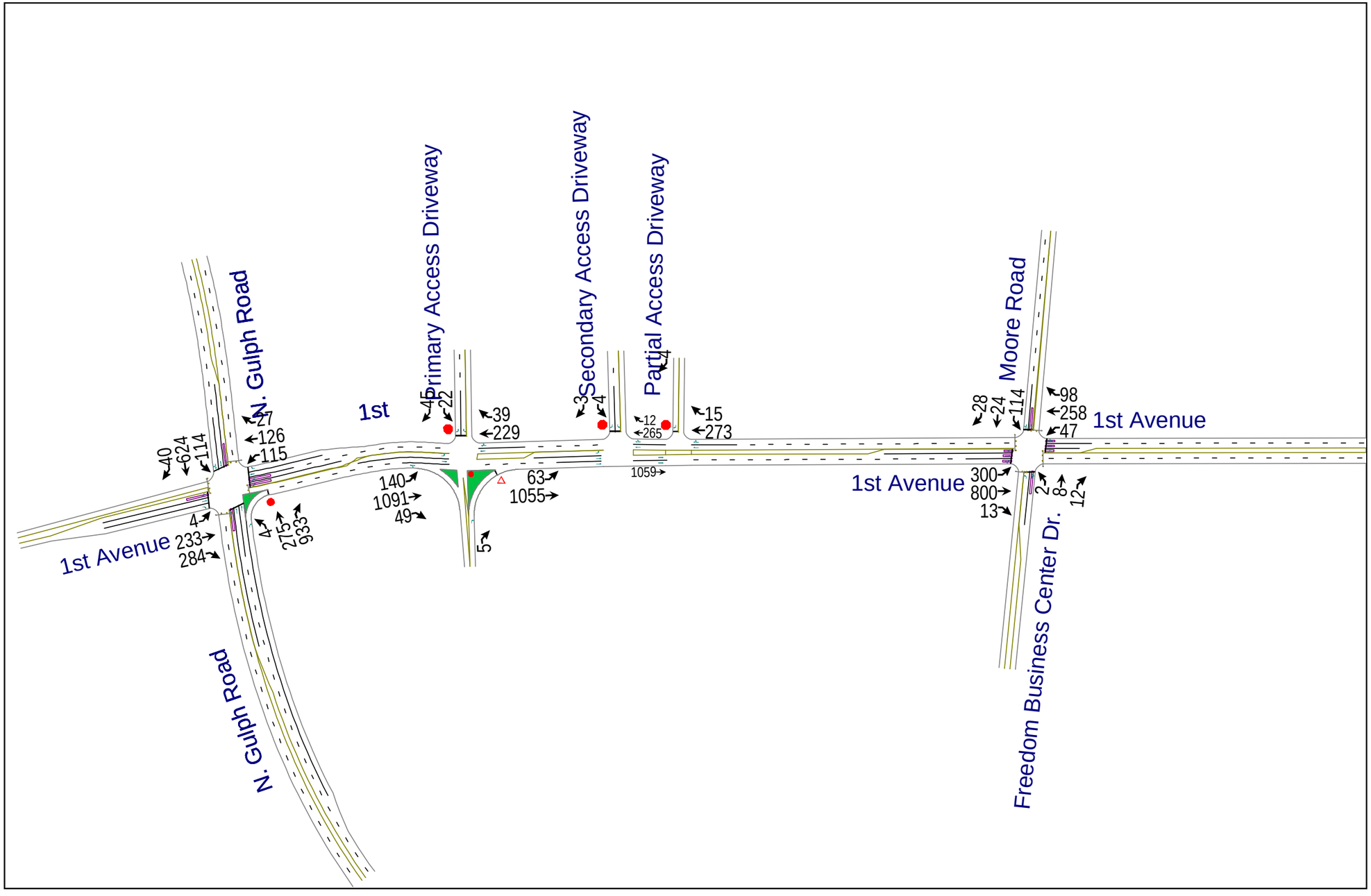
2030 No-Build Condition
AM Peak Hour



Lanes, Volumes, Timings
1: 1st Avenue & Moore Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	300	800	13	47	258	98	2	8	12	114	24	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	11	12	12	12	12	10	10	10
Storage Length (ft)	280		0	73		0	115		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	36		25	37		25	77		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00			0.99		0.99				0.99	
Frt		0.995			0.962			0.903			0.903	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1624	3555	0	1685	3240	0	1805	1621	0	1652	1473	0
Flt Permitted	0.405			0.208			0.711			0.735		
Satd. Flow (perm)	685	3555	0	369	3240	0	1338	1621	0	1278	1473	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			83			22			46	
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		773			1204			482			486	
Travel Time (s)		15.1			23.5			13.1			9.5	
Confl. Peds. (#/hr)	4		1	1		4	3					3
Peak Hour Factor	0.85	0.94	0.46	0.60	0.83	0.93	0.50	0.67	0.55	0.89	0.96	0.61
Heavy Vehicles (%)	0%	1%	0%	0%	3%	1%	0%	0%	9%	2%	0%	11%
Adj. Flow (vph)	353	851	28	78	311	105	4	12	22	128	25	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	353	879	0	78	416	0	4	34	0	128	71	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.00	0.96	1.09	1.04	1.00	1.00	1.00	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	35.0		11.0	35.0		21.5	21.5		21.5	21.5	
Total Split (s)	13.0	37.0	0.0	11.0	35.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	18.6%	52.9%	0.0%	15.7%	50.0%	0.0%	31.4%	31.4%	0.0%	31.4%	31.4%	0.0%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	Min		None	Min		C-Max	C-Max		C-Max	C-Max	

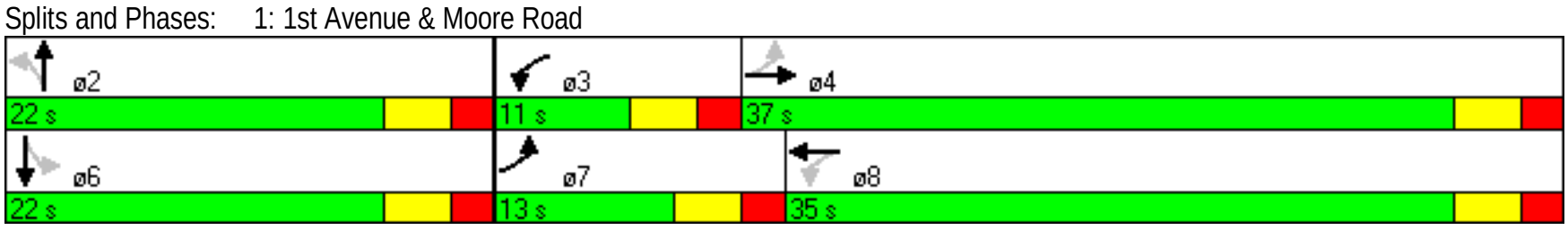
Lanes, Volumes, Timings
1: 1st Avenue & Moore Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	30.8	24.4		26.2	20.2		26.8	26.8		26.8	26.8	
Actuated g/C Ratio	0.44	0.35		0.37	0.29		0.38	0.38		0.38	0.38	
v/c Ratio	0.86	0.71		0.31	0.42		0.01	0.05		0.26	0.12	
Control Delay	35.3	22.8		12.0	16.0		17.0	10.4		19.4	9.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	35.3	22.8		12.0	16.0		17.0	10.4		19.4	9.5	
LOS	D	C		B	B		B	B		B	A	
Approach Delay		26.4			15.4			11.1			15.8	
Approach LOS		C			B			B			B	
Stops (vph)	192	657		25	209		3	8		82	18	
Fuel Used(gal)	5	13		1	6		0	0		1	0	
CO Emissions (g/hr)	369	926		50	407		2	11		103	29	
NOx Emissions (g/hr)	72	180		10	79		0	2		20	6	
VOC Emissions (g/hr)	85	215		12	94		0	3		24	7	
Dilemma Vehicles (#)	0	58		0	25		0	0		0	4	
Queue Length 50th (ft)	92	171		17	57		1	3		38	7	
Queue Length 95th (ft)	#126	203		19	72		4	15		87	35	
Internal Link Dist (ft)		693			1124			402			406	
Turn Bay Length (ft)	280			73			115					
Base Capacity (vph)	409	1628		251	1436		513	635		490	593	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.86	0.54		0.31	0.29		0.01	0.05		0.26	0.12	

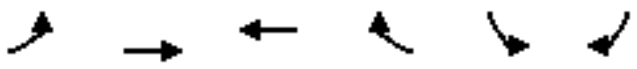
Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 22.3 Intersection LOS: C
Intersection Capacity Utilization 53.0% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: 1st Avenue & Moore Road



HCM Unsignalized Intersection Capacity Analysis
2: 1st Avenue & Partial Access Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	1059	273	15	0	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1151	297	16	0	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1001	773			
pX, platoon unblocked						
vC, conflicting volume	313				880	157
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	313				880	157
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1244				286	861

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	576	576	198	115	4
Volume Left	0	0	0	0	0
Volume Right	0	0	0	16	4
cSH	1700	1700	1700	1700	861
Volume to Capacity	0.34	0.34	0.12	0.07	0.01
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	9.2
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.2
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: 1st Avenue & Secondary Access Driveway

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	63	1055	265	12	4	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	68	1147	288	13	4	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		871	905			
pX, platoon unblocked						
vC, conflicting volume	301				1005	151
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	301				1005	151
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				98	100
cM capacity (veh/h)	1257				225	869

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	68	573	573	192	109	4	3
Volume Left	68	0	0	0	0	4	0
Volume Right	0	0	0	0	13	0	3
cSH	1257	1700	1700	1700	1700	225	869
Volume to Capacity	0.05	0.34	0.34	0.11	0.06	0.02	0.00
Queue Length 95th (ft)	4	0	0	0	0	1	0
Control Delay (s)	8.0	0.0	0.0	0.0	0.0	21.3	9.2
Lane LOS	A					C	A
Approach Delay (s)	0.5			0.0		16.1	
Approach LOS						C	

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: 1st Avenue & Primary Access Driveway

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	1091	49	0	229	39	0	0	5	22	0	45
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	152	1186	53	0	249	42	0	0	5	24	0	49
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		526			1245							
pX, platoon unblocked												
vC, conflicting volume	291			1186			1690	1808	620	1167	1760	146
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	291			1186			1690	1808	620	1167	1760	146
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			100			100	100	99	82	100	94
cM capacity (veh/h)	1267			585			52	69	431	133	74	875

