rain	0	0	0	1	1	8	9
	0.0%	0.0%	0.0%	11.1%	11.1%	88.9%	2.7%
Snow	0	0	0	1	1	2	3
	0.0%	0.0%	0.0%	33.3%	33.3%	66.7%	0.9%
Blowing sand, soil, dirt, snow	0	0	0	0	0	0	0
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fog, Smog, Smoke	0	0	0	0	0	0	0
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Severe Crosswinds	0	0	0	0	0	0	0
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Instances	3	8	43	81	124	189	324
Total Crashes	3	8	44	84	139	191	330



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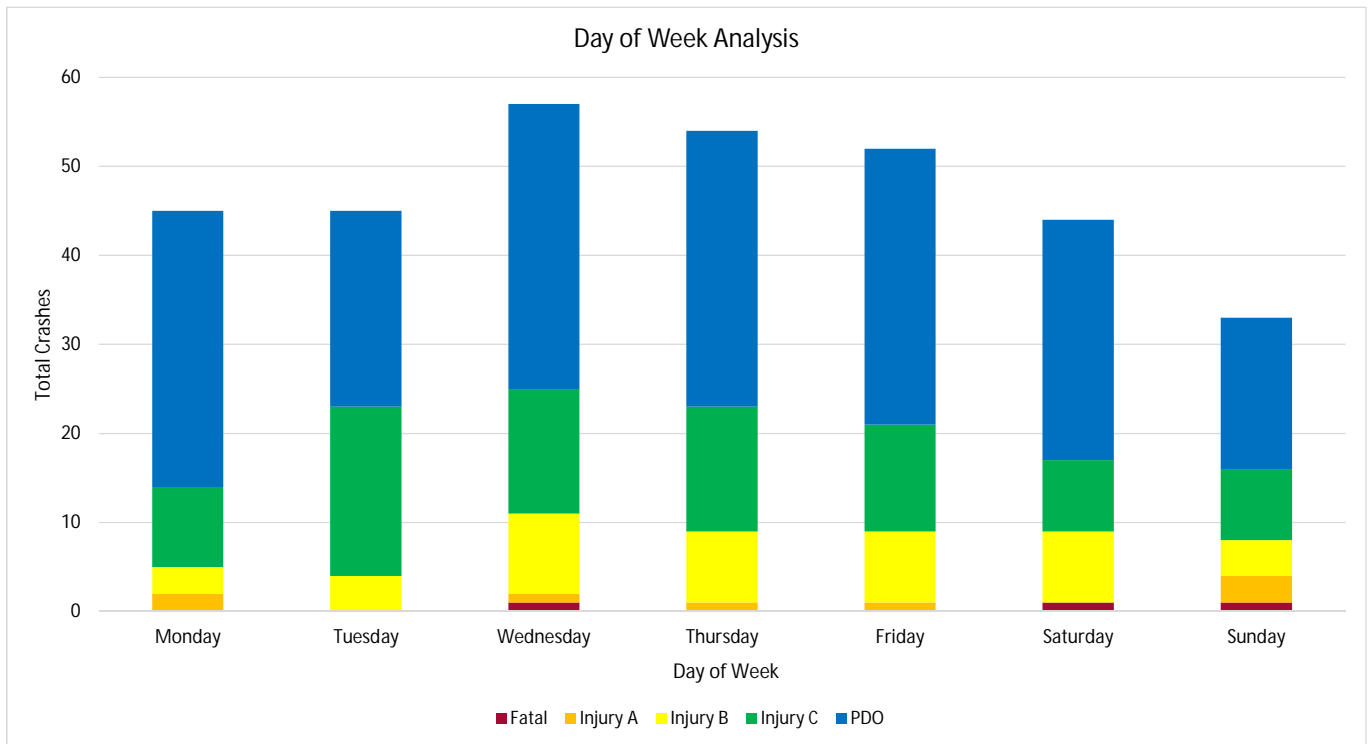
Lighting Conditions							
	Fatal and Injury					PDO	Total
	Fatal	Injury A	Injury B	Injury C	Sum		
Daylight	0	6	32	56	94	88	182
	0.0%	3.3%	17.6%	30.8%	51.6%	48.4%	55.2%
Dark	3	1	6	22	32	25	57
	5.3%	1.8%	10.5%	38.6%	56.1%	43.9%	17.3%
Dusk/Dawn	0	1	5	4	10	1	11
	0.0%	9.1%	45.5%	36.4%	90.9%	9.1%	3.3%
Unknown	0	0	1	2	3	77	80
	0.0%	0.0%	1.3%	2.5%	3.8%	96.3%	24.2%
Total Crashes	3	8	44	84	139	191	330





Area Crash Analysis  
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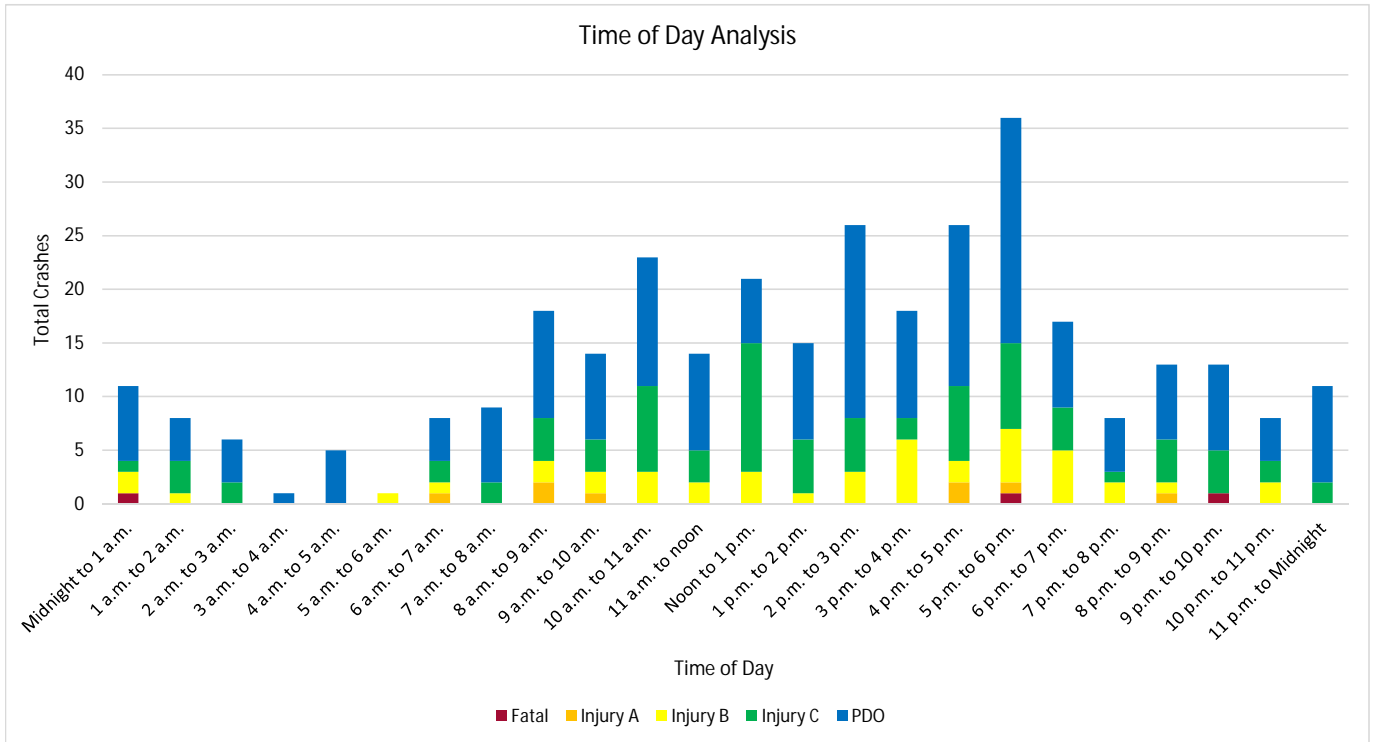
	Day of Week						PDO	Total
	Fatal and Injury							
	Fatal	Injury A	Injury B	Injury C	Sum			
Monday	0	2	3	9	14	31	45	
	0.0%	4.4%	6.7%	20.0%	31.1%	68.9%	13.6%	
Tuesday	1	1	4	19	25	22	45	
	2.2%	2.2%	8.9%	42.2%	55.6%	48.9%	13.6%	
Wednesday	0	1	9	14	24	32	57	
	0.0%	1.8%	15.8%	24.6%	42.1%	56.1%	17.3%	
Thursday	1	3	8	14	26	31	54	
	1.9%	5.6%	14.8%	25.9%	48.1%	57.4%	16.4%	
Friday	0	0	8	12	20	31	52	
	0.0%	0.0%	15.4%	23.1%	38.5%	59.6%	15.8%	
Saturday	0	0	8	8	16	27	44	
	0.0%	0.0%	18.2%	18.2%	36.4%	61.4%	13.3%	
Sunday	0	0	4	8	12	17	33	
	0.0%	0.0%	12.1%	24.2%	36.4%	51.5%	10.0%	
Total Crashes	2	7	44	84	137	191	330	



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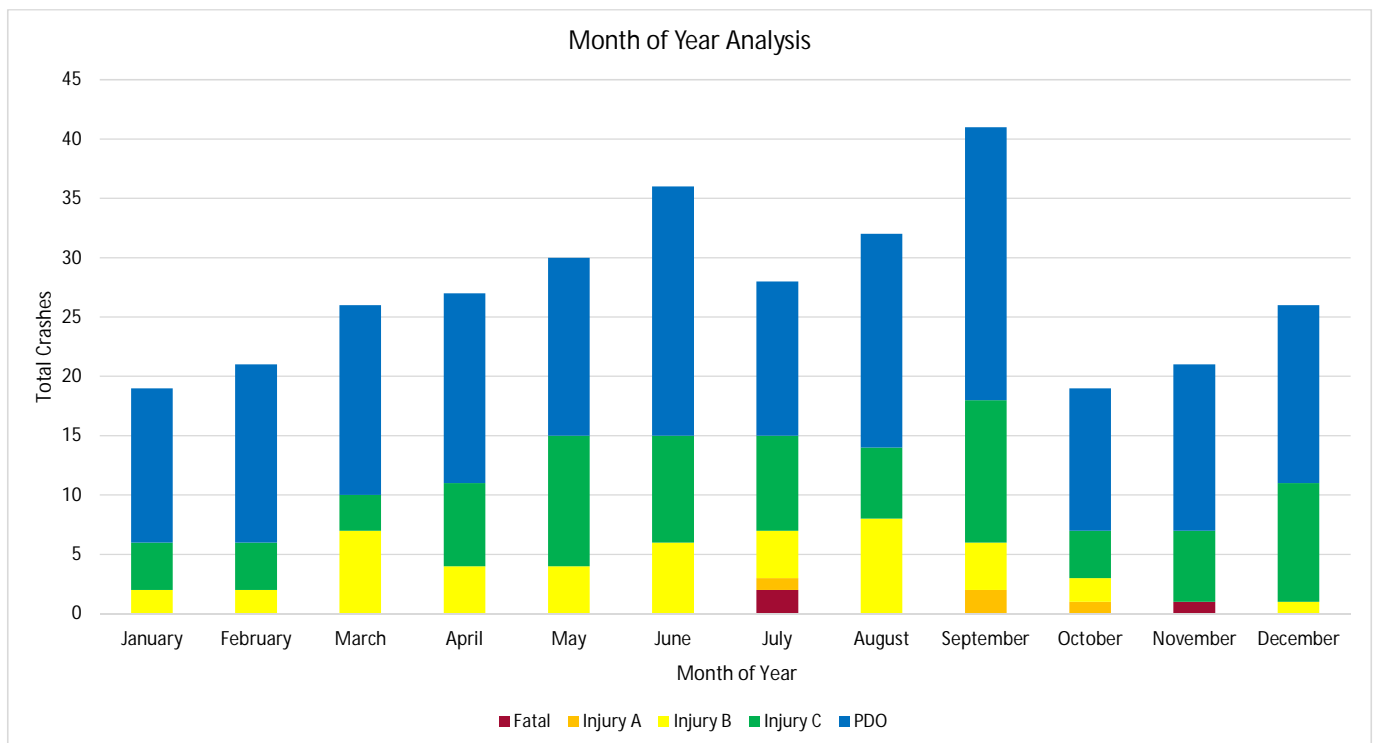
	Time of Day						PDO	Total
	Fatal and Injury							
	Fatal	Injury A	Injury B	Injury C	Sum			
Midnight to 1 a.m.	1	0	2	1	4	7	11	
	9.1%	0.0%	18.2%	9.1%	36.4%	63.6%	3.3%	
1 a.m. to 2 a.m.	0	0	1	3	4	4	8	
	0.0%	0.0%	12.5%	37.5%	50.0%	50.0%	2.4%	
2 a.m. to 3 a.m.	0	0	0	2	2	4	6	
	0.0%	0.0%	0.0%	33.3%	33.3%	66.7%	1.8%	
3 a.m. to 4 a.m.	0	0	0	0	0	1	1	
	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.3%	
4 a.m. to 5 a.m.	0	0	0	0	0	5	5	
	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	1.5%	
5 a.m. to 6 a.m.	0	0	1	0	1	0	1	
	0.0%	0.0%	100.0%	0.0%	100.0%	0.0%	0.3%	
6 a.m. to 7 a.m.	0	1	1	2	4	4	8	
	0.0%	12.5%	12.5%	25.0%	50.0%	50.0%	2.4%	
7 a.m. to 8 a.m.	0	0	0	2	2	7	9	
	0.0%	0.0%	0.0%	22.2%	22.2%	77.8%	2.7%	
8 a.m. to 9 a.m.	0	2	2	4	8	10	18	
	0.0%	11.1%	11.1%	22.2%	44.4%	55.6%	5.5%	
9 a.m. to 10 a.m.	0	1	2	3	6	8	14	
	0.0%	7.1%	14.3%	21.4%	42.9%	57.1%	4.2%	
10 a.m. to 11 a.m.	0	0	3	8	11	12	23	
	0.0%	0.0%	13.0%	34.8%	47.8%	52.2%	7.0%	
11 a.m. to noon	0	0	2	3	5	9	14	
	0.0%	0.0%	14.3%	21.4%	35.7%	64.3%	4.2%	
Noon to 1 p.m.	0	0	3	12	15	6	21	
	0.0%	0.0%	14.3%	57.1%	71.4%	28.6%	6.4%	
1 p.m. to 2 p.m.	0	0	1	5	6	9	15	
	0.0%	0.0%	6.7%	33.3%	40.0%	60.0%	4.5%	
2 p.m. to 3 p.m.	0	0	3	5	8	18	26	
	0.0%	0.0%	11.5%	19.2%	30.8%	69.2%	7.9%	
3 p.m. to 4 p.m.	0	0	6	2	8	10	18	
	0.0%	0.0%	33.3%	11.1%	44.4%	55.6%	5.5%	
4 p.m. to 5 p.m.	0	2	2	7	11	15	26	
	0.0%	7.7%	7.7%	26.9%	42.3%	57.7%	7.9%	
5 p.m. to 6 p.m.	1	1	5	8	15	21	36	
	2.8%	2.8%	13.9%	22.2%	41.7%	58.3%	10.9%	
6 p.m. to 7 p.m.	0	0	5	4	9	8	17	
	0.0%	0.0%	29.4%	23.5%	52.9%	47.1%	5.2%	
7 p.m. to 8 p.m.	0	0	2	1	3	5	8	
	0.0%	0.0%	25.0%	12.5%	37.5%	62.5%	2.4%	
8 p.m. to 9 p.m.	0	1	1	4	6	7	13	
	0.0%	7.7%	7.7%	30.8%	46.2%	53.8%	3.9%	
9 p.m. to 10 p.m.	1	0	0	4	5	8	13	
	7.7%	0.0%	0.0%	30.8%	38.5%	61.5%	3.9%	
10 p.m. to 11 p.m.	0	0	2	2	4	4	8	
	0.0%	0.0%	25.0%	25.0%	50.0%	50.0%	2.4%	
11 p.m. to Midnight	0	0	0	2	2	9	11	
	0.0%	0.0%	0.0%	18.2%	18.2%	81.8%	3.3%	
Total Crashes	3	8	44	84	139	191	330	

Area Crash Analysis  
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Area Crash Analysis  
01 JAN 15 - 31 DEC 17  
University Study Area

		Month of Year					PDO	Total
		Fatal and Injury						
		Fatal	Injury A	Injury B	Injury C	Sum		
January		0	0	2	4	6	13	19
		0.0%	0.0%	10.5%	21.1%	31.6%	68.4%	5.8%
February		0	1	2	4	7	15	22
		0.0%	4.5%	9.1%	18.2%	31.8%	68.2%	6.7%
March		0	1	7	3	11	16	27
		0.0%	3.7%	25.9%	11.1%	40.7%	59.3%	8.2%
April		0	1	4	7	12	16	28
		0.0%	3.6%	14.3%	25.0%	42.9%	57.1%	8.5%
May		0	0	4	11	15	15	30
		0.0%	0.0%	13.3%	36.7%	50.0%	50.0%	9.1%
June		0	0	6	9	15	21	36
		0.0%	0.0%	16.7%	25.0%	41.7%	58.3%	10.9%
July		2	1	4	8	15	13	28
		7.1%	3.6%	14.3%	28.6%	53.6%	46.4%	8.5%
August		0	0	8	6	14	18	32
		0.0%	0.0%	25.0%	18.8%	43.8%	56.3%	9.7%
September		0	1	4	12	17	23	40
		0.0%	2.5%	10.0%	30.0%	42.5%	57.5%	12.1%
October		0	1	2	4	7	12	19
		0.0%	5.3%	10.5%	21.1%	36.8%	63.2%	5.8%
November		1	0	0	6	7	14	21
		4.8%	0.0%	0.0%	28.6%	33.3%	66.7%	6.4%
December		0	2	1	10	13	15	28
		0.0%	7.1%	3.6%	35.7%	46.4%	53.6%	8.5%
Total Crashes		3	8	44	84	139	191	330



**APPENDIX E**  
**LAND USE TECHNICAL MEMORANDUM**

# TECHNICAL MEMORANDUM

To: Xuan Wang, PhD, PE, PTP, RSP  
RTC of Washoe County

From: Molly O'Brien, PE, PTOE, RSP  
Kimley-Horn and Associates, Inc.

Date: August 12, 2019 – **REVISED December 16, 2019**

Subject: University Transportation Area Study – Land Use

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This Technical Memorandum has been prepared to provide a summary of the current and anticipated land use changes within the study area of the University Transportation Area Study. Data included in this memorandum was obtained through coordination with the City of Reno, the Truckee Meadows Regional Planning Agency (TMRPA), University of Nevada, Reno (UNR), and the Regional Transportation Commission of Washoe County (RTC).

## 1. Study Area

The project includes a study of multimodal transportation and roadway operations in the area surrounding and within the UNR campus with a focus south of campus generally from 9<sup>th</sup> Street to 6<sup>th</sup> Street (north to south) and Sierra Street to Valley Road (west to east). This Technical Memorandum includes land use data from parcels within or near the study area. While not many details are available about some of these planned developments, they are helpful in understanding potential changes in travel behavior.

### 1.1. TMRPA – Approved Dwelling Units

The TMRPA maintains a database of developments with approved dwelling units; therefore, their list does not include any developments that are still in the planning/entitlement process. The following developments were available on the TMRPA website:

- 235 Ralston Street (Secunda Vita) – 28 Dwelling Units (Ralston Street and 2<sup>nd</sup> Street).
- The Cottages at Comstock – 282 Dwelling Units (North of McCarran Boulevard, East of Virginia Street).
- University Ridge – 23 Units Remaining Approved (488 total) (Socrates Drive) – this development is essentially built out, but is approved for up to 23 additional units, with no known plan to build them.

## 1.2. The City of Reno

The City of Reno provided the following developments that they were aware of near the study area:

- 1669 N. Virginia Street – “Identity II”, a five-story structure with 125 units and 300 bedrooms (northwest corner of Virginia Street and 16<sup>th</sup> Street).
- 1651 N. Virginia Street – “Reno Park Place” with 267 units and 762 bedrooms plus 349 parking spaces (southwest corner of Virginia Street and 16<sup>th</sup> Street).
- 661 N. Center Street – “Canyon Flats” with 158 units and 508 bedrooms and 177 parking spaces (southwest corner of Center Street and 7<sup>th</sup> Street).
- 1461 N. Virginia Street – “GMH Academy” 196 dwelling units with 755 beds.

At the time this Technical Memorandum was prepared, information on the number of beds per bedroom was not available.

The City of Reno provided the following additional developments in October 2019 which were included for the scenario model runs:

- 3678 Highland Avenue – Student housing with 178 dwelling units and 456 beds.
- North of the intersection of Wells Avenue and Winston Drive – “LIV+” student housing with 400 dwelling units.
- Between Lake Street, Evans Street and north of the Truckee River – “T3” mixed use development with 643 dwelling units, and 434,500 SF of non-residential space (office/retail).
- 40 East 4<sup>th</sup> Street – “P3 Partners” 124 hotel rooms and 60,000 SF retail.
- Six sites generally along W. 4<sup>th</sup> Street and W. 5<sup>th</sup> Street – “Jacobs” residential/retail/entertainment, with 2,000 dwelling units and 170,000 SF of non-residential area (150 hotel rooms, retail, indoor and outdoor event space).
- 301 State Street – 64 dwelling units.
- 219 Court Street – Hotel/convention/office with 75,270 SF office space, 257 hotel rooms, 67,600 SF convention/meeting space, and 46 condo units.
- South of Highland Avenue, west of Valley Road, and north of E. 9<sup>th</sup> Street – Student housing with 180 units, and 630 beds.

### 1.3. RTC

The RTC will expand transit service to UNR in 2021 with the extension of the RAPID route to campus. Some land use changes associated with this project were provided:

- The Virginia Street RAPID Extension project including a transit station at Virginia Street and 9<sup>th</sup> Street may change some land uses, particularly those on the east side of Virginia Street between 8<sup>th</sup> Street and 9<sup>th</sup> Street. The existing bookstore, restaurant, hotels, and residence will be demolished, in advance of the new development supporting the transit route, stop, and future UNR developments to the east as shown in **Figure 1**.
- Four additional transit stops will be developed as part of this project, but with less direct impact to the existing land uses.



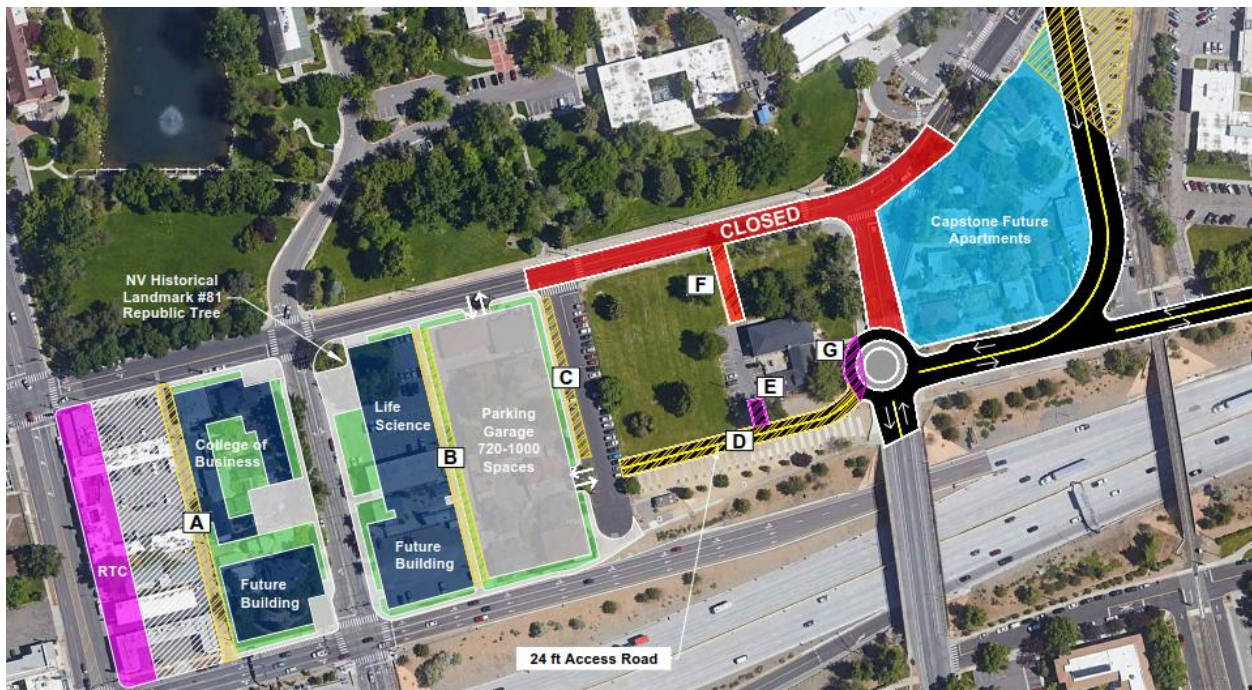
Figure 1 – RTC plans for Virginia and 9<sup>th</sup> Transit Stop



## 1.4. UNR

The following developments and land use changes were provided by UNR as shown in **Figure 2**:

- Multi-family housing development “Capstone Apartments” planned for the area at/near Record Street, with the realignment of Evans Avenue. 179 dwelling units with 636 beds.
- Multi-level, above-ground parking garage with approximately 1,000 parking spaces at 9<sup>th</sup> Street and Lake Street including a potential new roadway connection to Evans Avenue and a pedestrian bridge across 9<sup>th</sup> Street. A 2017 study of UNR’s Brian Whalen parking garage found that the 984 parking spaces generated 602 peak hour trips. Based on the UNR study, and parking counts at other university parking garages, a garage with 1,000 spaces is anticipated to generate vehicle trips on the order of 250 – 600 trips (in and out) during a typical weekday AM or PM peak hour.
- College of Business Building – Approximately 110,000 – 110,000 SF; 124 offices, 91 workstations; six classrooms, three computer labs; two large meeting rooms; two 200-person lecture halls; retail eating space. Anticipated opening in summer 2023.
- Life Sciences Building – Approximately 80,000 – 100,000 SF; several labs, offices, support space. Anticipated opening no earlier than 2024.



**Figure 2 – Draft UNR plans for south campus**

**Figure 3** summarizes the land use modifications proposed in and near the study area. Accompanying this Technical Memorandum is a GIS shapefile identifying the proposed land use changes including some not included in **Figure 3**.

