Appendix A – Glossary and LOS Definitions

Signal Optimization Study
Onondaga County, New York

Glossary

Detection: Devices used by the signal controller to detect the calls for green phases. Detection is usually provided by wire loops placed in the pavement which create a disturbance in the electrical field when a vehicle passes over them. Microwave detectors operate like motion detectors and sense when a vehicle moves in front of them.

Presence: Generally 60 to 70 foot long loops placed in the pavement. These detect when a vehicle is present at any point above them.

Point: Point detection uses a similar loop as presence, but is usually only 6 feet long, and is place in advance of the intersection and/or placed immediately before the stop bar.

Gap: Gaps refer to the time between vehicles. Through vehicle detection, a signal will know that no vehicles are present, and begin by counting down the passage time. If no additional vehicles arrive, the phase will "gap out" or end due to the lack of traffic demand.

Headway: The distance between successive vehicles, usually measured in time.

Master Controller: The master controller controls all of the subsequent traffic signal controllers within a coordinated corridor.

Measures of effectiveness (MOEs): A MOE serves as performance measure for a traffic simulation evaluation.

Minimum Green: The minimum amount of green time provided for a phase.

Minimum Split: The minimum amount of green time plus the yellow and all-red clearance time provided for a phase.

Passage Time (Vehicle Extension): The maximum allowable time separation between vehicle calls before the signal phase gaps out to serve other approaches.

Phases: Different indications displayed on the traffic signal faces allowing specific movements to proceed through the intersection.

Permitted: Permitted phases allow drivers to turn after yielding to on-coming traffic. For example, a left turn movement must first yield to on-coming traffic before proceeding under a permitted left turn phase, displayed as a green ball.

Protected: Protected phases, indicated with green arrows, allow drivers to proceed by holding all other conflicting traffic movements with red lights.

Split: Split phases are traffic phases that could normally run together like northbound and southbound movements, but for some reason are separated or split, from each other. Under split phasing, each phase operates as a protected phase, one following the other.

Performance Index (PI): The PI is a Measure of Effectiveness (MOE) provided by the simulation model that represents a combination of the delays, stops, and queuing penalty. A lower PI indicates better overall operations.

Recall – A phase timing setting determining the length of each phase.

None or no recall: This phase can be skipped by the signal controller of no vehicles are detected on the approach.

Minimum: This phase must turn on and stay on for the preset minimum amount of time. If no additional traffic is detected, the phase will turn off and serve other approaches. Typically used for mainline approaches with presence or point loop detectors.

Maximum: This phase must turn on and stay on for the preset maximum amount of time. If no additional traffic is detected, the phase will continue to run until the maximum before serving other approaches. Typically used when no vehicle detection is provided.

LOS Definitions

The following is an excerpt from the 2000 Highway Capacity Manual (HCM).

Level of Service for Signalized Intersections

Level of service for a signalized intersection is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions: in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a 15-minute analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group. Levels of service are defined to represent reasonable ranges in control delay.

LOS A describes operations with low control delay, up to 10 s/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay.

LOS B describes operations with control delay greater than 10 and up to 20 s/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

LOS C describes operations with control delay greater than 20 and up to 35 s/veh. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

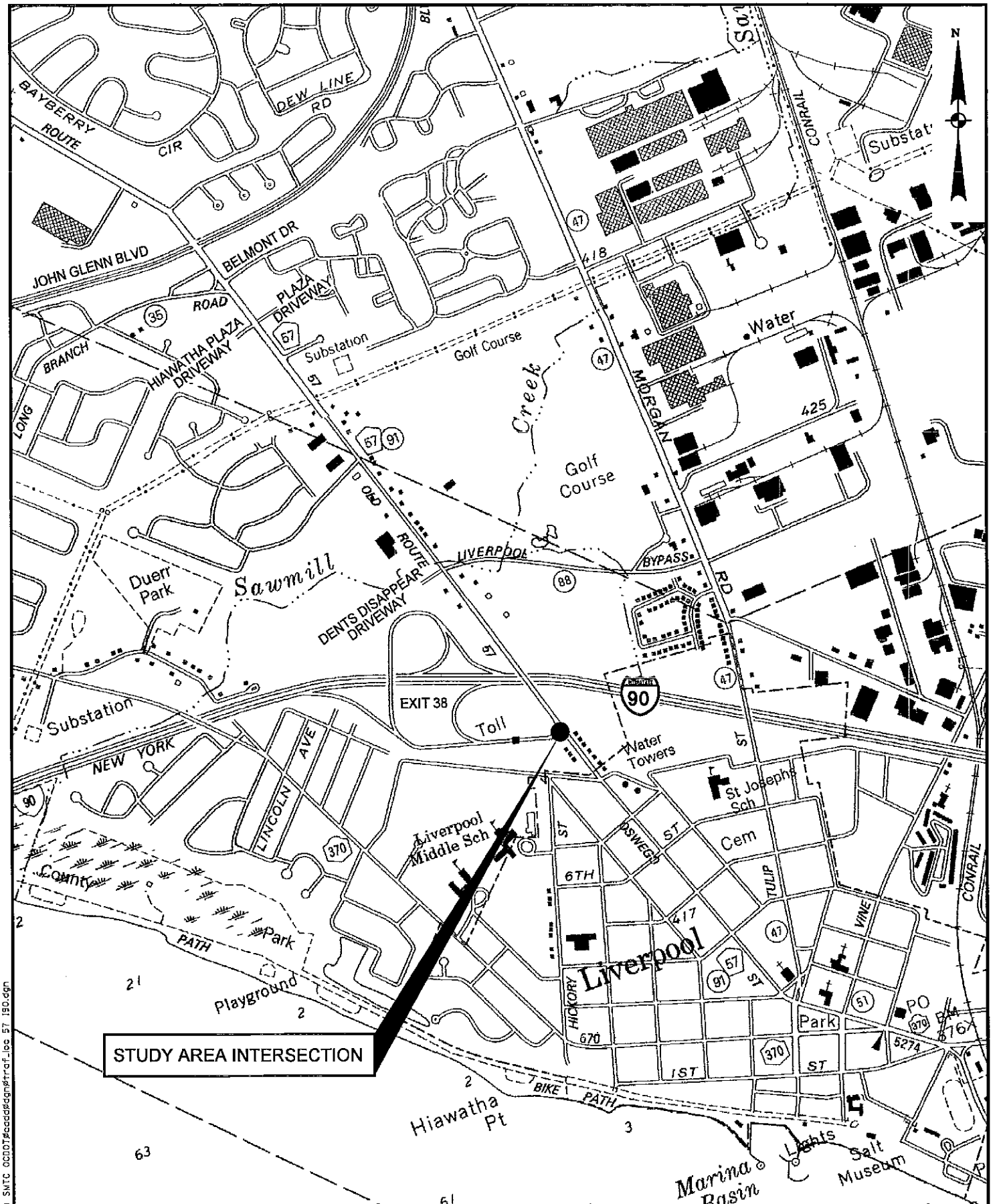
LOS D describes operations with control delay greater than 35 and up to 55 s/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

LOS E describes operations with control delay greater than 55 and up to 80 s/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.

LOS F describes operations with control delay in excess of 80 s/veh. This level, considered unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also be contribute significantly to high delay levels.