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	152	791	449	166	125	5	40	33
Volume Left	152	0	0	0	0	0	24	0
Volume Right	0	0	53	0	42	5	16	33
cSH	1267	1700	1700	1700	1700	431	203	875
Volume to Capacity	0.12	0.47	0.26	0.10	0.07	0.01	0.20	0.04
Queue Length 95th (ft)	10	0	0	0	0	1	18	3
Control Delay (s)	8.2	0.0	0.0	0.0	0.0	13.5	27.0	9.3
Lane LOS	A					B	D	A
Approach Delay (s)	0.9			0.0		13.5	19.1	
Approach LOS						B	C	

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lanes, Volumes, Timings
5: 1st Avenue & N. Gulph Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	233	284	115	126	27	4	275	933	114	624	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	12	10	12	12	10	12	12
Storage Length (ft)	236		236	204		167	301		667	173		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	120		120	62		93	107		92	56		25
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1863	1615	3255	1749	1495	1685	3539	1599	1685	3526	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1805	1863	1615	3255	1749	1495	1685	3539	1599	1685	3526	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									334		10	
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		477			526			924			509	
Travel Time (s)		9.3			10.2			15.8			8.7	
Peak Hour Factor	0.50	0.89	0.89	0.91	0.91	0.75	0.50	0.81	0.90	0.87	0.95	0.68
Heavy Vehicles (%)	0%	2%	0%	4%	5%	8%	0%	2%	1%	0%	1%	3%
Adj. Flow (vph)	8	262	319	126	138	36	8	340	1037	131	657	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	262	319	126	138	36	8	340	1037	131	716	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		23			23			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.00	1.09	1.00	1.00	1.09	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		Perm	Prot		
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	8.0	12.0	4.0	8.0	12.0	4.0	4.0	26.0	26.0	4.0	26.0	
Minimum Split (s)	13.0	21.0	18.0	13.0	21.0	18.0	18.0	32.0	32.0	18.0	32.0	
Total Split (s)	13.0	22.0	25.0	13.0	22.0	18.0	25.0	72.0	72.0	18.0	65.0	0.0
Total Split (%)	10.4%	17.6%	20.0%	10.4%	17.6%	14.4%	20.0%	57.6%	57.6%	14.4%	52.0%	0.0%
Yellow Time (s)	3.0	3.0	4.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	Min	None	None	Min	None	None	Min	Min	None	Min	
Act Effct Green (s)	8.0	17.0	35.4	8.0	27.4	44.1	13.4	66.0	66.0	11.7	64.3	
Actuated g/C Ratio	0.06	0.14	0.28	0.06	0.22	0.35	0.11	0.53	0.53	0.09	0.52	

Lanes, Volumes, Timings
5: 1st Avenue & N. Gulph Road

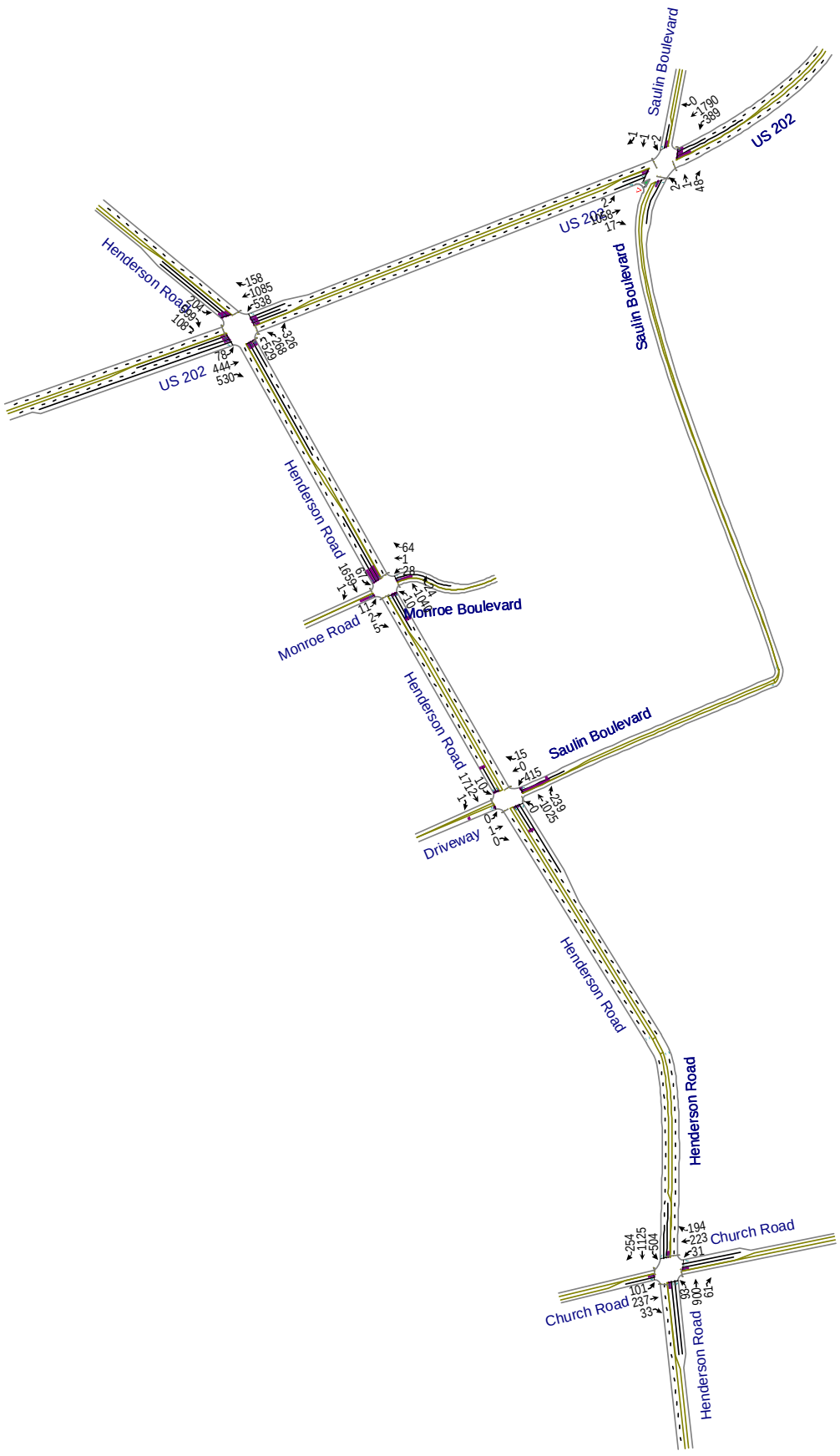
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.07	1.03	0.70	0.60	0.36	0.07	0.04	0.18	1.03	0.83	0.39	
Control Delay	56.5	117.6	48.0	69.6	46.1	29.4	47.0	15.6	58.0	93.2	19.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	56.5	117.6	48.0	69.6	46.1	29.4	47.0	15.6	58.0	93.2	19.5	
LOS	E	F	D	E	D	C	D	B	E	F	B	
Approach Delay		79.1			54.0			47.5			30.9	
Approach LOS		E			D			D			C	
Stops (vph)	5	197	247	111	107	18	5	138	628	104	389	
Fuel Used(gal)	0	8	6	3	2	0	0	4	23	4	9	
CO Emissions (g/hr)	7	550	392	203	172	28	8	277	1610	250	612	
NOx Emissions (g/hr)	1	107	76	39	34	5	2	54	313	49	119	
VOC Emissions (g/hr)	2	127	91	47	40	6	2	64	373	58	142	
Dilemma Vehicles (#)	0	8	0	0	5	0	0	11	0	0	27	
Queue Length 50th (ft)	6	~228	229	52	93	19	6	73	~765	106	177	
Queue Length 95th (ft)	13	#392	313	86	176	41	12	88	#1025	#204	245	
Internal Link Dist (ft)		397			446			844			429	
Turn Bay Length (ft)	236		236	204		167	301		667	173		
Base Capacity (vph)	116	254	531	209	385	532	257	1874	1004	162	1824	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.07	1.03	0.60	0.60	0.36	0.07	0.03	0.18	1.03	0.81	0.39	

Intersection Summary

Area Type: Other
Cycle Length: 125
Actuated Cycle Length: 124.7
Natural Cycle: 125
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 49.6 Intersection LOS: D
Intersection Capacity Utilization 90.5% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: 1st Avenue & N. Gulph Road

2030 No-Build Condition
AM Peak Hour



Lanes, Volumes, Timings
2: Saulin Boulevard & Henderson Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1	0	415	0	15	0	1025	239	10	1712	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	9	12	12	11	11	14	11	11	11
Storage Length (ft)	0		0	160		0	0		266	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25		25	100		25	25		120	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor									0.98		1.00	
Frt					0.850				0.850			
Flt Protected				0.950								
Satd. Flow (prot)	0	2153	0	1577	1482	0	0	3323	1706	0	3357	0
Flt Permitted				0.755							0.936	
Satd. Flow (perm)	0	2153	0	1253	1482	0	0	3323	1667	0	3142	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					83				314			
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		328			1024			977			821	
Travel Time (s)		6.4			19.9			19.0			16.0	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	1.00	0.25	1.00	0.92	1.00	0.55	1.00	0.92	0.76	0.63	0.95	1.00
Heavy Vehicles (%)	0%	0%	0%	3%	0%	9%	0%	5%	1%	0%	4%	0%
Adj. Flow (vph)	0	4	0	451	0	27	0	1114	314	16	1802	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	451	27	0	0	1114	314	0	1819	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	1.14	1.00	1.00	1.04	1.04	0.92	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	21.0	21.0		31.0	31.0		32.0	32.0	32.0	22.0	22.0	
Total Split (s)	49.0	49.0	0.0	49.0	49.0	0.0	81.0	81.0	81.0	81.0	81.0	0.0
Total Split (%)	37.7%	37.7%	0.0%	37.7%	37.7%	0.0%	62.3%	62.3%	62.3%	62.3%	62.3%	0.0%
Maximum Green (s)	44.0	44.0		44.0	44.0		75.0	75.0	75.0	75.0	75.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	4.0	6.0	6.0	6.0	6.0	6.0	4.0
Lead/Lag												
Lead-Lag Optimize?												