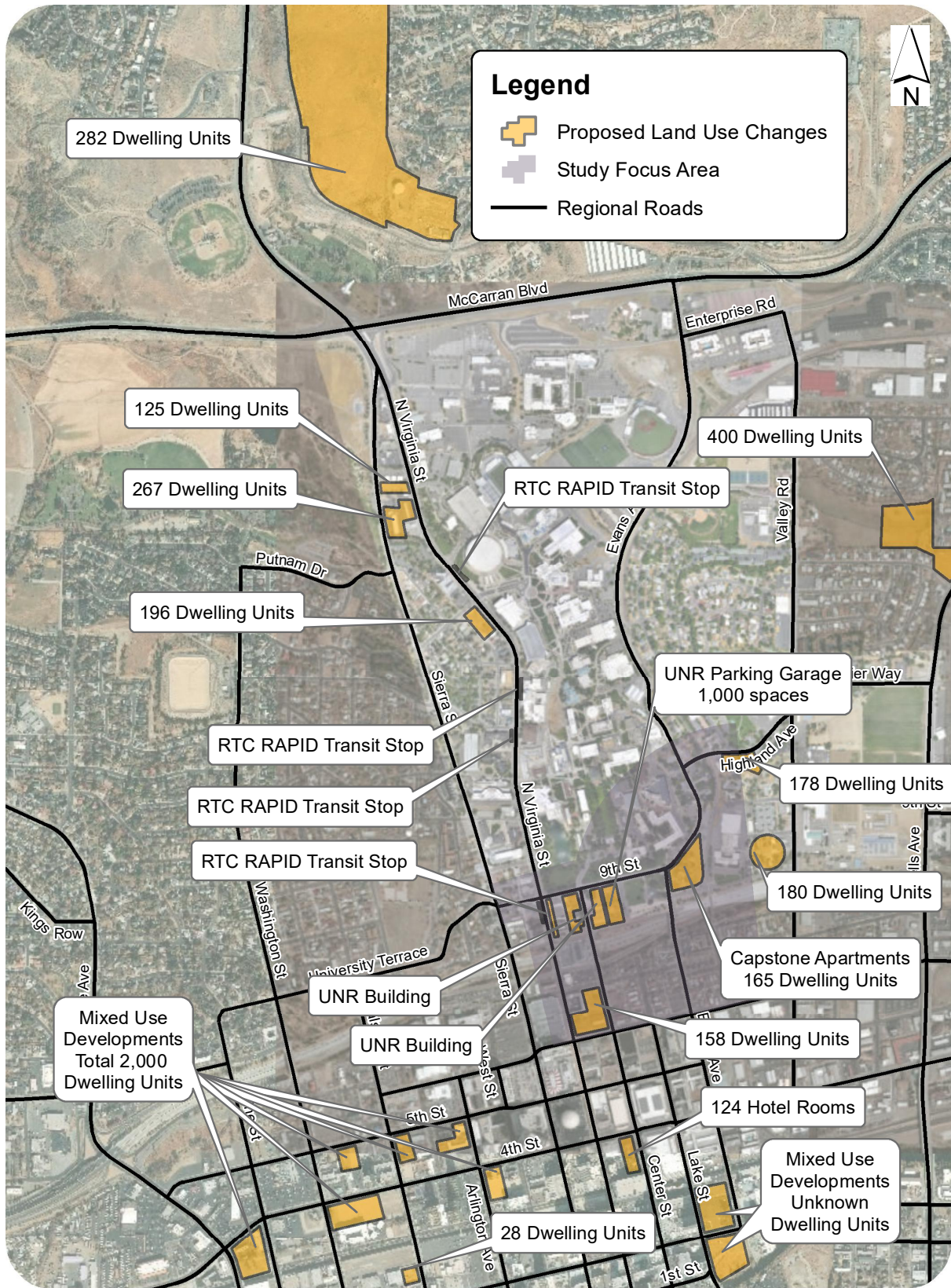


Figure 3 – Proposed Land Use Changes

**APPENDIX F**  
**OUTREACH SUMMARY**

# OUTREACH MEMORANDUM

## 1.1 Introduction

A primary goal of the University Area Transportation Study is to improve connectivity, safety, mobility, and access for everyone on and adjacent to the UNR campus. Community engagement is a key part of this effort. The project consultant team developed three surveys: an online public survey, and two intercept surveys for which responses were collected at two in-person pop-up meetings. The project team also conducted walking audits of the area immediately south of campus and held a public meeting at which preliminary results from the surveys and walking audits were shared with participants. This section summarizes the input received from community members through this outreach process.

## 1.2 Online Survey

The online survey was open to the general public from June 26 to July 22, 2019 and was publicized throughout Reno as well as on campus. The survey asked questions about respondents' transportation priorities, typical travel patterns, and improvements they would like to see regarding transportation on campus. A total of 137 people completed the survey. Results are discussed below.

### 1.2.1 Demographics

Roughly equal numbers of students, faculty members, and local residents took the survey. Nearly half of the respondents were between the ages of 25 and 40 years; approximately a quarter were between 18 and 24.

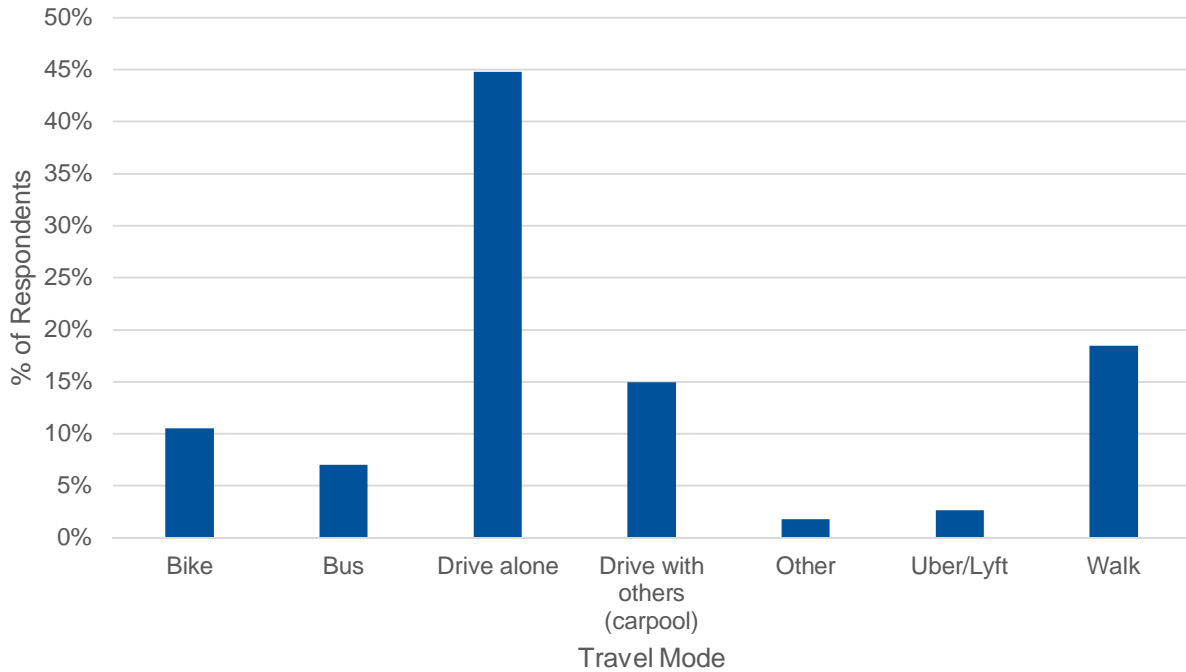
### 1.2.2 Transportation Priorities

The first survey question asked respondents to choose and rank four elements they consider to be most important for improving transportation south of the UNR campus. The element chosen most frequently was pedestrian elements (21 percent of people included pedestrian elements in the top four), followed by traffic and travel speeds (15 percent) and bicycle elements (15 percent).

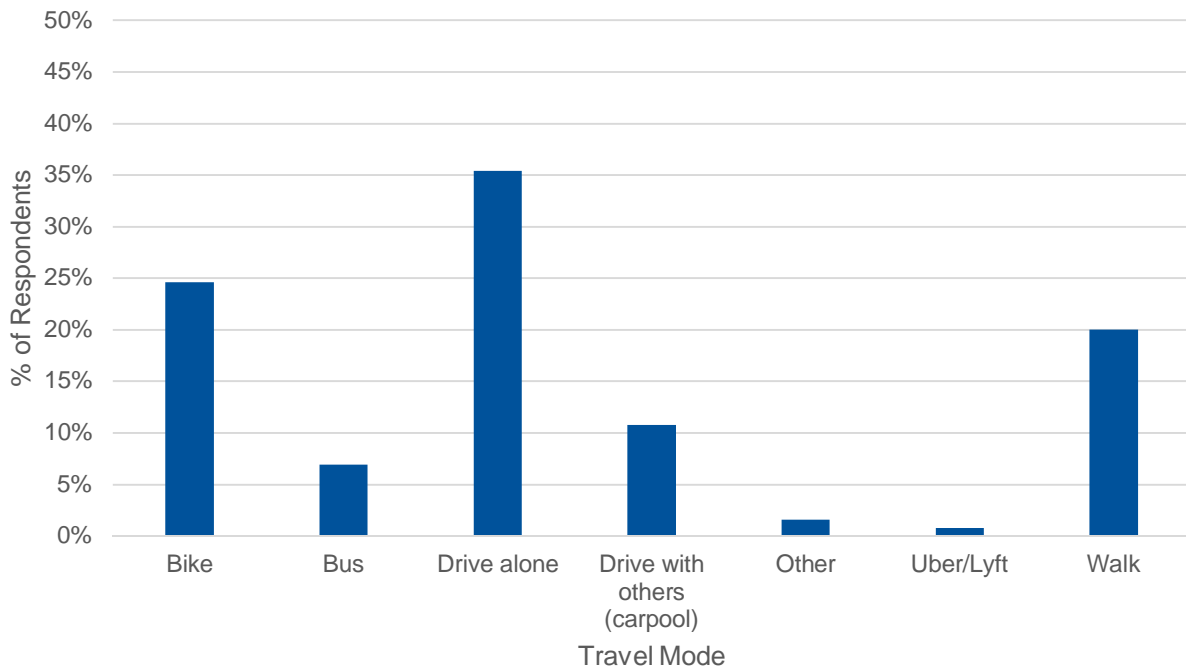
### 1.2.3 Travel Mode

The second question asked respondents how they typically travel to and from the UNR campus on a sunny day and on a cold or rainy day. Approximately 45 percent of people report that they typically walk or bike when it is sunny, compared to 35 percent who drive alone. When it is cold or rainy, a significant proportion (29 percent) still walk or bike while 45 percent drive alone. Transit mode share is constant at seven percent of respondents regardless of weather.

The rates of bicycling to campus appear to be the most impacted by weather, with the number of people biking on a cold or rainy dropping by more than half that of a sunny day. Nearly the same percentage of people walk on a cold or rainy day compared to a sunny one. When weather prevents people from walking or biking, they appear to drive alone, carpool, or use Uber or Lyft instead. **Figure 1** and **Figure 2** illustrate the distribution of respondents by travel mode for each type of weather.



**Figure 1 – Mode Share (Warm and Sunny Day)**



**Figure 2 – Mode Share (Cold or Rainy Day)**

### 1.2.4 Walking, Biking, and Transit Improvements

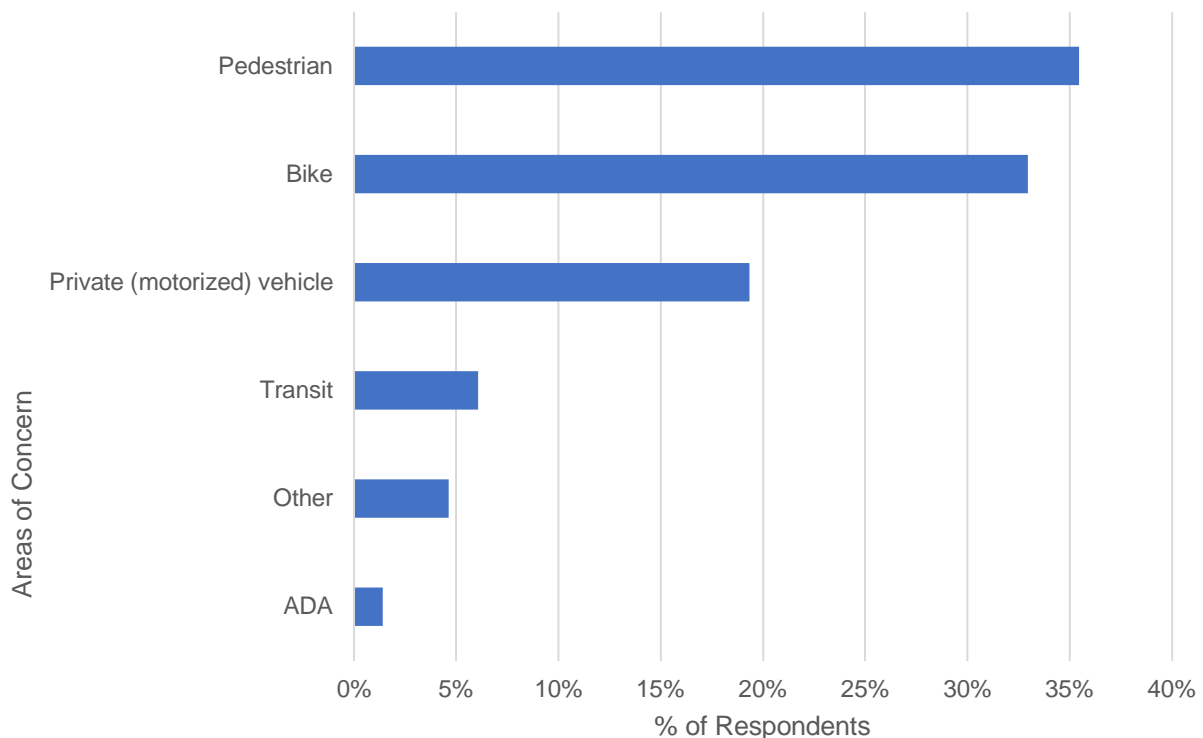
The survey asked respondents to choose improvements that would be most likely to encourage them to walk, bike, and take transit more frequently to and from campus. For walking, respondents most commonly chose improvements to existing sidewalks (18 percent), lighting (17 percent), and traffic safety (16 percent). For biking, respondents most frequently chose the addition of new bike lanes (21 percent), improvements to existing bike lanes (17 percent), and the construction of bike lanes that are physically protected from traffic (16 percent). For transit, improving route directness and speed (31 percent), increasing frequency (25 percent), and providing more weekend and evening service (18 percent) would encourage respondents to ride transit more often.

### 1.2.5 Driving and Carpooling Improvements

To improve driving and carpooling to and from campus, 40 percent of respondents indicated a preference for improvements to, and additional, parking. Approximately 30 percent would like to have more carpooling opportunities.

### 1.2.6 Areas of Concern

The survey also asked respondents to place pins on a map of campus corresponding to “areas of concern” for different elements of transportation, including pedestrian, bike, transit, private (motorized) vehicle, Americans with Disabilities Act (ADA), or other. People identified 279 such areas. The majority of map pins related to pedestrian (35 percent) and bicycle (33 percent) concerns. **Figure 3** displays the percentage of map markers by type.



**Figure 3 – Areas of Concern by Type**

### 1.3 Pop-up Meeting #1 – UNR Campus

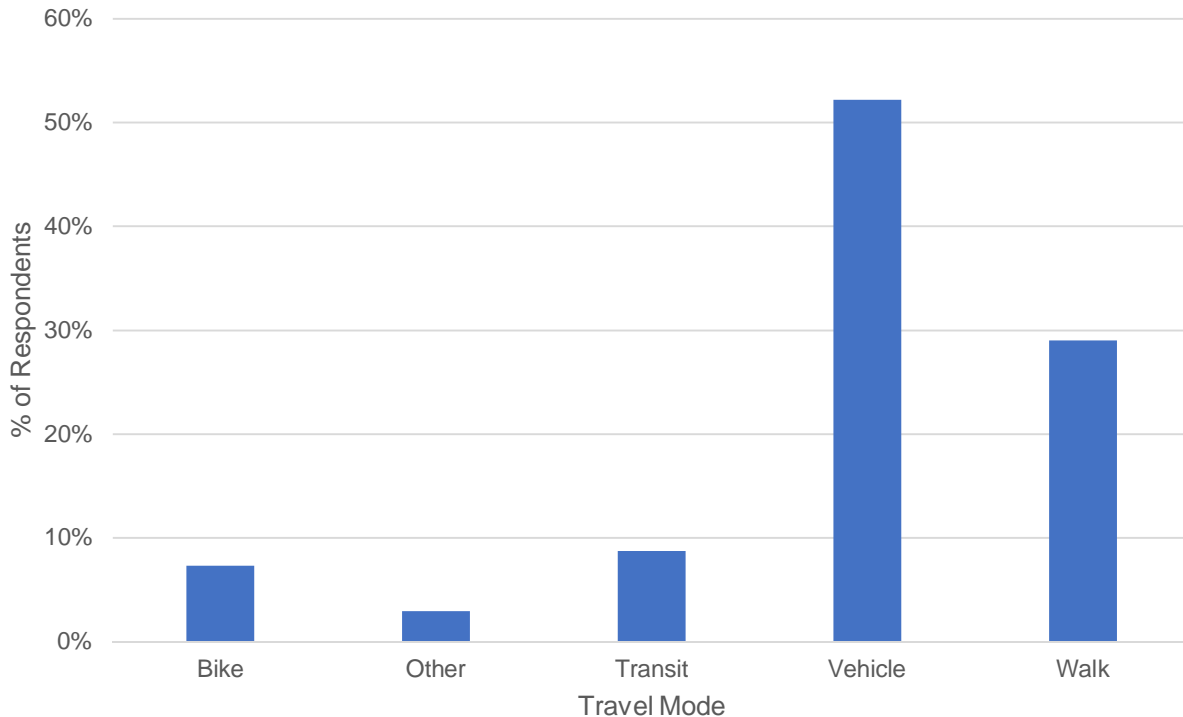
On Thursday, May 2, members of the RTC and project consultant team staffed a booth at the Joe Crowley Student Union from 11AM to 1PM to publicize the study and to gather input from passersby. Over 200 survey cards, which included a URL and QR code for the online survey, were distributed. Team members conducted 70 intercept surveys and collected more than 107 comments from students, faculty, and other university staff. The intercept survey asked respondents about their occupation, age, gender, and how they typically travel to campus. It also included an Areas of Concern map like that used in the online survey.

#### 1.3.1 Demographics

The majority of intercept survey takers were students (85 percent), female (67 percent),<sup>1</sup> and between the ages of 18 and 24 years.

#### 1.3.2 Travel Mode

Most respondents typically drive alone (52 percent) or walk to campus (29 percent). **Figure 4** illustrates the distribution of travel mode share from the intercept surveys.

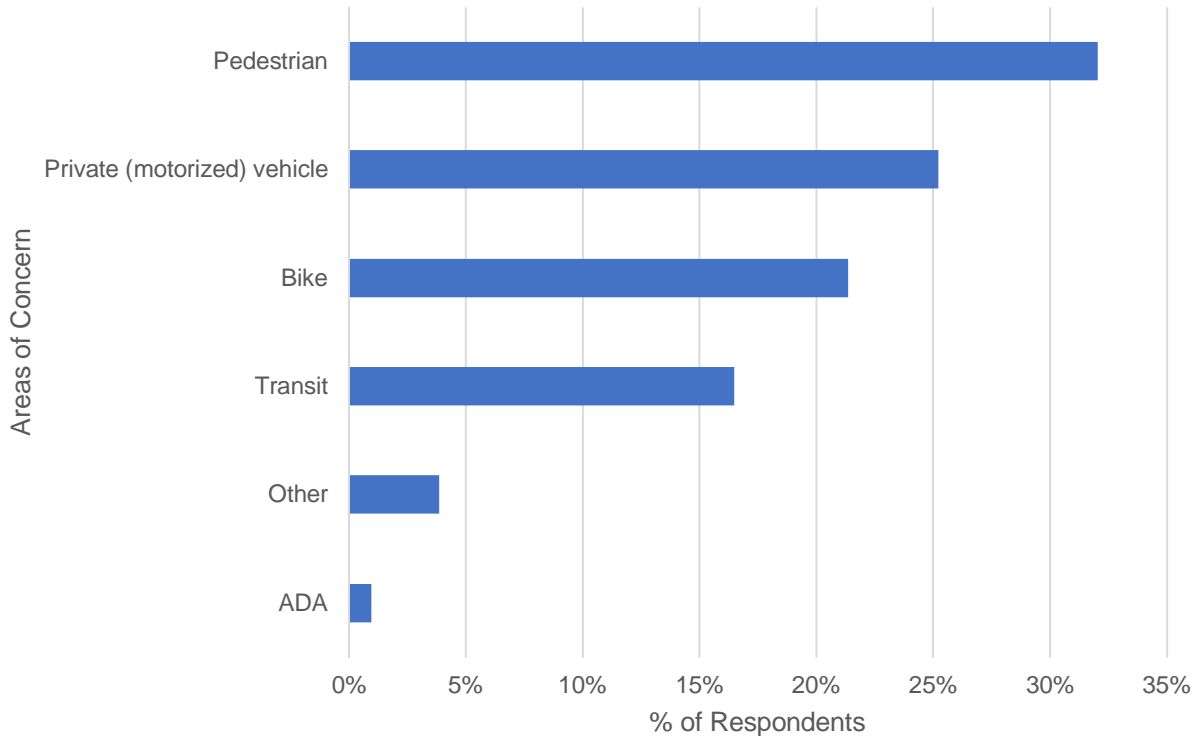


**Figure 4 – Mode Share (Intercept Survey)**

<sup>1</sup> Nine percent of respondents did not include their gender.

### 1.3.3 Areas of Concern

Intercept survey respondents identified 103 areas of concern. **Figure 5** displays the percentage of map markers by type. The most common marker type was pedestrian (35 percent), followed by vehicle (25 percent), and bike (21 percent).



**Figure 5 – Areas of Concern by Type (Intercept Survey)**

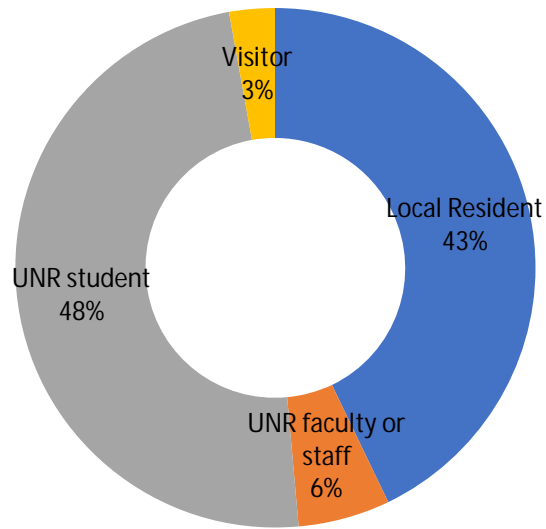
## 1.4 Pop-up Meeting #2 – Food Truck Friday

On Friday, August 23, members of the RTC and project consultant team staffed a booth at the Food Truck Friday to publicize the study and to gather input from passersby. Over 200 survey cards, which included a URL and QR code for the online survey, were distributed. Team members conducted intercept surveys and collected comments from the general public, UNR students, faculty, and other university staff. The intercept survey asked respondents about their occupation, age, gender, and how they typically travel to campus. It also included an Areas of Concern map like that used in the online survey.

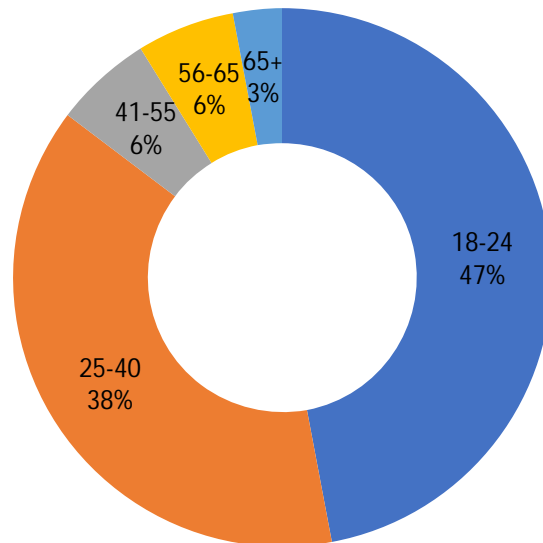
### 1.4.1 Demographics

The survey was completed primarily by students (48%) and local residents (43%), with only 6% of responses coming from faculty and staff (see **Figure 6**). Nearly half of respondents were between the ages of 18 and 24, with another 38% of respondents between 25 and 40 (see **Figure 7**).





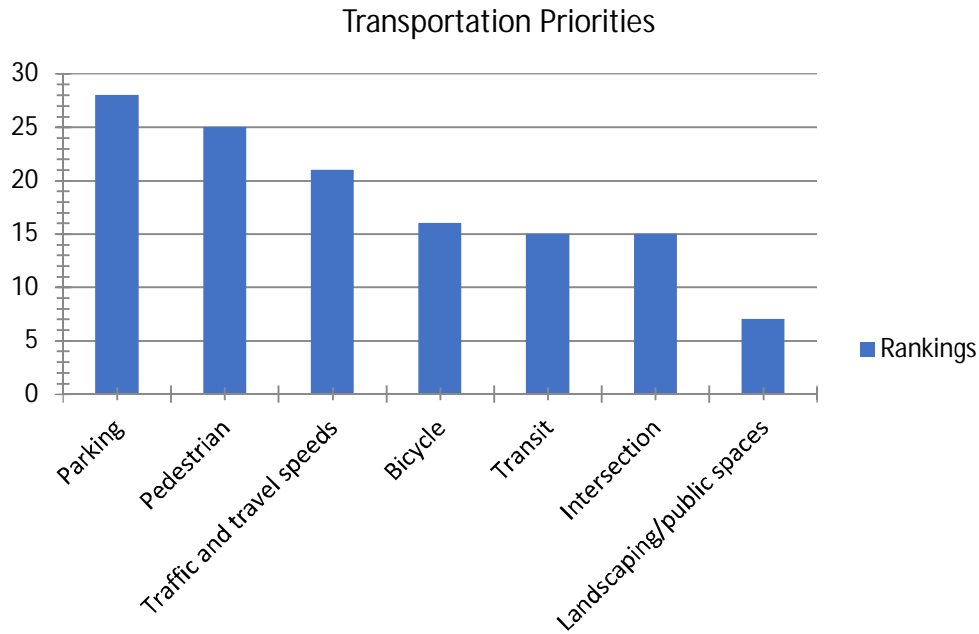
**Figure 6 – Relationship to University**



**Figure 7 – Age and Demographics**

#### 1.4.2 Transportation Priorities

Respondents were asked to rank their top four transportation priorities. Top four choices were parking, pedestrian, traffic and travel speeds, and bicycle. A summary of all responses is located in **Figure 8**.

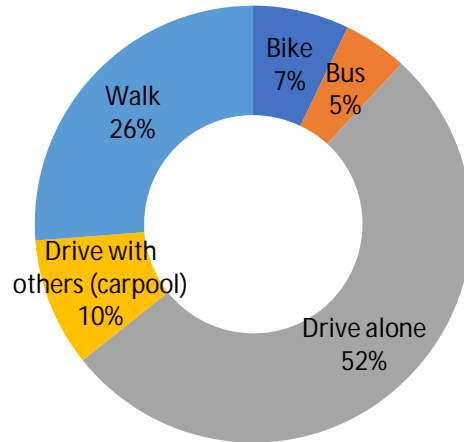


**Figure 8 – Transportation Priorities**

### 1.4.3 Travel Mode

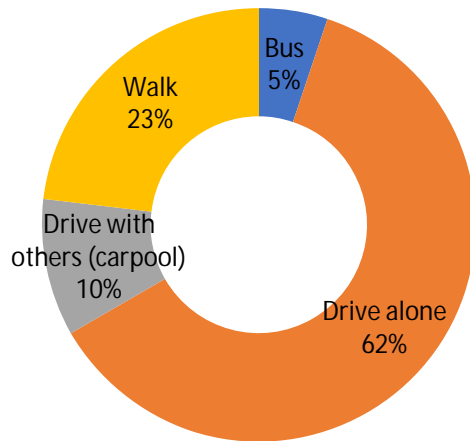
The survey asked respondents about their typical modes of transportation; and what UNR could do to encourage walking, biking, transit, and carpooling. More than half of respondents drove alone and one quarter walked on sunny days. The percentage of those who walked did not change much on cloudy days, however, those who drove alone jumped to 62%, with trips seemingly being diverted away from biking. **Figure 9** and **Figure 10** contain a summary of responses.

On a sunny day, what is your usual mode of transportation to/from the UNR campus?



**Figure 9 – Travel Mode (Sunny Day)**

On a cold or rainy day, what is your usual mode of transportation to/from the UNR campus?