Appendix B – Intersection Details

Signal Optimization Study
Onondaga County, New York



LOCATION MAP
COUNTY ROAD 57/I-90 EXIT 38 RAMP

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 9/10	FIGURE: 8.1

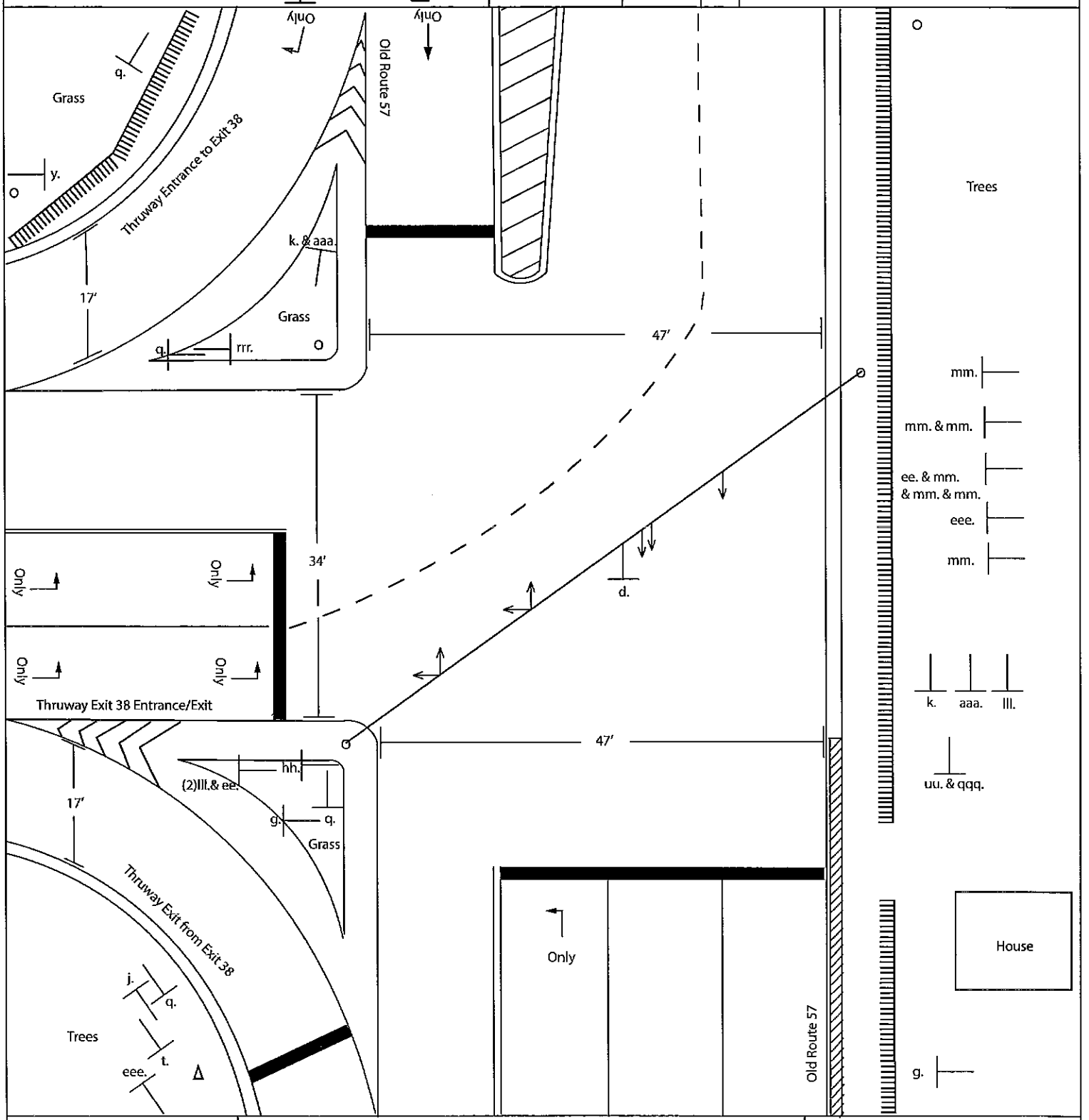
INTERSECTION DIAGRAM

Location: Old Route 57 at Thruway (Exit 38)

Drawn By: KK | Date: June 2010 | Prepared By: SMTC | N

Note:
Only actual pavement markings were drawn. An absence of arrows/striping indicates no pavement markings.

For sign definitions see Intersection Diagram Sign Index



Task: OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

Diagram is for presentation purposes only.
SMTC does not guarantee the accuracy or completeness of this diagram.

Diagram is not to scale

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Volume (vph)	228	57	146	387	1103	755
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	8%	8%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Volume (vph)	507	146	25	1192	628	197
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						

Intersection Summary

INTERSECTION NAME: 57 @ Thruway
INTERSECTION NUMBER: 75

INSTALLATION DATE:
PROGRAM DATE:

INTERVAL	PHASE (ON/OFF) 1	2	3	4	5	6	7	8
MEMORY								
EXT RECALL								
MAX RECALL		X						
Detector delay	6							
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS 1	2	3	4	5	6	7	8
MIN GREEN	8	10	8					
PASSAGE	4	4	4					
YELLOW	4	4	3.5					
RED	2	2	2					
MAX I	30	40	30					
MAX II	30	40	30					
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

TIMING PLAN			
PL 1 2 3 4	}	FRE-OP ON 00:00 - 0600	
PL 4		0600 0640 0900 230 1800 2030	4/1/1 5/1/1 4/1/1 6/1/1 4/1/1 FRE-ON
PL 5		0900	FRE-OFF

PHASES USED	1	2	3	4	5	6	7	8
ON/OFF	X	X	X					

Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLA	X	X						
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00			FRE-ON	
2	00:00				
3	00:00				
4	06:00			FRE-OFF	
4	06:00		4/1/1		80 S
4	06:40		5/1/1		90 S
4	09:00		4/1/1		80 S
4	14:30		6/1/1		90 S
4	18:00		4/1/1		80 S
4	20:30			FRE-ON	
5	00:00			FRE-ON	
5	09:00			FRE-OFF	
5	09:00		4/1/1		
5	20:00			FRE-ON	

INTERSECTION NAME: 57 @ Thruway
INTERSECTION NUMBER: 75

INSTALLATION DATE: COORDINATION
PROGRAM DATE: OPTIMIZATION

	PHASE (ON/OFF)							
INTERVAL	1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL		X				X		
MAX RECALL								
Detector delay								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

	PHASE TIMINGS							
INTERVAL	1	2	3	4	5	6	7	8
MIN GREEN	5	10	10			8		
PASSAGE	1.5	4.2	1			4.2		
YELLOW	4	4	4			4		
RED	2.5	2.5	2.5			2.5		
MAX I (AM)	7.5	72.5	10.5			86.5		
MAX II (PM)	5.5	44.5	20.5			56.5		
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

TIMING PLAN			
PL 1 2 3 4	}		
PL 4			
PL 5			

PHASES USED								
	1	2	3	4	5	6	7	8
ON/OFF	X	X	X			X		

Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

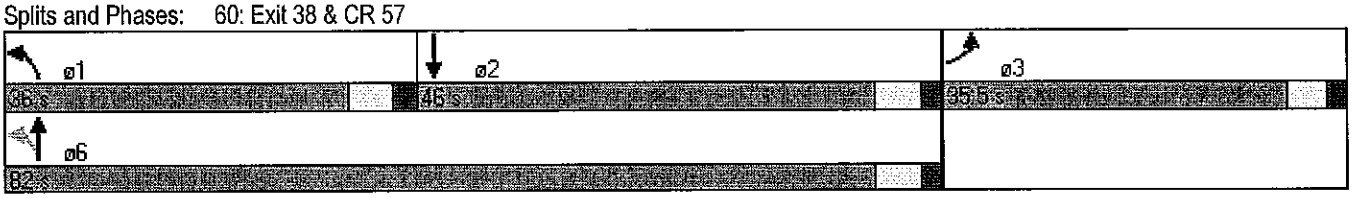
PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00				
2	00:00				
3	00:00				
4	06:00				
4	06:00				
4	06:40				
4	09:00				
4	14:30				
4	18:00				
4	20:30				
5	00:00				
5	09:00				
5	09:00				
5	20:00				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	228	57	146	387	1103	755
Turn Type		Free	pm+pt			Free
Protected Phases	3		1	6	2	
Permitted Phases		Free	6			Free
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	10.0	
Minimum Split (s)	13.5		14.0	14.0	16.0	
Total Split (s)	35.5	0.0	36.0	82.0	46.0	0.0
Total Split (%)	30.2%	0.0%	30.6%	69.8%	39.1%	0.0%
Maximum Green (s)	30.0		30.0	76.0	40.0	
Yellow Time (s)	3.5		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.5	-1.0	-3.0	-3.0	-3.0	-1.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Minimum Gap (s)	4.0		4.0	4.0	4.0	
Time Before Reduce (s)	0.0		0.0	0.0	0.0	
Time To Reduce (s)	0.0		0.0	0.0	0.0	
Recall Mode	None		None	C-Max	C-Max	
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						

Intersection Summary

Cycle Length: 117.5
Actuated Cycle Length: 117.5
Offset: 2 (2%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