Lanes, Volumes, Timings
2: Saulin Boulevard & Henderson Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	
Walk Time (s)				7.0	7.0		7.0	7.0	7.0			
Flash Dont Walk (s)				16.0	16.0		19.0	19.0	19.0			
Pedestrian Calls (#/hr)				0	0		0	0	0			
Act Effct Green (s)		44.0		44.0	44.0			75.0	75.0		75.0	
Actuated g/C Ratio		0.34		0.34	0.34			0.58	0.58		0.58	
v/c Ratio		0.01		1.06	0.05			0.58	0.29		1.00	
Control Delay		29.0		103.1	0.1			19.0	2.0		49.6	
Queue Delay		0.0		0.0	0.0			0.0	0.0		15.1	
Total Delay		29.0		103.1	0.1			19.0	2.0		64.7	
LOS	C		F		A		B		A		E	
Approach Delay	29.0			97.3			15.3			64.7		
Approach LOS	C			F			B			E		
Stops (vph)	1		351		0		627		11		1499	
Fuel Used(gal)	0		20		0		21		3		39	
CO Emissions (g/hr)	1		1382		22		1500		229		2719	
NOx Emissions (g/hr)	0		269		4		292		44		529	
VOC Emissions (g/hr)	0		320		5		348		53		630	
Dilemma Vehicles (#)	0		0		1		28		0		63	
Queue Length 50th (ft)	2		~418		0		300		0		~780	
Queue Length 95th (ft)	3		#630		0		365		14		#978	
Internal Link Dist (ft)	248				944		897				741	
Turn Bay Length (ft)			160						266			
Base Capacity (vph)	729		424		557		1917		1095		1813	
Starvation Cap Reductn	0		0		0		0		0		79	
Spillback Cap Reductn	0		0		0		0		0		0	
Storage Cap Reductn	0		0		0		0		0		0	
Reduced v/c Ratio	0.01		1.06		0.05		0.58		0.29		1.05	

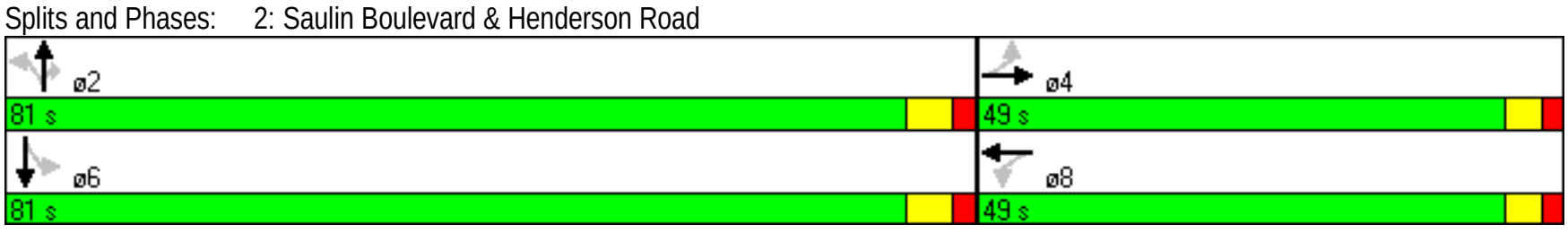
Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Natural Cycle: 130	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 49.9	Intersection LOS: D
Intersection Capacity Utilization 93.2%	ICU Level of Service F
Analysis Period (min) 15	

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

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

Lanes, Volumes, Timings
2: Saulin Boulevard & Henderson Road

Splits and Phases: 2: Saulin Boulevard & Henderson Road



Lanes, Volumes, Timings
3: Monroe Road & Henderson Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	2	5	28	1	64	10	1040	24	67	1659	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	11	11	14	10	12	13
Storage Length (ft)	0		0	0		190	135		0	242		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25		25	25		65	85		25	130		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.966				0.850		0.994				
Flt Protected		0.973			0.956		0.950			0.950		
Satd. Flow (prot)	0	1845	0	0	1816	1524	1745	3300	0	1589	3471	0
Flt Permitted		0.804			0.716		0.127			0.152		
Satd. Flow (perm)	0	1525	0	0	1360	1524	233	3300	0	254	3471	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				86		6				
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		298			390			821			997	
Travel Time (s)		8.1			10.6			16.0			19.4	
Peak Hour Factor	0.50	0.25	0.50	0.69	0.25	0.74	0.63	0.88	0.50	0.71	0.93	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	0%	6%	0%	5%	8%	6%	4%	0%
Adj. Flow (vph)	22	8	10	41	4	86	16	1182	48	94	1784	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	45	86	16	1230	0	94	1788	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	0.96	0.96	1.00	1.00	1.00	1.04	1.04	0.92	1.09	1.00	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm		Perm	Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	40.0	40.0		8.0	40.0	
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	46.0	46.0		15.0	46.0	
Total Split (s)	31.0	31.0	0.0	31.0	31.0	31.0	49.0	49.0	0.0	15.0	64.0	0.0
Total Split (%)	32.6%	32.6%	0.0%	32.6%	32.6%	32.6%	51.6%	51.6%	0.0%	15.8%	67.4%	0.0%
Maximum Green (s)	26.0	26.0		26.0	26.0	26.0	43.0	43.0		9.0	58.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	5.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		None	Min	

Lanes, Volumes, Timings
3: Monroe Road & Henderson Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0	19.0	19.0	19.0			19.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0			0	
Act Effct Green (s)		7.7			7.7	7.7	45.8	45.8		55.3	56.7	
Actuated g/C Ratio		0.11			0.11	0.11	0.64	0.64		0.77	0.79	
v/c Ratio		0.23			0.31	0.36	0.11	0.58		0.27	0.65	
Control Delay		27.9			36.3	12.4	11.1	12.2		4.8	6.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		27.9			36.3	12.4	11.1	12.2		4.8	6.1	
LOS		C			D	B	B	B		A	A	
Approach Delay		27.9			20.6			12.1			6.1	
Approach LOS		C			C			B			A	
Stops (vph)	14			28	15	6	626		15	701		
Fuel Used(gal)	0			0	0	0	14		1	19		
CO Emissions (g/hr)	14			29	30	9	954		46	1349		
NOx Emissions (g/hr)	3			6	6	2	186		9	262		
VOC Emissions (g/hr)	3			7	7	2	221		11	313		
Dilemma Vehicles (#)	0			0	0	0	49		0	85		
Queue Length 50th (ft)	13			19	0	3	190		9	171		
Queue Length 95th (ft)	8			13	24	10	275		17	277		
Internal Link Dist (ft)	218			310			741			917		
Turn Bay Length (ft)					190	135			242			
Base Capacity (vph)	564			497	612	155	2192		365	2830		
Starvation Cap Reductn	0			0	0	0	0		0	0		
Spillback Cap Reductn	0			0	0	0	0		0	0		
Storage Cap Reductn	0			0	0	0	0		0	0		
Reduced v/c Ratio	0.07			0.09	0.14	0.10	0.56		0.26	0.63		

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 71.7	
Natural Cycle: 95	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 9.2	Intersection LOS: A
Intersection Capacity Utilization 72.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Monroe Road & Henderson Road

Lanes, Volumes, Timings
4: US 202 & Saulin Boulevard

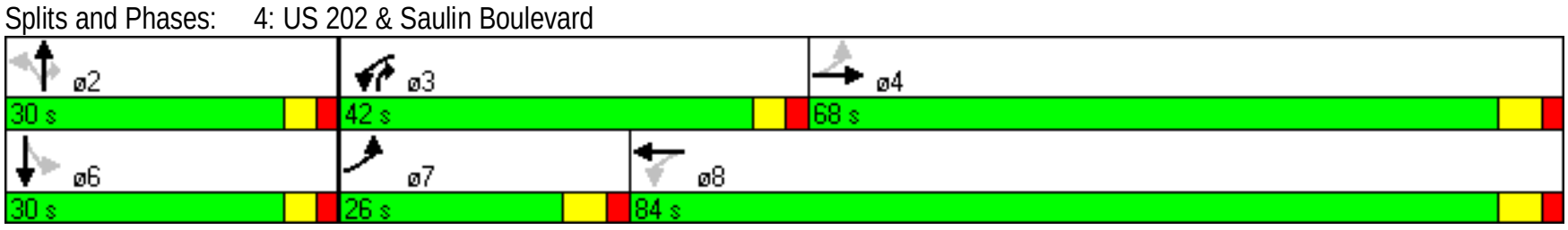
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	1058	17	389	1790	0	2	1	48	2	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	11	10	14	14	10	12	12
Storage Length (ft)	65		0	240		0	0		123	60		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	70		25	120		25	25		75	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00							0.99	1.00		
Frt		0.996							0.850		0.950	
Flt Protected	0.950			0.950				0.966		0.950		
Satd. Flow (prot)	1123	3504	0	1711	3455	0	0	1575	1672	1685	1354	0
Flt Permitted	0.103			0.131								
Satd. Flow (perm)	122	3504	0	236	3455	0	0	1631	1650	1767	1354	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2							34		2	
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		1518			675			1804			327	
Travel Time (s)		23.0			10.2			35.1			8.9	
Confl. Peds. (#/hr)			1	1					2	2		
Peak Hour Factor	0.50	0.93	0.54	0.92	0.91	0.25	0.44	0.50	0.88	0.25	0.25	0.50
Heavy Vehicles (%)	50%	2%	23%	2%	1%	0%	14%	50%	3%	0%	0%	100%
Adj. Flow (vph)	4	1138	31	423	1967	0	5	2	55	8	4	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	1169	0	423	1967	0	0	7	55	8	6	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.04	1.04	1.04	1.09	0.92	0.92	1.09	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt			Perm		pm+ov	Perm		
Protected Phases	7	4		3	8			2	3		6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		3	8		2	2	3	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0	20.0	8.0	8.0	
Minimum Split (s)	26.0	26.0		25.0	31.0		22.0	22.0	25.0	30.0	30.0	
Total Split (s)	26.0	68.0	0.0	42.0	84.0	0.0	30.0	30.0	42.0	30.0	30.0	0.0
Total Split (%)	18.6%	48.6%	0.0%	30.0%	60.0%	0.0%	21.4%	21.4%	30.0%	21.4%	21.4%	0.0%
Maximum Green (s)	20.0	62.0		37.0	78.0		25.0	25.0	37.0	25.0	25.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.0	6.0	4.0	5.0	5.0	5.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			