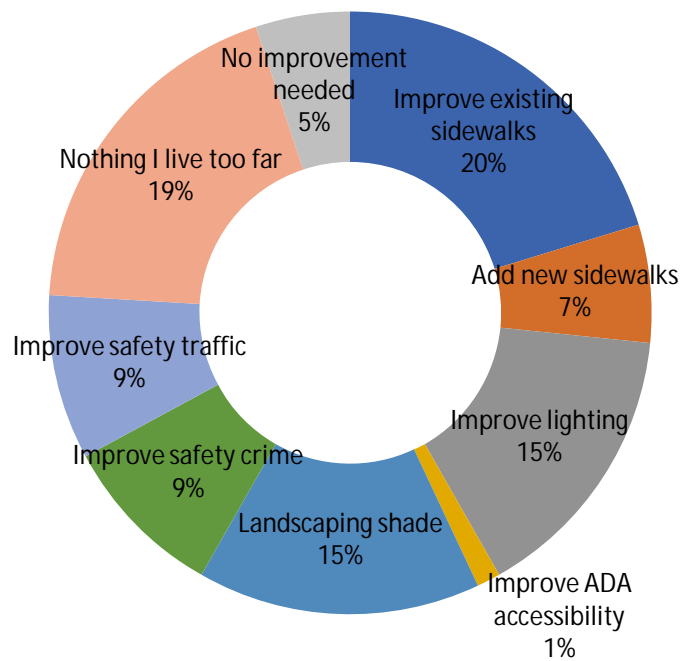
**Figure 10 – Travel Mode (Cloudy/Rainy)**

#### 1.4.4 Walking, Biking, and Transit Improvements

The survey asked respondents to choose improvements that would be most likely to encourage them to walk, bike, and take transit more frequently to and from campus. For walking, respondents most commonly chose improvements to existing sidewalks (20 percent), lighting (15 percent), and

landscaping shade (15 percent). Additionally, 19 percent of respondents indicated that they lived too far to walk. For biking, respondents most frequently chose improvements to existing bike lanes (20 percent), more bike lanes on side streets (14 percent), and the addition of new bike lanes (13 percent). Similar to walking responses, 13 percent indicated they live too far to bike. For transit, improving route directness and speed (24 percent), increasing frequency (21 percent), and providing more weekend and evening service (17 percent) would encourage respondents to ride transit more often. **Figure 11**, **Figure 12**, and **Figure 13** contain a summary of the walking, biking, and transit responses.

What could we do to encourage you to walk to/from the UNR Campus more?



**Figure 11 – Walking Improvements**

What could we do to encourage you to bike to/from the UNR Campus more?

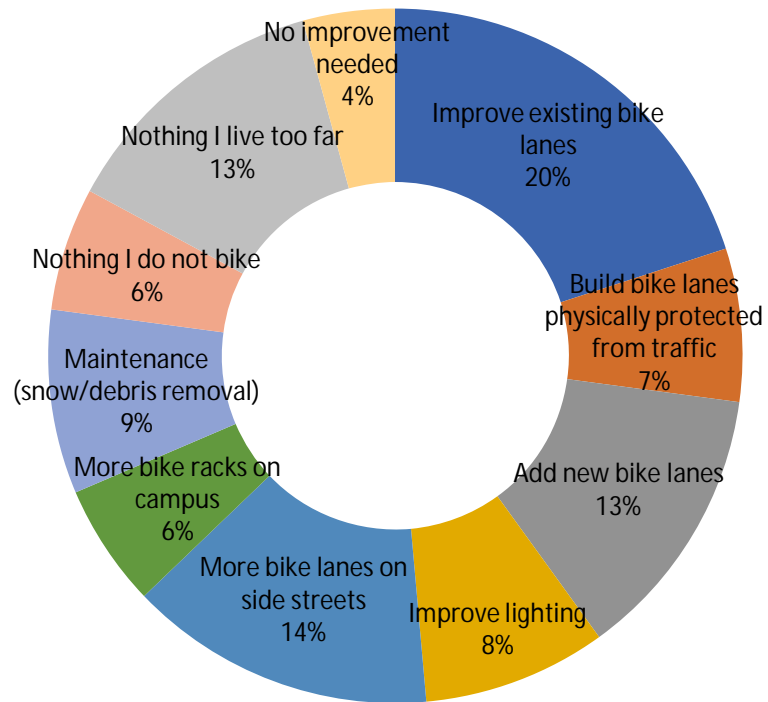
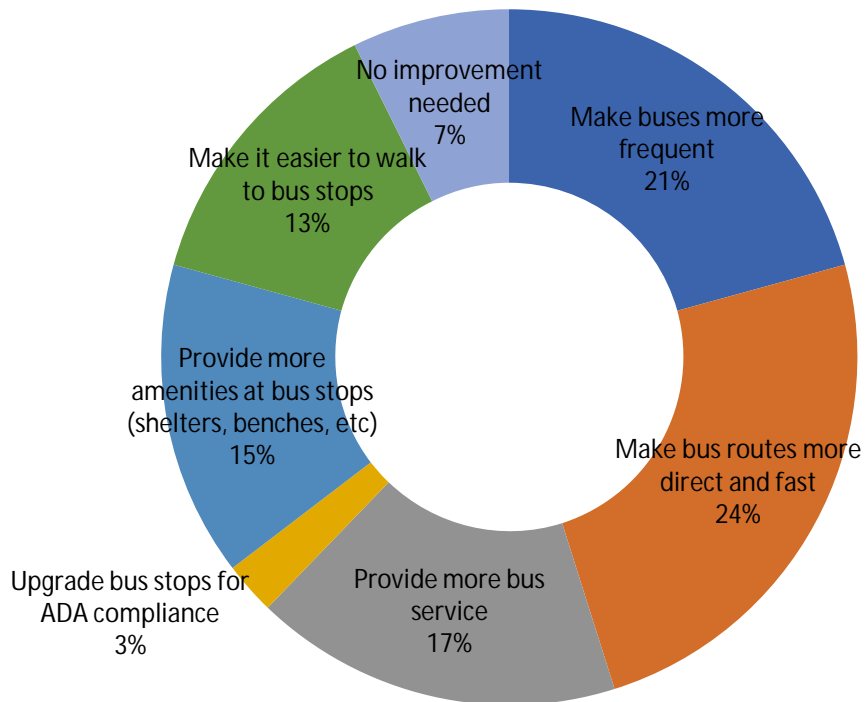


Figure 12 – Biking Improvements

What could we do to encourage you to take a bus to/from the UNR Campus more?

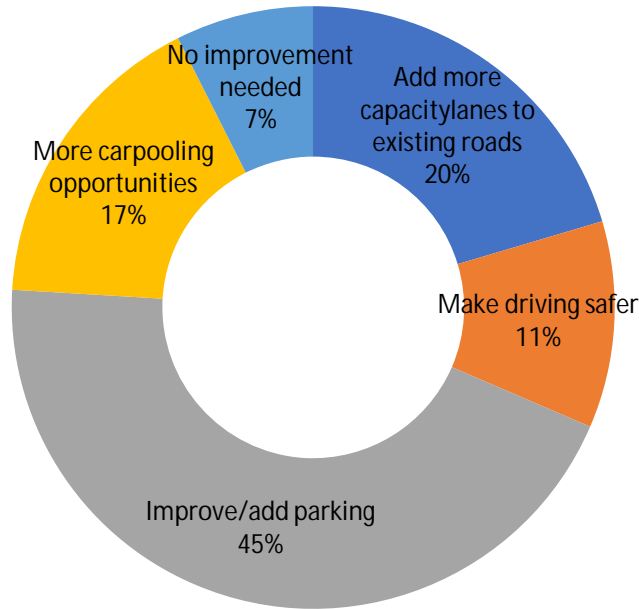


**Figure 13 – Transit Improvements**

#### 1.4.5 Driving and Carpooling Improvements

To improve driving and carpooling to and from campus, respondents wanted improved or additional parking (45 percent), additional lanes on existing roads (20 percent), and more carpooling opportunities (17 percent).

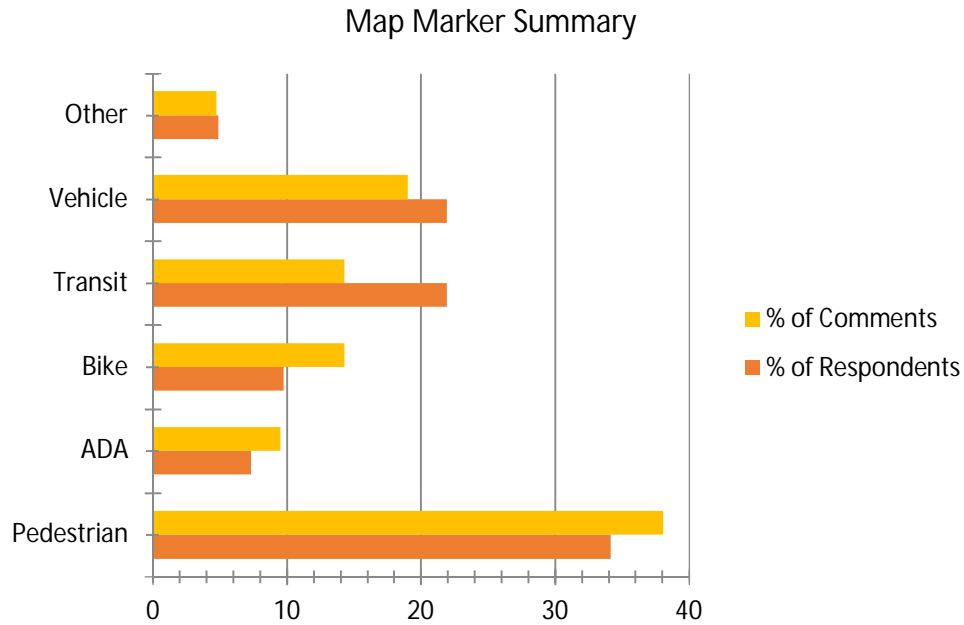
What things could we do to improve driving or carpooling to/from the UNR Campus?



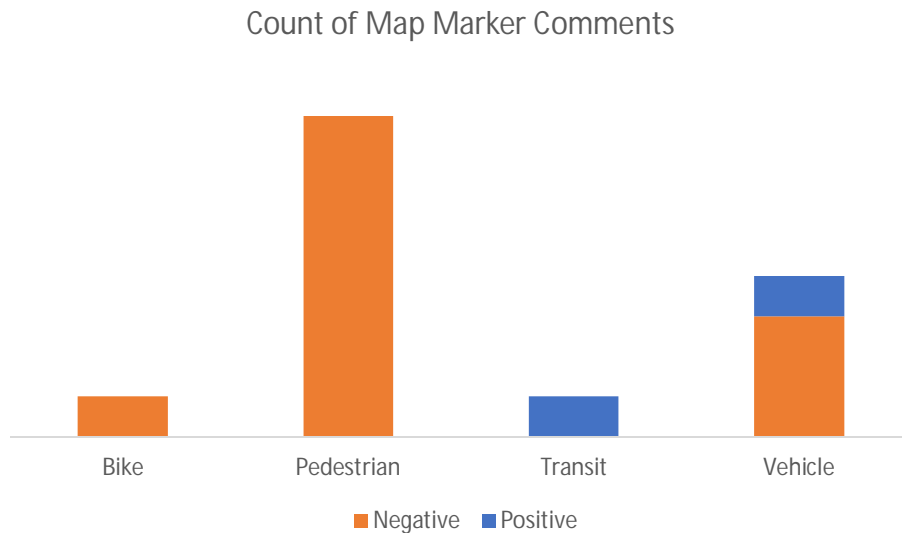
**Figure 14 – Driving/Carpooling Improvements**

#### 1.4.6 Areas of Concern

The survey also asked respondents to place pins on a map of campus corresponding to “areas of concern” for different elements of transportation, including pedestrian, bike, transit, private (motorized) vehicle, and Americans with Disabilities Act (ADA) access, or other. People identified 41 such areas. The majority of map pins related to pedestrian (34 percent), motorized vehicle (21 percent), and transit (21 percent) concerns. Figure 10 displays the percentage of map markers and comments by type. Additionally, respondents could indicate whether their comment was positive or negative. Overall, most comments were negative (Figure 11).



**Figure 15 – Map Marker Summary**



**Figure 16 – Positive and Negative Comments by Mode**

### 1.5 Pop-Up Meeting Common Themes

A number of themes regarding transportation improvements on campus emerged from the discussions that the project team had with the people at the pop-up event. Common themes included:

- ADA access is difficult
- The new bike improvements on campus are well-received



- More bike lanes are bike-friendly options are needed
- Vehicle-pedestrian conflicts present safety concerns
- A better transit connection to downtown is desired
- More frequent transit is desired
- Motorized vehicles tend to back up during peak hours
- There is a need for motorized vehicle parking south of campus

## 1.6 Walking Audits

The project team conducted four separate walking audits of the southern portion of campus on Thursday, May 2<sup>nd</sup> and Friday, May 3<sup>rd</sup> to review existing pedestrian conditions. A total of 21 individuals attended the audits, including bicycle and accessibility advocates, members of the public, and representatives from the City of Reno, the Nevada Department of Transportation (NDOT), the Regional Transportation Commission (RTC), and the University.

### 1.6.1 Comment Locations

Team members recorded over 120 specific comments during the walking audits. **Figure 17** is a map of comment densities. Comments were concentrated in the following locations:

- 9<sup>th</sup> Street and Center Street
- 9<sup>th</sup> Street and Evans Avenue
- 7<sup>th</sup> Street and Center Street
- 6<sup>th</sup> Street and Virginia Street
- Evans Avenue between 6<sup>th</sup> Street and 7<sup>th</sup> Street

### 1.6.2 Common Themes

Common themes and issues for concern that participants noted on the walking audits included:

- Sidewalk and curb ramp obstructions
- Inadequate sidewalks
- Opportunities for bulb-outs at intersections
- Quality bike lanes, where existing
- Lack of amenities at transit stops
- Parked vehicles blocking the sidewalk
- Parked vehicles obstructing sightlines at intersections
- Opportunities for landscaping improvements

### 1.6.3 Existing Conditions Public Outreach Conclusions

Overall, the outreach process has revealed that there is significant demand on and near campus for pedestrian infrastructure and safety improvements. There is also demand for more and improved bicycle facilities, including a preference for bikeways that are physically protected from traffic. In addition, community members would like to see additional parking and carpooling opportunities south of campus. When it comes to transit, relatively few people use it to access campus. More frequent and faster service, and more direct routes to destinations like downtown may encourage people to take transit to campus more often.



Figure 17 – Walking Audit Comment Density

**APPENDIX G**  
**PREFERRED SCENARIO FUTURE LOS ANALYSIS**

HCM 6th Signalized Intersection Summary  
 1: Sierra Street & University Terrace/9th Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	139	35	51	42	23	32	158	17	39	672	97
Future Volume (veh/h)	71	139	35	51	42	23	32	158	17	39	672	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.94	0.98		0.98	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	174	44	76	63	34	46	226	24	43	738	107
Peak Hour Factor	0.80	0.80	0.80	0.67	0.67	0.67	0.70	0.70	0.70	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	289	73	165	230	124	395	1320	1113	810	1320	1090
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	1276	1419	359	1142	1133	611	652	1870	1577	1127	1870	1544
Grp Volume(v), veh/h	89	0	218	76	0	97	46	226	24	43	738	107
Grp Sat Flow(s),veh/h/ln	1276	0	1778	1142	0	1744	652	1870	1577	1127	1870	1544
Q Serve(g_s), s	7.6	0.0	13.4	7.8	0.0	5.6	4.4	4.9	0.5	1.6	23.0	2.6
Cycle Q Clear(g_c), s	13.2	0.0	13.4	21.1	0.0	5.6	27.4	4.9	0.5	6.4	23.0	2.6
Prop In Lane	1.00		0.20	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	260	0	362	165	0	355	395	1320	1113	810	1320	1090
V/C Ratio(X)	0.34	0.00	0.60	0.46	0.00	0.27	0.12	0.17	0.02	0.05	0.56	0.10
Avail Cap(c_a), veh/h	350	0	487	248	0	481	395	1320	1113	810	1320	1090
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.9	0.0	43.4	53.0	0.0	40.3	15.2	5.9	5.3	7.0	8.6	5.6
Incr Delay (d2), s/veh	0.8	0.0	1.6	2.0	0.0	0.4	0.6	0.3	0.0	0.1	1.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	6.0	2.3	0.0	2.5	0.7	1.9	0.2	0.4	9.1	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	0.0	45.0	55.0	0.0	40.7	15.8	6.2	5.3	7.1	10.3	5.8
LnGrp LOS	D	A	D	D	A	D	B	A	A	A	B	A
Approach Vol, veh/h		307			173			296			888	
Approach Delay, s/veh		45.5			47.0			7.6			9.6	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		90.5		29.5		90.5		29.5				
Change Period (Y+Rc), s		5.8		5.1		5.8		* 5.1				
Max Green Setting (Gmax), s		76.2		32.9		76.2		* 33				
Max Q Clear Time (g_c+I1), s		29.4		15.4		25.0		23.1				
Green Ext Time (p_c), s		2.0		1.4		7.2		0.5				

Intersection Summary

HCM 6th Ctrl Delay	19.8
HCM 6th LOS	B

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 2: Virginia Street & 9th Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↖		↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	6	23	6	4	20	38	18	508	59	45	189	21
Future Volume (veh/h)	6	23	6	4	20	38	18	508	59	45	189	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.92		0.93	0.95		0.89	0.99		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	34	9	5	25	47	22	620	72	60	252	28
Peak Hour Factor	0.67	0.67	0.67	0.81	0.81	0.81	0.82	0.82	0.82	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	286	280	69	308	246	804	1354	986	501	1354	1116
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	244	1497	1466	179	1611	1290	1092	1870	1362	750	1870	1541
Grp Volume(v), veh/h	43	0	9	30	0	47	22	620	72	60	252	28
Grp Sat Flow(s),veh/h/ln	1741	0	1466	1791	0	1290	1092	1870	1362	750	1870	1541
Q Serve(g_s), s	0.0	0.0	0.6	0.0	0.0	3.7	0.8	16.4	1.8	4.3	5.2	0.6
Cycle Q Clear(g_c), s	2.3	0.0	0.6	1.6	0.0	3.7	5.9	16.4	1.8	20.7	5.2	0.6
Prop In Lane	0.21		1.00	0.17		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	369	0	280	377	0	246	804	1354	986	501	1354	1116
V/C Ratio(X)	0.12	0.00	0.03	0.08	0.00	0.19	0.03	0.46	0.07	0.12	0.19	0.03
Avail Cap(c_a), veh/h	818	0	671	841	0	590	804	1354	986	501	1354	1116
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.00	0.80	1.00	0.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	0.0	39.5	39.9	0.0	40.8	6.2	6.8	4.8	11.1	5.3	4.7
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.0	0.4	0.1	1.1	0.1	0.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.2	0.7	0.0	1.2	0.2	6.3	0.5	0.8	2.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.3	0.0	39.6	40.0	0.0	41.1	6.3	7.9	5.0	11.6	5.6	4.7
LnGrp LOS	D	A	D	D	A	D	A	A	A	B	A	A
Approach Vol, veh/h		52			77			714			340	
Approach Delay, s/veh		40.2			40.7			7.6			6.6	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		92.0		28.0		92.0		28.0				
Change Period (Y+Rc), s		5.1		5.1		5.1		5.1				
Max Green Setting (Gmax), s		54.9		54.9		54.9		54.9				
Max Q Clear Time (g_c+I1), s		18.4		4.3		22.7		5.7				
Green Ext Time (p_c), s		5.2		0.3		2.1		0.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											10.9	
HCM 6th LOS											B	

HCM 6th AWSC  
3: Center Street & 9th Street

03/04/2020

Intersection

Intersection Delay, s/veh 8.7




Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	10	42	4	6	27	6	81	44	124	24	27	45
Future Vol, veh/h	10	42	4	6	27	6	81	44	124	24	27	45
Peak Hour Factor	0.78	0.78	0.78	0.63	0.63	0.63	0.86	0.86	0.86	0.60	0.60	0.60
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	54	5	10	43	10	94	51	144	40	45	75
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	8.6	8.5	8.9	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	18%	15%	100%	0%
Vol Thru, %	0%	26%	75%	69%	0%	38%
Vol Right, %	0%	74%	7%	15%	0%	62%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	168	56	39	24	72
LT Vol	81	0	10	6	24	0
Through Vol	0	44	42	27	0	27
RT Vol	0	124	4	6	0	45
Lane Flow Rate	94	195	72	62	40	120
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.144	0.244	0.1	0.086	0.063	0.156
Departure Headway (Hd)	5.518	4.496	5.015	4.976	5.636	4.692
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	650	799	713	719	636	763
Service Time	3.249	2.227	3.056	3.017	3.371	2.428
HCM Lane V/C Ratio	0.145	0.244	0.101	0.086	0.063	0.157
HCM Control Delay	9.2	8.7	8.6	8.5	8.8	8.3
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.5	1	0.3	0.3	0.2	0.6

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	21	10	176	15	5
Future Vol, veh/h	28	21	10	176	15	5
Peak Hour Factor	0.73	0.73	0.63	0.63	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	29	16	279	20	7
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.8	8	7.6
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	57%	75%
Vol Thru, %	5%	0%	25%
Vol Right, %	95%	43%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	186	49	20
LT Vol	0	28	15
Through Vol	10	0	5
RT Vol	176	21	0
Lane Flow Rate	295	67	27
Geometry Grp	1	1	1
Degree of Util (X)	0.287	0.081	0.033
Departure Headway (Hd)	3.504	4.345	4.428
Convergence, Y/N	Yes	Yes	Yes
Cap	1019	818	802
Service Time	1.554	2.409	2.493
HCM Lane V/C Ratio	0.289	0.082	0.034
HCM Control Delay	8	7.8	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.2	0.3	0.1

HCM 6th TWSC  
6: Evans Avenue & Highland Avenue

03/04/2020

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	27	130	30	52	232
Future Vol, veh/h	21	27	130	30	52	232
Conflicting Peds, #/hr	20	0	0	20	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	57	57	79	79	74	74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	47	165	38	70	314

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	678	204	0	0	223
Stage 1	204	-	-	-	-
Stage 2	474	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	418	837	-	-	1346
Stage 1	830	-	-	-	-
Stage 2	626	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	377	821	-	-	1320
Mov Cap-2 Maneuver	377	-	-	-	-
Stage 1	814	-	-	-	-
Stage 2	575	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	542	1320
HCM Lane V/C Ratio	-	-	0.155	0.053
HCM Control Delay (s)	-	-	12.9	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.2



Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	48	40	15	83	194	62
Future Vol, veh/h	48	40	15	83	194	62
Conflicting Peds, #/hr	3	14	8	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	69	69	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	53	22	120	243	78

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	460	307	332	0	-	0
Stage 1	293	-	-	-	-	-
Stage 2	167	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	559	733	1227	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	538	716	1214	-	-	-
Mov Cap-2 Maneuver	602	-	-	-	-	-
Stage 1	736	-	-	-	-	-
Stage 2	854	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1214	-	649	-	-
HCM Lane V/C Ratio	0.018	-	0.178	-	-
HCM Control Delay (s)	8	-	11.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

HCM 6th TWSC  
8: Valley Road & Sadlier Way

03/04/2020

Intersection						
Int Delay, s/veh	11.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	119	109	75	64	196	158
Future Vol, veh/h	119	109	75	64	196	158
Conflicting Peds, #/hr	18	6	0	8	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	79	79	59	59
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	175	160	95	81	332	268

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1094	150	0	0	184
Stage 1	144	-	-	-	-
Stage 2	950	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	237	896	-	-	1391
Stage 1	883	-	-	-	-
Stage 2	376	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	175	884	-	-	1380
Mov Cap-2 Maneuver	243	-	-	-	-
Stage 1	876	-	-	-	-
Stage 2	280	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.1	0	4.7
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	243	884	1380
HCM Lane V/C Ratio	-	-	0.72	0.181	0.241
HCM Control Delay (s)	-	-	50.5	10	8.4
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	4.9	0.7	0.9

# HCM 6th Signalized Intersection Summary

## 9: Virginia Street & 8th Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑		↑	↑↑			↑↑	
Traffic Volume (veh/h)	0	0	0	171	1012	338	68	284	0	0	385	51
Future Volume (veh/h)	0	0	0	171	1012	338	68	284	0	0	385	51
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				186	1100	367	72	302	0	0	542	72
Peak Hour Factor				0.92	0.92	0.92	0.94	0.94	0.94	0.71	0.71	0.71
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				295	1849	639	249	1336	0	0	877	116
Arrive On Green				0.18	0.18	0.18	0.09	0.75	0.00	0.00	0.29	0.29
Sat Flow, veh/h				547	3424	1183	1781	3647	0	0	3073	394
Grp Volume(v), veh/h				627	527	499	72	302	0	0	322	292
Grp Sat Flow(s),veh/h/ln				1843	1702	1608	1781	1777	0	0	1777	1597
Q Serve(g_s), s				37.8	34.0	34.1	3.2	3.1	0.0	0.0	18.8	18.9
Cycle Q Clear(g_c), s				37.8	34.0	34.1	3.2	3.1	0.0	0.0	18.8	18.9
Prop In Lane				0.30		0.74	1.00		0.00	0.00		0.25
Lane Grp Cap(c), veh/h				995	919	868	249	1336	0	0	523	470
V/C Ratio(X)				0.63	0.57	0.57	0.29	0.23	0.00	0.00	0.62	0.62
Avail Cap(c_a), veh/h				995	919	868	326	1336	0	0	523	470
HCM Platoon Ratio				0.33	0.33	0.33	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				0.77	0.77	0.77	0.98	0.98	0.00	0.00	0.99	0.99
Uniform Delay (d), s/veh				38.2	36.7	36.7	26.7	9.7	0.0	0.0	36.5	36.6
Incr Delay (d2), s/veh				2.3	2.0	2.1	0.6	0.4	0.0	0.0	5.3	6.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				19.3	16.0	15.2	1.4	1.2	0.0	0.0	8.9	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				40.6	38.7	38.8	27.3	10.1	0.0	0.0	41.8	42.6
LnGrp LOS				D	D	D	C	B	A	A	D	D
Approach Vol, veh/h					1653			374			614	
Approach Delay, s/veh					39.4			13.4			42.2	
Approach LOS					D			B			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.0			9.8	40.2		70.0				
Change Period (Y+Rc), s		4.9			4.5	4.9		5.2				
Max Green Setting (Gmax), s		45.1			10.5	30.1		64.8				
Max Q Clear Time (g_c+I1), s		5.1			5.2	20.9		39.8				
Green Ext Time (p_c), s		2.1			0.1	2.6		13.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											36.4	
HCM 6th LOS											D	

HCM 6th Signalized Intersection Summary  
 10: Center Street & 8th Street/I-80 WB Off-Ramp

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑			↑	↑
Traffic Volume (veh/h)	0	0	0	3	1425	206	42	95	0	0	35	15
Future Volume (veh/h)	0	0	0	3	1425	206	42	95	0	0	35	15
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.98	0.99		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				4	1738	251	51	114	0	0	48	21
Peak Hour Factor				0.82	0.82	0.82	0.83	0.83	0.83	0.73	0.73	0.73
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				8	3476	518	246	608	0	0	304	256
Arrive On Green				0.75	0.75	0.75	0.05	0.05	0.00	0.00	0.16	0.16
Sat Flow, veh/h				10	4609	687	1324	3741	0	0	1870	1573
Grp Volume(v), veh/h				744	616	634	51	114	0	0	48	21
Grp Sat Flow(s),veh/h/ln				1870	1702	1734	1324	1870	0	0	1870	1573
Q Serve(g_s), s				19.5	16.7	17.0	4.5	3.5	0.0	0.0	2.6	1.4
Cycle Q Clear(g_c), s				19.5	16.7	17.0	7.1	3.5	0.0	0.0	2.6	1.4
Prop In Lane				0.01		0.40	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1410	1284	1308	246	608	0	0	304	256
V/C Ratio(X)				0.53	0.48	0.48	0.21	0.19	0.00	0.00	0.16	0.08
Avail Cap(c_a), veh/h				1410	1284	1308	246	608	0	0	324	273
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.83	0.83	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				6.0	5.7	5.7	52.2	49.2	0.0	0.0	43.2	42.7
Incr Delay (d2), s/veh				1.4	1.3	1.3	1.6	0.6	0.0	0.0	0.2	0.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.1	5.6	5.7	1.7	1.7	0.0	0.0	1.3	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				7.4	7.0	7.0	53.8	49.8	0.0	0.0	43.4	42.8
LnGrp LOS				A	A	A	D	D	A	A	D	D
Approach Vol, veh/h					1993			165			69	
Approach Delay, s/veh					7.2			51.0			43.2	
Approach LOS					A			D			D	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		24.7				24.7		95.3				
Change Period (Y+Rc), s		* 5.2				* 5.2		4.8				
Max Green Setting (Gmax), s		* 20				* 21		65.2				
Max Q Clear Time (g_c+I1), s		9.1				4.6		21.5				
Green Ext Time (p_c), s		0.5				0.2		22.7				