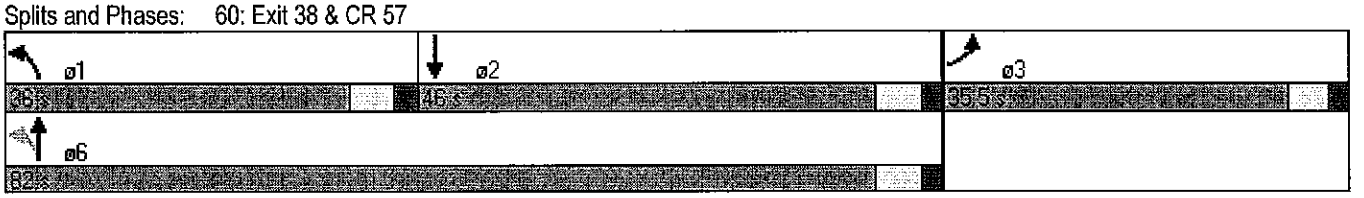
Splits and Phases: 60: Exit 38 & CR 57



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	507	146	25	1192	628	197
Turn Type		Free	pm+pt			Free
Protected Phases	3		1	6	2	
Permitted Phases		Free	6			Free
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	10.0	
Minimum Split (s)	13.5		14.0	14.0	16.0	
Total Split (s)	35.5	0.0	36.0	82.0	46.0	0.0
Total Split (%)	30.2%	0.0%	30.6%	69.8%	39.1%	0.0%
Maximum Green (s)	30.0		30.0	76.0	40.0	
Yellow Time (s)	3.5		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.5	-1.0	-3.0	-3.0	-3.0	-1.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Minimum Gap (s)	4.0		4.0	4.0	4.0	
Time Before Reduce (s)	0.0		0.0	0.0	0.0	
Time To Reduce (s)	0.0		0.0	0.0	0.0	
Recall Mode	None		None	C-Max	C-Max	
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						

Intersection Summary
Cycle Length: 117.5
Actuated Cycle Length: 117.5
Offset: 72 (61%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

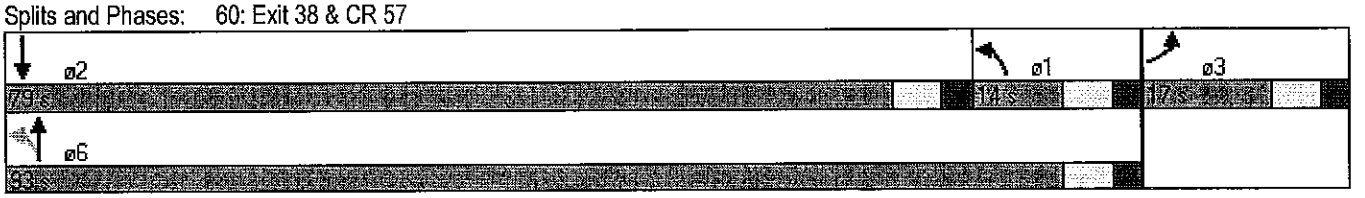
Splits and Phases: 60: Exit 38 & CR 57



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	228	57	146	387	1103	755
Turn Type		Free	pm+pt			Free
Protected Phases	3		1	6	2	
Permitted Phases		Free	6			Free
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	10.0		5.0	8.0	10.0	
Minimum Split (s)	16.5		11.5	14.5	16.5	
Total Split (s)	17.0	0.0	14.0	93.0	79.0	0.0
Total Split (%)	15.5%	0.0%	12.7%	84.5%	71.8%	0.0%
Maximum Green (s)	10.5		7.5	86.5	72.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.5		2.5	2.5	2.5	
Lost Time Adjust (s)	-2.5	-1.0	-3.0	-3.0	-3.0	-1.0
Total Lost Time (s)	4.0	3.0	3.5	3.5	3.5	3.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0		1.5	4.2	4.2	
Minimum Gap (s)	1.0		1.5	4.2	4.2	
Time Before Reduce (s)	0.0		0.0	0.0	0.0	
Time To Reduce (s)	0.0		0.0	0.0	0.0	
Recall Mode	None		None	C-Min	C-Min	
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 78 (71%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

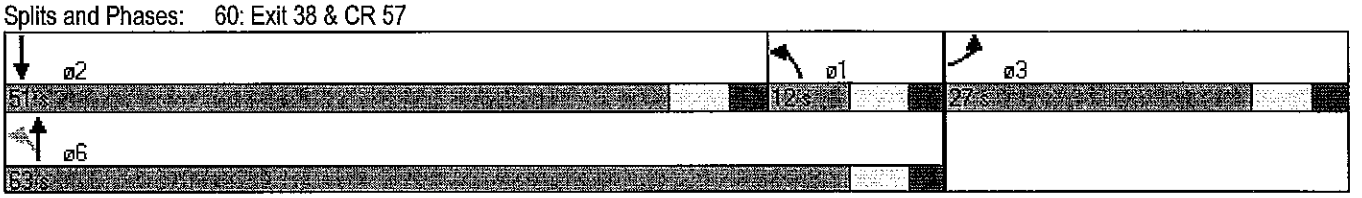
Splits and Phases: 60: Exit 38 & CR 57



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	507	146	25	1192	628	197
Turn Type		Free	pm+pt			Free
Protected Phases	3		1	6	2	
Permitted Phases		Free	6			Free
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	10.0		5.0	8.0	10.0	
Minimum Split (s)	16.5		11.5	14.5	16.5	
Total Split (s)	27.0	0.0	12.0	63.0	51.0	0.0
Total Split (%)	30.0%	0.0%	13.3%	70.0%	56.7%	0.0%
Maximum Green (s)	20.5		5.5	56.5	44.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.5		2.5	2.5	2.5	
Lost Time Adjust (s)	-2.5	-1.0	-3.0	-3.0	-3.0	-1.0
Total Lost Time (s)	4.0	3.0	3.5	3.5	3.5	3.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0		1.5	4.2	4.2	
Minimum Gap (s)	1.0		1.5	4.2	4.2	
Time Before Reduce (s)	0.0		0.0	0.0	0.0	
Time To Reduce (s)	0.0		0.0	0.0	0.0	
Recall Mode	None		None	C-Min	C-Min	
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 25 (28%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 60: Exit 38 & CR 57



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	228	57	146	387	1103	755
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	16	12	12	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3164	1711	1671	3343	1845	1568
Flt Permitted	0.95	1.00	0.05	1.00	1.00	1.00
Satd. Flow (perm)	3164	1711	89	3343	1845	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	253	63	162	430	1226	839
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	253	63	162	430	1226	839
Heavy Vehicles (%)	7%	7%	8%	8%	3%	3%
Turn Type		Free	pm+pt			Free
Protected Phases	3		1	6	2	
Permitted Phases		Free	6			Free
Actuated Green, G (s)	15.6	117.5	90.4	90.4	73.1	117.5
Effective Green, g (s)	18.1	117.5	93.4	93.4	76.1	117.5
Actuated g/C Ratio	0.15	1.00	0.79	0.79	0.65	1.00
Clearance Time (s)	5.5		6.0	6.0	6.0	
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	487	1711	263	2657	1195	1568
v/s Ratio Prot	0.08		0.07	0.13	c0.66	
v/s Ratio Perm		0.04	0.41			c0.54
v/c Ratio	0.52	0.04	0.62	0.16	1.03	0.54
Uniform Delay, d1	45.7	0.0	37.3	2.8	20.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0	4.8	0.1	32.8	1.3
Delay (s)	46.9	0.0	42.2	3.0	53.5	1.3
Level of Service	D	A	D	A	D	A
Approach Delay (s)	37.6			13.7	32.3	
Approach LOS	D			B	C	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	117.5	Sum of lost time (s)	3.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	507	146	25	1192	628	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	16	12	12	12	12
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3224	1743	1787	3574	1881	1599
Flt Permitted	0.95	1.00	0.24	1.00	1.00	1.00
Satd. Flow (perm)	3224	1743	460	3574	1881	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	563	162	28	1324	698	219
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	563	162	28	1324	698	219
Heavy Vehicles (%)	5%	5%	1%	1%	1%	1%
Turn Type		Free	pm+pt			Free
Protected Phases	3		1	6	2	
Permitted Phases		Free	6			Free
Actuated Green, G (s)	26.5	117.5	79.5	79.5	68.7	117.5
Effective Green, g (s)	29.0	117.5	82.5	82.5	71.7	117.5
Actuated g/C Ratio	0.25	1.00	0.70	0.70	0.61	1.00
Clearance Time (s)	5.5		6.0	6.0	6.0	
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	796	1743	411	2509	1148	1599
v/s Ratio Prot	c0.17		0.00	c0.37	c0.37	
v/s Ratio Perm		0.09	0.04			0.14
v/c Ratio	0.71	0.09	0.07	0.53	0.61	0.14
Uniform Delay, d1	40.4	0.0	9.0	8.3	14.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.1	0.1	0.8	2.4	0.2
Delay (s)	43.5	0.1	9.1	9.1	16.6	0.2
Level of Service	D	A	A	A	B	A
Approach Delay (s)	33.8			9.1	12.7	
Approach LOS	C			A	B	