Lanes, Volumes, Timings
4: US 202 & Saulin Boulevard

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min		None	Min		None	None	None	None	None	
Walk Time (s)					7.0					7.0	7.0	
Flash Dont Walk (s)					18.0					18.0	18.0	
Pedestrian Calls (#/hr)					0					0	0	
Act Effct Green (s)	58.9	36.8		69.0	69.4			8.8	27.9	8.8	8.8	
Actuated g/C Ratio	0.75	0.47		0.88	0.89			0.11	0.36	0.11	0.11	
v/c Ratio	0.01	0.71		0.61	0.64			0.04	0.09	0.04	0.04	
Control Delay	3.0	20.0		17.2	7.8			45.3	10.3	45.5	40.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	3.0	20.0		17.2	7.8			45.3	10.3	45.5	40.5	
LOS	A	C		B	A			D	B	D	D	
Approach Delay		20.0			9.4			14.2			43.4	
Approach LOS		B			A			B			D	
Stops (vph)	1	778		172	543			4	15	2	2	
Fuel Used(gal)	0	25		5	17			0	1	0	0	
CO Emissions (g/hr)	2	1723		364	1218			8	85	2	2	
NOx Emissions (g/hr)	0	335		71	237			2	16	0	0	
VOC Emissions (g/hr)	1	399		84	282			2	20	1	0	
Dilemma Vehicles (#)	0	72		0	37			0	0	0	0	
Queue Length 50th (ft)	0	160		56	0			2	5	3	1	
Queue Length 95th (ft)	1	428		281	788			12	35	6	4	
Internal Link Dist (ft)		1438			595			1724			247	
Turn Bay Length (ft)	65			240					123	60		
Base Capacity (vph)	374	2918		976	3085			574	936	622	478	
Starvation Cap Reductn	0	0		0	0			0	0	0	0	
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.01	0.40		0.43	0.64			0.01	0.06	0.01	0.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 78.3	
Natural Cycle: 140	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 87.4%	ICU Level of Service E
Analysis Period (min) 15	

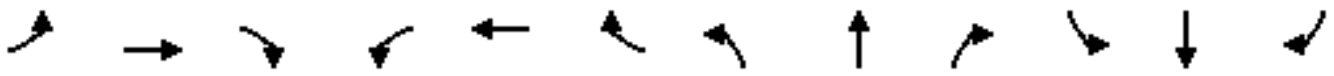
Splits and Phases: 4: US 202 & Saulin Boulevard



Lanes, Volumes, Timings
5: Church Road & Henderson Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	237	33	31	223	194	93	900	61	504	1125	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	10	11	11	14	12	12	14	11	11	12
Storage Length (ft)	98		0	170		195	243		243	173		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	60		25	70		35	50		45	35		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00				0.99		1.00				
Frt		0.981				0.850		0.988			0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	1679	0	1572	1783	1625	1736	3449	0	1694	3284	0
Flt Permitted	0.284			0.159			0.097			0.087		
Satd. Flow (perm)	516	1679	0	263	1783	1605	177	3449	0	155	3284	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		375			573			598			768	
Travel Time (s)		7.3			11.2			11.6			15.0	
Confl. Peds. (#/hr)			2			1			1			
Peak Hour Factor	0.74	0.76	0.73	0.56	0.84	0.84	0.69	0.93	0.75	0.91	0.92	0.86
Heavy Vehicles (%)	1%	2%	13%	11%	3%	6%	4%	3%	6%	3%	3%	4%
Adj. Flow (vph)	136	312	45	55	265	231	135	968	81	554	1223	295
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	357	0	55	265	231	135	1049	0	554	1518	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.09	1.04	1.04	0.92	1.00	1.00	0.92	1.04	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt		pm+ov	pm+pt			pm+pt		
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	9.0	10.0		9.0	10.0	9.0	9.0	15.0		9.0	15.0	
Minimum Split (s)	14.0	28.0		14.0	22.0	14.0	14.0	28.0		14.0	22.0	
Total Split (s)	14.0	33.0	0.0	14.0	33.0	41.0	14.0	47.0	0.0	41.0	74.0	0.0
Total Split (%)	10.4%	24.4%	0.0%	10.4%	24.4%	30.4%	10.4%	34.8%	0.0%	30.4%	54.8%	0.0%
Maximum Green (s)	9.0	27.0		9.0	27.0	36.0	9.0	41.0		36.0	68.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	4.0	5.0	6.0	5.0	5.0	6.0	4.0	5.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	

Lanes, Volumes, Timings
5: Church Road & Henderson Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min	None	None	Min		None	Min	
Walk Time (s)		6.0						6.0				
Flash Dont Walk (s)		16.0						16.0				
Pedestrian Calls (#/hr)		0						0				
Act Effct Green (s)	35.9	27.8		34.8	24.8	61.8	51.1	41.0		83.1	68.1	
Actuated g/C Ratio	0.27	0.21		0.26	0.19	0.47	0.38	0.31		0.63	0.51	
v/c Ratio	0.62	1.02		0.35	0.80	0.31	0.78	0.98		1.08	0.90	
Control Delay	49.0	104.5		39.8	69.6	20.5	61.1	70.1		99.5	38.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	49.0	104.5		39.8	69.6	20.5	61.1	70.1		99.5	38.7	
LOS	D	F		D	E	C	E	E		F	D	
Approach Delay		89.2			46.0			69.0			54.9	
Approach LOS		F			D			E			D	
Stops (vph)	81	226		23	206	112	69	860		376	1182	
Fuel Used(gal)	2	8		1	6	2	2	24		19	36	
CO Emissions (g/hr)	132	571		39	394	172	145	1700		1343	2548	
NOx Emissions (g/hr)	26	111		8	77	33	28	331		261	496	
VOC Emissions (g/hr)	31	132		9	91	40	34	394		311	591	
Dilemma Vehicles (#)	0	8		0	8	0	0	34		0	51	
Queue Length 50th (ft)	89	~344		34	221	112	64	~486		~499	629	
Queue Length 95th (ft)	117	#412		42	297	155	87	#640		#730	#761	
Internal Link Dist (ft)		295			493			518			688	
Turn Bay Length (ft)	98			170		195	243			173		
Base Capacity (vph)	221	351		157	363	752	174	1065		514	1682	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.62	1.02		0.35	0.73	0.31	0.78	0.98		1.08	0.90	

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 132.9	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 61.6	Intersection LOS: E
Intersection Capacity Utilization 95.3%	ICU Level of Service F
Analysis Period (min) 15	

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

Lanes, Volumes, Timings
5: Church Road & Henderson Road

Splits and Phases: 5: Church Road & Henderson Road

Lanes, Volumes, Timings
6: US 202 & Henderson Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Volume (vph)	78	444	530	538	1085	158	529	268	326	204	599	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	14	10	11	14	10	12	12	10	10	12
Storage Length (ft)	318		675	120		120		435	0	275	275	
Storage Lanes	1		1	1		1		1	0	1	1	
Taper Length (ft)	100		25	85		85		85	25	85	85	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.91	0.91	0.95	0.97	0.91	0.95
Frt			0.850			0.850		0.934		0.905	0.850	
Flt Protected	0.950			0.950			0.950	0.973		0.982		
Satd. Flow (prot)	1652	3421	1689	1652	3421	1689	1503	3081	0	2997	1345	0
Flt Permitted	0.950			0.950			0.950	0.973		0.982		
Satd. Flow (perm)	1652	3421	1689	1652	3421	1689	1503	3081	0	2997	1345	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								119			13	
Link Speed (mph)		45			45			35		40		
Link Distance (ft)		844			1518			997		640		
Travel Time (s)		12.8			23.0			19.4		10.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	483	576	585	1179	172	575	291	354	222	651	117
Shared Lane Traffic (%)							27%				59%	
Lane Group Flow (vph)	85	483	576	585	1179	172	420	800	0	606	384	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	Right
Median Width(ft)		10			10			34		20		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway Factor	1.09	1.04	0.92	1.09	1.04	0.92	1.09	1.00	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15	15	9	15	9	9
Turn Type	Prot		pm+ov	Prot		pm+ov	Split				Prot	
Protected Phases	7	4	5	3	8	6	5	5		6	6	
Permitted Phases			4			8						
Detector Phase	7	4	5	3	8	6	5	5		6	6	
Switch Phase												
Minimum Initial (s)	11.0	40.0	11.0	11.0	40.0	11.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	17.0	47.0	17.0	17.0	47.0	22.0	17.0	17.0		22.0	22.0	
Total Split (s)	17.0	50.0	31.0	37.0	70.0	27.0	31.0	31.0	0.0	27.0	27.0	0.0
Total Split (%)	11.7%	34.5%	21.4%	25.5%	48.3%	18.6%	21.4%	21.4%	0.0%	18.6%	18.6%	0.0%
Maximum Green (s)	11.0	43.0	25.0	31.0	63.0	21.0	25.0	25.0		21.0	21.0	
Yellow Time (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	7.0	6.0	6.0	7.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	Min	None	C-Min	Min	Min	Min		Min	Min	
Walk Time (s)					5.0	5.0				5.0	5.0	

Lanes, Volumes, Timings
6: US 202 & Henderson Road

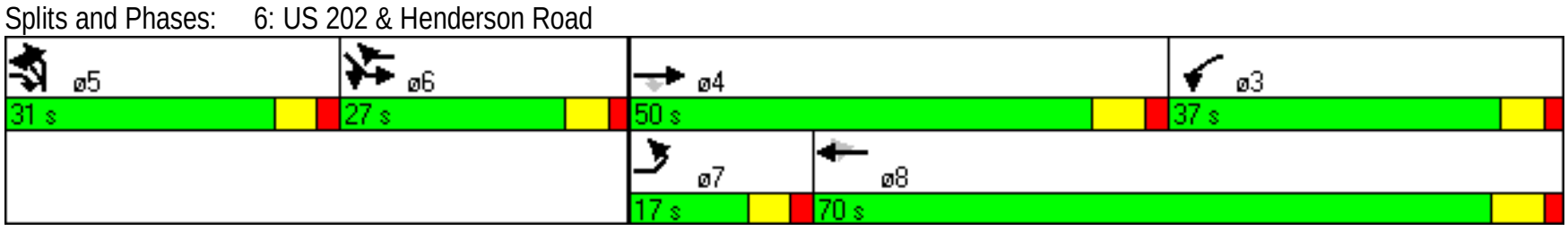
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Flash Dont Walk (s)					11.0	11.0				11.0	11.0	
Pedestrian Calls (#/hr)					0	0				0	0	
Act Effct Green (s)	11.0	43.0	69.0	31.0	63.0	85.0	25.0	25.0		21.0	21.0	
Actuated g/C Ratio	0.08	0.30	0.48	0.21	0.43	0.59	0.17	0.17		0.14	0.14	
v/c Ratio	0.68	0.48	0.72	1.66	0.79	0.17	1.62	1.27		1.79dr	1.86	
Control Delay	91.4	43.7	22.4	343.2	40.3	7.8	333.8	173.8		235.9	438.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	91.4	43.7	22.4	343.2	40.3	7.8	333.8	173.8		235.9	438.5	
LOS	F	D	C	F	D	A	F	F		F	F	
Approach Delay		36.5			128.9			228.9		314.5		
Approach LOS		D			F			F		F		
Stops (vph)	72	357	418	369	917	67	270	503		424	219	
Fuel Used(gal)	3	11	11	47	31	3	31	35		33	35	
CO Emissions (g/hr)	194	756	735	3319	2166	185	2170	2456		2334	2460	
NOx Emissions (g/hr)	38	147	143	646	421	36	422	478		454	479	
VOC Emissions (g/hr)	45	175	170	769	502	43	503	569		541	570	
Dilemma Vehicles (#)	0	15	0	0	38	0	0	0		0	0	
Queue Length 50th (ft)	80	197	225	~800	500	41	~625	~470		~392	~597	
Queue Length 95th (ft)	#161	253	305	#1035	592	64	#860	#610		#514	#831	
Internal Link Dist (ft)		764			1438			917		560		
Turn Bay Length (ft)	318		675	120		120	435	435		275	275	
Base Capacity (vph)	125	1015	804	353	1486	990	259	630		434	206	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.68	0.48	0.72	1.66	0.79	0.17	1.62	1.27		1.40	1.86	