Intersection Summary

HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC  
11: Evans Avenue & 9th Street

03/10/2020

Intersection						
Int Delay, s/veh	4.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	300	32	130	50	50	23
Future Vol, veh/h	300	32	130	50	50	23
Conflicting Peds, #/hr	0	0	0	0	0	38
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	83	92	92	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	326	35	157	54	54	32

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	361	0	712 382
Stage 1	-	-	-	-	344 -
Stage 2	-	-	-	-	368 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1198	-	399 665
Stage 1	-	-	-	-	718 -
Stage 2	-	-	-	-	700 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1198	-	347 641
Mov Cap-2 Maneuver	-	-	-	-	347 -
Stage 1	-	-	-	-	718 -
Stage 2	-	-	-	-	608 -

Approach	EB	WB	NB
HCM Control Delay, s	0	6.3	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	418	-	-	1198	-
HCM Lane V/C Ratio	0.206	-	-	0.131	-
HCM Control Delay (s)	15.8	-	-	8.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0.5	-

HCM 6th Signalized Intersection Summary  
 12: Virginia Street & Maple Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↕↔						↕↔		↕	↕↕	
Traffic Volume (veh/h)	175	144	51	0	0	0	0	201	64	302	322	0
Future Volume (veh/h)	175	144	51	0	0	0	0	201	64	302	322	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	192	158	56				0	248	79	343	366	0
Peak Hour Factor	0.91	0.91	0.91				0.81	0.81	0.81	0.88	0.88	0.88
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	595	839	286				0	1445	447	780	2479	0
Arrive On Green	0.33	0.33	0.33				0.00	0.55	0.55	0.23	1.00	0.00
Sat Flow, veh/h	1781	2511	856				0	2743	820	1781	3647	0
Grp Volume(v), veh/h	192	105	109				0	164	163	343	366	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1665				0	1777	1693	1781	1777	0
Q Serve(g_s), s	9.7	5.3	5.6				0.0	5.5	5.8	10.6	0.0	0.0
Cycle Q Clear(g_c), s	9.7	5.3	5.6				0.0	5.5	5.8	10.6	0.0	0.0
Prop In Lane	1.00		0.51				0.00		0.48	1.00		0.00
Lane Grp Cap(c), veh/h	595	569	556				0	969	923	780	2479	0
V/C Ratio(X)	0.32	0.18	0.20				0.00	0.17	0.18	0.44	0.15	0.00
Avail Cap(c_a), veh/h	595	569	556				0	969	923	1029	2479	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.70	0.70	0.00
Uniform Delay (d), s/veh	29.8	28.3	28.5				0.0	13.7	13.7	7.3	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.7	0.8				0.0	0.4	0.4	0.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	2.3	2.4				0.0	2.3	2.3	2.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	29.1	29.2				0.0	14.0	14.1	7.6	0.1	0.0
LnGrp LOS	C	C	C				A	B	B	A	A	A
Approach Vol, veh/h		406						327			709	
Approach Delay, s/veh		30.1						14.1			3.7	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	18.1	70.9	45.0	89.0								
Change Period (Y+Rc), s	4.5	4.9	4.9	* 4.9								
Max Green Setting (Gmax), s	30.5	35.1	40.1	* 71								
Max Q Clear Time (g_c+I1), s	12.6	7.8	11.7	2.0								
Green Ext Time (p_c), s	1.0	2.0	2.6	2.7								

Intersection Summary

HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 13: Center Street & Maple Street/I-80 EB On-Ramp

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	538	2	0	0	0	0	127	299	41	0	0
Future Volume (veh/h)	27	538	2	0	0	0	0	127	299	41	0	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	0	0
Adj Flow Rate, veh/h	32	633	2				0	137	322	50	0	0
Peak Hour Factor	0.85	0.85	0.85				0.93	0.93	0.93	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2				0	2	2	2	0	0
Cap, veh/h	1239	2527	8				0	254	418	79	0	0
Arrive On Green	0.70	0.70	0.70				0.00	0.14	0.14	0.04	0.00	0.00
Sat Flow, veh/h	1781	3633	11				0	1870	3077	1781	50	
Grp Volume(v), veh/h	32	310	325				0	137	322	50	63.9	
Grp Sat Flow(s),veh/h/ln	1781	1777	1868				0	1870	1538	1781	E	
Q Serve(g_s), s	0.7	7.7	7.7				0.0	8.2	12.1	3.3		
Cycle Q Clear(g_c), s	0.7	7.7	7.7				0.0	8.2	12.1	3.3		
Prop In Lane	1.00		0.01				0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1239	1236	1299				0	254	418	79		
V/C Ratio(X)	0.03	0.25	0.25				0.00	0.54	0.77	0.63		
Avail Cap(c_a), veh/h	1239	1236	1299				0	620	1020	156		
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.93	0.93	0.93				0.00	1.00	1.00	0.94		
Uniform Delay (d), s/veh	5.7	6.7	6.7				0.0	48.4	50.1	56.4		
Incr Delay (d2), s/veh	0.0	0.5	0.4				0.0	1.8	3.0	7.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	2.9	3.0				0.0	4.0	4.8	1.7		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.7	7.2	7.2				0.0	50.1	53.1	63.9		
LnGrp LOS	A	A	A				A	D	D	E		
Approach Vol, veh/h		667						459				
Approach Delay, s/veh		7.1						52.2				
Approach LOS		A						D				
Timer - Assigned Phs	1	2	4									
Phs Duration (G+Y+Rc), s	9.8	21.5	88.7									
Change Period (Y+Rc), s	4.5	* 5.2	* 5.2									
Max Green Setting (Gmax), s	40.5	* 40	* 55									
Max Q Clear Time (g_c+15), s	15.3	14.1	9.7									
Green Ext Time (p_c), s	0.0	2.2	4.5									

### Intersection Summary

HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

### Notes

User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	6	89	8	38	133
Future Vol, veh/h	11	6	89	8	38	133
Conflicting Peds, #/hr	0	23	0	23	23	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	79	79	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	8	113	10	53	185

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	432	164	0	0	146	0
Stage 1	141	-	-	-	-	-
Stage 2	291	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	581	881	-	-	1436	-
Stage 1	886	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	544	843	-	-	1405	-
Mov Cap-2 Maneuver	544	-	-	-	-	-
Stage 1	867	-	-	-	-	-
Stage 2	727	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	622	1405
HCM Lane V/C Ratio	-	-	0.036	0.038
HCM Control Delay (s)	-	-	11	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1



Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	11	19	6	4	9	30	6	251	14	45	323	20
Future Vol, veh/h	11	19	6	4	9	30	6	251	14	45	323	20
Conflicting Peds, #/hr	7	0	39	5	0	35	34	0	33	28	0	41
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	67	67	67	75	75	75	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	30	10	6	13	45	8	335	19	55	394	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	782	960	289	755	963	245	459	0	0	387	0	0
Stage 1	557	557	-	394	394	-	-	-	-	-	-	-
Stage 2	225	403	-	361	569	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	284	255	708	298	254	755	1098	-	-	1168	-	-
Stage 1	482	510	-	602	604	-	-	-	-	-	-	-
Stage 2	757	598	-	630	504	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	226	224	655	235	223	707	1055	-	-	1131	-	-
Mov Cap-2 Maneuver	226	224	-	235	223	-	-	-	-	-	-	-
Stage 1	460	466	-	579	580	-	-	-	-	-	-	-
Stage 2	664	575	-	532	461	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	23.4		14.8		0.2		1	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1055	-	-	252	431	1131	-
HCM Lane V/C Ratio	0.008	-	-	0.227	0.149	0.049	-
HCM Control Delay (s)	8.4	-	-	23.4	14.8	8.3	-
HCM Lane LOS	A	-	-	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.5	0.2	-

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔↔↔	↔↔↔				
Traffic Vol, veh/h	29	15	0	0	10	29	8	431	17	0	0	0
Future Vol, veh/h	29	15	0	0	10	29	8	431	17	0	0	0
Conflicting Peds, #/hr	0	0	20	9	0	6	11	0	15	6	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	61	61	61	90	90	90	25	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	19	0	0	16	48	9	479	19	0	0	0

Major/Minor	Minor2		Minor1		Major1						
Conflicting Flow All	235	542	-	-	533	270	11	0	0		
Stage 1	11	11	-	-	522	-	-	-	-		
Stage 2	224	531	-	-	11	-	-	-	-		
Critical Hdwy	6.44	6.54	-	-	6.54	7.14	5.34	-	-		
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-		
Critical Hdwy Stg 2	6.74	5.54	-	-	-	-	-	-	-		
Follow-up Hdwy	3.82	4.02	-	-	4.02	3.92	3.12	-	-		
Pot Cap-1 Maneuver	699	446	0	0	451	620	1141	-	-		
Stage 1	-	-	0	0	529	-	-	-	-		
Stage 2	696	524	0	0	-	-	-	-	-		
Platoon blocked, %								-	-		
Mov Cap-1 Maneuver	614	430	-	-	435	611	1129	-	-		
Mov Cap-2 Maneuver	614	430	-	-	435	-	-	-	-		
Stage 1	-	-	-	-	516	-	-	-	-		
Stage 2	615	511	-	-	-	-	-	-	-		

Approach	EB		WB		NB	
HCM Control Delay, s	12.5		12.3		0.1	
HCM LOS	B		B			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	
Capacity (veh/h)	1129	-	-	536	554
HCM Lane V/C Ratio	0.008	-	-	0.104	0.115
HCM Control Delay (s)	8.2	0	-	12.5	12.3
HCM Lane LOS	A	A	-	B	B
HCM 95th %tile Q(veh)	0	-	-	0.3	0.4

HCM 6th Signalized Intersection Summary  
 17: 6th Street & Virginia Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	73	96	10	13	103	38	17	0	0	34	243	54
Future Volume (veh/h)	73	96	10	13	103	38	17	0	0	34	243	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.97	0.98		0.96	1.00		1.00	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	90	119	12	15	120	44	22	0	0	40	283	63
Peak Hour Factor	0.81	0.81	0.81	0.86	0.86	0.86	0.79	0.79	0.79	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	605	60	270	475	165	769	2494	0	1066	2031	445
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.70	0.00	0.00	0.70	0.70	0.70
Sat Flow, veh/h	1190	3254	323	1231	2557	889	1030	3647	0	1405	2893	633
Grp Volume(v), veh/h	90	64	67	15	81	83	22	0	0	40	172	174
Grp Sat Flow(s),veh/h/ln	1190	1777	1801	1231	1777	1670	1030	1777	0	1405	1777	1750
Q Serve(g_s), s	6.3	2.7	2.8	0.9	3.5	3.8	0.7	0.0	0.0	0.8	2.9	3.0
Cycle Q Clear(g_c), s	10.1	2.7	2.8	3.8	3.5	3.8	3.6	0.0	0.0	0.8	2.9	3.0
Prop In Lane	1.00		0.18	1.00		0.53	1.00		0.00	1.00		0.36
Lane Grp Cap(c), veh/h	251	330	335	270	330	310	769	2494	0	1066	1247	1228
V/C Ratio(X)	0.36	0.19	0.20	0.06	0.25	0.27	0.03	0.00	0.00	0.04	0.14	0.14
Avail Cap(c_a), veh/h	490	687	696	517	687	646	769	2494	0	1066	1247	1228
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	30.9	31.0	32.6	31.3	31.4	5.0	0.0	0.0	4.1	4.4	4.4
Incr Delay (d2), s/veh	0.9	0.3	0.3	0.1	0.4	0.4	0.1	0.0	0.0	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.2	1.2	0.3	1.5	1.6	0.1	0.0	0.0	0.2	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	31.2	31.3	32.6	31.6	31.8	5.1	0.0	0.0	4.2	4.7	4.7
LnGrp LOS	D	C	C	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		221			179			22			386	
Approach Delay, s/veh		33.4			31.8			5.1			4.6	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.1		21.9		68.1		21.9				
Change Period (Y+Rc), s		4.9		* 5.2		4.9		* 5.2				
Max Green Setting (Gmax), s		45.1		* 35		45.1		* 35				
Max Q Clear Time (g_c+I1), s		5.6		12.1		5.0		5.8				
Green Ext Time (p_c), s		0.1		1.0		2.3		1.0				

Intersection Summary

HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 18: 6th Street & Center Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↑			↑↔			↔↑↔				
Traffic Volume (veh/h)	52	148	0	0	171	31	7	367	44	0	0	0
Future Volume (veh/h)	52	148	0	0	171	31	7	367	44	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.90	0.90	1.00	0.90			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	68	195	0	0	199	36	8	412	49			
Peak Hour Factor	0.76	0.76	0.76	0.86	0.86	0.86	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	173	445	0	0	524	93	54	2910	351			
Arrive On Green	0.18	0.18	0.00	0.00	0.18	0.18	0.67	0.67	0.67			
Sat Flow, veh/h	461	2506	0	0	2945	504	80	4358	526			
Grp Volume(v), veh/h	137	126	0	0	122	113	167	154	147			
Grp Sat Flow(s),veh/h/ln	1265	1617	0	0	1777	1579	1679	1702	1583			
Q Serve(g_s), s	2.8	4.2	0.0	0.0	3.7	3.8	2.2	2.0	2.1			
Cycle Q Clear(g_c), s	6.6	4.2	0.0	0.0	3.7	3.8	2.2	2.0	2.1			
Prop In Lane	0.50		0.00	0.00		0.32	0.05		0.33			
Lane Grp Cap(c), veh/h	321	297	0	0	327	290	1121	1136	1057			
V/C Ratio(X)	0.43	0.42	0.00	0.00	0.37	0.39	0.15	0.14	0.14			
Avail Cap(c_a), veh/h	1004	1080	0	0	1186	1054	1121	1136	1057			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	22.8	21.9	0.0	0.0	21.7	21.7	3.7	3.7	3.7			
Incr Delay (d2), s/veh	0.9	1.0	0.0	0.0	0.7	0.8	0.3	0.2	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.8	1.6	0.0	0.0	1.5	1.4	0.6	0.5	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.7	22.9	0.0	0.0	22.4	22.6	4.0	3.9	4.0			
LnGrp LOS	C	C	A	A	C	C	A	A	A			
Approach Vol, veh/h		263			235			469				
Approach Delay, s/veh		23.3			22.5			4.0				
Approach LOS		C			C			A				
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		45.0		15.7				15.7				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.5		40.5				40.5				
Max Q Clear Time (g_c+I1), s		4.2		8.6				5.8				
Green Ext Time (p_c), s		3.0		1.7				1.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay					13.7							
HCM 6th LOS					B							

HCM 6th TWSC  
19: Evans Avenue & 6th Street

03/04/2020

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔↔	
Traffic Vol, veh/h	39	178	9	45	226	24	2	33	20	26	59	29
Future Vol, veh/h	39	178	9	45	226	24	2	33	20	26	59	29
Conflicting Peds, #/hr	11	0	19	8	0	15	11	0	12	4	0	22
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	81	81	81	85	85	85	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	223	11	56	279	30	2	39	24	36	81	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	324	0	0	253	0	0	660	782	148	662	772	192
Stage 1	-	-	-	-	-	-	346	346	-	421	421	-
Stage 2	-	-	-	-	-	-	314	436	-	241	351	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1233	-	-	1309	-	-	348	324	872	347	329	817
Stage 1	-	-	-	-	-	-	643	634	-	581	587	-
Stage 2	-	-	-	-	-	-	671	578	-	741	631	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1215	-	-	1285	-	-	231	284	846	273	288	788
Mov Cap-2 Maneuver	-	-	-	-	-	-	231	284	-	273	288	-
Stage 1	-	-	-	-	-	-	602	594	-	546	548	-
Stage 2	-	-	-	-	-	-	504	540	-	635	591	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			1.4			16.8			24.5		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	370	1215	-	-	1285	-	-	338
HCM Lane V/C Ratio	0.175	0.04	-	-	0.043	-	-	0.462
HCM Control Delay (s)	16.8	8.1	0.1	-	7.9	0.2	-	24.5
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-	-	2.3

HCM 6th Signalized Intersection Summary  
 1: Sierra Street & University Terrace/9th Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	121	57	116	138	71	45	279	14	37	538	86
Future Volume (veh/h)	172	121	57	116	138	71	45	279	14	37	538	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.90	0.94		0.95	1.00		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	189	133	63	125	148	76	48	300	15	40	578	92
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	362	172	329	359	184	364	1057	869	590	1057	870
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1125	1155	547	1111	1143	587	767	1870	1537	1057	1870	1539
Grp Volume(v), veh/h	189	0	196	125	0	224	48	300	15	40	578	92
Grp Sat Flow(s),veh/h/ln	1125	0	1702	1111	0	1730	767	1870	1537	1057	1870	1539
Q Serve(g_s), s	14.3	0.0	8.0	8.8	0.0	9.2	3.8	7.5	0.4	1.8	17.5	2.5
Cycle Q Clear(g_c), s	23.5	0.0	8.0	16.9	0.0	9.2	21.3	7.5	0.4	9.3	17.5	2.5
Prop In Lane	1.00		0.32	1.00		0.34	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	318	0	534	329	0	543	364	1057	869	590	1057	870
V/C Ratio(X)	0.59	0.00	0.37	0.38	0.00	0.41	0.13	0.28	0.02	0.07	0.55	0.11
Avail Cap(c_a), veh/h	364	0	603	377	0	617	364	1057	869	590	1057	870
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	0.0	24.0	30.5	0.0	24.3	19.0	10.1	8.6	12.5	12.3	9.1
Incr Delay (d2), s/veh	2.0	0.0	0.4	0.7	0.0	0.5	0.7	0.7	0.0	0.2	2.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	3.2	2.4	0.0	3.7	0.7	3.1	0.1	0.5	7.3	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	0.0	24.4	31.2	0.0	24.8	19.8	10.8	8.6	12.8	14.3	9.3
LnGrp LOS	D	A	C	C	A	C	B	B	A	B	B	A
Approach Vol, veh/h		385			349			363			710	
Approach Delay, s/veh		29.9			27.1			11.9			13.6	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		56.7		33.3		56.7		33.3				
Change Period (Y+Rc), s		5.8		5.1		5.8		* 5.1				
Max Green Setting (Gmax), s		47.2		31.9		47.2		* 32				
Max Q Clear Time (g_c+I1), s		23.3		25.5		19.5		18.9				
Green Ext Time (p_c), s		2.2		1.0		4.7		1.5				

Intersection Summary

HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 2: Virginia Street & 9th Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↖		↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	4	26	9	8	47	36	41	572	62	54	353	39
Future Volume (veh/h)	4	26	9	8	47	36	41	572	62	54	353	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.90		0.88	0.90		0.87	0.99		0.93	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	32	11	9	53	41	47	657	71	67	436	48
Peak Hour Factor	0.81	0.81	0.81	0.88	0.88	0.88	0.87	0.87	0.87	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	63	356	298	73	381	241	611	1309	929	451	1309	1049
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	136	1654	1388	179	1774	1123	905	1870	1327	727	1870	1499
Grp Volume(v), veh/h	37	0	11	56	0	47	47	657	71	67	436	48
Grp Sat Flow(s),veh/h/ln	1790	0	1388	1776	0	1299	905	1870	1327	727	1870	1499
Q Serve(g_s), s	0.0	0.0	0.8	0.0	0.0	3.6	2.6	19.5	2.0	5.6	10.9	1.2
Cycle Q Clear(g_c), s	1.9	0.0	0.8	2.9	0.0	3.6	13.5	19.5	2.0	25.1	10.9	1.2
Prop In Lane	0.14		1.00	0.16		0.86	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	419	0	298	417	0	279	611	1309	929	451	1309	1049
V/C Ratio(X)	0.09	0.00	0.04	0.13	0.00	0.17	0.08	0.50	0.08	0.15	0.33	0.05
Avail Cap(c_a), veh/h	839	0	635	834	0	594	611	1309	929	451	1309	1049
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.00	0.94	1.00	0.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	0.0	37.3	38.1	0.0	38.4	9.7	8.3	5.7	14.1	7.0	5.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.0	0.3	0.2	1.3	0.2	0.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.3	1.3	0.0	1.2	0.5	7.7	0.6	0.9	4.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	0.0	37.3	38.2	0.0	38.7	9.9	9.6	5.9	14.3	7.2	5.6
LnGrp LOS	D	A	D	D	A	D	A	A	A	B	A	A
Approach Vol, veh/h		48			103			775			551	
Approach Delay, s/veh		37.7			38.4			9.3			7.9	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		89.1		30.9		89.1		30.9				
Change Period (Y+Rc), s		5.1		5.1		5.1		5.1				
Max Green Setting (Gmax), s		54.9		54.9		54.9		54.9				
Max Q Clear Time (g_c+I1), s		21.5		3.9		27.1		5.6				
Green Ext Time (p_c), s		5.8		0.2		3.7		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											11.7	
HCM 6th LOS											B	

HCM 6th AWSC  
3: Center Street & 9th Street

03/04/2020

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	11	56	6	13	54	6	80	27	96	36	34	73
Future Vol, veh/h	11	56	6	13	54	6	80	27	96	36	34	73
Peak Hour Factor	0.70	0.70	0.70	0.85	0.85	0.85	0.86	0.86	0.86	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	80	9	15	64	7	93	31	112	51	49	104
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9	8.8	8.9	8.8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	15%	18%	100%	0%
Vol Thru, %	0%	22%	77%	74%	0%	32%
Vol Right, %	0%	78%	8%	8%	0%	68%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	123	73	73	36	107
LT Vol	80	0	11	13	36	0
Through Vol	0	27	56	54	0	34
RT Vol	0	96	6	6	0	73
Lane Flow Rate	93	143	104	86	51	153
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.148	0.185	0.146	0.121	0.082	0.202
Departure Headway (Hd)	5.717	4.663	5.048	5.081	5.753	4.768
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	626	767	707	702	621	749
Service Time	3.466	2.412	3.102	3.137	3.504	2.519
HCM Lane V/C Ratio	0.149	0.186	0.147	0.123	0.082	0.204
HCM Control Delay	9.5	8.5	9	8.8	9	8.7
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.5	0.7	0.5	0.4	0.3	0.8



Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	30	10	176	22	5
Future Vol, veh/h	12	30	10	176	22	5
Peak Hour Factor	0.93	0.93	0.87	0.87	0.64	0.64
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	32	11	202	34	8
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.3	7.4	7.6
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	29%	81%
Vol Thru, %	5%	0%	19%
Vol Right, %	95%	71%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	186	42	27
LT Vol	0	12	22
Through Vol	10	0	5
RT Vol	176	30	0
Lane Flow Rate	214	45	42
Geometry Grp	1	1	1
Degree of Util (X)	0.206	0.05	0.051
Departure Headway (Hd)	3.477	4.002	4.338
Convergence, Y/N	Yes	Yes	Yes
Cap	1030	888	824
Service Time	1.508	2.056	2.372
HCM Lane V/C Ratio	0.208	0.051	0.051
HCM Control Delay	7.4	7.3	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.8	0.2	0.2

HCM 6th TWSC  
6: Evans Avenue & Highland Avenue

03/04/2020

Intersection						
Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	50	208	45	51	315
Future Vol, veh/h	45	50	208	45	51	315
Conflicting Peds, #/hr	26	0	0	26	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	79	79	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	64	263	57	57	350

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	808	318	0	0	346	0
Stage 1	318	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	350	723	-	-	1213	-
Stage 1	738	-	-	-	-	-
Stage 2	616	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	313	705	-	-	1183	-
Mov Cap-2 Maneuver	313	-	-	-	-	-
Stage 1	720	-	-	-	-	-
Stage 2	565	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	442	1183
HCM Lane V/C Ratio	-	-	0.276	0.048
HCM Control Delay (s)	-	-	16.2	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.1	0.2

HCM 6th TWSC  
7: Valley Road & Highland Avenue

03/04/2020

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	104	27	29	213	114	87
Future Vol, veh/h	104	27	29	213	114	87
Conflicting Peds, #/hr	0	4	4	0	0	4
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	83	83	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	132	34	35	257	141	107

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	526	203	252	0	0
Stage 1	199	-	-	-	-
Stage 2	327	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	512	838	1313	-	-
Stage 1	835	-	-	-	-
Stage 2	731	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	494	832	1308	-	-
Mov Cap-2 Maneuver	573	-	-	-	-
Stage 1	809	-	-	-	-
Stage 2	728	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1308	-	612	-	-
HCM Lane V/C Ratio	0.027	-	0.271	-	-
HCM Control Delay (s)	7.8	-	13.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

HCM 6th TWSC  
8: Valley Road & Sadlier Way

03/04/2020

Intersection						
Int Delay, s/veh	5.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	122	134	156	191	128	122
Future Vol, veh/h	122	134	156	191	128	122
Conflicting Peds, #/hr	35	6	0	9	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	86	86	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	137	151	181	222	151	144

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	782	307	0	0	412
Stage 1	301	-	-	-	-
Stage 2	481	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	363	733	-	-	1147
Stage 1	751	-	-	-	-
Stage 2	622	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	302	723	-	-	1137
Mov Cap-2 Maneuver	409	-	-	-	-
Stage 1	744	-	-	-	-
Stage 2	521	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.6	0	4.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	409	723	1137
HCM Lane V/C Ratio	-	-	0.335	0.208	0.132
HCM Control Delay (s)	-	-	18.2	11.3	8.6
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	1.4	0.8	0.5

# HCM 6th Signalized Intersection Summary

## 9: Virginia Street & 8th Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑		↑	↑↑			↑↑	
Traffic Volume (veh/h)	0	0	0	305	909	238	118	493	0	0	477	148
Future Volume (veh/h)	0	0	0	305	909	238	118	493	0	0	477	148
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	1.00		1.00	1.00		0.92
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				351	1045	274	133	554	0	0	575	178
Peak Hour Factor				0.87	0.87	0.87	0.89	0.89	0.89	0.83	0.83	0.83
Percent Heavy Veh, %				0	2	0	2	2	2	0	2	2
Cap, veh/h				471	1505	403	289	1632	0	0	886	273
Arrive On Green				0.15	0.15	0.15	0.13	0.92	0.00	0.00	0.36	0.36
Sat Flow, veh/h				1022	3266	875	1781	3647	0	0	2572	764
Grp Volume(v), veh/h				625	531	514	133	554	0	0	411	342
Grp Sat Flow(s),veh/h/ln				1819	1702	1642	1781	1777	0	0	1777	1465
Q Serve(g_s), s				39.4	35.4	35.5	5.5	2.2	0.0	0.0	23.2	23.4
Cycle Q Clear(g_c), s				39.4	35.4	35.5	5.5	2.2	0.0	0.0	23.2	23.4
Prop In Lane				0.56		0.53	1.00		0.00	0.00		0.52
Lane Grp Cap(c), veh/h				838	784	757	289	1632	0	0	635	524
V/C Ratio(X)				0.74	0.68	0.68	0.46	0.34	0.00	0.00	0.65	0.65
Avail Cap(c_a), veh/h				838	784	757	405	1632	0	0	635	524
HCM Platoon Ratio				0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				0.70	0.70	0.70	0.59	0.59	0.00	0.00	0.95	0.95
Uniform Delay (d), s/veh				44.1	42.4	42.5	22.1	2.7	0.0	0.0	32.2	32.3
Incr Delay (d2), s/veh				4.2	3.3	3.4	0.7	0.3	0.0	0.0	4.8	5.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				20.2	16.9	16.4	2.2	0.7	0.0	0.0	10.8	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				48.4	45.7	45.9	22.8	3.1	0.0	0.0	37.0	38.2
LnGrp LOS				D	D	D	C	A	A	A	D	D
Approach Vol, veh/h					1670			687			753	
Approach Delay, s/veh					46.8			6.9			37.6	
Approach LOS					D			A			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		60.0			12.2	47.8		60.0				
Change Period (Y+Rc), s		4.9			4.5	4.9		4.7				
Max Green Setting (Gmax), s		55.1			15.5	35.1		55.3				
Max Q Clear Time (g_c+I1), s		4.2			7.5	25.4		41.4				
Green Ext Time (p_c), s		4.3			0.2	3.4		9.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											35.7	
HCM 6th LOS											D	