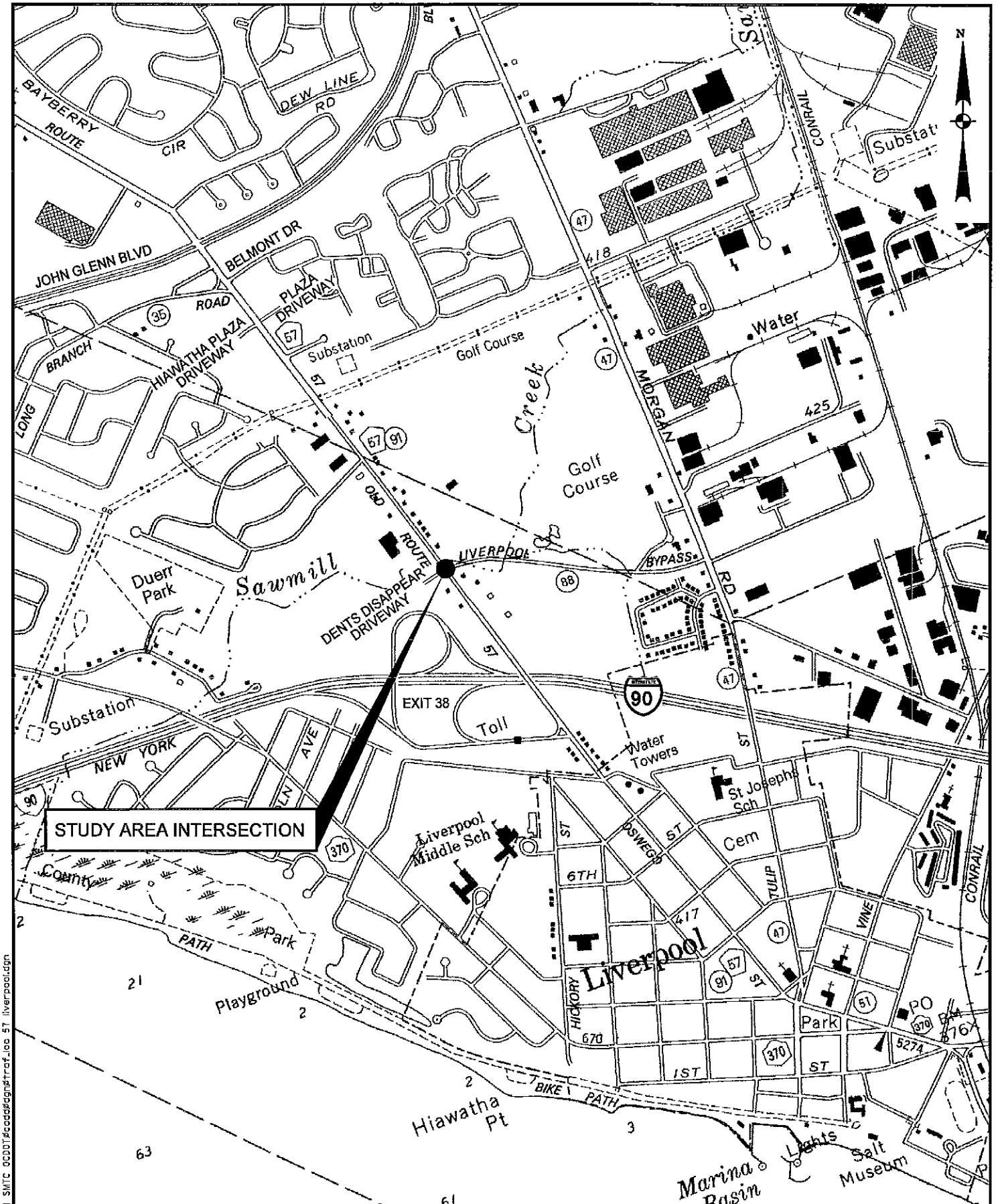
Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	117.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	228	57	146	387	1103	755
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	16	12	12	12	12
Total Lost time (s)	4.0	3.0	3.5	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3164	1711	1671	3343	1845	1568
Flt Permitted	0.95	1.00	0.05	1.00	1.00	1.00
Satd. Flow (perm)	3164	1711	88	3343	1845	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	253	63	162	430	1226	839
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	253	63	162	430	1226	839
Heavy Vehicles (%)	7%	7%	8%	8%	3%	3%
Turn Type		Free	pm+pt			Free
Protected Phases	3		1	6	2	
Permitted Phases		Free	6			Free
Actuated Green, G (s)	10.4	110.0	86.6	86.6	73.1	110.0
Effective Green, g (s)	12.9	110.0	89.6	89.6	76.1	110.0
Actuated g/C Ratio	0.12	1.00	0.81	0.81	0.69	1.00
Clearance Time (s)	6.5		6.5	6.5	6.5	
Vehicle Extension (s)	1.0		1.5	4.2	4.2	
Lane Grp Cap (vph)	371	1711	216	2723	1276	1568
v/s Ratio Prot	0.08		c0.07	0.13	c0.66	
v/s Ratio Perm		0.04	0.54			c0.54
v/c Ratio	0.68	0.04	0.75	0.16	0.96	0.54
Uniform Delay, d1	46.6	0.0	42.2	2.2	15.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	0.64	1.00
Incremental Delay, d2	4.1	0.0	12.2	0.1	14.7	1.0
Delay (s)	50.7	0.0	54.4	2.3	24.7	1.0
Level of Service	D	A	D	A	C	A
Approach Delay (s)	40.6			16.5	15.1	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	3.5
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	507	146	25	1192	628	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	16	12	12	12	12
Total Lost time (s)	4.0	3.0	3.5	3.5	3.5	3.0
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3224	1743	1787	3574	1881	1599
Flt Permitted	0.95	1.00	0.26	1.00	1.00	1.00
Satd. Flow (perm)	3224	1743	488	3574	1881	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	563	162	28	1324	698	219
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	563	162	28	1324	698	219
Heavy Vehicles (%)	5%	5%	1%	1%	1%	1%
Turn Type		Free	pm+pt			Free
Protected Phases	3		1	6	2	
Permitted Phases		Free	6			Free
Actuated Green, G (s)	18.4	90.0	58.6	58.6	50.1	90.0
Effective Green, g (s)	20.9	90.0	61.6	61.6	53.1	90.0
Actuated g/C Ratio	0.23	1.00	0.68	0.68	0.59	1.00
Clearance Time (s)	6.5		6.5	6.5	6.5	
Vehicle Extension (s)	1.0		1.5	4.2	4.2	
Lane Grp Cap (vph)	749	1743	406	2446	1110	1599
v/s Ratio Prot	c0.17		0.00	c0.37	c0.37	
v/s Ratio Perm		0.09	0.04			0.14
v/c Ratio	0.75	0.09	0.07	0.54	0.63	0.14
Uniform Delay, d1	32.1	0.0	13.4	7.1	12.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	0.91	1.00
Incremental Delay, d2	3.8	0.1	0.0	0.9	2.6	0.2
Delay (s)	35.9	0.1	13.5	8.0	13.6	0.2
Level of Service	D	A	B	A	B	A
Approach Delay (s)	27.9			8.1	10.4	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