Intersection Summary

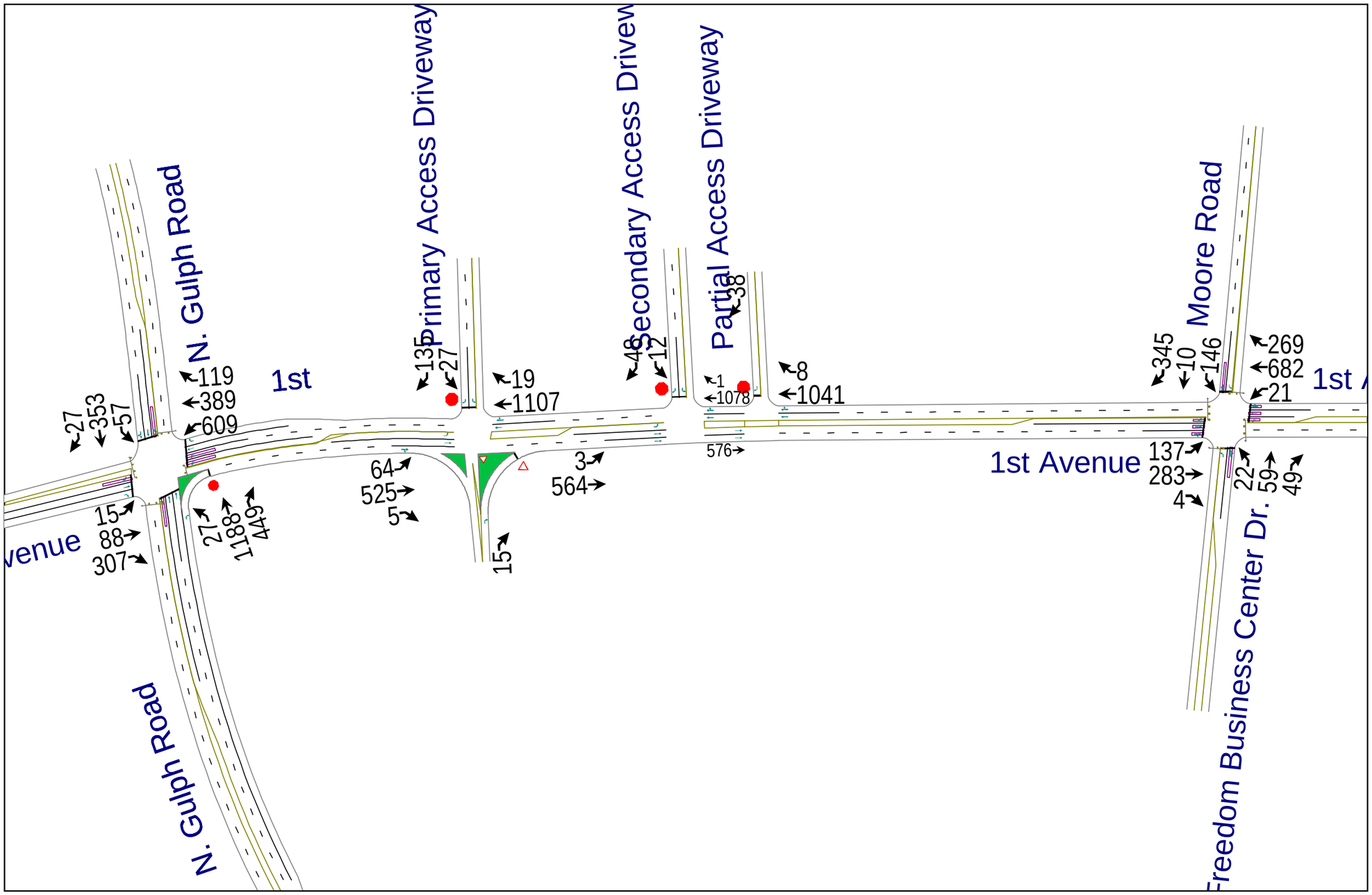
Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 145
Offset: 71 (49%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.86
Intersection Signal Delay: 166.7 Intersection LOS: F
Intersection Capacity Utilization 119.2% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lanes, Volumes, Timings
6: US 202 & Henderson Road

Splits and Phases: 6: US 202 & Henderson Road



2030 No-Build Condition
PM Peak Hour



Lanes, Volumes, Timings
1: 1st Avenue & Moore Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	283	4	21	682	269	22	59	49	146	10	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	12	13	10	11	12	12	12	12	10	10	10
Storage Length (ft)	280		0	73		0	115		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	36		25	37		25	77		25	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99						0.98	
Frt		0.997			0.956			0.932			0.858	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1624	3528	0	1685	3278	0	1805	1771	0	1668	1484	0
Flt Permitted	0.122			0.529			0.212			0.656		
Satd. Flow (perm)	209	3528	0	925	3278	0	403	1771	0	1152	1484	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			113			59			262	
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		767			1204			482			486	
Travel Time (s)		14.9			23.5			13.1			9.5	
Confl. Peds. (#/hr)	1		4	4		1	4					4
Peak Hour Factor	0.76	0.77	0.50	0.83	0.87	0.83	0.88	0.68	0.67	0.69	0.45	0.83
Heavy Vehicles (%)	0%	2%	0%	0%	1%	1%	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	180	368	8	25	784	324	25	87	73	212	22	416
Shared Lane Traffic (%)												
Lane Group Flow (vph)	180	376	0	25	1108	0	25	160	0	212	438	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.00	0.96	1.09	1.04	1.00	1.00	1.00	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	35.0		11.0	35.0		21.5	21.5		21.5	21.5	
Total Split (s)	11.0	35.0	0.0	11.0	35.0	0.0	24.0	24.0	0.0	24.0	24.0	0.0
Total Split (%)	15.7%	50.0%	0.0%	15.7%	50.0%	0.0%	34.3%	34.3%	0.0%	34.3%	34.3%	0.0%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	Min		None	Min		C-Max	C-Max		C-Max	C-Max	

Lanes, Volumes, Timings
1: 1st Avenue & Moore Road

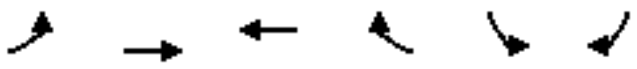
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	36.1	33.7		33.1	27.1		21.9	21.9		21.9	21.9	
Actuated g/C Ratio	0.52	0.48		0.47	0.39		0.31	0.31		0.31	0.31	
v/c Ratio	0.79	0.22		0.05	0.83		0.20	0.27		0.59	0.68	
Control Delay	38.7	11.3		6.8	23.2		24.5	14.0		30.2	15.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.7	11.3		6.8	23.2		24.5	14.0		30.2	15.6	
LOS	D	B		A	C		C	B		C	B	
Approach Delay		20.2			22.8			15.5			20.4	
Approach LOS		C			C			B			C	
Stops (vph)	68	156		11	741		21	53		120	137	
Fuel Used(gal)	2	3		0	18		0	1		2	3	
CO Emissions (g/hr)	164	239		21	1281		20	67		162	238	
NOx Emissions (g/hr)	32	47		4	249		4	13		31	46	
VOC Emissions (g/hr)	38	55		5	297		5	15		37	55	
Dilemma Vehicles (#)	0	21		0	68		0	0		0	25	
Queue Length 50th (ft)	35	37		4	192		8	32		78	60	
Queue Length 95th (ft)	#88	66		12	242		28	52		108	15	
Internal Link Dist (ft)		687			1124			402			406	
Turn Bay Length (ft)	280			73			115					
Base Capacity (vph)	229	1698		502	1469		126	596		361	645	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.79	0.22		0.05	0.75		0.20	0.27		0.59	0.68	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 21.1 Intersection LOS: C
Intersection Capacity Utilization 69.9% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: 1st Avenue & Moore Road

HCM Unsignalized Intersection Capacity Analysis
2: 1st Avenue & Partial Access Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	576	1041	8	0	38
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	626	1132	9	0	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		999	767			
pX, platoon unblocked	0.91				0.91	0.91
vC, conflicting volume	1140				1449	570
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	945				1286	315
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	93
cM capacity (veh/h)	653				141	616

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	313	313	754	386	41
Volume Left	0	0	0	0	0
Volume Right	0	0	0	9	41
cSH	1700	1700	1700	1700	616
Volume to Capacity	0.18	0.18	0.44	0.23	0.07
Queue Length 95th (ft)	0	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	0.0	11.3
Lane LOS					B
Approach Delay (s)	0.0		0.0		11.3
Approach LOS					B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: 1st Avenue & Secondary Access Driveway

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	3	564	1078	1	12	48
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	613	1172	1	13	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		869	896			
pX, platoon unblocked	0.95				0.95	0.95
vC, conflicting volume	1173				1485	586
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1072				1402	454
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				89	90
cM capacity (veh/h)	612				123	525

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	3	307	307	781	392	13	52
Volume Left	3	0	0	0	0	13	0
Volume Right	0	0	0	0	1	0	52
cSH	612	1700	1700	1700	1700	123	525
Volume to Capacity	0.01	0.18	0.18	0.46	0.23	0.11	0.10
Queue Length 95th (ft)	0	0	0	0	0	9	8
Control Delay (s)	10.9	0.0	0.0	0.0	0.0	37.6	12.6
Lane LOS	B					E	B
Approach Delay (s)	0.1			0.0		17.6	
Approach LOS						C	