HCM 6th Signalized Intersection Summary  
 10: Center Street & 8th Street/I-80 WB Off-Ramp

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑			↑	↑
Traffic Volume (veh/h)	0	0	0	3	1069	151	178	145	0	0	67	27
Future Volume (veh/h)	0	0	0	3	1069	151	178	145	0	0	67	27
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				3	1162	164	260	207	0	0	91	36
Peak Hour Factor				0.92	0.92	0.92	0.69	0.69	0.69	0.74	0.74	0.74
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				8	3291	483	532	382	0	0	382	322
Arrive On Green				0.71	0.71	0.71	0.07	0.07	0.00	0.00	0.20	0.20
Sat Flow, veh/h				11	4619	678	2520	1870	0	0	1870	1578
Grp Volume(v), veh/h				497	412	420	260	207	0	0	91	36
Grp Sat Flow(s),veh/h/ln				1870	1702	1736	1260	1870	0	0	1870	1578
Q Serve(g_s), s				12.5	11.0	11.0	12.1	12.9	0.0	0.0	4.9	2.2
Cycle Q Clear(g_c), s				12.5	11.0	11.0	17.0	12.9	0.0	0.0	4.9	2.2
Prop In Lane				0.01		0.39	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1332	1213	1237	532	382	0	0	382	322
V/C Ratio(X)				0.37	0.34	0.34	0.49	0.54	0.00	0.00	0.24	0.11
Avail Cap(c_a), veh/h				1332	1213	1237	532	382	0	0	382	322
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.53	0.53	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				6.8	6.5	6.5	54.9	50.5	0.0	0.0	39.9	38.9
Incr Delay (d2), s/veh				0.8	0.8	0.7	1.7	2.9	0.0	0.0	0.3	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.8	3.9	4.0	4.2	6.8	0.0	0.0	2.3	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				7.6	7.3	7.3	56.6	53.4	0.0	0.0	40.3	39.0
LnGrp LOS				A	A	A	E	D	A	A	D	D
Approach Vol, veh/h					1329			467			127	
Approach Delay, s/veh					7.4			55.2			39.9	
Approach LOS					A			E			D	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		29.7				29.7		90.3				
Change Period (Y+Rc), s		* 5.2				* 5.2		4.8				
Max Green Setting (Gmax), s		* 25				* 21		60.2				
Max Q Clear Time (g_c+I1), s		19.0				6.9		14.5				
Green Ext Time (p_c), s		1.1				0.4		11.8				

Intersection Summary

HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	6.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	300	30	140	40	115	15
Future Vol, veh/h	300	30	140	40	115	15
Conflicting Peds, #/hr	0	0	0	0	0	40
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	83	92	92	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	326	33	169	43	125	21

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	359	0	724 383
Stage 1	-	-	-	-	343 -
Stage 2	-	-	-	-	381 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1200	-	393 664
Stage 1	-	-	-	-	719 -
Stage 2	-	-	-	-	691 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1200	-	338 639
Mov Cap-2 Maneuver	-	-	-	-	338 -
Stage 1	-	-	-	-	719 -
Stage 2	-	-	-	-	594 -

Approach	EB	WB	NB
HCM Control Delay, s	0	6.8	21.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	363	-	-	1200	-
HCM Lane V/C Ratio	0.403	-	-	0.141	-
HCM Control Delay (s)	21.5	-	-	8.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.9	-	-	0.5	-

HCM 6th Signalized Intersection Summary  
 12: Virginia Street & Maple Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↕↔						↕↔		↔	↕↕	
Traffic Volume (veh/h)	106	277	90	0	0	0	1	528	167	317	468	0
Future Volume (veh/h)	106	277	90	0	0	0	1	528	167	317	468	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.84				0.97		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900				1870	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	115	301	98				1	629	199	360	532	0
Peak Hour Factor	0.92	0.92	0.92				0.84	0.84	0.84	0.88	0.88	0.88
Percent Heavy Veh, %	0	2	0				2	2	2	2	2	0
Cap, veh/h	202	564	175				30	1119	353	681	2595	0
Arrive On Green	0.19	0.19	0.19				0.44	0.44	0.44	0.51	1.00	0.00
Sat Flow, veh/h	1076	2998	933				0	2552	805	1781	3647	0
Grp Volume(v), veh/h	194	164	156				461	0	368	360	532	0
Grp Sat Flow(s),veh/h/ln	1817	1702	1488				1870	0	1488	1781	1777	0
Q Serve(g_s), s	11.7	10.4	11.4				0.0	0.0	22.1	7.8	0.0	0.0
Cycle Q Clear(g_c), s	11.7	10.4	11.4				22.0	0.0	22.1	7.8	0.0	0.0
Prop In Lane	0.59		0.63				0.00		0.54	1.00		0.00
Lane Grp Cap(c), veh/h	342	320	280				850	0	652	681	2595	0
V/C Ratio(X)	0.57	0.51	0.56				0.54	0.00	0.56	0.53	0.21	0.00
Avail Cap(c_a), veh/h	501	469	411				850	0	652	681	2595	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	0.00	1.00	0.67	0.67	0.00
Uniform Delay (d), s/veh	44.3	43.7	44.2				25.1	0.0	25.1	6.6	0.0	0.0
Incr Delay (d2), s/veh	1.5	1.3	1.7				2.5	0.0	3.5	2.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	4.5	4.4				10.3	0.0	8.4	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	45.0	45.9				27.6	0.0	28.6	8.6	0.1	0.0
LnGrp LOS	D	D	D				C	A	C	A	A	A
Approach Vol, veh/h		514						829			892	
Approach Delay, s/veh		45.6						28.1			3.5	
Approach LOS		D						C			A	
Timer - Assigned Phs	1	2		4				6				
Phs Duration (G+Y+Rc), s	35.0	57.5		27.5				92.5				
Change Period (Y+Rc), s	4.5	4.9		4.9				* 4.9				
Max Green Setting (Gmax), s	30.5	42.1		33.1				* 78				
Max Q Clear Time (g_c+I1), s	9.8	24.1		13.7				2.0				
Green Ext Time (p_c), s	1.1	5.3		3.1				4.2				

Intersection Summary

HCM 6th Ctrl Delay	22.3
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



# HCM 6th Signalized Intersection Summary

## 13: Center Street & Maple Street/I-80 EB On-Ramp

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	779	0	0	0	0	0	353	636	83	0	0
Future Volume (veh/h)	31	779	0	0	0	0	0	353	636	83	0	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	0				0	1870	1870	1870	0	0
Adj Flow Rate, veh/h	38	950	0				0	464	837	101	0	0
Peak Hour Factor	0.82	0.82	0.82				0.76	0.76	0.76	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	0				0	2	2	2	0	0
Cap, veh/h	863	1723	0				0	594	977	131	0	0
Arrive On Green	0.48	0.48	0.00				0.00	0.32	0.32	0.07	0.00	0.00
Sat Flow, veh/h	1781	3647	0				0	1870	3075	1781	101	
Grp Volume(v), veh/h	38	950	0				0	464	837	101	62.6	
Grp Sat Flow(s),veh/h/ln	1781	1777	0				0	1870	1538	1781	E	
Q Serve(g_s), s	1.3	22.6	0.0				0.0	27.0	30.6	6.7		
Cycle Q Clear(g_c), s	1.3	22.6	0.0				0.0	27.0	30.6	6.7		
Prop In Lane	1.00		0.00				0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	863	1723	0				0	594	977	131		
V/C Ratio(X)	0.04	0.55	0.00				0.00	0.78	0.86	0.77		
Avail Cap(c_a), veh/h	863	1723	0				0	698	1148	230		
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.78	0.78	0.00				0.00	1.00	1.00	0.84		
Uniform Delay (d), s/veh	16.3	21.7	0.0				0.0	37.1	38.4	54.6		
Incr Delay (d2), s/veh	0.1	1.0	0.0				0.0	4.9	5.8	7.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	9.5	0.0				0.0	13.0	12.2	3.3		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	22.7	0.0				0.0	42.0	44.2	62.6		
LnGrp LOS	B	C	A				A	D	D	E		
Approach Vol, veh/h	988						1301					
Approach Delay, s/veh	22.5						43.4					
Approach LOS	C						D					
Timer - Assigned Phs	1	2	4									
Phs Duration (G+Y+Rc), s	3.3	43.3	63.4									
Change Period (Y+Rc), s	4.5	* 5.2	* 5.2									
Max Green Setting (Gmax), s	5.5	* 45	* 45									
Max Q Clear Time (g_c+1/3), s	1.3	32.6	3.3									
Green Ext Time (p_c), s	0.1	5.5	0.0									

### Intersection Summary

HCM 6th Ctrl Delay	35.6
HCM 6th LOS	D

### Notes

User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	10	15	114	9	2	140
Future Vol, veh/h	10	15	114	9	2	140
Conflicting Peds, #/hr	0	25	0	25	25	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	52	52	68	68	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	29	168	13	3	200

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	406	225	0	0	206	0
Stage 1	200	-	-	-	-	-
Stage 2	206	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	601	814	-	-	1365	-
Stage 1	834	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	585	776	-	-	1333	-
Mov Cap-2 Maneuver	585	-	-	-	-	-
Stage 1	814	-	-	-	-	-
Stage 2	827	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	686	1333
HCM Lane V/C Ratio	-	-	0.07	0.002
HCM Control Delay (s)	-	-	10.6	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

HCM 6th TWSC  
15: Virginia Street & 7th Street

03/04/2020

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	17	23	13	14	7	17	16	659	35	22	505	15
Future Vol, veh/h	17	23	13	14	7	17	16	659	35	22	505	15
Conflicting Peds, #/hr	4	0	104	19	0	69	85	0	84	65	0	89
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	86	86	86	89	89	89	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	31	18	16	8	20	18	740	39	23	521	15

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1143	1563	461	1306	1551	543	625	0	0	863	0	0
Stage 1	664	664	-	880	880	-	-	-	-	-	-	-
Stage 2	479	899	-	426	671	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	155	111	547	117	113	484	952	-	-	775	-	-
Stage 1	416	456	-	308	363	-	-	-	-	-	-	-
Stage 2	537	356	-	577	453	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	113	89	451	65	90	416	871	-	-	713	-	-
Mov Cap-2 Maneuver	113	89	-	65	90	-	-	-	-	-	-	-
Stage 1	373	404	-	278	327	-	-	-	-	-	-	-
Stage 2	456	321	-	446	401	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	70.8		55.3		0.2		0.4	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	871	-	-	121	114	713	-
HCM Lane V/C Ratio	0.021	-	-	0.592	0.388	0.032	-
HCM Control Delay (s)	9.2	-	-	70.8	55.3	10.2	-
HCM Lane LOS	A	-	-	F	F	B	-
HCM 95th %tile Q(veh)	0.1	-	-	2.9	1.6	0.1	-

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗		↕↗	↕↗				
Traffic Vol, veh/h	49	25	0	0	9	46	13	888	9	0	0	0
Future Vol, veh/h	49	25	0	0	9	46	13	888	9	0	0	0
Conflicting Peds, #/hr	0	0	65	31	0	10	34	0	41	10	0	34
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	86	86	86	80	80	80	25	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	31	0	0	10	53	16	1110	11	0	0	0

Major/Minor	Minor2		Minor1		Major1				
Conflicting Flow All	525	1228	-	-	1223	612	34	0	0
Stage 1	34	34	-	-	1189	-	-	-	-
Stage 2	491	1194	-	-	34	-	-	-	-
Critical Hdwy	6.44	6.54	-	-	6.54	7.14	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	-	-	4.02	3.92	3.12	-	-
Pot Cap-1 Maneuver	481	177	0	0	178	374	1113	-	-
Stage 1	-	-	0	0	260	-	-	-	-
Stage 2	482	258	0	0	-	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	365	158	-	-	159	359	1077	-	-
Mov Cap-2 Maneuver	365	158	-	-	159	-	-	-	-
Stage 1	-	-	-	-	240	-	-	-	-
Stage 2	377	238	-	-	-	-	-	-	-

Approach	EB		WB		NB	
HCM Control Delay, s	27.2		20.4		0.2	
HCM LOS	D		C			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	
Capacity (veh/h)	1077	-	-	253	298
HCM Lane V/C Ratio	0.015	-	-	0.366	0.215
HCM Control Delay (s)	8.4	0.1	-	27.2	20.4
HCM Lane LOS	A	A	-	D	C
HCM 95th %tile Q(veh)	0	-	-	1.6	0.8

HCM 6th Signalized Intersection Summary  
 17: 6th Street & Virginia Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	330	33	22	167	61	42	0	20	54	389	86
Future Volume (veh/h)	253	330	33	22	167	61	42	0	20	54	389	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.89	0.96		0.93	0.98		0.93	0.94		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	309	402	40	23	178	65	49	0	24	58	418	92
Peak Hour Factor	0.82	0.82	0.82	0.94	0.94	0.94	0.85	0.85	0.85	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	419	1165	115	325	914	317	466	936	776	759	1505	327
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.53	0.00	0.53	0.53	0.53	0.53
Sat Flow, veh/h	1095	3227	318	910	2531	877	868	1777	1473	1310	2858	621
Grp Volume(v), veh/h	309	220	222	23	122	121	49	0	24	58	258	252
Grp Sat Flow(s),veh/h/ln	1095	1777	1768	910	1777	1631	868	1777	1473	1310	1777	1703
Q Serve(g_s), s	24.4	8.1	8.3	1.7	4.2	4.6	3.0	0.0	0.7	2.0	7.2	7.4
Cycle Q Clear(g_c), s	29.0	8.1	8.3	10.0	4.2	4.6	10.4	0.0	0.7	2.7	7.2	7.4
Prop In Lane	1.00		0.18	1.00		0.54	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	419	642	638	325	642	589	466	936	776	759	936	897
V/C Ratio(X)	0.74	0.34	0.35	0.07	0.19	0.21	0.11	0.00	0.03	0.08	0.28	0.28
Avail Cap(c_a), veh/h	447	687	684	348	687	631	466	936	776	759	936	897
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	21.0	21.0	24.7	19.7	19.8	14.7	0.0	10.2	10.9	11.8	11.8
Incr Delay (d2), s/veh	5.9	0.3	0.3	0.1	0.1	0.2	0.5	0.0	0.1	0.2	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	3.3	3.4	0.4	1.7	1.7	0.6	0.0	0.2	0.6	2.9	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.7	21.3	21.3	24.7	19.9	20.0	15.2	0.0	10.3	11.1	12.5	12.6
LnGrp LOS	D	C	C	C	B	B	B	A	B	B	B	B
Approach Vol, veh/h		751			266			73			568	
Approach Delay, s/veh		27.2			20.3			13.6			12.4	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.3		37.7		52.3		37.7				
Change Period (Y+Rc), s		4.9		* 5.2		4.9		* 5.2				
Max Green Setting (Gmax), s		45.1		* 35		45.1		* 35				
Max Q Clear Time (g_c+I1), s		12.4		31.0		9.4		12.0				
Green Ext Time (p_c), s		0.4		1.5		3.7		1.5				

Intersection Summary

HCM 6th Ctrl Delay	20.5
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 18: 6th Street & Center Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕↕				
Traffic Volume (veh/h)	119	273	0	0	274	62	14	758	65	0	0	0
Future Volume (veh/h)	119	273	0	0	274	62	14	758	65	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.90	0.90	1.00	0.90			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	157	359	0	0	347	78	18	997	86			
Peak Hour Factor	0.76	0.76	0.76	0.79	0.79	0.79	0.76	0.76	0.76			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	263	665	0	0	926	205	42	2439	217			
Arrive On Green	0.34	0.34	0.00	0.00	0.34	0.34	0.54	0.54	0.54			
Sat Flow, veh/h	541	2049	0	0	2828	606	77	4507	402			
Grp Volume(v), veh/h	236	280	0	0	224	201	394	363	343			
Grp Sat Flow(s),veh/h/ln	888	1617	0	0	1777	1563	1679	1702	1604			
Q Serve(g_s), s	12.7	10.4	0.0	0.0	7.1	7.3	10.5	9.3	9.4			
Cycle Q Clear(g_c), s	20.0	10.4	0.0	0.0	7.1	7.3	10.5	9.3	9.4			
Prop In Lane	0.66		0.00	0.00		0.39	0.05		0.25			
Lane Grp Cap(c), veh/h	381	548	0	0	602	529	909	921	868			
V/C Ratio(X)	0.62	0.51	0.00	0.00	0.37	0.38	0.43	0.39	0.40			
Avail Cap(c_a), veh/h	613	875	0	0	961	846	909	921	868			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	25.0	19.8	0.0	0.0	18.7	18.8	10.3	10.0	10.0			
Incr Delay (d2), s/veh	1.6	0.7	0.0	0.0	0.4	0.4	1.5	1.3	1.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.9	3.8	0.0	0.0	2.8	2.6	3.8	3.4	3.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	20.5	0.0	0.0	19.1	19.2	11.8	11.3	11.4			
LnGrp LOS	C	C	A	A	B	B	B	B	B			
Approach Vol, veh/h		516			425			1101				
Approach Delay, s/veh		23.3			19.2			11.5				
Approach LOS		C			B			B				
Timer - Assigned Phs		2			4			8				
Phs Duration (G+Y+Rc), s		45.0			29.9			29.9				
Change Period (Y+Rc), s		4.5			4.5			4.5				
Max Green Setting (Gmax), s		40.5			40.5			40.5				
Max Q Clear Time (g_c+I1), s		12.5			22.0			9.3				
Green Ext Time (p_c), s		8.0			3.3			2.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay					16.1							
HCM 6th LOS					B							

HCM 6th TWSC  
19: Evans Avenue & 6th Street

03/04/2020

Intersection												
Int Delay, s/veh	8.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	28	369	6	46	276	16	11	51	36	30	54	35
Future Vol, veh/h	28	369	6	46	276	16	11	51	36	30	54	35
Conflicting Peds, #/hr	14	0	47	10	0	23	37	0	19	9	0	51
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	82	82	82	93	93	93	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	467	8	56	337	20	12	55	39	34	61	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	380	0	0	522	0	0	950	1080	304	832	1074	253
Stage 1	-	-	-	-	-	-	588	588	-	482	482	-
Stage 2	-	-	-	-	-	-	362	492	-	350	592	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1175	-	-	1041	-	-	215	217	692	262	218	746
Stage 1	-	-	-	-	-	-	462	494	-	534	552	-
Stage 2	-	-	-	-	-	-	629	546	-	639	492	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1149	-	-	994	-	-	125	181	649	167	182	694
Mov Cap-2 Maneuver	-	-	-	-	-	-	125	181	-	167	182	-
Stage 1	-	-	-	-	-	-	423	453	-	501	502	-
Stage 2	-	-	-	-	-	-	461	497	-	497	451	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			1.4			33.2			42.2		
HCM LOS							D			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	230	1149	-	-	994	-	-	226
HCM Lane V/C Ratio	0.458	0.031	-	-	0.056	-	-	0.598
HCM Control Delay (s)	33.2	8.2	0.1	-	8.8	0.2	-	42.2
HCM Lane LOS	D	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	2.2	0.1	-	-	0.2	-	-	3.4

HCM 6th Signalized Intersection Summary  
 1: Sierra Street & University Terrace/9th Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	144	37	52	44	24	33	164	17	41	696	100
Future Volume (veh/h)	74	144	37	52	44	24	33	164	17	41	696	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.94	0.98		0.98	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	180	46	78	66	36	47	234	24	45	765	110
Peak Hour Factor	0.80	0.80	0.80	0.67	0.67	0.67	0.70	0.70	0.70	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	261	294	75	165	234	128	374	1312	1106	797	1312	1083
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	1271	1415	362	1134	1128	615	634	1870	1577	1119	1870	1544
Grp Volume(v), veh/h	92	0	226	78	0	102	47	234	24	45	765	110
Grp Sat Flow(s),veh/h/ln	1271	0	1777	1134	0	1744	634	1870	1577	1119	1870	1544
Q Serve(g_s), s	7.9	0.0	13.9	8.0	0.0	5.9	4.9	5.1	0.6	1.7	24.8	2.7
Cycle Q Clear(g_c), s	13.8	0.0	13.9	21.9	0.0	5.9	29.6	5.1	0.6	6.8	24.8	2.7
Prop In Lane	1.00		0.20	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	261	0	369	165	0	362	374	1312	1106	797	1312	1083
V/C Ratio(X)	0.35	0.00	0.61	0.47	0.00	0.28	0.13	0.18	0.02	0.06	0.58	0.10
Avail Cap(c_a), veh/h	346	0	487	242	0	481	374	1312	1106	797	1312	1083
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	0.0	43.2	53.1	0.0	40.0	16.5	6.1	5.4	7.3	9.0	5.8
Incr Delay (d2), s/veh	0.8	0.0	1.6	2.1	0.0	0.4	0.7	0.3	0.0	0.1	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	6.3	2.4	0.0	2.6	0.8	2.0	0.2	0.4	9.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	0.0	44.8	55.2	0.0	40.4	17.2	6.4	5.5	7.4	10.9	5.9
LnGrp LOS	D	A	D	E	A	D	B	A	A	A	B	A
Approach Vol, veh/h		318			180			305			920	
Approach Delay, s/veh		45.3			46.8			8.0			10.2	
Approach LOS		D			D			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		90.0		30.0		90.0		30.0				
Change Period (Y+Rc), s		5.8		5.1		5.8		* 5.1				
Max Green Setting (Gmax), s		76.2		32.9		76.2		* 33				
Max Q Clear Time (g_c+I1), s		31.6		15.9		26.8		23.9				
Green Ext Time (p_c), s		2.1		1.5		7.6		0.5				

Intersection Summary

HCM 6th Ctrl Delay	20.1
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



# HCM 6th Signalized Intersection Summary

## 2: Virginia Street & 9th Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	9	34	9	6	30	56	18	525	61	46	195	21
Future Volume (veh/h)	9	34	9	6	30	56	18	525	61	46	195	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.93		0.93	0.95		0.90	0.99		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	51	13	7	37	69	22	640	74	61	260	28
Peak Hour Factor	0.67	0.67	0.67	0.81	0.81	0.81	0.82	0.82	0.82	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	292	285	67	316	251	792	1348	981	483	1348	1111
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	234	1504	1468	168	1624	1293	1084	1870	1361	736	1870	1541
Grp Volume(v), veh/h	64	0	13	44	0	69	22	640	74	61	260	28
Grp Sat Flow(s),veh/h/ln	1739	0	1468	1792	0	1293	1084	1870	1361	736	1870	1541
Q Serve(g_s), s	0.0	0.0	0.9	0.0	0.0	5.5	0.8	17.4	1.9	4.6	5.4	0.6
Cycle Q Clear(g_c), s	3.4	0.0	0.9	2.3	0.0	5.5	6.2	17.4	1.9	22.0	5.4	0.6
Prop In Lane	0.20		1.00	0.16		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	374	0	285	383	0	251	792	1348	981	483	1348	1111
V/C Ratio(X)	0.17	0.00	0.05	0.11	0.00	0.27	0.03	0.47	0.08	0.13	0.19	0.03
Avail Cap(c_a), veh/h	816	0	672	841	0	591	792	1348	981	483	1348	1111
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.00	0.79	1.00	0.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	0.0	39.3	39.9	0.0	41.1	6.4	7.1	5.0	11.8	5.4	4.8
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.1	0.0	0.6	0.1	1.2	0.1	0.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.3	1.1	0.0	1.8	0.2	6.7	0.5	0.8	2.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.5	0.0	39.3	40.0	0.0	41.7	6.5	8.3	5.1	12.3	5.8	4.8
LnGrp LOS	D	A	D	D	A	D	A	A	A	B	A	A
Approach Vol, veh/h		77			113			736			349	
Approach Delay, s/veh		40.3			41.1			7.9			6.8	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		91.6		28.4		91.6		28.4				
Change Period (Y+Rc), s		5.1		5.1		5.1		5.1				
Max Green Setting (Gmax), s		54.9		54.9		54.9		54.9				
Max Q Clear Time (g_c+I1), s		19.4		5.4		24.0		7.5				
Green Ext Time (p_c), s		5.4		0.4		2.2		0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											12.5	
HCM 6th LOS											B	

HCM 6th AWSC  
3: Center Street & 9th Street

03/04/2020




Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	14	62	6	9	40	8	82	45	126	25	28	47
Future Vol, veh/h	14	62	6	9	40	8	82	45	126	25	28	47
Peak Hour Factor	0.78	0.78	0.78	0.63	0.63	0.63	0.86	0.86	0.86	0.60	0.60	0.60
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	79	8	14	63	13	95	52	147	42	47	78
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.1	8.9	9.2	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	17%	16%	100%	0%
Vol Thru, %	0%	26%	76%	70%	0%	37%
Vol Right, %	0%	74%	7%	14%	0%	63%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	171	82	57	25	75
LT Vol	82	0	14	9	25	0
Through Vol	0	45	62	40	0	28
RT Vol	0	126	6	8	0	47
Lane Flow Rate	95	199	105	90	42	125
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.151	0.258	0.149	0.128	0.067	0.169
Departure Headway (Hd)	5.698	4.675	5.103	5.084	5.825	4.879
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	627	766	699	701	613	731
Service Time	3.45	2.427	3.162	3.144	3.584	2.637
HCM Lane V/C Ratio	0.152	0.26	0.15	0.128	0.069	0.171
HCM Control Delay	9.5	9.1	9.1	8.9	9	8.6
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.5	1	0.5	0.4	0.2	0.6

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	20	10	190	15	5
Future Vol, veh/h	27	20	10	190	15	5
Peak Hour Factor	0.73	0.73	0.63	0.63	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	27	16	302	20	7
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.8	8.1	7.7
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	57%	75%
Vol Thru, %	5%	0%	25%
Vol Right, %	95%	43%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	200	47	20
LT Vol	0	27	15
Through Vol	10	0	5
RT Vol	190	20	0
Lane Flow Rate	317	64	27
Geometry Grp	1	1	1
Degree of Util (X)	0.308	0.078	0.033
Departure Headway (Hd)	3.496	4.386	4.439
Convergence, Y/N	Yes	Yes	Yes
Cap	1019	809	799
Service Time	1.545	2.452	2.505
HCM Lane V/C Ratio	0.311	0.079	0.034
HCM Control Delay	8.1	7.8	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.3	0.3	0.1

HCM 6th TWSC  
6: Evans Avenue & Highland Avenue

03/04/2020

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	20	125	28	49	216
Future Vol, veh/h	16	20	125	28	49	216
Conflicting Peds, #/hr	20	0	0	20	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	57	57	79	79	74	74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	35	158	35	66	292

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	640	196	0	0	213	0
Stage 1	196	-	-	-	-	-
Stage 2	444	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	440	845	-	-	1357	-
Stage 1	837	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	399	829	-	-	1331	-
Mov Cap-2 Maneuver	399	-	-	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	596	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	561	1331
HCM Lane V/C Ratio	-	-	0.113	0.05
HCM Control Delay (s)	-	-	12.2	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.2

HCM 6th TWSC  
7: Valley Road & Highland Avenue

03/04/2020

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	52	43	16	94	203	65
Future Vol, veh/h	52	43	16	94	203	65
Conflicting Peds, #/hr	3	14	8	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	69	69	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	57	23	136	254	81