LOCATION MAP
COUNTY ROAD 57/LIVERPOOL BYPASS/
DENTS DISAPPEAR DRIVEWAY

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 9/10	FIGURE: B.2

ddoran
F:\Projects\2009\09-094 SMTC OCDOT\acad\dgn\traf_loc 57 liverpool.dgn

INTERSECTION DIAGRAM

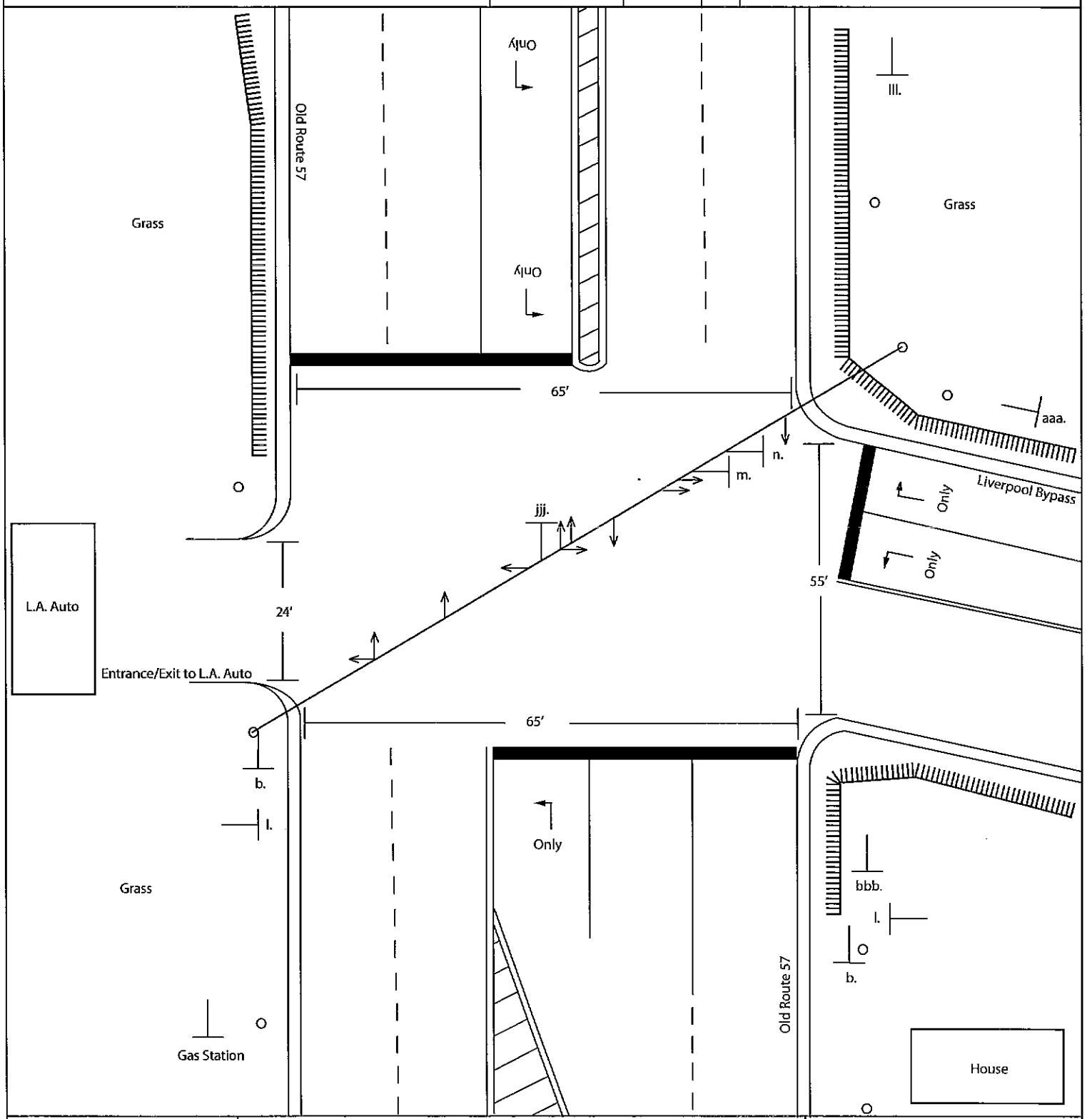
Location: Old Route 57 at Liverpool Bypass

Legend: Sign; Signal Head; Signal with Span Wire; ## (Feet); Utility Pole; Guardrail

Drawn By: KK | Date: June 2010 | Prepared By: SMTC | N

Note:
Only actual pavement markings were drawn. An absence of arrows/striping indicates no pavement markings.

For sign definitions see Intersection Diagram Sign Index



Task: OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

Diagram is for presentation purposes only.
SMTC does not guarantee the accuracy or completeness of this diagram.
Diagram is not to scale.


ONLY

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	2	2	2	146	2	124	2	488	127	431	1712	2
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	19%	2%	19%	2%	6%	6%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	2	2	2	76	2	330	2	1611	89	184	748	2
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	13%	2%	13%	2%	1%	1%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

INTERSECTION NAME: 57 @ Liverpool Bypass
INTERSECTION NUMBER: 64

INSTALLATION DATE:
PROGRAM DATE:

INTERVAL	PHASE (ON/OFF) 1	2	3	4	5	6	7	8
MEMORY								
EXT RECALL								
MAX RECALL		X						
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS 1	2	3	4	5	6	7	8
MIN GREEN	8	10	8					
PASSAGE	4	4	4					
YELLOW	4	4	4					
RED	2	3	2					
MAX I	13	35	25					
MAX II	30	30	30					
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

		COS -
PL 1 2 3 4	FRE-OP ON 00:00 - 0600	
PL 4	0600 0640 0900 230 1800 2030	4/1/1 5/1/1 4/1/1 6/1/1 4/1/1 FRE-ON
PL 5	0900	FRE-OFF

PHASES USED	1	2	3	4	5	6	7	8
ON/OFF	X	X	X					

Overlaps	1	2	3	4	5	6	7	8
INHIBIT O/L								
OLA	X	X						
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00			FRE-ON	
2	00:00				
3	00:00				
4	06:00			FRE-OFF	
4	06:00		4/1/1		80 S
4	06:40		5/1/1		90 S
4	09:00		4/1/1		80 S
4	14:30		6/1/1		90 S
4	18:00		4/1/1		80 S
4	20:30			FRE-ON	
5	00:00			FRE-ON	
5	09:00			FRE-OFF	
5	09:00		4/1/1		
5	20:00			FRE-ON	

INTERSECTION NAME: 57 @ Liverpool Bypass
INTERSECTION NUMBER: 64

INSTALLATION DATE: COORDINATION
PROGRAM DATE: OPTIMIZATION

INTERVAL	PHASE (ON/OFF) 1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL		X				X		
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS 1	2	3	4	5	6	7	8
MIN GREEN		10		7	5	10		10
PASSAGE		4.2		1	1.6	4.2		1
YELLOW		4		4	4	4		4
RED		2.5		2.5	2.5	2.5		2.5
MAX I (AM)		80.5		16.5	33.5	40.5		16.5
MAX II (PM)		64.5		12.5	12.5	45.5		12.5
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

			COS -
PL 1 2 3 4	}		
PL 4			
PL 5			

PHASES USED	1	2	3	4	5	6	7	8
ON/OFF		X		X	X	X		X

Overlaps INHIBIT O/L	1	2	3	4	5	6	7	8
OLA					X			
OVERLAP B								
OVERLAP C								
OVERLAP D								

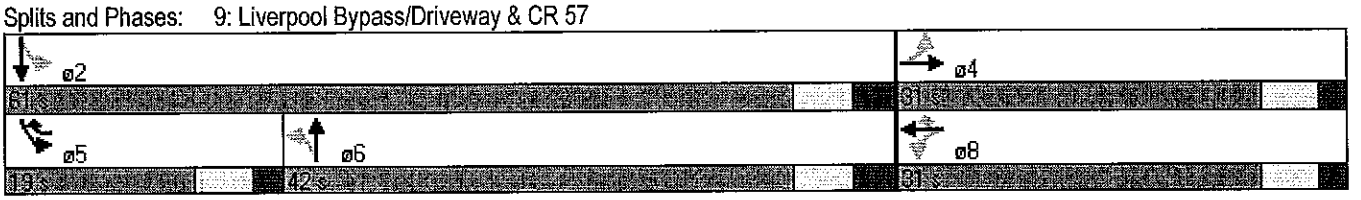
PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00				
2	00:00				
3	00:00				
4	06:00				
4	06:00				
4	06:40				
4	09:00				
4	14:30				
4	18:00				
4	20:30				
5	00:00				
5	09:00				
5	09:00				
5	20:00				

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	2	2	146	2	124	2	488	431	1712
Turn Type	Perm		Perm		pm+ov	Perm		pm+pt	
Protected Phases		4		8	5		6	5	2
Permitted Phases	4		8		8	6		2	
Detector Phase	4	4	8	8	5	6	6	5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	10.0	10.0	8.0	10.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	17.0	17.0	14.0	17.0
Total Split (s)	31.0	31.0	31.0	31.0	19.0	42.0	42.0	19.0	61.0
Total Split (%)	33.7%	33.7%	33.7%	33.7%	20.7%	45.7%	45.7%	20.7%	66.3%
Maximum Green (s)	25.0	25.0	25.0	25.0	13.0	35.0	35.0	13.0	54.0
Yellow Time (s)	4.0	4.0	4.0	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	3.0	3.0	2.0	3.0
Lost Time Adjust (s)	0.0	0.0	-2.0	0.0	-2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	4.0	7.0	5.0	4.0	5.0
Lead/Lag					Lead	Lag	Lag	Lead	
Lead-Lag Optimize?									
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 92
Actual Cycle Length: 92
Offset: 7 (8%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 9: Liverpool Bypass/Driveway & CR 57