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: 1st Avenue & Primary Access Driveway

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	525	5	0	1107	19	0	0	15	27	0	135
Sign Control		Free			Free			Yield			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	571	5	0	1203	21	0	0	16	29	0	147
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		524			1244							
pX, platoon unblocked												
vC, conflicting volume	1224			571			1461	1936	288	1638	1923	612
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1224			571			1461	1936	288	1638	1923	612
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			100			100	100	98	50	100	66
cM capacity (veh/h)	565			998			54	57	709	59	58	436

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	70	380	196	802	422	16	29	147
Volume Left	70	0	0	0	0	0	29	0
Volume Right	0	0	5	0	21	16	0	147
cSH	565	1700	1700	1700	1700	709	59	436
Volume to Capacity	0.12	0.22	0.12	0.47	0.25	0.02	0.50	0.34
Queue Length 95th (ft)	10	0	0	0	0	2	49	37
Control Delay (s)	12.3	0.0	0.0	0.0	0.0	10.2	116.3	17.4
Lane LOS	B					B	F	C
Approach Delay (s)	1.3			0.0		10.2	33.9	
Approach LOS						B	D	

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lanes, Volumes, Timings
5: 1st Avenue & N. Gulph Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	88	307	609	389	119	27	1188	449	57	353	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	12	10	12	12	10	12	12
Storage Length (ft)	236		236	204		167	301		667	173		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	120		120	62		93	107		92	56		25
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1827	1615	3351	1818	1583	1685	3610	1599	1685	3534	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1805	1827	1615	3351	1818	1583	1685	3610	1599	1685	3534	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									528		9	
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		477			525			924			509	
Travel Time (s)		9.3			10.2			15.8			8.7	
Peak Hour Factor	0.70	0.88	0.82	0.85	0.78	0.65	0.59	0.96	0.85	0.78	0.95	0.82
Heavy Vehicles (%)	0%	4%	0%	1%	1%	2%	0%	0%	1%	0%	1%	0%
Adj. Flow (vph)	21	100	374	716	499	183	46	1238	528	73	372	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	100	374	716	499	183	46	1238	528	73	405	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		23			23			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.04	1.04	1.00	1.09	1.00	1.00	1.09	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		Perm	Prot		
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	8.0	12.0	4.0	8.0	12.0	4.0	4.0	26.0	26.0	4.0	26.0	
Minimum Split (s)	13.0	20.0	18.0	13.0	20.0	18.0	18.0	32.0	32.0	18.0	32.0	
Total Split (s)	13.0	20.0	25.0	26.0	33.0	18.0	25.0	41.0	41.0	18.0	34.0	0.0
Total Split (%)	12.4%	19.0%	23.8%	24.8%	31.4%	17.1%	23.8%	39.0%	39.0%	17.1%	32.4%	0.0%
Yellow Time (s)	3.0	3.0	4.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	Min	None	None	Min	None	None	Min	Min	None	Min	
Act Effct Green (s)	8.0	13.2	33.5	21.0	34.2	48.5	15.3	35.0	35.0	9.3	29.1	
Actuated g/C Ratio	0.08	0.13	0.33	0.21	0.34	0.48	0.15	0.35	0.35	0.09	0.29	

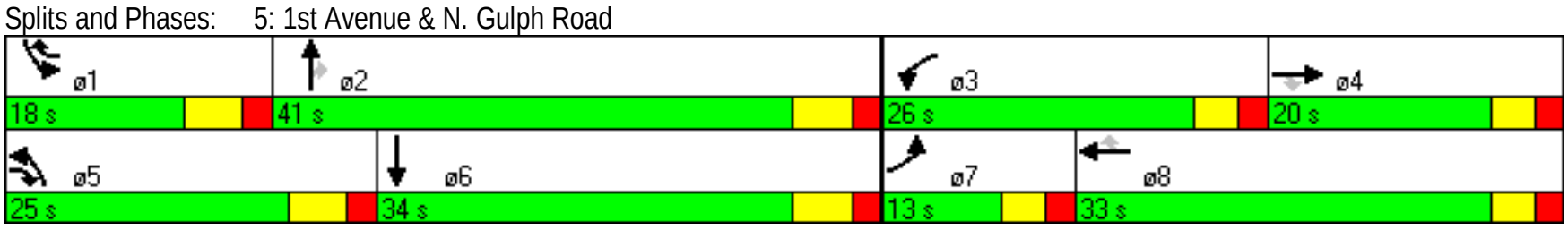
Lanes, Volumes, Timings
5: 1st Avenue & N. Gulph Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.15	0.42	0.70	1.02	0.81	0.24	0.18	0.98	0.59	0.47	0.39	
Control Delay	47.2	46.5	36.3	80.3	44.4	17.7	38.1	55.6	5.3	53.5	30.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.2	46.5	36.3	80.3	44.4	17.7	38.1	55.6	5.3	53.5	30.4	
LOS	D	D	D	F	D	B	D	E	A	D	C	
Approach Delay		38.8			59.3			40.5			33.9	
Approach LOS		D			E			D			C	
Stops (vph)	15	78	256	524	297	69	22	1025	39	52	291	
Fuel Used(gal)	0	2	5	16	7	1	1	31	4	1	7	
CO Emissions (g/hr)	22	120	367	1132	505	98	42	2165	257	93	456	
NOx Emissions (g/hr)	4	23	71	220	98	19	8	421	50	18	89	
VOC Emissions (g/hr)	5	28	85	262	117	23	10	502	60	22	106	
Dilemma Vehicles (#)	0	4	0	0	17	0	0	55	0	0	18	
Queue Length 50th (ft)	13	60	199	~240	266	59	25	403	0	45	108	
Queue Length 95th (ft)	30	111	267	#356	#442	87	38	#603	52	79	162	
Internal Link Dist (ft)		397			445			844			429	
Turn Bay Length (ft)	236		236	204		167	301		667	173		
Base Capacity (vph)	144	273	597	700	618	806	319	1258	901	201	1037	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.15	0.37	0.63	1.02	0.81	0.23	0.14	0.98	0.59	0.36	0.39	

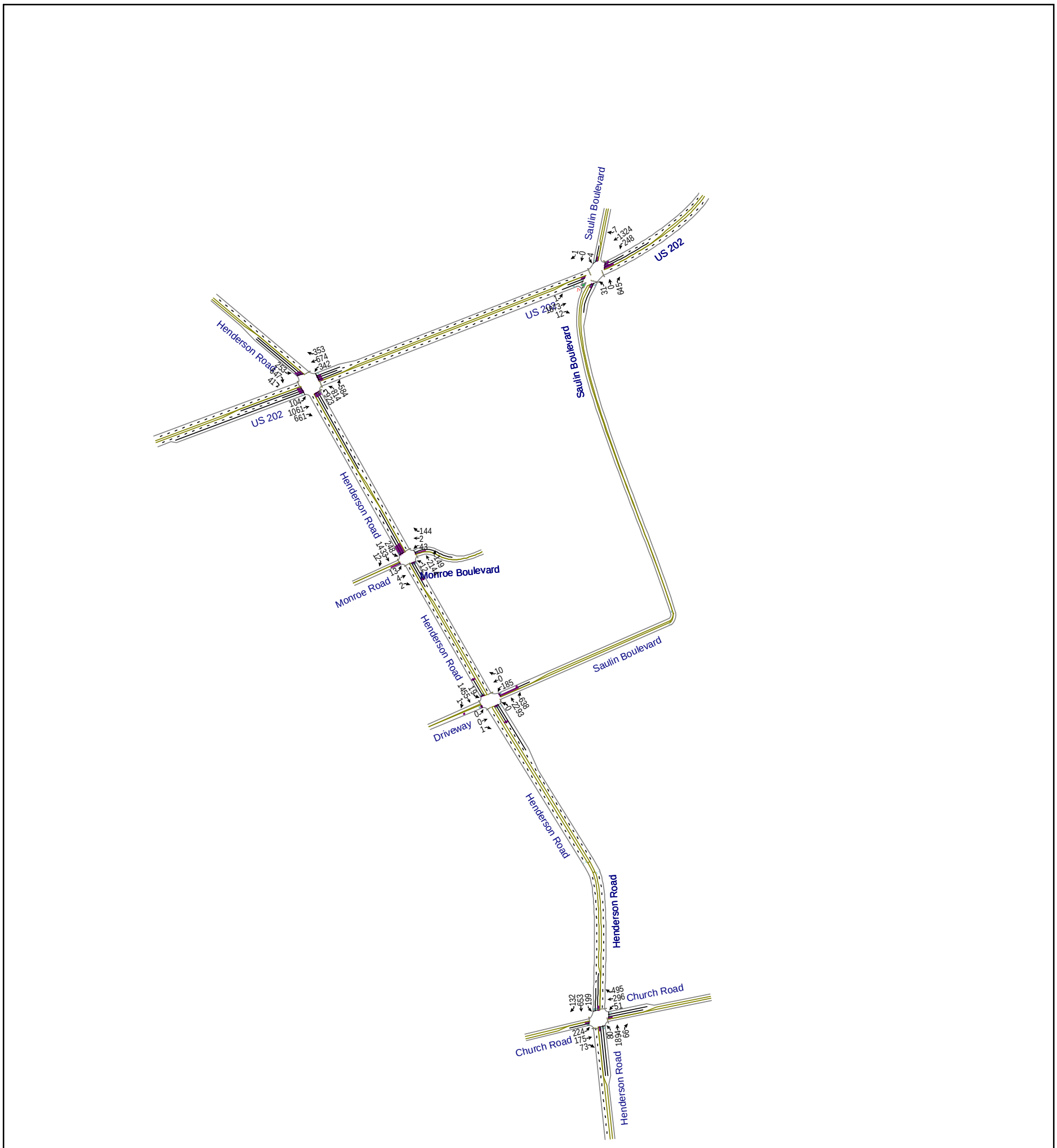
Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 100.6
Natural Cycle: 105
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 45.8 Intersection LOS: D
Intersection Capacity Utilization 74.4% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: 1st Avenue & N. Gulph Road