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	491	320	346	0	-	0
Stage 1	306	-	-	-	-	-
Stage 2	185	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	537	721	1213	-	-	-
Stage 1	747	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	516	704	1200	-	-	-
Mov Cap-2 Maneuver	587	-	-	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	839	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	635	-	-
HCM Lane V/C Ratio	0.019	-	0.197	-	-
HCM Control Delay (s)	8.1	-	12.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Intersection						
Int Delay, s/veh	14.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↖		↘	↗
Traffic Vol, veh/h	108	99	79	67	230	185
Future Vol, veh/h	108	99	79	67	230	185
Conflicting Peds, #/hr	18	6	0	8	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	79	79	59	59
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	159	146	100	85	390	314

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1263	157	0	0	193
Stage 1	151	-	-	-	-
Stage 2	1112	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	187	889	-	-	1380
Stage 1	877	-	-	-	-
Stage 2	315	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 130	877	-	-	1369
Mov Cap-2 Maneuver	193	-	-	-	-
Stage 1	870	-	-	-	-
Stage 2	221	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	44.4	0	4.8
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	193	877	1369
HCM Lane V/C Ratio	-	-	0.823	0.166	0.285
HCM Control Delay (s)	-	-	76	9.9	8.7
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	5.9	0.6	1.2

Notes  
 ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

# HCM 6th Signalized Intersection Summary

## 9: Virginia Street & 8th Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑		↑	↑↑			↑↑	
Traffic Volume (veh/h)	0	0	0	188	1112	371	76	320	0	0	398	53
Future Volume (veh/h)	0	0	0	188	1112	371	76	320	0	0	398	53
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.97	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				204	1209	403	81	340	0	0	561	75
Peak Hour Factor				0.92	0.92	0.92	0.94	0.94	0.94	0.71	0.71	0.71
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				295	1852	636	244	1336	0	0	865	115
Arrive On Green				0.18	0.18	0.18	0.10	0.75	0.00	0.00	0.29	0.29
Sat Flow, veh/h				547	3430	1178	1781	3647	0	0	3070	397
Grp Volume(v), veh/h				688	578	551	81	340	0	0	334	302
Grp Sat Flow(s),veh/h/ln				1843	1702	1609	1781	1777	0	0	1777	1597
Q Serve(g_s), s				42.0	37.7	38.0	3.7	3.5	0.0	0.0	19.7	19.9
Cycle Q Clear(g_c), s				42.0	37.7	38.0	3.7	3.5	0.0	0.0	19.7	19.9
Prop In Lane				0.30		0.73	1.00		0.00	0.00		0.25
Lane Grp Cap(c), veh/h				995	919	869	244	1336	0	0	516	464
V/C Ratio(X)				0.69	0.63	0.63	0.33	0.25	0.00	0.00	0.65	0.65
Avail Cap(c_a), veh/h				995	919	869	315	1336	0	0	516	464
HCM Platoon Ratio				0.33	0.33	0.33	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				0.70	0.70	0.70	0.97	0.97	0.00	0.00	0.99	0.99
Uniform Delay (d), s/veh				39.9	38.2	38.3	26.9	9.7	0.0	0.0	37.2	37.2
Incr Delay (d2), s/veh				2.8	2.3	2.5	0.8	0.4	0.0	0.0	6.1	6.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				21.5	17.8	17.0	1.5	1.3	0.0	0.0	9.4	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				42.7	40.5	40.8	27.7	10.2	0.0	0.0	43.3	44.1
LnGrp LOS				D	D	D	C	B	A	A	D	D
Approach Vol, veh/h					1816			421			636	
Approach Delay, s/veh					41.4			13.6			43.7	
Approach LOS					D			B			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.0			10.2	39.8		70.0				
Change Period (Y+Rc), s		4.9			4.5	4.9		5.2				
Max Green Setting (Gmax), s		45.1			10.5	30.1		64.8				
Max Q Clear Time (g_c+I1), s		5.5			5.7	21.9		44.0				
Green Ext Time (p_c), s		2.4			0.1	2.5		13.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											37.8	
HCM 6th LOS											D	

HCM 6th Signalized Intersection Summary  
 10: Center Street & 8th Street/I-80 WB Off-Ramp

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑			↑	↑
Traffic Volume (veh/h)	0	0	0	3	1565	226	46	104	0	0	36	15
Future Volume (veh/h)	0	0	0	3	1565	226	46	104	0	0	36	15
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.98	0.99		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				4	1909	276	55	125	0	0	49	21
Peak Hour Factor				0.82	0.82	0.82	0.83	0.83	0.83	0.73	0.73	0.73
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				7	3479	516	245	608	0	0	304	256
Arrive On Green				0.75	0.75	0.75	0.05	0.05	0.00	0.00	0.16	0.16
Sat Flow, veh/h				9	4614	684	1322	3741	0	0	1870	1573
Grp Volume(v), veh/h				814	674	700	55	125	0	0	49	21
Grp Sat Flow(s),veh/h/ln				1870	1702	1735	1322	1870	0	0	1870	1573
Q Serve(g_s), s				22.8	19.4	20.0	4.8	3.8	0.0	0.0	2.7	1.4
Cycle Q Clear(g_c), s				22.8	19.4	20.0	7.5	3.8	0.0	0.0	2.7	1.4
Prop In Lane				0.00		0.39	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1410	1284	1308	245	608	0	0	304	256
V/C Ratio(X)				0.58	0.53	0.54	0.22	0.21	0.00	0.00	0.16	0.08
Avail Cap(c_a), veh/h				1410	1284	1308	245	608	0	0	324	273
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.82	0.82	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				6.4	6.0	6.1	52.4	49.4	0.0	0.0	43.2	42.7
Incr Delay (d2), s/veh				1.7	1.5	1.6	1.7	0.6	0.0	0.0	0.2	0.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.3	6.5	6.8	1.8	1.9	0.0	0.0	1.3	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				8.2	7.5	7.7	54.2	50.0	0.0	0.0	43.5	42.8
LnGrp LOS				A	A	A	D	D	A	A	D	D
Approach Vol, veh/h					2189			180			70	
Approach Delay, s/veh					7.8			51.3			43.3	
Approach LOS					A			D			D	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		24.7				24.7		95.3				
Change Period (Y+Rc), s		* 5.2				* 5.2		4.8				
Max Green Setting (Gmax), s		* 20				* 21		65.2				
Max Q Clear Time (g_c+I1), s		9.5				4.7		24.8				
Green Ext Time (p_c), s		0.6				0.2		25.1				

Intersection Summary

HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



HCM 6th TWSC  
 11: Evans Avenue & 9th Street

03/10/2020

Intersection						
Int Delay, s/veh	6.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	300	40	150	50	100	30
Future Vol, veh/h	300	40	150	50	100	30
Conflicting Peds, #/hr	0	0	0	0	0	38
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	83	92	92	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	326	43	181	54	109	42

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	369	0	764 386
Stage 1	-	-	-	-	348 -
Stage 2	-	-	-	-	416 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1190	-	372 662
Stage 1	-	-	-	-	715 -
Stage 2	-	-	-	-	666 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1190	-	314 638
Mov Cap-2 Maneuver	-	-	-	-	314 -
Stage 1	-	-	-	-	715 -
Stage 2	-	-	-	-	561 -

Approach	EB	WB	NB
HCM Control Delay, s	0	6.6	21.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	365	-	-	1190	-
HCM Lane V/C Ratio	0.412	-	-	0.152	-
HCM Control Delay (s)	21.6	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2	-	-	0.5	-

HCM 6th Signalized Intersection Summary  
 12: Virginia Street & Maple Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↕↔						↕↔		↔	↕↕	
Traffic Volume (veh/h)	181	149	53	0	0	0	0	227	72	341	363	0
Future Volume (veh/h)	181	149	53	0	0	0	0	227	72	341	363	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	199	164	58				0	280	89	388	412	0
Peak Hour Factor	0.91	0.91	0.91				0.81	0.81	0.81	0.88	0.88	0.88
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	595	839	286				0	1395	432	766	2479	0
Arrive On Green	0.33	0.33	0.33				0.00	0.53	0.53	0.27	1.00	0.00
Sat Flow, veh/h	1781	2512	855				0	2741	821	1781	3647	0
Grp Volume(v), veh/h	199	109	113				0	186	183	388	412	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1665				0	1777	1692	1781	1777	0
Q Serve(g_s), s	10.0	5.5	5.8				0.0	6.6	6.9	12.7	0.0	0.0
Cycle Q Clear(g_c), s	10.0	5.5	5.8				0.0	6.6	6.9	12.7	0.0	0.0
Prop In Lane	1.00		0.51				0.00		0.49	1.00		0.00
Lane Grp Cap(c), veh/h	595	569	556				0	936	891	766	2479	0
V/C Ratio(X)	0.33	0.19	0.20				0.00	0.20	0.21	0.51	0.17	0.00
Avail Cap(c_a), veh/h	595	569	556				0	936	891	981	2479	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.67	0.67	0.00
Uniform Delay (d), s/veh	29.9	28.4	28.5				0.0	15.0	15.1	7.5	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.7	0.8				0.0	0.5	0.5	0.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	2.4	2.5				0.0	2.8	2.8	3.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.5	29.2	29.4				0.0	15.5	15.6	7.9	0.1	0.0
LnGrp LOS	C	C	C				A	B	B	A	A	A
Approach Vol, veh/h		421						369			800	
Approach Delay, s/veh		30.3						15.5			3.9	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2		4				6				
Phs Duration (G+Y+Rc), s	20.4	68.6		45.0				89.0				
Change Period (Y+Rc), s	4.5	4.9		4.9				* 4.9				
Max Green Setting (Gmax), s	30.5	35.1		40.1				* 71				
Max Q Clear Time (g_c+I1), s	14.7	8.9		12.0				2.0				
Green Ext Time (p_c), s	1.1	2.3		2.7				3.1				

Intersection Summary

HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary  
 13: Center Street & Maple Street/I-80 EB On-Ramp

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	528	2	0	0	0	0	140	329	45	0	0
Future Volume (veh/h)	27	528	2	0	0	0	0	140	329	45	0	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	0	0
Adj Flow Rate, veh/h	32	621	2				0	151	354	55	0	0
Peak Hour Factor	0.85	0.85	0.85				0.93	0.93	0.93	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2				0	2	2	2	0	0
Cap, veh/h	1214	2475	8				0	275	454	84	0	0
Arrive On Green	0.68	0.68	0.68				0.00	0.15	0.15	0.05	0.00	0.00
Sat Flow, veh/h	1781	3633	12				0	1870	3084	1781	55	
Grp Volume(v), veh/h	32	304	319				0	151	354	55	64.0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1868				0	1870	1542	1781	E	
Q Serve(g_s), s	0.7	7.9	7.9				0.0	9.0	13.3	3.6		
Cycle Q Clear(g_c), s	0.7	7.9	7.9				0.0	9.0	13.3	3.6		
Prop In Lane	1.00		0.01				0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1214	1211	1273				0	275	454	84		
V/C Ratio(X)	0.03	0.25	0.25				0.00	0.55	0.78	0.65		
Avail Cap(c_a), veh/h	1214	1211	1273				0	620	1023	156		
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.90	0.90	0.90				0.00	1.00	1.00	0.94		
Uniform Delay (d), s/veh	6.2	7.3	7.3				0.0	47.5	49.3	56.2		
Incr Delay (d2), s/veh	0.0	0.4	0.4				0.0	1.7	3.0	7.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	3.0	3.1				0.0	4.3	5.3	1.8		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.2	7.8	7.8				0.0	49.2	52.3	64.0		
LnGrp LOS	A	A	A				A	D	D	E		
Approach Vol, veh/h		655						505				
Approach Delay, s/veh		7.7						51.3				
Approach LOS		A						D				
Timer - Assigned Phs	1	2	4									
Phs Duration (G+Y+Rc), s	0.2	22.9	87.0									
Change Period (Y+Rc), s	4.5	* 5.2	* 5.2									
Max Green Setting (Gmax), s	0.5	* 40	* 55									
Max Q Clear Time (g_c+15), s	0.6	15.3	9.9									
Green Ext Time (p_c), s	0.0	2.4	4.4									

Intersection Summary

HCM 6th Ctrl Delay	28.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	12	6	116	10	49	174
Future Vol, veh/h	12	6	116	10	49	174
Conflicting Peds, #/hr	0	23	0	23	23	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	79	79	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	8	147	13	68	242

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	555	200	0	0	183
Stage 1	177	-	-	-	-
Stage 2	378	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	493	841	-	-	1392
Stage 1	854	-	-	-	-
Stage 2	693	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	454	805	-	-	1362
Mov Cap-2 Maneuver	454	-	-	-	-
Stage 1	835	-	-	-	-
Stage 2	653	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	531	1362
HCM Lane V/C Ratio	-	-	0.045	0.05
HCM Control Delay (s)	-	-	12.1	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0.2

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	11	20	6	5	10	33	7	283	16	50	364	22
Future Vol, veh/h	11	20	6	5	10	33	7	283	16	50	364	22
Conflicting Peds, #/hr	7	0	39	5	0	35	34	0	33	28	0	41
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	67	67	67	75	75	75	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	32	10	7	15	49	9	377	21	61	444	27

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	870	1070	316	838	1073	267	512	0	0	431	0	0
Stage 1	621	621	-	439	439	-	-	-	-	-	-	-
Stage 2	249	449	-	399	634	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	246	220	680	259	219	731	1050	-	-	1125	-	-
Stage 1	442	477	-	567	576	-	-	-	-	-	-	-
Stage 2	733	571	-	598	471	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	190	192	629	198	191	684	1009	-	-	1090	-	-
Mov Cap-2 Maneuver	190	192	-	198	191	-	-	-	-	-	-	-
Stage 1	421	433	-	544	553	-	-	-	-	-	-	-
Stage 2	634	548	-	496	427	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	27.8		16.6		0.2		1	
HCM LOS	D		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1009	-	-	216	381	1090	-
HCM Lane V/C Ratio	0.009	-	-	0.272	0.188	0.056	-
HCM Control Delay (s)	8.6	-	-	27.8	16.6	8.5	-
HCM Lane LOS	A	-	-	D	C	A	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.7	0.2	-

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗		↕↗↘					
Traffic Vol, veh/h	32	17	0	0	11	32	9	473	18	0	0	0
Future Vol, veh/h	32	17	0	0	11	32	9	473	18	0	0	0
Conflicting Peds, #/hr	0	0	20	9	0	6	11	0	15	6	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	61	61	61	90	90	90	25	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	22	0	0	18	52	10	526	20	0	0	0

Major/Minor	Minor2		Minor1		Major1					
Conflicting Flow All	256	592	-	-	582	294	11	0	0	
Stage 1	11	11	-	-	571	-	-	-	-	
Stage 2	245	581	-	-	11	-	-	-	-	
Critical Hdwy	6.44	6.54	-	-	6.54	7.14	5.34	-	-	
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-	
Critical Hdwy Stg 2	6.74	5.54	-	-	-	-	-	-	-	
Follow-up Hdwy	3.82	4.02	-	-	4.02	3.92	3.12	-	-	
Pot Cap-1 Maneuver	681	418	0	0	423	599	1141	-	-	
Stage 1	-	-	0	0	503	-	-	-	-	
Stage 2	676	498	0	0	-	-	-	-	-	
Platoon blocked, %								-	-	
Mov Cap-1 Maneuver	587	403	-	-	407	590	1129	-	-	
Mov Cap-2 Maneuver	587	403	-	-	407	-	-	-	-	
Stage 1	-	-	-	-	489	-	-	-	-	
Stage 2	585	485	-	-	-	-	-	-	-	

Approach	EB		WB		NB	
HCM Control Delay, s	13.1		12.8		0.1	
HCM LOS	B		B			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	
Capacity (veh/h)	1129	-	-	507	529
HCM Lane V/C Ratio	0.009	-	-	0.122	0.133
HCM Control Delay (s)	8.2	0	-	13.1	12.8
HCM Lane LOS	A	A	-	B	B
HCM 95th %tile Q(veh)	0	-	-	0.4	0.5

HCM 6th Signalized Intersection Summary  
 17: 6th Street & Virginia Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↘		↗	↗↘		↗	↗↘		↗	↗↘	
Traffic Volume (veh/h)	83	108	11	15	117	43	18	0	0	38	275	61
Future Volume (veh/h)	83	108	11	15	117	43	18	0	0	38	275	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.98		0.96	1.00		1.00	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	102	133	14	17	136	50	23	0	0	44	320	71
Peak Hour Factor	0.81	0.81	0.81	0.86	0.86	0.86	0.79	0.79	0.79	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	637	66	276	502	176	725	2456	0	1051	2000	438
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.69	0.00	0.00	0.69	0.69	0.69
Sat Flow, veh/h	1169	3240	336	1216	2554	894	989	3647	0	1405	2894	633
Grp Volume(v), veh/h	102	72	75	17	92	94	23	0	0	44	195	196
Grp Sat Flow(s),veh/h/ln	1169	1777	1799	1216	1777	1671	989	1777	0	1405	1777	1750
Q Serve(g_s), s	7.3	3.1	3.1	1.1	4.0	4.3	0.7	0.0	0.0	0.9	3.4	3.5
Cycle Q Clear(g_c), s	11.6	3.1	3.1	4.2	4.0	4.3	4.3	0.0	0.0	0.9	3.4	3.5
Prop In Lane	1.00		0.19	1.00		0.53	1.00		0.00	1.00		0.36
Lane Grp Cap(c), veh/h	254	349	354	276	349	328	725	2456	0	1051	1228	1210
V/C Ratio(X)	0.40	0.21	0.21	0.06	0.26	0.28	0.03	0.00	0.00	0.04	0.16	0.16
Avail Cap(c_a), veh/h	476	687	696	508	687	646	725	2456	0	1051	1228	1210
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	30.3	30.3	32.1	30.6	30.8	5.6	0.0	0.0	4.4	4.8	4.8
Incr Delay (d2), s/veh	1.0	0.3	0.3	0.1	0.4	0.4	0.1	0.0	0.0	0.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.3	1.4	0.3	1.7	1.7	0.2	0.0	0.0	0.2	1.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	30.6	30.6	32.2	31.0	31.2	5.7	0.0	0.0	4.5	5.1	5.1
LnGrp LOS	D	C	C	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		249			203			23			435	
Approach Delay, s/veh		33.1			31.2			5.7			5.0	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		67.1		22.9		67.1		22.9				
Change Period (Y+Rc), s		4.9		* 5.2		4.9		* 5.2				
Max Green Setting (Gmax), s		45.1		* 35		45.1		* 35				
Max Q Clear Time (g_c+I1), s		6.3		13.6		5.5		6.3				
Green Ext Time (p_c), s		0.1		1.1		2.7		1.1				

Intersection Summary

HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 18: 6th Street & Center Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕↕				
Traffic Volume (veh/h)	59	168	0	0	194	36	8	404	48	0	0	0
Future Volume (veh/h)	59	168	0	0	194	36	8	404	48	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.90	0.90	1.00	0.90			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	78	221	0	0	226	42	9	454	54			
Peak Hour Factor	0.76	0.76	0.76	0.86	0.86	0.86	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	182	481	0	0	583	106	53	2831	342			
Arrive On Green	0.21	0.21	0.00	0.00	0.21	0.21	0.65	0.65	0.65			
Sat Flow, veh/h	462	2423	0	0	2931	517	82	4355	527			
Grp Volume(v), veh/h	153	146	0	0	140	128	185	170	162			
Grp Sat Flow(s),veh/h/ln	1183	1617	0	0	1777	1578	1679	1702	1583			
Q Serve(g_s), s	3.8	4.9	0.0	0.0	4.2	4.4	2.7	2.4	2.5			
Cycle Q Clear(g_c), s	8.2	4.9	0.0	0.0	4.2	4.4	2.7	2.4	2.5			
Prop In Lane	0.51		0.00	0.00		0.33	0.05		0.33			
Lane Grp Cap(c), veh/h	330	332	0	0	365	324	1091	1106	1029			
V/C Ratio(X)	0.46	0.44	0.00	0.00	0.38	0.40	0.17	0.15	0.16			
Avail Cap(c_a), veh/h	942	1051	0	0	1155	1025	1091	1106	1029			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	23.0	21.6	0.0	0.0	21.3	21.4	4.3	4.2	4.3			
Incr Delay (d2), s/veh	1.0	0.9	0.0	0.0	0.7	0.8	0.3	0.3	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.0	1.8	0.0	0.0	1.7	1.6	0.8	0.7	0.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	22.5	0.0	0.0	22.0	22.2	4.6	4.5	4.6			
LnGrp LOS	C	C	A	A	C	C	A	A	A			
Approach Vol, veh/h		299			268			517				
Approach Delay, s/veh		23.3			22.1			4.6				
Approach LOS		C			C			A				
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		45.0		17.3				17.3				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.5		40.5				40.5				
Max Q Clear Time (g_c+I1), s		4.7		10.2				6.4				
Green Ext Time (p_c), s		3.3		1.9				1.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay					14.1							
HCM 6th LOS					B							



HCM 6th TWSC  
 19: Evans Avenue & 6th Street

03/04/2020

Intersection												
Int Delay, s/veh	10.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔↔	
Traffic Vol, veh/h	44	201	10	50	255	27	2	43	26	34	76	37
Future Vol, veh/h	44	201	10	50	255	27	2	43	26	34	76	37
Conflicting Peds, #/hr	11	0	19	8	0	15	11	0	12	4	0	22
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	81	81	81	85	85	85	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	251	13	62	315	33	2	51	31	47	104	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	363	0	0	283	0	0	743	874	163	744	864	211
Stage 1	-	-	-	-	-	-	387	387	-	471	471	-
Stage 2	-	-	-	-	-	-	356	487	-	273	393	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1192	-	-	1276	-	-	304	287	853	303	291	794
Stage 1	-	-	-	-	-	-	608	608	-	542	558	-
Stage 2	-	-	-	-	-	-	634	549	-	710	604	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1175	-	-	1253	-	-	169	246	828	219	250	766
Mov Cap-2 Maneuver	-	-	-	-	-	-	169	246	-	219	250	-
Stage 1	-	-	-	-	-	-	564	564	-	505	516	-
Stage 2	-	-	-	-	-	-	434	508	-	581	561	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.6			1.4			19.8			41.4		
HCM LOS							C			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	326	1175	-	-	1253	-	-	290
HCM Lane V/C Ratio	0.256	0.047	-	-	0.049	-	-	0.694
HCM Control Delay (s)	19.8	8.2	0.2	-	8	0.2	-	41.4
HCM Lane LOS	C	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	1	0.1	-	-	0.2	-	-	4.8

HCM 6th Signalized Intersection Summary  
 1: Sierra Street & University Terrace/9th Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	126	59	120	143	74	46	289	14	39	557	90
Future Volume (veh/h)	179	126	59	120	143	74	46	289	14	39	557	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.90	0.94		0.95	1.00		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	197	138	65	129	154	80	49	311	15	42	599	97
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	316	368	173	330	362	188	345	1049	862	576	1049	863
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.56	0.56	0.56	0.56	0.56	0.56
Sat Flow, veh/h	1116	1158	546	1106	1138	591	749	1870	1537	1047	1870	1538
Grp Volume(v), veh/h	197	0	203	129	0	234	49	311	15	42	599	97
Grp Sat Flow(s),veh/h/ln	1116	0	1704	1106	0	1729	749	1870	1537	1047	1870	1538
Q Serve(g_s), s	15.2	0.0	8.3	9.2	0.0	9.6	4.1	7.9	0.4	2.0	18.6	2.7
Cycle Q Clear(g_c), s	24.8	0.0	8.3	17.5	0.0	9.6	22.7	7.9	0.4	9.9	18.6	2.7
Prop In Lane	1.00		0.32	1.00		0.34	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	316	0	542	330	0	550	345	1049	862	576	1049	863
V/C Ratio(X)	0.62	0.00	0.37	0.39	0.00	0.43	0.14	0.30	0.02	0.07	0.57	0.11
Avail Cap(c_a), veh/h	356	0	604	372	0	617	345	1049	862	576	1049	863
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.99	0.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	0.0	23.8	30.5	0.0	24.2	20.1	10.4	8.8	13.0	12.8	9.3
Incr Delay (d2), s/veh	2.8	0.0	0.4	0.7	0.0	0.5	0.9	0.7	0.0	0.2	2.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	3.3	2.5	0.0	3.9	0.8	3.2	0.1	0.5	7.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.8	0.0	24.2	31.3	0.0	24.7	20.9	11.1	8.8	13.2	15.0	9.5
LnGrp LOS	D	A	C	C	A	C	C	B	A	B	B	A
Approach Vol, veh/h		400			363			375			738	
Approach Delay, s/veh		30.4			27.1			12.3			14.2	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		56.3		33.7		56.3		33.7				
Change Period (Y+Rc), s		5.8		5.1		5.8		* 5.1				
Max Green Setting (Gmax), s		47.2		31.9		47.2		* 32				
Max Q Clear Time (g_c+I1), s		24.7		26.8		20.6		19.5				
Green Ext Time (p_c), s		2.3		0.9		4.9		1.6				

Intersection Summary

HCM 6th Ctrl Delay	19.8
HCM 6th LOS	B

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 2: Virginia Street & 9th Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↖		↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	6	38	13	12	70	54	42	591	64	56	364	41
Future Volume (veh/h)	6	38	13	12	70	54	42	591	64	56	364	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.91		0.88	0.90		0.87	0.99		0.93	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	47	16	14	80	61	48	679	74	69	449	51
Peak Hour Factor	0.81	0.81	0.81	0.88	0.88	0.88	0.87	0.87	0.87	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	359	300	75	381	243	598	1307	927	434	1307	1048
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	127	1661	1389	185	1761	1123	892	1870	1326	710	1870	1499
Grp Volume(v), veh/h	54	0	16	84	0	71	48	679	74	69	449	51
Grp Sat Flow(s),veh/h/ln	1788	0	1389	1769	0	1300	892	1870	1326	710	1870	1499
Q Serve(g_s), s	0.0	0.0	1.1	0.0	0.0	5.4	2.7	20.6	2.1	6.1	11.4	1.3
Cycle Q Clear(g_c), s	2.8	0.0	1.1	4.4	0.0	5.4	14.1	20.6	2.1	26.7	11.4	1.3
Prop In Lane	0.13		1.00	0.17		0.86	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	420	0	300	417	0	281	598	1307	927	434	1307	1048
V/C Ratio(X)	0.13	0.00	0.05	0.20	0.00	0.25	0.08	0.52	0.08	0.16	0.34	0.05
Avail Cap(c_a), veh/h	837	0	635	831	0	595	598	1307	927	434	1307	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.00	0.94	1.00	0.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	0.0	37.3	38.6	0.0	39.0	10.0	8.5	5.8	14.9	7.2	5.6
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.2	0.0	0.5	0.2	1.4	0.2	0.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.4	2.1	0.0	1.8	0.6	8.1	0.6	1.0	4.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.1	0.0	37.4	38.8	0.0	39.5	10.2	9.9	5.9	15.0	7.3	5.7
LnGrp LOS	D	A	D	D	A	D	B	A	A	B	A	A
Approach Vol, veh/h		70			155			801			569	
Approach Delay, s/veh		37.9			39.1			9.6			8.1	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		89.0		31.0		89.0		31.0				
Change Period (Y+Rc), s		5.1		5.1		5.1		5.1				
Max Green Setting (Gmax), s		54.9		54.9		54.9		54.9				
Max Q Clear Time (g_c+I1), s		22.6		4.8		28.7		7.4				
Green Ext Time (p_c), s		6.1		0.4		3.8		1.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											13.2	
HCM 6th LOS											B	

HCM 6th AWSC  
3: Center Street & 9th Street

03/04/2020

Intersection

Intersection Delay, s/veh 9.5

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	17	83	8	19	81	9	81	27	98	37	35	76
Future Vol, veh/h	17	83	8	19	81	9	81	27	98	37	35	76
Peak Hour Factor	0.70	0.70	0.70	0.85	0.85	0.85	0.86	0.86	0.86	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	119	11	22	95	11	94	31	114	53	50	109
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0




Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.8	9.5	9.4	9.3
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	16%	17%	100%	0%
Vol Thru, %	0%	22%	77%	74%	0%	32%
Vol Right, %	0%	78%	7%	8%	0%	68%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	125	108	109	37	111
LT Vol	81	0	17	19	37	0
Through Vol	0	27	83	81	0	35
RT Vol	0	98	8	9	0	76
Lane Flow Rate	94	145	154	128	53	159
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.157	0.199	0.222	0.186	0.089	0.222
Departure Headway (Hd)	5.994	4.934	5.178	5.216	6.03	5.041
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	593	719	687	680	589	704
Service Time	3.782	2.721	3.265	3.307	3.819	2.829
HCM Lane V/C Ratio	0.159	0.202	0.224	0.188	0.09	0.226
HCM Control Delay	9.9	9	9.8	9.5	9.4	9.3
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.6	0.7	0.8	0.7	0.3	0.8

HCM 6th AWSC  
5: Record Street & Evans Avenue

03/10/2020

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	28	10	190	22	5
Future Vol, veh/h	11	28	10	190	22	5
Peak Hour Factor	0.93	0.93	0.87	0.87	0.64	0.64
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	30	11	218	34	8
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.3	7.5	7.6
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	28%	81%
Vol Thru, %	5%	0%	19%
Vol Right, %	95%	72%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	200	39	27
LT Vol	0	11	22
Through Vol	10	0	5
RT Vol	190	28	0
Lane Flow Rate	230	42	42
Geometry Grp	1	1	1
Degree of Util (X)	0.222	0.047	0.051
Departure Headway (Hd)	3.469	4.026	4.343
Convergence, Y/N	Yes	Yes	Yes
Cap	1032	882	823
Service Time	1.499	2.084	2.379
HCM Lane V/C Ratio	0.223	0.048	0.051
HCM Control Delay	7.5	7.3	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.8	0.1	0.2

HCM 6th TWSC  
6: Evans Avenue & Highland Avenue

03/04/2020

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	37	199	43	48	292
Future Vol, veh/h	34	37	199	43	48	292
Conflicting Peds, #/hr	26	0	0	26	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	79	79	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	44	47	252	54	53	324

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	761	305	0	0	332
Stage 1	305	-	-	-	-
Stage 2	456	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	373	735	-	-	1227
Stage 1	748	-	-	-	-
Stage 2	638	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	335	717	-	-	1197
Mov Cap-2 Maneuver	335	-	-	-	-
Stage 1	729	-	-	-	-
Stage 2	589	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.6	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	464	1197
HCM Lane V/C Ratio	-	-	0.196	0.045
HCM Control Delay (s)	-	-	14.6	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1

HCM 6th TWSC  
7: Valley Road & Highland Avenue

03/04/2020

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	113	30	33	241	119	91
Future Vol, veh/h	113	30	33	241	119	91
Conflicting Peds, #/hr	0	4	4	0	0	4
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	83	83	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	38	40	290	147	112

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	577	211	263	0	-	0
Stage 1	207	-	-	-	-	-
Stage 2	370	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	478	829	1301	-	-	-
Stage 1	828	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	459	823	1296	-	-	-
Mov Cap-2 Maneuver	546	-	-	-	-	-
Stage 1	799	-	-	-	-	-
Stage 2	696	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1296	-	587	-	-
HCM Lane V/C Ratio	0.031	-	0.308	-	-
HCM Control Delay (s)	7.9	-	13.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.3	-	-

HCM 6th TWSC  
8: Valley Road & Sadlier Way

03/04/2020

Intersection						
Int Delay, s/veh	5.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	112	123	163	199	150	143
Future Vol, veh/h	112	123	163	199	150	143
Conflicting Peds, #/hr	35	6	0	9	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	86	86	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	126	138	190	231	176	168

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	870	321	0	0	430
Stage 1	315	-	-	-	-
Stage 2	555	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	322	720	-	-	1129
Stage 1	740	-	-	-	-
Stage 2	575	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	260	710	-	-	1119
Mov Cap-2 Maneuver	370	-	-	-	-
Stage 1	733	-	-	-	-
Stage 2	469	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	4.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	370	710	1119
HCM Lane V/C Ratio	-	-	0.34	0.195	0.158
HCM Control Delay (s)	-	-	19.7	11.3	8.8
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	1.5	0.7	0.6



HCM 6th Signalized Intersection Summary  
 9: Virginia Street & 8th Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔↔↔		↔	↔↔			↔↔	
Traffic Volume (veh/h)	0	0	0	335	998	261	133	556	0	0	493	153
Future Volume (veh/h)	0	0	0	335	998	261	133	556	0	0	493	153
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	1.00		1.00	1.00		0.92
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				385	1147	300	149	625	0	0	594	184
Peak Hour Factor				0.87	0.87	0.87	0.89	0.89	0.89	0.83	0.83	0.83
Percent Heavy Veh, %				0	2	0	2	2	2	0	2	2
Cap, veh/h				472	1507	401	286	1632	0	0	869	268
Arrive On Green				0.15	0.15	0.15	0.14	0.92	0.00	0.00	0.35	0.35
Sat Flow, veh/h				1023	3270	871	1781	3647	0	0	2570	764
Grp Volume(v), veh/h				684	582	566	149	625	0	0	426	352
Grp Sat Flow(s),veh/h/ln				1819	1702	1644	1781	1777	0	0	1777	1463
Q Serve(g_s), s				43.7	39.2	39.5	6.3	2.7	0.0	0.0	24.5	24.7
Cycle Q Clear(g_c), s				43.7	39.2	39.5	6.3	2.7	0.0	0.0	24.5	24.7
Prop In Lane				0.56		0.53	1.00		0.00	0.00		0.52
Lane Grp Cap(c), veh/h				838	784	757	286	1632	0	0	624	514
V/C Ratio(X)				0.82	0.74	0.75	0.52	0.38	0.00	0.00	0.68	0.69
Avail Cap(c_a), veh/h				838	784	757	391	1632	0	0	624	514
HCM Platoon Ratio				0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				0.62	0.62	0.62	0.44	0.44	0.00	0.00	0.95	0.95
Uniform Delay (d), s/veh				46.0	44.0	44.2	22.5	2.8	0.0	0.0	33.2	33.3
Incr Delay (d2), s/veh				5.5	3.9	4.2	0.6	0.3	0.0	0.0	5.7	6.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				22.6	18.8	18.3	2.4	0.8	0.0	0.0	11.5	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				51.5	48.0	48.4	23.2	3.1	0.0	0.0	38.9	40.2
LnGrp LOS				D	D	D	C	A	A	A	D	D
Approach Vol, veh/h					1832			774			778	
Approach Delay, s/veh					49.4			6.9			39.5	
Approach LOS					D			A			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		60.0			13.0	47.0		60.0				
Change Period (Y+Rc), s		4.9			4.5	4.9		4.7				
Max Green Setting (Gmax), s		55.1			15.5	35.1		55.3				
Max Q Clear Time (g_c+I1), s		4.7			8.3	26.7		45.7				
Green Ext Time (p_c), s		5.0			0.2	3.2		7.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											37.4	
HCM 6th LOS											D	

HCM 6th Signalized Intersection Summary  
 10: Center Street & 8th Street/I-80 WB Off-Ramp

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↖	↗			↑	↗
Traffic Volume (veh/h)	0	0	0	3	1174	166	196	159	0	0	68	28
Future Volume (veh/h)	0	0	0	3	1174	166	196	159	0	0	68	28
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				3	1276	180	286	228	0	0	92	38
Peak Hour Factor				0.92	0.92	0.92	0.69	0.69	0.69	0.74	0.74	0.74
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				7	3292	483	530	382	0	0	382	322
Arrive On Green				0.71	0.71	0.71	0.07	0.07	0.00	0.00	0.20	0.20
Sat Flow, veh/h				10	4620	678	2513	1870	0	0	1870	1578
Grp Volume(v), veh/h				546	452	461	286	228	0	0	92	38
Grp Sat Flow(s),veh/h/ln				1870	1702	1736	1256	1870	0	0	1870	1578
Q Serve(g_s), s				14.2	12.5	12.5	13.4	14.2	0.0	0.0	4.9	2.4
Cycle Q Clear(g_c), s				14.2	12.5	12.5	18.4	14.2	0.0	0.0	4.9	2.4
Prop In Lane				0.01		0.39	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1332	1213	1237	530	382	0	0	382	322
V/C Ratio(X)				0.41	0.37	0.37	0.54	0.60	0.00	0.00	0.24	0.12
Avail Cap(c_a), veh/h				1332	1213	1237	530	382	0	0	382	322
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.43	0.43	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				7.0	6.8	6.8	55.5	51.2	0.0	0.0	40.0	38.9
Incr Delay (d2), s/veh				0.9	0.9	0.9	1.7	3.0	0.0	0.0	0.3	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.5	4.4	4.5	4.7	7.5	0.0	0.0	2.3	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				7.9	7.6	7.6	57.2	54.1	0.0	0.0	40.3	39.1
LnGrp LOS				A	A	A	E	D	A	A	D	D
Approach Vol, veh/h					1459			514			130	
Approach Delay, s/veh					7.7			55.8			39.9	
Approach LOS					A			E			D	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		29.7				29.7		90.3				
Change Period (Y+Rc), s		* 5.2				* 5.2		4.8				
Max Green Setting (Gmax), s		* 25				* 21		60.2				
Max Q Clear Time (g_c+I1), s		20.4				6.9		16.2				
Green Ext Time (p_c), s		1.0				0.4		13.6				

Intersection Summary

HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	8.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	300	40	150	40	150	19
Future Vol, veh/h	300	40	150	40	150	19
Conflicting Peds, #/hr	0	0	0	0	0	40
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	83	92	92	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	326	43	181	43	163	27
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	369	0	753	388
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	405	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1190	-	377	660
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1190	-	318	635
Mov Cap-2 Maneuver	-	-	-	-	318	-
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	568	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	6.9	27.9			
HCM LOS			D			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	342	-	-	1190	-	
HCM Lane V/C Ratio	0.556	-	-	0.152	-	
HCM Control Delay (s)	27.9	-	-	8.6	0	
HCM Lane LOS	D	-	-	A	A	
HCM 95th %tile Q(veh)	3.2	-	-	0.5	-	

HCM 6th Signalized Intersection Summary  
 12: Virginia Street & Maple Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔↔						↔↔		↔	↔↔	
Traffic Volume (veh/h)	110	287	93	0	0	0	2	595	188	358	528	0
Future Volume (veh/h)	110	287	93	0	0	0	2	595	188	358	528	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.84				0.97		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900				1870	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	120	312	101				2	708	224	407	600	0
Peak Hour Factor	0.92	0.92	0.92				0.84	0.84	0.84	0.88	0.88	0.88
Percent Heavy Veh, %	0	2	0				2	2	2	2	2	0
Cap, veh/h	205	567	176				31	1116	352	645	2591	0
Arrive On Green	0.19	0.19	0.19				0.44	0.44	0.44	0.51	1.00	0.00
Sat Flow, veh/h	1082	2997	930				1	2550	805	1781	3647	0
Grp Volume(v), veh/h	201	170	162				520	0	414	407	600	0
Grp Sat Flow(s),veh/h/ln	1816	1702	1491				1869	0	1488	1781	1777	0
Q Serve(g_s), s	12.1	10.8	11.9				0.0	0.0	26.0	9.7	0.0	0.0
Cycle Q Clear(g_c), s	12.1	10.8	11.9				26.0	0.0	26.0	9.7	0.0	0.0
Prop In Lane	0.60		0.62				0.00		0.54	1.00		0.00
Lane Grp Cap(c), veh/h	343	322	282				848	0	651	645	2591	0
V/C Ratio(X)	0.59	0.53	0.57				0.61	0.00	0.64	0.63	0.23	0.00
Avail Cap(c_a), veh/h	501	469	411				848	0	651	645	2591	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	0.00	1.00	0.62	0.62	0.00
Uniform Delay (d), s/veh	44.4	43.8	44.3				26.3	0.0	26.3	8.2	0.0	0.0
Incr Delay (d2), s/veh	1.6	1.3	1.8				3.3	0.0	4.7	2.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	4.7	4.5				12.2	0.0	9.9	2.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	45.2	46.1				29.6	0.0	31.0	11.1	0.1	0.0
LnGrp LOS	D	D	D				C	A	C	B	A	A
Approach Vol, veh/h		533						934			1007	
Approach Delay, s/veh		45.8						30.2			4.6	
Approach LOS		D						C			A	
Timer - Assigned Phs	1	2		4				6				
Phs Duration (G+Y+Rc), s	35.0	57.4		27.6				92.4				
Change Period (Y+Rc), s	4.5	4.9		4.9				* 4.9				
Max Green Setting (Gmax), s	30.5	42.1		33.1				* 78				
Max Q Clear Time (g_c+I1), s	11.7	28.0		14.1				2.0				
Green Ext Time (p_c), s	1.2	5.4		3.2				4.8				

Intersection Summary

HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 13: Center Street & Maple Street/I-80 EB On-Ramp

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	765	0	0	0	0	0	388	699	91	0	0
Future Volume (veh/h)	30	765	0	0	0	0	0	388	699	91	0	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	0				0	1870	1870	1870	0	0
Adj Flow Rate, veh/h	37	933	0				0	511	920	111	0	0
Peak Hour Factor	0.82	0.82	0.82				0.76	0.76	0.76	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	0				0	2	2	2	0	0
Cap, veh/h	815	1626	0				0	635	1046	140	0	0
Arrive On Green	0.46	0.46	0.00				0.00	0.34	0.34	0.08	0.00	0.00
Sat Flow, veh/h	1781	3647	0				0	1870	3081	1781	111	
Grp Volume(v), veh/h	37	933	0				0	511	920	111	62.4	
Grp Sat Flow(s),veh/h/ln	1781	1777	0				0	1870	1541	1781	E	
Q Serve(g_s), s	1.4	23.2	0.0				0.0	29.8	33.7	7.3		
Cycle Q Clear(g_c), s	1.4	23.2	0.0				0.0	29.8	33.7	7.3		
Prop In Lane	1.00		0.00				0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	815	1626	0				0	635	1046	140		
V/C Ratio(X)	0.05	0.57	0.00				0.00	0.80	0.88	0.79		
Avail Cap(c_a), veh/h	815	1626	0				0	698	1150	230		
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00		
Upstream Filter(l)	0.74	0.74	0.00				0.00	1.00	1.00	0.84		
Uniform Delay (d), s/veh	18.0	24.0	0.0				0.0	36.0	37.3	54.3		
Incr Delay (d2), s/veh	0.1	1.1	0.0				0.0	6.3	7.5	8.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	9.9	0.0				0.0	14.6	13.6	3.6		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	25.0	0.0				0.0	42.3	44.9	62.4		
LnGrp LOS	B	C	A				A	D	D	E		
Approach Vol, veh/h	970						1431					
Approach Delay, s/veh	24.8						44.0					
Approach LOS	C						D					
Timer - Assigned Phs	1	2	4									
Phs Duration (G+Y+Rc), s	4.0	45.9	60.1									
Change Period (Y+Rc), s	4.5	* 5.2	* 5.2									
Max Green Setting (Gmax), s	45.5	* 45	* 45									
Max Q Clear Time (g_c+1/3), s	19.3	35.7	3.4									
Green Ext Time (p_c), s	0.1	5.0	0.0									

### Intersection Summary

HCM 6th Ctrl Delay	37.4
HCM 6th LOS	D

### Notes

User approved volume balancing among the lanes for turning movement.

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	11	16	148	11	2	182
Future Vol, veh/h	11	16	148	11	2	182
Conflicting Peds, #/hr	0	25	0	25	25	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	52	52	68	68	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	31	218	16	3	260

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	517	276	0	0	259
Stage 1	251	-	-	-	-
Stage 2	266	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	518	763	-	-	1306
Stage 1	791	-	-	-	-
Stage 2	779	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	504	727	-	-	1275
Mov Cap-2 Maneuver	504	-	-	-	-
Stage 1	772	-	-	-	-
Stage 2	777	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	616	1275
HCM Lane V/C Ratio	-	-	0.084	0.002
HCM Control Delay (s)	-	-	11.4	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Intersection												
Int Delay, s/veh	8.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	18	24	13	15	8	19	18	744	39	24	570	17
Future Vol, veh/h	18	24	13	15	8	19	18	744	39	24	570	17
Conflicting Peds, #/hr	4	0	104	19	0	69	85	0	84	65	0	89
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	86	86	86	89	89	89	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	32	18	17	9	22	20	836	44	25	588	18

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1268	1740	496	1446	1727	593	695	0	0	964	0	0
Stage 1	736	736	-	982	982	-	-	-	-	-	-	-
Stage 2	532	1004	-	464	745	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	125	86	519	92	88	449	897	-	-	710	-	-
Stage 1	377	423	-	267	325	-	-	-	-	-	-	-
Stage 2	499	318	-	548	419	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	86	68	428	44	70	386	821	-	-	653	-	-
Mov Cap-2 Maneuver	86	68	-	44	70	-	-	-	-	-	-	-
Stage 1	337	372	-	240	292	-	-	-	-	-	-	-
Stage 2	415	286	-	416	369	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	124.9		97.4		0.2		0.4	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	821	-	-	93	83	653	-	-
HCM Lane V/C Ratio	0.025	-	-	0.799	0.588	0.038	-	-
HCM Control Delay (s)	9.5	-	-	124.9	97.4	10.7	-	-
HCM Lane LOS	A	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	4.2	2.6	0.1	-	-

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔↔↔					
Traffic Vol, veh/h	53	27	0	0	10	50	14	976	10	0	0	0
Future Vol, veh/h	53	27	0	0	10	50	14	976	10	0	0	0
Conflicting Peds, #/hr	0	0	65	31	0	10	34	0	41	10	0	34
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	86	86	86	80	80	80	25	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	34	0	0	12	58	18	1220	13	0	0	0

Major/Minor	Minor2		Minor1		Major1				
Conflicting Flow All	574	1344	-	-	1338	668	34	0	0
Stage 1	34	34	-	-	1304	-	-	-	-
Stage 2	540	1310	-	-	34	-	-	-	-
Critical Hdwy	6.44	6.54	-	-	6.54	7.14	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	-	-	4.02	3.92	3.12	-	-
Pot Cap-1 Maneuver	451	151	0	0	152	344	1113	-	-
Stage 1	-	-	0	0	229	-	-	-	-
Stage 2	450	227	0	0	-	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	322	133	-	-	134	331	1077	-	-
Mov Cap-2 Maneuver	322	133	-	-	134	-	-	-	-
Stage 1	-	-	-	-	208	-	-	-	-
Stage 2	332	207	-	-	-	-	-	-	-

Approach	EB		WB		NB	
HCM Control Delay, s	34.8		23.3		0.2	
HCM LOS	D		C			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1
Capacity (veh/h)	1077	-	-	218	266
HCM Lane V/C Ratio	0.016	-	-	0.459	0.262
HCM Control Delay (s)	8.4	0.1	-	34.8	23.3
HCM Lane LOS	A	A	-	D	C
HCM 95th %tile Q(veh)	0.1	-	-	2.2	1



HCM 6th Signalized Intersection Summary  
 17: 6th Street & Virginia Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	287	374	37	25	190	70	45	0	21	61	439	97
Future Volume (veh/h)	287	374	37	25	190	70	45	0	21	61	439	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.90	0.97		0.93	0.98		0.93	0.94		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	350	456	45	27	202	74	53	0	25	66	472	104
Peak Hour Factor	0.82	0.82	0.82	0.94	0.94	0.94	0.85	0.85	0.85	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	433	1250	122	328	977	342	409	890	736	723	1430	312
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.50	0.00	0.50	0.50	0.50	0.50
Sat Flow, veh/h	1068	3232	317	869	2527	884	819	1777	1468	1305	2853	623
Grp Volume(v), veh/h	350	249	252	27	139	137	53	0	25	66	292	284
Grp Sat Flow(s),veh/h/ln	1068	1777	1772	869	1777	1634	819	1777	1468	1305	1777	1699
Q Serve(g_s), s	29.4	9.0	9.1	2.1	4.7	5.0	3.7	0.0	0.8	2.4	8.8	9.0
Cycle Q Clear(g_c), s	34.4	9.0	9.1	11.2	4.7	5.0	12.7	0.0	0.8	3.2	8.8	9.0
Prop In Lane	1.00		0.18	1.00		0.54	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	433	687	685	328	687	632	409	890	736	723	890	852
V/C Ratio(X)	0.81	0.36	0.37	0.08	0.20	0.22	0.13	0.00	0.03	0.09	0.33	0.33
Avail Cap(c_a), veh/h	433	687	685	328	687	632	409	890	736	723	890	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.91	0.91	0.91	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	19.7	19.7	23.7	18.4	18.5	17.3	0.0	11.4	12.2	13.4	13.4
Incr Delay (d2), s/veh	10.9	0.3	0.3	0.1	0.1	0.2	0.7	0.0	0.1	0.3	1.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	3.7	3.7	0.4	1.9	1.9	0.8	0.0	0.3	0.7	3.6	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	20.0	20.1	23.8	18.5	18.6	17.9	0.0	11.5	12.5	14.4	14.5
LnGrp LOS	D	C	C	C	B	B	B	A	B	B	B	B
Approach Vol, veh/h		851			303			78			642	
Approach Delay, s/veh		28.6			19.0			15.9			14.2	
Approach LOS		C			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.0		40.0		50.0		40.0				
Change Period (Y+Rc), s		4.9		* 5.2		4.9		* 5.2				
Max Green Setting (Gmax), s		45.1		* 35		45.1		* 35				
Max Q Clear Time (g_c+I1), s		14.7		36.4		11.0		13.2				
Green Ext Time (p_c), s		0.4		0.0		4.2		1.7				

Intersection Summary

HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 18: 6th Street & Center Street

03/04/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕↕				
Traffic Volume (veh/h)	135	310	0	0	311	71	15	833	71	0	0	0
Future Volume (veh/h)	135	310	0	0	311	71	15	833	71	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.90	0.90	1.00	0.90			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1900	1870	1900			
Adj Flow Rate, veh/h	178	408	0	0	394	90	20	1096	93			
Peak Hour Factor	0.76	0.76	0.76	0.79	0.79	0.79	0.76	0.76	0.76			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	279	724	0	0	1032	233	39	2294	201			
Arrive On Green	0.38	0.38	0.00	0.00	0.38	0.38	0.51	0.51	0.51			
Sat Flow, veh/h	536	1996	0	0	2818	615	78	4513	396			
Grp Volume(v), veh/h	258	328	0	0	255	229	433	399	377			
Grp Sat Flow(s),veh/h/ln	829	1617	0	0	1777	1563	1679	1702	1605			
Q Serve(g_s), s	16.2	12.6	0.0	0.0	8.3	8.5	13.6	12.0	12.0			
Cycle Q Clear(g_c), s	24.7	12.6	0.0	0.0	8.3	8.5	13.6	12.0	12.0			
Prop In Lane	0.69		0.00	0.00		0.39	0.05		0.25			
Lane Grp Cap(c), veh/h	390	612	0	0	673	592	854	865	816			
V/C Ratio(X)	0.66	0.54	0.00	0.00	0.38	0.39	0.51	0.46	0.46			
Avail Cap(c_a), veh/h	530	822	0	0	903	794	854	865	816			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	25.7	19.3	0.0	0.0	18.0	18.0	13.0	12.6	12.6			
Incr Delay (d2), s/veh	1.9	0.7	0.0	0.0	0.4	0.4	2.1	1.8	1.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.6	4.6	0.0	0.0	3.3	3.0	5.2	4.6	4.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.7	20.0	0.0	0.0	18.3	18.4	15.1	14.4	14.5			
LnGrp LOS	C	C	A	A	B	B	B	B	B			
Approach Vol, veh/h		586			484			1209				
Approach Delay, s/veh		23.4			18.4			14.7				
Approach LOS		C			B			B				
Timer - Assigned Phs		2			4			8				
Phs Duration (G+Y+Rc), s		45.0			34.7			34.7				
Change Period (Y+Rc), s		4.5			4.5			4.5				
Max Green Setting (Gmax), s		40.5			40.5			40.5				
Max Q Clear Time (g_c+I1), s		15.6			26.7			10.5				
Green Ext Time (p_c), s		8.7			3.5			3.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay					17.7							
HCM 6th LOS					B							

HCM 6th TWSC  
19: Evans Avenue & 6th Street

03/04/2020

Intersection												
Int Delay, s/veh	24.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	31	416	7	52	311	18	14	67	47	38	71	45
Future Vol, veh/h	31	416	7	52	311	18	14	67	47	38	71	45
Conflicting Peds, #/hr	14	0	47	10	0	23	37	0	19	9	0	51
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	82	82	82	93	93	93	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	527	9	63	379	22	15	72	51	43	81	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	424	0	0	583	0	0	1064	1207	334	936	1200	275
Stage 1	-	-	-	-	-	-	657	657	-	539	539	-
Stage 2	-	-	-	-	-	-	407	550	-	397	661	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1132	-	-	987	-	-	177	182	662	220	184	722
Stage 1	-	-	-	-	-	-	420	460	-	494	520	-
Stage 2	-	-	-	-	-	-	592	514	-	600	458	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1107	-	-	943	-	-	77	148	621	109	149	672
Mov Cap-2 Maneuver	-	-	-	-	-	-	77	148	-	109	149	-
Stage 1	-	-	-	-	-	-	381	417	-	459	465	-
Stage 2	-	-	-	-	-	-	393	460	-	425	415	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			1.5			70.5			125.8		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	180	1107	-	-	943	-	-	173
HCM Lane V/C Ratio	0.765	0.035	-	-	0.067	-	-	1.012
HCM Control Delay (s)	70.5	8.4	0.2	-	9.1	0.3	-	125.8
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	5	0.1	-	-	0.2	-	-	8.2

**APPENDIX H**  
**LOS RESULTS FOR OTHER SCENARIOS**

**Table 1 – Scenario Improvement Recommendations**

Recommendation	Scenario						
	1	2	3	4	5	6	7
Provide bike facilities on 6th Street from Sierra Street to Wells Avenue	X	X	X	X	X	X	X
Pedestrian improvements at Highland Avenue railroad crossing	X	X	X	X	X	X	X
Provide pedestrian enhancements (Center Street)	X	X	X	X	X	X	X
Provide bike facilities (cycle track or bike lanes) on Center Street from 8th Street to 9th Street	X	X	X	X	X	X	X
15 mph speed limit on 9th Street from Virginia Street to Evans Avenue with traffic calming	X	X	X	X	X	X	X
Closure of 9th Street from Lake Street to Evans Street			X	X	X		X
Construct "Horseshoe Pit Road" to connect Evans Street to Lake Street			X	X	X	X	X
Realign Record Street		X		X	X	X	X
Roundabout at 9th Street/Evans Street/"Horseshoe Pit Road"				X	X	X	X
Closure of 9th Street from Evans Street to Record Street					X		X
Closure of Evans Street between 9th Street and "Horseshoe Pit Road"					X	X	X
9th Street connection between Valley Road and Wells Avenue					X	X	X
Eastbound right turn prohibited at 9th Street and Lake Street							X