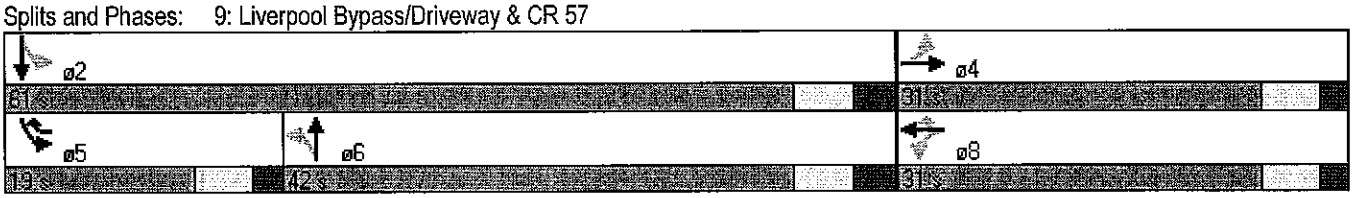


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	2	2	76	2	330	2	1611	184	748
Turn Type	Perm		Perm		pm+ov	Perm		pm+pt	
Protected Phases		4		8	5		6	5	2
Permitted Phases	4		8		8	6		2	
Detector Phase	4	4	8	8	5	6	6	5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	10.0	10.0	8.0	10.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	17.0	17.0	14.0	17.0
Total Split (s)	31.0	31.0	31.0	31.0	19.0	42.0	42.0	19.0	61.0
Total Split (%)	33.7%	33.7%	33.7%	33.7%	20.7%	45.7%	45.7%	20.7%	66.3%
Maximum Green (s)	25.0	25.0	25.0	25.0	13.0	35.0	35.0	13.0	54.0
Yellow Time (s)	4.0	4.0	4.0	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	3.0	3.0	2.0	3.0
Lost Time Adjust (s)	0.0	0.0	-2.0	0.0	-2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	4.0	7.0	5.0	4.0	5.0
Lead/Lag					Lead	Lag	Lag	Lead	
Lead-Lag Optimize?									
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 92
Actuated Cycle Length: 92
Offset: 70 (76%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 9: Liverpool Bypass/Driveway & CR 57

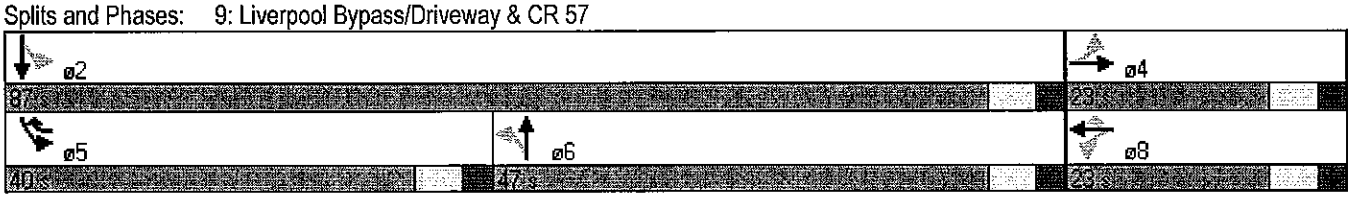


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	2	2	146	2	124	2	488	431	1712
Turn Type	Perm		Perm		pm+ov	Perm		pm+pt	
Protected Phases		4		8	5		6	5	2
Permitted Phases	4		8		8	6		2	
Detector Phase	4	4	8	8	5	6	6	5	2
Switch Phase									
Minimum Initial (s)	7.0	7.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	13.5	13.5	16.5	16.5	11.5	16.5	16.5	11.5	16.5
Total Split (s)	23.0	23.0	23.0	23.0	40.0	47.0	47.0	40.0	87.0
Total Split (%)	20.9%	20.9%	20.9%	20.9%	36.4%	42.7%	42.7%	36.4%	79.1%
Maximum Green (s)	16.5	16.5	16.5	16.5	33.5	40.5	40.5	33.5	80.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	-2.0	0.0	-2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	6.5	6.5	4.5	6.5	4.5	6.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lag	Lead	
Lead-Lag Optimize?									
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.6	4.2	4.2	1.6	4.2
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.6	4.2	4.2	1.6	4.2
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 9: Liverpool Bypass/Driveway & CR 57

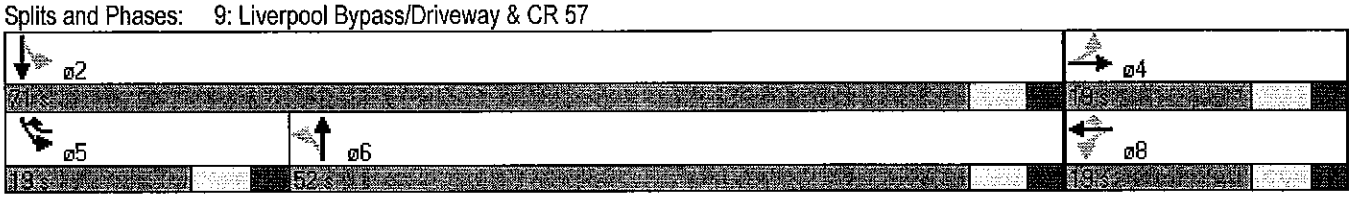


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	2	2	76	2	330	2	1611	184	748
Turn Type	Perm		Perm		pm+ov	Perm		pm+pt	
Protected Phases		4		8	5		6	5	2
Permitted Phases	4		8		8	6		2	
Detector Phase	4	4	8	8	5	6	6	5	2
Switch Phase									
Minimum Initial (s)	7.0	7.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	13.5	13.5	16.5	16.5	11.5	16.5	16.5	11.5	16.5
Total Split (s)	19.0	19.0	19.0	19.0	19.0	52.0	52.0	19.0	71.0
Total Split (%)	21.1%	21.1%	21.1%	21.1%	21.1%	57.8%	57.8%	21.1%	78.9%
Maximum Green (s)	12.5	12.5	12.5	12.5	12.5	45.5	45.5	12.5	64.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	-2.0	0.0	-2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	6.5	6.5	4.5	6.5	4.5	6.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lag	Lead	
Lead-Lag Optimize?									
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.6	4.2	4.2	1.6	4.2
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.6	4.2	4.2	1.6	4.2
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 9: Liverpool Bypass/Driveway & CR 57