2030 No-Build Condition
PM Peak Hour



Lanes, Volumes, Timings
2: Saulin Boulevard & Henderson Road

1/25/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	1	185	0	10	0	2293	638	19	1455	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	9	12	12	11	11	14	11	11	11
Storage Length (ft)	0		0	160		0	0		266	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25		25	100		25	25		120	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor					0.98				0.97			
Frt		0.865			0.850				0.850			
Flt Protected				0.950							0.998	
Satd. Flow (prot)	0	1863	0	1608	1590	0	0	3455	1706	0	3438	0
Flt Permitted				0.757							0.571	
Satd. Flow (perm)	0	1863	0	1282	1590	0	0	3455	1657	0	1967	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		70			12				626			
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		328			1014			977			821	
Travel Time (s)		6.4			19.8			19.0			16.0	
Confl. Peds. (#/hr)						2			3	3		
Peak Hour Factor	1.00	1.00	1.00	0.91	1.00	0.69	1.00	0.93	0.89	0.38	0.94	1.00
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	0%	1%	1%	11%	1%	0%
Adj. Flow (vph)	0	0	1	203	0	14	0	2466	717	50	1548	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1	0	203	14	0	0	2466	717	0	1599	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	1.14	1.00	1.00	1.04	1.04	0.92	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	21.0	21.0		31.0	31.0		32.0	32.0	32.0	22.0	22.0	
Total Split (s)	31.0	31.0	0.0	31.0	31.0	0.0	119.0	119.0	119.0	119.0	119.0	0.0
Total Split (%)	20.7%	20.7%	0.0%	20.7%	20.7%	0.0%	79.3%	79.3%	79.3%	79.3%	79.3%	0.0%
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	4.0	6.0	6.0	6.0	6.0	6.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		25.2		25.2	25.2			113.0	113.0		113.0	
Actuated g/C Ratio		0.17		0.17	0.17			0.76	0.76		0.76	
v/c Ratio		0.00		0.94	0.05			0.94	0.51		1.14dl	
Control Delay		0.0		107.3	26.0			24.7	2.2		65.5	
Queue Delay		0.0		0.0	0.0			0.0	0.0		3.9	
Total Delay		0.0		107.3	26.0			24.7	2.2		69.4	
LOS		A		F	C			C	A		E	
Approach Delay		0.0			102.1			19.6			69.4	
Approach LOS		A			F			B			E	
Stops (vph)		0		163	4			1782	33		1192	
Fuel Used(gal)		0		9	0			53	9		37	
CO Emissions (g/hr)		0		629	20			3718	613		2612	
NOx Emissions (g/hr)		0		122	4			723	119		508	
VOC Emissions (g/hr)		0		146	5			862	142		605	
Dilemma Vehicles (#)		0		0	0			76	0		45	
Queue Length 50th (ft)		0		198	2			977	21		~916	
Queue Length 95th (ft)		0		#355	23			1154	50		#1054	
Internal Link Dist (ft)		248			934			897			741	
Turn Bay Length (ft)				160					266			
Base Capacity (vph)		383		223	287			2616	1407		1490	
Starvation Cap Reductn		0		0	0			0	0		13	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.00		0.91	0.05			0.94	0.51		1.08	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 149.2			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 39.1		Intersection LOS: D	
Intersection Capacity Utilization 103.1%		ICU Level of Service G	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 2: Saulin Boulevard & Henderson Road

Lanes, Volumes, Timings
3: Monroe Road & Henderson Road

1/25/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	4	2	43	2	144	12	2144	149	248	1433	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	11	11	14	10	12	13
Storage Length (ft)	0		0	0		190	135		0	242		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25		25	25		65	85		25	130		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00				0.98		1.00				
Frt		0.972				0.850		0.988			0.999	
Flt Protected		0.976			0.955		0.950			0.950		
Satd. Flow (prot)	0	1863	0	0	1814	1599	1745	3409	0	1652	3536	0
Flt Permitted		0.821			0.803		0.048			0.044		
Satd. Flow (perm)	0	1564	0	0	1526	1575	88	3409	0	76	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						155		11			1	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		298			390			821			997	
Travel Time (s)		8.1			10.6			16.0			19.4	
Confl. Peds. (#/hr)	2					2			2	2		
Peak Hour Factor	0.69	0.38	0.25	0.75	0.50	0.93	0.75	0.93	0.73	0.86	0.25	0.38
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	0%	2%	2%	0%
Adj. Flow (vph)	19	11	8	57	4	155	16	2305	204	288	5732	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	0	0	61	155	16	2509	0	288	5764	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	0.96	0.96	1.00	1.00	1.00	1.04	1.04	0.92	1.09	1.00	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm		Perm	Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	40.0	40.0		8.0	40.0	
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	46.0	46.0		15.0	46.0	
Total Split (s)	32.0	32.0	0.0	32.0	32.0	32.0	90.0	90.0	0.0	23.0	113.0	0.0
Total Split (%)	22.1%	22.1%	0.0%	22.1%	22.1%	22.1%	62.1%	62.1%	0.0%	15.9%	77.9%	0.0%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	5.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None	None	Min	Min		None	Min	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		11.0			11.0	11.0	84.1	84.1		107.1	107.1	
Actuated g/C Ratio		0.09			0.09	0.09	0.65	0.65		0.83	0.83	
v/c Ratio		0.29			0.47	0.56	0.28	1.13		1.06	1.97	
Control Delay		60.3			67.8	16.3	26.2	87.9		112.1	453.5	
Queue Delay		0.0			0.0	0.0	0.0	33.1		0.0	0.0	
Total Delay		60.3			67.8	16.3	26.2	120.9		112.1	453.5	
LOS		E			E	B	C	F		F	F	
Approach Delay		60.3			30.9			120.3			437.2	
Approach LOS		E			C			F			F	
Stops (vph)		18			41	20	8	1884		161	861	
Fuel Used(gal)		0			1	1	0	69		9	150	
CO Emissions (g/hr)		25			65	72	14	4808		605	10505	
NOx Emissions (g/hr)		5			13	14	3	935		118	2044	
VOC Emissions (g/hr)		6			15	17	3	1114		140	2435	
Dilemma Vehicles (#)		0			0	0	0	78		0	29	
Queue Length 50th (ft)		30			49	0	5	~1279		~218	~3968	
Queue Length 95th (ft)		28			52	66	21	#1498		#392	225	
Internal Link Dist (ft)		218			310			741			917	
Turn Bay Length (ft)						190	135			242		
Base Capacity (vph)		327			319	452	57	2223		271	2933	
Starvation Cap Reductn		0			0	0	0	138		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.12			0.19	0.34	0.28	1.20		1.06	1.97	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 129.1			
Natural Cycle: 145			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.97			
Intersection Signal Delay: 335.1		Intersection LOS: F	
Intersection Capacity Utilization 99.6%		ICU Level of Service F	
Analysis Period (min) 15			

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

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

Splits and Phases: 3: Monroe Road & Henderson Road

Lanes, Volumes, Timings
4: US 202 & Saulin Boulevard

1/25/2016

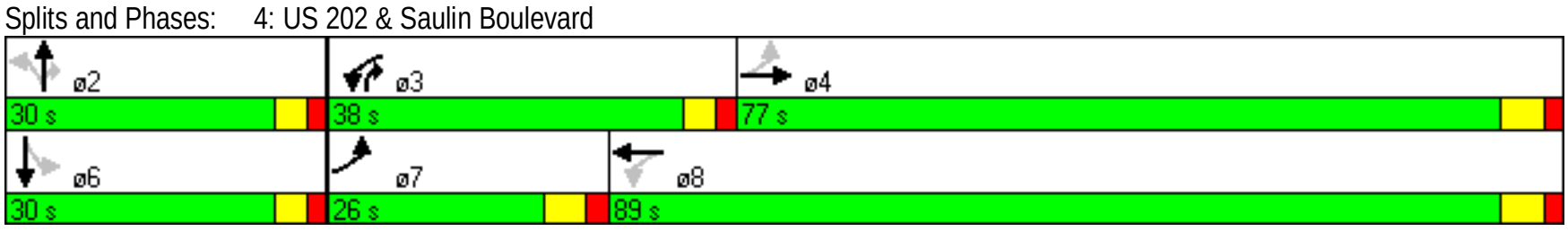
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1873	12	248	1324	7	31	0	645	4	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	11	10	14	14	10	12	12
Storage Length (ft)	65		0	240		0	0		123	60		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	70		25	120		25	25		75	25		25
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.99	1.00		
Frt		0.999			0.998				0.850		0.850	
Flt Protected	0.950			0.950				0.950		0.950		
Satd. Flow (prot)	1685	3604	0	1711	3433	0	0	1750	1706	1123	1615	0
Flt Permitted	0.178			0.049				0.755		0.726		
Satd. Flow (perm)	316	3604	0	88	3433	0	0	1391	1683	855	1615	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1				4		251	
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		1518			675			1804			327	
Travel Time (s)		23.0			10.2			35.1			8.9	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.25	0.94	0.69	0.95	0.91	0.42	0.66	1.00	0.95	1.00	1.00	0.25
Heavy Vehicles (%)	0%	0%	9%	2%	1%	40%	10%	0%	1%	50%	0%	0%
Adj. Flow (vph)	4	1993	17	261	1455	17	47	0	679	4	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	2010	0	261	1472	0	0	47	679	4	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.04	1.04	1.04	1.09	0.92	0.92	1.09	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt			Perm		pm+ov	Perm		
Protected Phases	7	4		3	8			2	3		6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		3	8		2	2	3	6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		8.0	8.0	20.0	8.0	8.0	
Minimum Split (s)	26.0	35.0		25.0	35.0		22.0	22.0	25.0	30.0	30.0	
Total Split (s)	26.0	77.0	0.0	38.0	89.0	0.0	30.0	30.0	38.0	30.0	30.0	0.0
Total Split (%)	17.9%	53.1%	0.0%	26.2%	61.4%	0.0%	20.7%	20.7%	26.2%	20.7%	20.7%	0.0%
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	5.0	6.0	4.0	5.0	5.0	5.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Recall Mode	None	Min		None	Min		None	None	None	None	None	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	91.3	71.2		110.4	105.7			10.2	41.5	10.2	10.2	
Actuated g/C Ratio	0.71	0.56		0.86	0.83			0.08	0.32	0.08	0.08	
v/c Ratio	0.01	1.00		0.53	0.52			0.42	1.22	0.06	0.01	
Control Delay	3.0	49.1		32.6	7.0			68.8	151.7	56.8	0.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	3.0	49.1		32.6	7.0			68.8	151.7	56.8	0.0	
LOS	A	D		C	A			E	F	E	A	
Approach Delay		49.0			10.9			146.4			28.4	
Approach LOS		D			B			F			C	
Stops (vph)	0	1580		153	420			28	509	6	0	
Fuel Used(gal)	0	57		5	13			1	37	0	0	
CO Emissions (g/hr)	1	3988		324	906			89	2575	6	0	
NOx Emissions (g/hr)	0	776		63	176			17	501	1	0	
VOC Emissions (g/hr)	0	924		75	210			21	597	1	0	
Dilemma Vehicles (#)	0	69		0	42			1	0	0	0	
Queue Length 50th (ft)	1	~941		139	138			39	~696	3	0	
Queue Length 95th (ft)	1	#1142		240	503			81	#928	15	0	
Internal Link Dist (ft)		1438			595			1724			247	
Turn Bay Length (ft)	65			240					123	60		
Base Capacity (vph)	441	2010		497	2842			273	556	168	519	
Starvation Cap Reductn	0	0		0	0			0	0	0	0	
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.01	1.00		0.53	0.52			0.17	1.22	0.02	0.01	