**Table 2 – LOS Results from Scenario Analysis**

#	Intersection	Existing	2025 Scenarios							2040 Scenarios						
			1	2	3/4	5	6	7	1	2	3/4	5	6	7		
1	University Terrace/9th Street & Sierra Street	B(B)	B(B)	C(C)	B(B)	B(B)	B(B)	B(B)	C(C)	C(C)	C(B)	C(B)	C(B)	B(B)		
		19(19)	20(19)	22(27)	19(19)	19(19)	19(19)	19(19)	22(21)	22(27)	20(19)	20(19)	20(19)	19(19)		
2	Virginia Street & 9th Street	C(C)	C(C)	C(E)	B(B)	B(B)	B(B)	A(B)	C(C)	C(D)	B(B)	B(B)	B(B)	B(B)		
		22 (23)	22(23)	21(70)	10(11)	11(12)	11(12)	9(11)	25(27)	33(54)	12(13)	13(13)	12(12)	11(12)		
3	Center Street & 9th Street	C(E)	C(F)	B(E)	A(A)	A(A)	A(A)	A(A)	C(F)	A(F)	A(A)	A(A)	A(A)	A(A)		
		17 (47)	18(51)	13(41)	9(9)	9(9)	9(9)	9(9)	25(87)	13(51)	9(9)	9(9)	9(9)	9(9)		
4	Evans Avenue & 9th Street	A (A)	A(A)	-	A(A)	-	-	-	A(A)	-	A(A)	-	-	-		
		3 (5)	4(5)	-	8(9)	-	-	-	4(6)	-	9(9)	-	-	-		
5	Record Street & Evans Avenue	B (B)	B(B)	B(C)	A(B)	A(A)	A(A)	A(A)	B(C)	C(C)	A(B)	A(A)	A(A)	A(A)		
		11 (13)	11(14)	11(18)	10(11)	8(7)	9(9)	8(8)	12(16)	11(18)	9(11)	8(8)	9(9)	8(8)		
6	Evans Avenue & Highland Avenue	A (A)	A(A)	A(B)	A(A)	A(A)	A(A)	A(A)	A(A)	A(B)	A(A)	A(A)	A(A)	A(A)		
		3 (4)	3(4)	2(11)	3(4)	2(3)	3(3)	3(3)	3(5)	2(10)	2(3)	2(2)	2(3)	2(3)		
7	Valley Road & Highland Avenue	A (A)	A(A)	A(D)	A(A)	A(A)	A(A)	A(A)	A(A)	A(D)	A(A)	A(A)	A(A)	A(A)		
		3 (4)	3(4)	3(34)	3(4)	3(4)	3(3)	3(3)	3(5)	4(34)	4(6)	3(4)	3(3)	3(4)		
8	Valley Road & Sadlier Way	C (A)	C(A)	B(A)	F(A)	B(A)	B(A)	B(A)	F(A)	A(A)	D(A)	B(A)	B(A)	C(A)		
		21 (6)	24(6)	11(6)	56(8)	12(6)	10(6)	13(6)	48(7)	8(6)	30(7)	14(5)	12(6)	24(6)		
9	Virginia Street & 8th Street	D(D)	D(D)	D(E)	D(D)	D(D)	D(D)	D(D)	D(D)	E(E)	D(D)	D(D)	D(D)	D(D)		
		37(36)	37(36)	45(75)	36(36)	36(36)	36(36)	36(36)	40(39)	71(64)	38(37)	38(37)	38(36)	38(37)		
10	Center Street & 8th Street	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)		
		13(25)	13(25)	16(33)	12(21)	12(21)	12(21)	12(21)	14(26)	14(30)	12(21)	12(22)	12(21)	12(22)		
11	Evans Avenue & 9th Street	A (A)	A(A)	A(A)	B(B)	A(A)	A(A)	A(A)	A(A)	A(A)	B(B)	A(A)	A(A)	A(A)		
		3 (3)	3(3)	3(4)	11(12)	4(5)	5(7)	5(6)	3(4)	3(4)	11(12)	6(9)	7(7)	6(6)		
12	Virginia Street & Maple Street	B (C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)	B(C)		
		13(22)	13(22)	17(24)	14(22)	14(22)	14(22)	14(22)	13(23)	17(24)	14(23)	14(23)	13(22)	14(23)		
13	Center Street & Maple Street	C(D)	C(D)	C(D)	C(D)	C(D)	C(D)	C(D)	C(D)	C(D)	C(D)	C(D)	C(D)	C(D)		
		30(37)	30(38)	29(39)	27(36)	27(36)	27(36)	27(36)	30(40)	28(39)	28(37)	28(37)	28(36)	28(37)		
14	Evans Avenue & 8th Street	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)		
		2(1)	2(1)	2(1)	2(1)	2(1)	2(1)	2(1)	2(1)	2(1)	2(1)	2(1)	2(1)	2(1)		
15	Virginia Street & 7th Street	A(A)	A(A)	A(E)	A(A)	A(A)	A(A)	A(A)	A(B)	A(E)	A(B)	A(A)	A(A)	A(A)		
		3(5)	3(7)	3(48)	3(5)	3(5)	3(5)	4(7)	3(13)	4(48)	3(10)	3(9)	3(5)	3(9)		
16	Center Street & 7th Street	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)		
		2(3)	3(3)	3(6)	3(4)	2(3)	3(3)	3(3)	3(5)	3(6)	3(4)	3(4)	3(3)	3(4)		
17	6th Street & Virginia Street	B(B)	B(B)	B(C)	B(C)	B(C)	B(C)	B(C)	B(B)	B(C)	B(C)	B(C)	B(C)	B(C)		
		15(18)	15(18)	17(21)	18(21)	19(21)	19(21)	19(21)	15(19)	16(21)	18(21)	19(22)	19(21)	19(21)		
18	6th Street & Center Street	B(B)	B(B)	B(B)	B(B)	B(B)	B(B)	B(B)	B(B)	B(B)	B(B)	B(B)	B(B)	B(B)		
		13(15)	13(16)	13(17)	14(16)	14(16)	14(16)	14(16)	13(17)	13(17)	14(18)	14(18)	14(16)	14(18)		
19	Evans Avenue & 6th Street	A(A)	A(A)	A(B)	A(B)	A(A)	A(A)	A(B)	A(A)	A(B)	B(C)	B(C)	B(A)	B(B)		
		6(7)	6(7)	6(14)	8(12)	7(9)	7(9)	8(12)	7(9)	7(14)	11(25)	11(24)	11(9)	10(19)		

XX(XX) – AM(PM)

It should be noted that at some unsignalized intersections, based on the traffic volumes at major or minor streets, with increased volumes on the major streets, the overall intersection delay may decrease, even though the delay for the minor street approaches may increase.

As highlighted in **Table 2**, there are only a few LOS concerns based on the future conditions and scenario analyses including:

- Center Street and 9<sup>th</sup> Street (Existing LOS E in PM, also Scenario 1 and 2)
- Virginia Street and 9<sup>th</sup> Street (PM in Scenario 2)
- Virginia Street and 8<sup>th</sup> Street (Scenario 2)
- Virginia Street and 7<sup>th</sup> Street (Scenario 2)
- Valley Road and Sadlier Way (Scenario 1, 3, and 4)

Also of note, based on the redistribution of traffic as calculated by the TDM that is associated with the improvements recommended in scenarios 5, 6, and 7, all intersections are anticipated to be LOS D or better in both 2025 and 2040.

**(Synchro analysis reports can be provided upon request.)**

**APPENDIX I**  
**COST ESTIMATE DETAILS**

RTC University Area  
Transportation Study  
6th Street Lane Reconfiguration



Planning Level  
Estimate

BID ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
<b>DESIGN</b>					
D1	PS&E @10%	1	LS	\$24,000	\$24,000
<i>Design Subtotal</i>					<b>\$24,000</b>
<b>CONSTRUCTION</b>					
C1	Project Mobilization, Demobilization, and Off Site Staging Area @6%	1	LS	\$14,000	\$14,000
C2	Install Thermoplastic Pavement Marking ("ONLY")	4	EA	\$350	\$1,400
C3	Place 24" Stop Bar Thermoplastic	310	LF	\$18	\$5,580
C4	Place RR Crossing Thermoplastic	2	EA	\$620	\$1,240
C5	Install Thermoplastic Pavement Marking (Yield Triangles)	12	EA	\$60	\$720
C6	Place Crosswalk Thermoplastic	1,300	LF	\$15	\$19,500
C7	Install Thermoplastic Pavement Marking (Left /Right/Thru Arrow Legend)	41	EA	\$250	\$10,250
C9	Install Thermoplastic Pavement Marking (Green Bike Legend)	20	EA	\$990	\$19,800
C10	Place Slurry Seal	260,000	SF	\$0.60	\$156,000
C11	Place 6" Solid White Striping (Waterborne)	11,600	LF	\$0.70	\$8,120
C12	Place 8" Solid White Striping (Waterborne)	800	LF	\$0.75	\$600
C13	Place 4" Double Broken & Solid Yellow Striping (Waterborne)	5,800	LF	\$0.45	\$2,610
<i>Construction Subtotal</i>					<b>\$239,820</b>
<b>Engineering During Construction</b>					
EDC1	Construction Services @10%	1	LS	\$24,000	\$24,000
<i>EDC Subtotal</i>					<b>\$24,000</b>
<b>CONTINGENCY</b>					
	Contingency @25%	1	LS	\$72,000	\$72,000
<b>PROJECT PLANNING ESTIMATE*</b>					<b>\$359,820</b>

\*Estimates for right of way and utility relocation to be completed separate of this estimate.



RTC University Area  
Transportation Study  
9th 15MPH



Planning Level  
Estimate

BID ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
<b>DESIGN</b>					
D1	PS&E @10%	1	LS	\$6,600	\$6,600
<i>Design Subtotal</i>					<b>\$6,600</b>
<b>CONSTRUCTION</b>					
C1	Project Mobilization, Demobilization, and Off Site Staging Area @6%	1	LS	\$4,000	\$4,000
C2	Place PCC Sidewalk	720	SF	\$15	\$10,800
C3	Place PCC C&G - Type 1	110	LF	\$40	\$4,400
C4	Place PCC Pedestrian Ramps	150	SF	\$25	\$3,750
C5	Install Thermoplastic Pavement Marking ("STOP")	1	EA	\$350	\$350
C6	Place 12" Stop Bar Thermoplastic	100	LF	\$15	\$1,500
C7	Place Crosswalk Thermoplastic	610	LF	\$15	\$9,150
C8	Install Thermoplastic Pavement Marking (Left /Right Arrow Legend)	2	EA	\$250	\$500
C9	Install Thermoplastic Pavement Marking (Left /Right & Thru Arrow Legend)	6	EA	\$460	\$2,760
C10	Install Thermoplastic Pavement Marking (Sharrow Legend)	2	EA	\$750	\$1,500
C11	Place Slurry Seal	31,690	SF	\$0.60	\$19,014
C12	Place 6" Solid White Striping (Waterborne)	920	LF	\$0.70	\$644
C13	Place 8" Solid White Striping (Waterborne)	140	LF	\$0.75	\$105
C14	Place 4" Double Solid Yellow Striping (Waterborne)	630	LF	\$0.60	\$378
C15	AC Patch	220	SF	\$30	\$6,600
<i>Construction Subtotal</i>					<b>\$65,451</b>
<b>Engineering During Construction</b>					
EDC1	Construction Services @10%	1	LS	\$6,600	\$6,600
<i>EDC Subtotal</i>					<b>\$6,600</b>
<b>CONTINGENCY</b>					
	Contingency @25%	1	LS	\$19,700	<b>\$19,700</b>
<b>PROJECT PLANNING ESTIMATE*</b>					<b>\$98,351</b>

\*Estimates for right of way and utility relocation to be completed separate of this estimate.

RTC University Area  
Transportation Study  
Horseshoe Pit Road



Planning Level  
Estimate

BID ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
<b>DESIGN</b>					
D1	PS&E @10%	1	LS	\$32,500	\$32,500
<i>Design Subtotal</i>					<b>\$32,500</b>
<b>CONSTRUCTION</b>					
C1	Project Mobilization, Demobilization, and Off Site Staging Area @6%	1	LS	\$19,000	\$19,000
C2	Remove Composite Surface (6-inch Depth)	18,960	SF	\$5.50	\$104,280
C3	Place PCC Sidewalk	4,220	SF	\$15	\$63,300
C4	Construct Commercial or Residential Driveway	330	SF	\$17	\$5,610
C5	Place PCC C&G - Type 1	760	LF	\$40	\$30,400
C6	Place PCC Pedestrian Ramps	150	SF	\$25	\$3,750
C7	Signs	4	EA	\$500	\$2,000
C8	Install Thermoplastic Pavement Marking ("STOP")	2	EA	\$350	\$700
C9	Place 12" Stop Bar Thermoplastic	30	LF	\$15	\$450
C10	Install Thermoplastic Pavement Marking (Green Bike Legend)	2	EA	\$990	\$1,980
C11	Place Crosswalk Thermoplastic	160	LF	\$15	\$2,400
C12	Place 4" PG64-28NV Plantmix Bituminous Pavement	12,050	SF	\$4.00	\$48,200
C13	Place 6" Aggregate Base Course	12,050	SF	\$3.50	\$42,175
C14	Place 6" Solid White Striping (Waterborne)	760	LF	\$0.70	\$532
C15	Place 4" Double Solid Yellow Striping (Waterborne)	350	LF	\$0.60	\$210
<i>Construction Subtotal</i>					<b>\$324,987</b>
<b>Engineering During Construction</b>					
EDC1	Construction Services @10%	1	LS	\$32,500	\$32,500
<i>EDC Subtotal</i>					<b>\$32,500</b>
<b>CONTINGENCY</b>					
	Contingency @25%	1	LS	\$97,500	<b>\$97,500</b>
<b>PROJECT PLANNING ESTIMATE*</b>					<b>\$487,487</b>

\*Estimates for right of way and utility relocation to be completed separate of this estimate.

RTC University Area  
Transportation Study  
Realign Record Street



Planning Level  
Estimate

BID ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
<b>DESIGN</b>					
D1	PS&E @10%	1	LS	\$62,700	\$62,700
<i>Design Subtotal</i>					<b>\$62,700</b>
<b>CONSTRUCTION</b>					
C1	Project Mobilization, Demobilization, and Off Site Staging Area @6%	1	LS	\$36,000	\$36,000
C2	Remove Composite Surface (6-inch Depth)	1,900	SF	\$5.50	\$10,450
C3	Remove PCC	3,300	SF	\$4	\$13,200
C4	Remove Asphalt Pavement	34,300	SF	\$4	\$137,200
C5	Place PCC Sidewalk	7,820	SF	\$15	\$117,300
C6	Construct Commercial or Residential Driveway	1,100	SF	\$17	\$18,700
C7	Place PCC C&G - Type 1	1,100	LF	\$40	\$44,000
C8	Place PCC Pedestrian Ramps	280	SF	\$25	\$7,000
C9	Signs	4	EA	\$500	\$2,000
C10	Install Thermoplastic Pavement Marking ("STOP")	2	EA	\$350	\$700
C11	Place 12" Stop Bar Thermoplastic	26	LF	\$15	\$390
C12	Install Thermoplastic Pavement Marking (Green Bike Legend)	4	EA	\$990	\$3,960
C13	Install Thermoplastic Pavement Marking (Sharrow Legend)	4	EA	\$750	\$3,000
C14	Install Thermoplastic Pavement Marking (Yield Triangles)	8	EA	\$60	\$480
C15	Place Crosswalk Thermoplastic	200	LF	\$15	\$3,000
C16	Place 12" Aggregate Base Course	25,300	SF	\$4	\$101,200
C17	Place 6" PG64-28NV Plantmix Bituminous Pavement	25,300	SF	\$5	\$126,500
C18	Place 6" Solid White Striping (Waterborne)	1,130	LF	\$0.70	\$791
C19	Place 4" Double Solid Yellow Striping (Waterborne)	1,110	LF	\$0.60	\$666
C20	Place Groundcovers	2,080	SF	\$5	\$10,400
<i>Construction Subtotal</i>					<b>\$626,537</b>
<b>Engineering During Construction</b>					
EDC1	Construction Services @10%	1	LS	\$62,700	\$62,700
<i>EDC Subtotal</i>					<b>\$62,700</b>
<b>CONTINGENCY</b>					
	Contingency @25%	1	LS	\$188,000	<b>\$188,000</b>
<b>PROJECT PLANNING ESTIMATE*</b>					<b>\$939,937</b>

\*Estimates for right of way and utility relocation to be completed separate of this estimate.

RTC University Area  
 Transportation Study  
 Lane Closure - Option 1



Planning Level  
 Estimate

BID ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
<b>DESIGN</b>					
D1	PS&E @10%	1	LS	\$2,700	\$2,700
	<i>Design Subtotal</i>				<b>\$2,700</b>
<b>CONSTRUCTION</b>					
C1	Project Mobilization, Demobilization, and Off Site Staging Area @6%	1	LS	\$1,500	\$1,500
C2	Remove Asphalt Pavement	1,170	SF	\$4	\$4,680
C3	Place PCC Sidewalk	650	SF	\$15	\$9,750
C4	Place PCC C&G - Type 1	130	LF	\$40	\$5,200
C5	Concrete Barrier Rail (Type A)	130	LF	\$40	\$5,200
	<i>Construction Subtotal</i>				<b>\$26,330</b>
<b>Engineering During Construction</b>					
EDC1	Construction Services @10%	1	LS	\$2,700	\$2,700
	<i>EDC Subtotal</i>				<b>\$2,700</b>
<b>CONTINGENCY</b>					
	Contingency @25%	1	LS	\$8,000	<b>\$8,000</b>
	<b>PROJECT PLANNING ESTIMATE*</b>				<b>\$39,730</b>

\*Estimates for right of way and utility relocation to be completed separate of this estimate.

RTC University Area  
Transportation Study  
Lane Closure - Option 2



Planning Level  
Estimate

BID ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
<b>DESIGN</b>					
D1	PS&E @10%	1	LS	\$52,400	\$52,400
	<i>Design Subtotal</i>				<b>\$52,400</b>
<b>CONSTRUCTION</b>					
C1	Project Mobilization, Demobilization, and Off Site Staging Area @6%	1	LS	\$30,000	\$30,000
C2	Remove Composite Surface (6-inch Depth)	2,200	SF	\$5.50	\$12,100
C3	Remove PCC & Subgrade	8,700	SF	\$5	\$43,500
C4	Remove Asphalt Pavement & Subgrade	32,600	SF	\$5	\$163,000
C5	Place PCC Sidewalk	2,370	SF	\$15	\$35,550
C6	Place PCC C&G - Type 1	130	LF	\$40	\$5,200
C7	Place Lawn (Includes: irrigation, 6" topsoil, sod)	42,650	SF	\$5.50	\$234,575
	<i>Construction Subtotal</i>				<b>\$523,925</b>
<b>Engineering During Construction</b>					
EDC1	Construction Services @10%	1	LS	\$52,400	\$52,400
	<i>EDC Subtotal</i>				<b>\$52,400</b>
<b>CONTINGENCY</b>					
	Contingency @25%	1	LS	\$157,200	<b>\$157,200</b>
<b>PROJECT PLANNING ESTIMATE*</b>					<b>\$785,925</b>

\*Estimates for right of way and utility relocation to be completed separate of this estimate.

RTC University Area  
Transportation Study  
Highland RR Ped Xing



Planning Level  
Estimate

BID ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
<b>PLANNING</b>					
P1	Railroad Permitting/Facilitator	1	LS	\$5,000	\$5,000
<i>Planning Subtotal</i>					<b>\$5,000</b>
<b>DESIGN</b>					
D1	PS&E @12%	1	LS	\$9,500	\$9,500
<i>Design Subtotal</i>					<b>\$9,500</b>
<b>CONSTRUCTION</b>					
C1	Project Mobilization, Demobilization, and Off Site Staging Area @6%	1	LS	\$5,000	\$5,000
C2	Place PCC Sidewalk	1,860	SF	\$15	\$27,900
C3	Place PCC C&G - Type 1	390	LF	\$40	\$15,600
C4	Commerical Driveway Approach	380	SF	\$17	\$6,460
C5	AC Patch	780	SF	\$30	\$23,400
<i>Construction Subtotal</i>					<b>\$78,360</b>
<b>Engineering During Construction</b>					
EDC1	Construction Services @10%	1	LS	\$7,900	\$7,900
<i>EDC Subtotal</i>					<b>\$7,900</b>
<b>CONTINGENCY</b>					
	Contingency @25%	1	LS	\$25,200	\$25,200
<b>PROJECT PLANNING ESTIMATE*</b>					<b>\$125,960</b>

\*Estimates for right of way and utility relocation to be completed separate of this estimate.

RTC University Area  
Transportation Study  
Center and 7th Bulbout



Planning Level  
Estimate

BID ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
<b>DESIGN</b>					
D1	PS&E @10%	1	LS	\$4,600	\$4,600
<i>Design Subtotal</i>					<b>\$4,600</b>
<b>CONSTRUCTION</b>					
C1	Project Mobilization, Demobilization, and Off Site Staging Area @6%	1	LS	\$3,000	\$3,000
C2	Place PCC Sidewalk	1,440	SF	\$15	\$21,600
C3	Place PCC C&G - Type 1	150	LF	\$40	\$6,000
C4	Place PCC Pedestrian Ramps	110	SF	\$25	\$2,750
C5	Install Thermoplastic Pavement Marking ("STOP")	1	EA	\$350	\$350
C6	Place 12" Stop Bar Thermoplastic	15	LF	\$15	\$225
C7	Place Crosswalk Thermoplastic	90	LF	\$15	\$1,350
C8	Place Slurry Seal	1,550	SF	\$0.60	\$930
C9	Place 4" Double Solid Yellow Striping (Waterborne)	70	LF	\$0.60	\$42
C10	AC Patch	300	SF	\$30	\$9,000
<i>Construction Subtotal</i>					<b>\$45,247</b>
<b>Engineering During Construction</b>					
EDC1	Construction Services @10%	1	LS	\$4,600	\$4,600
<i>EDC Subtotal</i>					<b>\$4,600</b>
<b>CONTINGENCY</b>					
	Contingency @25%	1	LS	\$13,700	\$13,700
<b>PROJECT PLANNING ESTIMATE*</b>					<b>\$68,147</b>

\*Estimates for right of way and utility relocation to be completed separate of this estimate.

RTC University Area  
Transportation Study  
Center and 8th Bulbout



Planning Level  
Estimate

BID ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
<b>DESIGN</b>					
D1	PS&E @10%	1	LS	\$2,500	\$2,500
	<i>Design Subtotal</i>				<b>\$2,500</b>
<b>CONSTRUCTION</b>					
C1	Project Mobilization, Demobilization, and Off Site Staging Area @6%	1	LS	\$2,000	\$2,000
C2	Place PCC Sidewalk	710	SF	\$15	\$10,650
C3	Place PCC C&G - Type 1	110	LF	\$40	\$4,400
C4	Place PCC Pedestrian Ramps	40	SF	\$25	\$1,000
C5	AC Patch	220	SF	\$30	\$6,600
	<i>Construction Subtotal</i>				<b>\$24,650</b>
<b>Engineering During Construction</b>					
EDC1	Construction Services @10%	1	LS	\$2,500	\$2,500
	<i>EDC Subtotal</i>				<b>\$2,500</b>
<b>CONTINGENCY</b>					
	Contingency @25%	1	LS	\$7,500	<b>\$7,500</b>
	<b>PROJECT PLANNING ESTIMATE*</b>				<b>\$37,150</b>

\*Estimates for right of way and utility relocation to be completed separate of this estimate.



RTC University Area  
Transportation Study  
9th and Wells - Route A



Planning Level  
Estimate

BID ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
<b>DESIGN</b>					
D1	PS&E @10%	1	LS	\$142,900	\$142,900
<i>Design Subtotal</i>					<b>\$142,900</b>
<b>CONSTRUCTION</b>					
C1	Project Mobilization, Demobilization, and Off Site Staging Area @6%	1	LS	\$81,000	\$81,000
C2	Remove Composite Surface (6-inch Depth)	78,430	SF	\$5.50	\$431,365
C3	Place PCC Sidewalk	18,830	SF	\$15	\$282,450
C4	Place PCC C&G - Type 1	3,140	LF	\$40	\$125,600
C5	Place PCC Pedestrian Ramps	150	SF	\$25	\$3,750
C6	Construct Commercial or Residential Driveway	660	SF	\$17	\$11,220
C7	Place 18" Culvert	52	LF	\$210	\$10,920
C8	Place Type 4R Catch Basin	2	EA	\$3,400	\$6,800
C9	Signs	3	EA	\$500	\$1,500
C10	Install Thermoplastic Pavement Marking ("STOP")	1	EA	\$350	\$350
C11	Place 12" Stop Bar Thermoplastic	15	LF	\$15	\$225
C12	Install Thermoplastic Pavement Marking (Green Bike Legend)	2	EA	\$990	\$1,980
C13	Place Crosswalk Thermoplastic	210	LF	\$15	\$3,150
C14	Place 4" PG64-28NV Plantmix Bituminous Pavement	52,160	SF	\$4.00	\$208,640
C15	Place 6" Aggregate Base Course	52,160	SF	\$3.50	\$182,560
C16	Place 6" Solid White Striping (Waterborne)	6,280	LF	\$0.70	\$4,396
C17	Place 4" Double Solid Yellow Striping (Waterborne)	1,570	LF	\$0.60	\$942
C18	Signal Modification @ Wells	1	LS	\$71,500	\$71,500
<i>Construction Subtotal</i>					<b>\$1,428,348</b>
<b>Engineering During Construction</b>					
EDC1	Construction Services @10%	1	LS	\$142,900	\$142,900
<i>EDC Subtotal</i>					<b>\$142,900</b>
<b>CONTINGENCY</b>					
	Contingency @25%	1	LS	\$428,600	<b>\$428,600</b>
<b>PROJECT PLANNING ESTIMATE*</b>					<b>\$2,142,748</b>

\*Estimates for right of way and utility relocation to be completed separate of this estimate.

RTC University Area  
Transportation Study  
9th and Wells - Route B



Planning Level  
Estimate

BID ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
<b>DESIGN</b>					
D1	PS&E @10%	1	LS	\$141,200	\$141,200
	<i>Design Subtotal</i>				<b>\$141,200</b>
<b>CONSTRUCTION</b>					
C1	Project Mobilization, Demobilization, and Off Site Staging Area @6%	1	LS	\$80,000	\$80,000
C2	Remove Composite Surface (6-inch Depth)	77,500	SF	\$5.50	\$426,250
C3	Place PCC Sidewalk	17,280	SF	\$15	\$259,200
C4	Construct Commercial or Residential Driveway	1,320	SF	\$17	\$22,440
C5	Place 18" PVC Storm Drain	95	LF	\$105	\$9,975
C6	Place 12" PVC Storm Drain	35	LF	\$95	\$3,325
C7	Place 48-Inch Type IA Storm Drain Manhole	1	EA	\$5,000	\$5,000
C8	Place Type 4R Catch Basin	2	EA	\$3,400	\$6,800
C9	Place PCC C&G - Type 1	3,100	LF	\$40	\$124,000
C10	Place PCC Pedestrian Ramps	150	SF	\$25	\$3,750
C11	Signs	3	EA	\$500	\$1,500
C12	Install Thermoplastic Pavement Marking ("STOP")	1	EA	\$350	\$350
C13	Place 12" Stop Bar Thermoplastic	15	LF	\$15	\$225
C14	Install Thermoplastic Pavement Marking (Green Bike Legend)	2	EA	\$990	\$1,980
C15	Place Crosswalk Thermoplastic	210	LF	\$15	\$3,150
C16	Place 4" PG64-28NV Plantmix Bituminous Pavement	51,600	SF	\$4.00	\$206,400
C17	Place 6" Aggregate Base Course	51,600	SF	\$3.50	\$180,600
C18	Place 6" Solid White Striping (Waterborne)	6,200	LF	\$0.70	\$4,340
C19	Place 4" Double Solid Yellow Striping (Waterborne)	1,550	LF	\$0.60	\$930
C20	Signal Modification @ Wells	1	LS	\$71,500.00	\$71,500
	<i>Construction Subtotal</i>				<b>\$1,411,715</b>
<b>Engineering During Construction</b>					
EDC1	Construction Services @10%	1	LS	\$141,200	\$141,200
	<i>EDC Subtotal</i>				<b>\$141,200</b>
<b>CONTINGENCY</b>					
	Contingency @25%	1	LS	\$423,600	<b>\$423,600</b>
<b>PROJECT PLANNING ESTIMATE*</b>					<b>\$2,117,715</b>

\*Estimates for right of way and utility relocation to be completed separate of this estimate.