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2	2	146	2	124	2	488	127	431	1712	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2100	1900
Lane Width	16	16	16	12	12	12	12	12	12	12	13	13
Total Lost time (s)		6.0			6.0	4.0	7.0	5.0		4.0	5.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.95			1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1983			1524	1357	1770	3474		1787	4081	
Flt Permitted		0.92			0.73	1.00	0.10	1.00		0.29	1.00	
Satd. Flow (perm)		1859			1160	1357	194	3474		540	4081	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2	2	2	162	2	138	2	542	141	479	1902	2
RTOR Reduction (vph)	0	2	0	0	0	0	0	24	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	164	138	2	659	0	479	1904	0
Heavy Vehicles (%)	2%	2%	2%	19%	2%	19%	2%	6%	6%	1%	1%	2%
Turn Type	Perm			Perm		pm+ov	Perm			pm+pt		
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		18.6			18.6	34.6	38.4	38.4		60.4	60.4	
Effective Green, g (s)		18.6			18.6	38.6	38.4	40.4		62.4	62.4	
Actuated g/C Ratio		0.20			0.20	0.42	0.42	0.44		0.68	0.68	
Clearance Time (s)		6.0			6.0	6.0	7.0	7.0		6.0	7.0	
Vehicle Extension (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)		376			235	628	81	1526		610	2768	
v/s Ratio Prot						0.04		0.19		c0.15	0.47	
v/s Ratio Perm		0.00			c0.14	0.06	0.01			c0.38		
v/c Ratio		0.01			0.70	0.22	0.02	0.43		0.79	0.69	
Uniform Delay, d1		29.3			34.1	17.1	15.8	17.9		8.7	8.9	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			9.4	0.2	0.6	0.9		7.0	1.4	
Delay (s)		29.4			43.5	17.3	16.3	18.8		15.7	10.3	
Level of Service		C			D	B	B	B		B	B	
Approach Delay (s)		29.4			31.5			18.7			11.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	92.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2	2	76	2	330	2	1611	89	184	748	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2100	1900
Lane Width	16	16	16	12	12	12	12	12	12	12	13	13
Total Lost time (s)		6.0			6.0	4.0	7.0	5.0		4.0	5.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1983			1607	1429	1770	3733		1787	4081	
Flt Permitted		0.90			0.73	1.00	0.34	1.00		0.08	1.00	
Satd. Flow (perm)		1824			1226	1429	630	3733		150	4081	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2	2	2	84	2	367	2	1790	99	204	831	2
RTOR Reduction (vph)	0	2	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	86	367	2	1886	0	204	833	0
Heavy Vehicles (%)	2%	2%	2%	13%	2%	13%	2%	1%	1%	1%	1%	2%
Turn Type	Perm			Perm		pm+ov	Perm			pm+pt		
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		11.2			11.2	28.7	44.3	44.3		67.8	67.8	
Effective Green, g (s)		11.2			11.2	32.7	44.3	46.3		69.8	69.8	
Actuated g/C Ratio		0.12			0.12	0.36	0.48	0.50		0.76	0.76	
Clearance Time (s)		6.0			6.0	6.0	7.0	7.0		6.0	7.0	
Vehicle Extension (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)		222			149	570	303	1879		461	3096	
v/s Ratio Prot						c0.14		c0.51		0.09	0.20	
v/s Ratio Perm		0.00			0.07	0.12	0.00			0.24		
v/c Ratio		0.02			0.58	0.64	0.01	1.00		0.44	0.27	
Uniform Delay, d1		35.6			38.2	24.8	12.4	22.9		19.8	3.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			6.4	2.8	0.0	21.6		0.9	0.2	
Delay (s)		35.6			44.5	27.6	12.4	44.4		20.7	3.6	
Level of Service		D			D	C	B	D		C	A	
Approach Delay (s)		35.6			30.8			44.4			6.9	
Approach LOS		D			C			D			A	

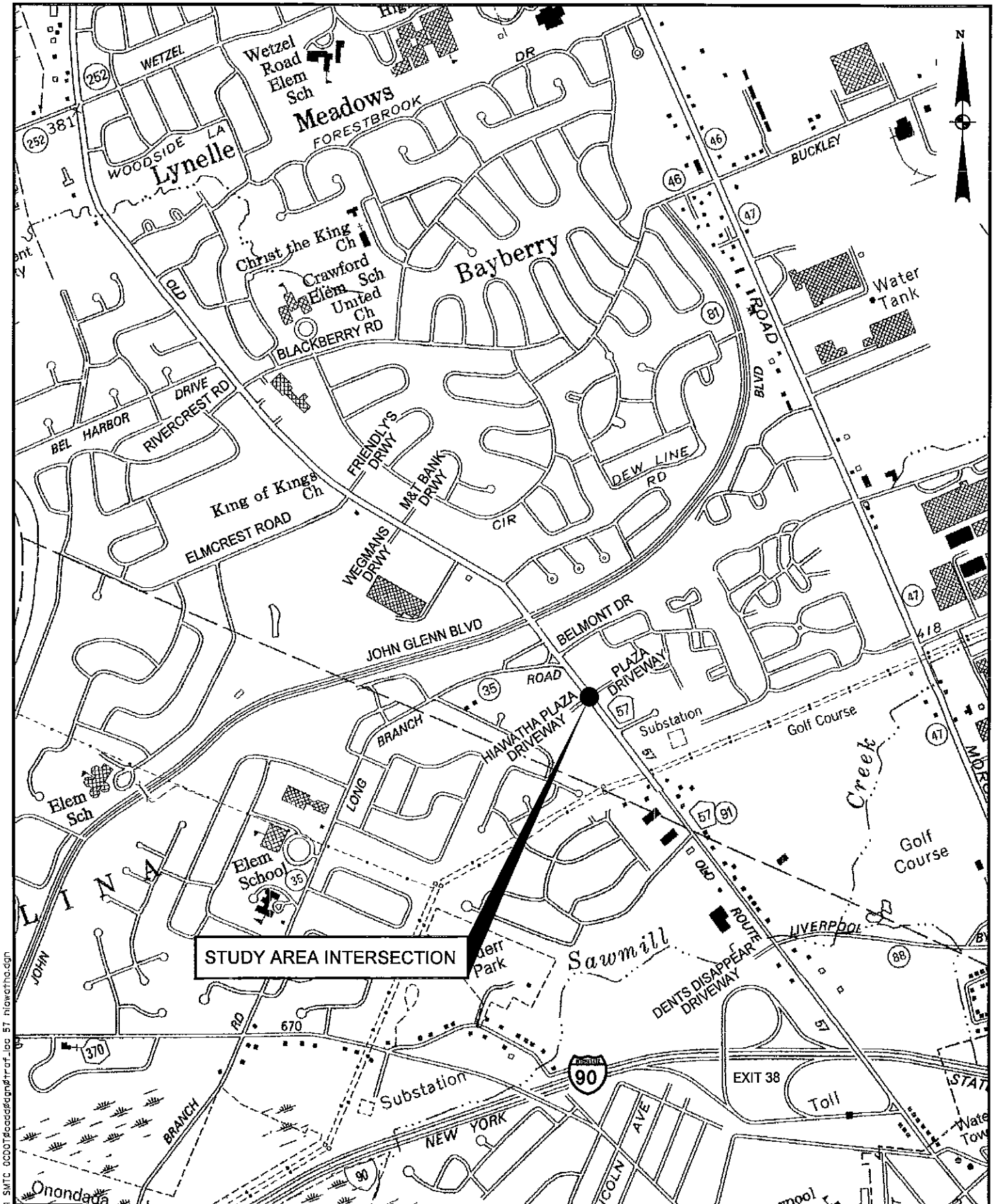
Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	92.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2	2	146	2	124	2	488	127	431	1712	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2100	1900
Lane Width	16	16	16	12	12	12	12	12	12	12	13	13
Total Lost time (s)		6.5			6.5	4.5	6.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.95			1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1983			1524	1357	1770	3474		1787	4081	
Flt Permitted		0.92			0.73	1.00	0.09	1.00		0.29	1.00	
Satd. Flow (perm)		1859			1160	1357	169	3474		552	4081	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2	2	2	162	2	138	2	542	141	479	1902	2
RTOR Reduction (vph)	0	2	0	0	0	0	0	18	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	164	138	2	665	0	479	1904	0
Heavy Vehicles (%)	2%	2%	2%	19%	2%	19%	2%	6%	6%	1%	1%	2%
Turn Type	Perm			Perm		pm+ov	Perm			pm+pt		
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		21.2			21.2	40.0	50.5	50.5		75.8	75.8	
Effective Green, g (s)		21.2			21.2	44.0	50.5	52.5		77.8	77.8	
Actuated g/C Ratio		0.19			0.19	0.40	0.46	0.48		0.71	0.71	
Clearance Time (s)		6.5			6.5	6.5	6.5	6.5		6.5	6.5	
Vehicle Extension (s)		1.0			1.0	1.6	4.2	4.2		1.6	4.2	
Lane Grp Cap (vph)		358			224	598	78	1658		624	2886	
v/s Ratio Prot						0.04		0.19		c0.15	0.47	
v/s Ratio Perm		0.00			c0.14	0.06	0.01			c0.40		
v/c Ratio		0.01			0.73	0.23	0.03	0.40		0.77	0.66	
Uniform Delay, d1		35.9			41.7	21.8	16.3	18.6		9.1	8.8	
Progression Factor		1.00			1.00	1.00	0.72	0.68		1.00	1.00	
Incremental Delay, d2		0.0			10.1	0.1	0.6	0.7		5.1	1.2	
Delay (s)		35.9			51.9	21.9	12.4	13.3		14.2	10.0	
Level of Service		D			D	C	B	B		B	B	
Approach Delay (s)		35.9			38.2			13.3			10.9	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2	2	76	2	330	2	1611	89	184	748	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2100	1900
Lane Width	16	16	16	12	12	12	12	12	12	12	13	13
Total Lost time (s)		6.5			6.5	4.5	6.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.95			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1983			1607	1429	1770	3733		1787	4081	
Flt Permitted		0.88			0.73	1.00	0.34	1.00		0.07	1.00	
Satd. Flow (perm)		1767			1226	1429	630	3733		139	4081	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2	2	2	84	2	367	2	1790	99	204	831	2
RTOR Reduction (vph)	0	2	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	86	367	2	1885	0	204	833	0
Heavy Vehicles (%)	2%	2%	2%	13%	2%	13%	2%	1%	1%	1%	1%	2%
Turn Type	Perm			Perm		pm+ov	Perm			pm+pt		
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)		8.9			8.9	22.8	47.7	47.7		68.1	68.1	
Effective Green, g (s)		8.9			8.9	26.8	47.7	49.7		70.1	70.1	
Actuated g/C Ratio		0.10			0.10	0.30	0.53	0.55		0.78	0.78	
Clearance Time (s)		6.5			6.5	6.5	6.5	6.5		6.5	6.5	
Vehicle Extension (s)		1.0			1.0	1.6	4.2	4.2		1.6	4.2	
Lane Grp Cap (vph)		175			121	497	334	2061		399	3179	
v/s Ratio Prot						c0.13		c0.50		0.09	0.20	
v/s Ratio Perm		0.00			0.07	0.13	0.00			0.31		
v/c Ratio		0.02			0.71	0.74	0.01	0.91		0.51	0.26	
Uniform Delay, d1		36.6			39.3	28.4	10.0	18.2		22.4	2.8	
Progression Factor		1.00			1.00	1.00	1.07	0.89		1.00	1.00	
Incremental Delay, d2		0.0			15.1	4.9	0.0	6.6		0.5	0.2	
Delay (s)		36.6			54.4	33.4	10.6	22.7		22.9	3.0	
Level of Service		D			D	C	B	C		C	A	
Approach Delay (s)		36.6			37.3			22.7			6.9	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