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 127.7
Natural Cycle: 145
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 50.0 Intersection LOS: D
Intersection Capacity Utilization 112.3% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: US 202 & Saulin Boulevard



Lanes, Volumes, Timings
5: Church Road & Henderson Road

1/25/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	224	175	73	51	296	495	80	1894	66	199	653	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	10	11	11	14	12	12	14	11	11	12
Storage Length (ft)	98		0	170		195	243		243	173		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	60		25	70		35	50		45	35		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00			1.00				1.00	
Frt		0.951				0.850		0.994			0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	1673	0	1711	1837	1706	1805	3550	0	1728	3335	0
Flt Permitted	0.149			0.160			0.256			0.051		
Satd. Flow (perm)	274	1673	0	288	1837	1706	486	3550	0	93	3335	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		375			573			598			768	
Travel Time (s)		7.3			11.2			11.6			15.0	
Confl. Peds. (#/hr)			1	1			2					2
Peak Hour Factor	0.87	0.79	0.68	0.88	0.83	0.97	0.66	0.93	0.85	0.98	0.92	0.79
Heavy Vehicles (%)	0%	0%	1%	2%	0%	1%	0%	1%	3%	1%	1%	2%
Adj. Flow (vph)	257	222	107	58	357	510	121	2037	78	203	710	167
Shared Lane Traffic (%)												
Lane Group Flow (vph)	257	329	0	58	357	510	121	2115	0	203	877	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.09	1.04	1.04	0.92	1.00	1.00	0.92	1.04	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt		pm+ov	pm+pt			pm+pt		
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	9.0	10.0		9.0	10.0	9.0	9.0	10.0		9.0	10.0	
Minimum Split (s)	14.0	28.0		14.0	22.0	14.0	14.0	28.0		14.0	22.0	
Total Split (s)	14.0	30.0	0.0	14.0	30.0	14.0	14.0	84.0	0.0	14.0	84.0	0.0
Total Split (%)	9.9%	21.1%	0.0%	9.9%	21.1%	9.9%	9.9%	59.2%	0.0%	9.9%	59.2%	0.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	4.0	5.0	6.0	5.0	5.0	6.0	4.0	5.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	Min		None	Min	None	None	Min		None	Min	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	35.0	26.8		34.0	24.0	39.0	88.0	78.0		88.0	78.0	
Actuated g/C Ratio	0.25	0.19		0.24	0.17	0.27	0.62	0.55		0.62	0.55	
v/c Ratio	1.60	1.04		0.36	1.15	1.09	0.31	1.08		1.26	0.48	
Control Delay	327.3	116.7		45.6	149.7	115.0	11.4	79.0		190.2	20.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	327.3	116.7		45.6	149.7	115.0	11.4	79.0		190.2	20.7	
LOS	F	F		D	F	F	B	E		F	C	
Approach Delay		209.1			124.0			75.3			52.5	
Approach LOS		F			F			E			D	
Stops (vph)	136	197		39	247	422	30	1710		103	462	
Fuel Used(gal)	17	8		1	12	17	1	53		11	17	
CO Emissions (g/hr)	1157	562		68	846	1175	53	3696		767	1157	
NOx Emissions (g/hr)	225	109		13	165	229	10	719		149	225	
VOC Emissions (g/hr)	268	130		16	196	272	12	856		178	268	
Dilemma Vehicles (#)	0	7		0	9	0	0	63		0	28	
Queue Length 50th (ft)	~292	~360		40	~387	~529	39	~1150		~185	252	
Queue Length 95th (ft)	#455	#454		76	#519	#753	45	#1282		#352	307	
Internal Link Dist (ft)		295			493			518			688	
Turn Bay Length (ft)	98			170		195	243			173		
Base Capacity (vph)	161	316		159	310	469	385	1950		161	1832	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.60	1.04		0.36	1.15	1.09	0.31	1.08		1.26	0.48	

Intersection Summary

Area Type: Other
Cycle Length: 142
Actuated Cycle Length: 142
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.60
Intersection Signal Delay: 95.8 Intersection LOS: F
Intersection Capacity Utilization 111.8% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Church Road & Henderson Road

Lanes, Volumes, Timings
6: US 202 & Henderson Road

1/25/2016

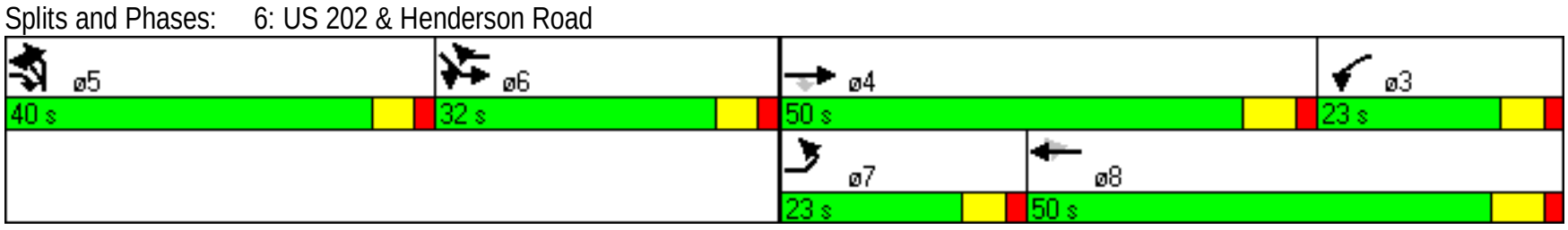
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Volume (vph)	104	1061	661	342	674	353	923	814	584	253	647	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	14	10	11	14	10	12	12	10	10	12
Storage Length (ft)	318		675	120		120		435	0	275	275	
Storage Lanes	1		1	1		1		1	0	1	1	
Taper Length (ft)	100		25	85		85		85	25	85	100	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.91	0.91	0.95	0.97	0.91	0.95
Frt			0.850			0.850		0.943		0.914	0.850	
Flt Protected	0.950			0.950			0.950	0.970		0.979		
Satd. Flow (prot)	1652	3421	1689	1652	3421	1689	1503	3101	0	3018	1345	0
Flt Permitted	0.950			0.950			0.950	0.970		0.979		
Satd. Flow (perm)	1652	3421	1689	1652	3421	1689	1503	3101	0	3018	1345	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								74			4	
Link Speed (mph)		45			45			35		40		
Link Distance (ft)		834			1518			997		653		
Travel Time (s)		12.6			23.0			19.4		11.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	1153	718	372	733	384	1003	885	635	275	703	45
Shared Lane Traffic (%)							14%				53%	
Lane Group Flow (vph)	113	1153	718	372	733	384	863	1660	0	648	375	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	Right
Median Width(ft)		10			10			34		20		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway Factor	1.09	1.04	0.92	1.09	1.04	0.92	1.09	1.00	1.00	1.09	1.09	1.00
Turning Speed (mph)	15		9	15		9	15	15	9	15	9	9
Turn Type	Prot		pm+ov	Prot		pm+ov	Split				Prot	
Protected Phases	7	4	5	3	8	6	5	5		6	6	
Permitted Phases			4			8						
Detector Phase	7	4	5	3	8	6	5	5		6	6	
Switch Phase												
Minimum Initial (s)	11.0	40.0	11.0	11.0	40.0	11.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	17.0	47.0	17.0	17.0	47.0	32.0	17.0	17.0		32.0	32.0	
Total Split (s)	23.0	50.0	40.0	23.0	50.0	32.0	40.0	40.0	0.0	32.0	32.0	0.0
Total Split (%)	15.9%	34.5%	27.6%	15.9%	34.5%	22.1%	27.6%	27.6%	0.0%	22.1%	22.1%	0.0%
Yellow Time (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	7.0	6.0	6.0	7.0	6.0	6.0	6.0	4.0	6.0	6.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	Min	None	C-Min	Min	Min	Min		Min	Min	
Act Effct Green (s)	14.6	43.0	78.0	17.0	45.4	72.4	34.0	34.0		26.0	26.0	
Actuated g/C Ratio	0.10	0.30	0.54	0.12	0.31	0.50	0.23	0.23		0.18	0.18	
v/c Ratio	0.68	1.14	0.79	1.92	0.68	0.46	2.45	2.12		1.41dr	1.54	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Control Delay	82.9	119.2	21.1	463.8	47.9	14.8	685.5	533.3		155.5	299.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	82.9	119.2	21.1	463.8	47.9	14.8	685.5	533.3		155.5	299.5	
LOS	F	F	C	F	D	B	F	F		F	F	
Approach Delay		81.7			143.3			585.4		208.3		
Approach LOS		F			F			F		F		
Stops (vph)	99	914	504	221	580	217	480	895		494	244	
Fuel Used(gal)	4	43	13	38	20	7	120	184		26	25	
CO Emissions (g/hr)	248	2996	887	2685	1428	506	8397	12827		1843	1745	
NOx Emissions (g/hr)	48	583	173	522	278	98	1634	2496		359	340	
VOC Emissions (g/hr)	58	694	206	622	331	117	1946	2973		427	404	
Dilemma Vehicles (#)	0	32	0	0	23	0	0	0		0	0	
Queue Length 50th (ft)	104	~665	277	~539	321	138	~1478	~1346		~380	~543	
Queue Length 95th (ft)	171	#805	375	#745	403	193	#1760	#1493		#505	#775	
Internal Link Dist (ft)		754			1438			917		573		
Turn Bay Length (ft)	318		675	120		120	435	435		275	275	
Base Capacity (vph)	194	1015	909	194	1071	843	352	784		541	244	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.58	1.14	0.79	1.92	0.68	0.46	2.45	2.12		1.20	1.54	

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 145
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.45
Intersection Signal Delay: 294.2 Intersection LOS: F
Intersection Capacity Utilization 132.8% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 6: US 202 & Henderson Road



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