LOCATION MAP
COUNTY ROAD 57/HIAWATHA PLAZA DRIVEWAY/
PLAZA DRIVEWAY

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 9/10	FIGURE: B.3

ddoran
F:\Projects\2009\09-094 SMTC OCDOT\acad\dgn\traf_loc 57 hiawatha.dgn

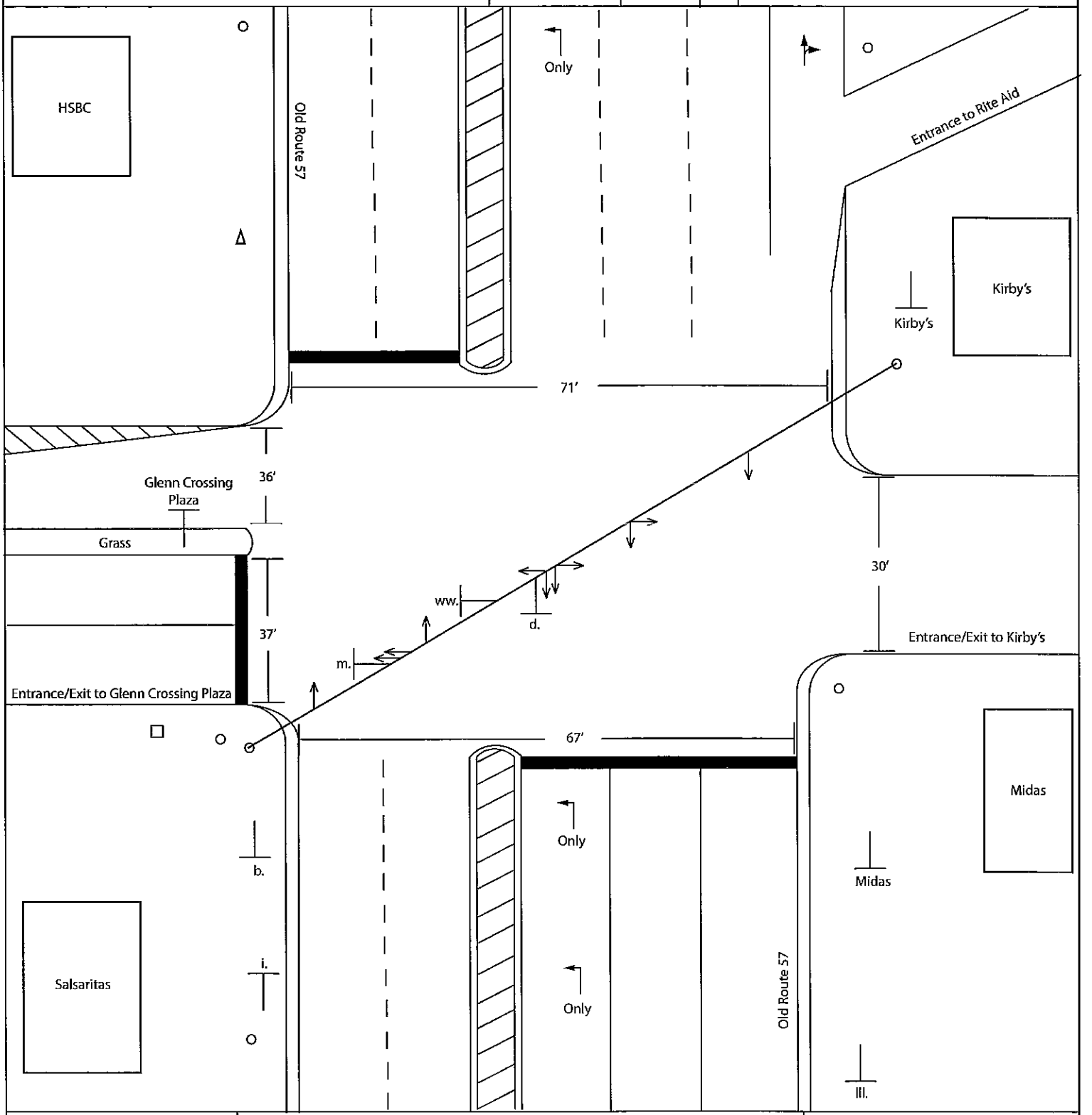
INTERSECTION DIAGRAM

Location: Old Route 57 at Glenn Crossing Plaza

Drawn By: KK | Date: June 2010 | Prepared By: SMTC

Note:
Only actual pavement markings were drawn. An absence of arrows/striping indicates no pavement markings.

For sign definitions see Intersection Diagram Sign Index



Task: OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

Diagram is for presentation purposes only.
SMTC does not guarantee the accuracy or completeness of this diagram.
Diagram is not to scale.


PLAZA
ALDI
TELE PHILIPPINE
PASCALE'S LIQUORS
Kirby


KIRBY'S

INTERSECTION NAME: 57 @ GLENN CROSSING MALL INSTALLATION DATE:
INTERSECTION NUMBER: 66 PROGRAM DATE:

INTERVAL	PHASE (ON/OFF) 1	2	3	4	5	6	7	8
MEMORY								
EXT RECALL								
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS 1	2	3	4	5	6	7	8
MIN GREEN	5	10	1	10				
PASSAGE	4	4	4	4				
YELLOW	4	4	4	4				
RED	2	2	2	2				
MAX I	12	25	5	18				
MAX II	10	40	15	30				
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

	PHASES USED 1	2	3	4	5	6	7	8
ON/OFF								

INHIBIT O/L	PED Overlaps 1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00			FRE-ON	
2	00:00				
3	00:00				
4	06:00			FRE-OFF	
4	06:00		4/1/1		80 S
4	06:40		5/1/1		90 S
4	09:00		4/1/1		80 S
4	14:30		6/1/1		90 S
4	18:00		4/1/1		80 S
4	20:30			FRE-ON	
5	00:00			FRE-ON	
5	09:00			FRE-OFF	
5	09:00		4/1/1		
5	20:00			FRE-ON	

		COS -
PL 1, 2, 3, 4	FRE-OP ON 00:00 - 0600	
PL 4	0600	4/1/1
	0640	5/1/1
	0900	4/1/1
	230	6/1/1
	1800	4/1/1
	2030	FRE-ON
PL 5	0900	FRE-OFF

INTERSECTION NAME: 57 @ GLENN CROSSING MALL
INTERSECTION NUMBER: 66

INSTALLATION DATE:
PROGRAM DATE:

COORDINATION
OPTIMIZATION

INTERVAL	PHASE (ON/OFF)							
	1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL		X				X		
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	10		7		10		7
PASSAGE	1.6	4.2		1		4.2		1
YELLOW	4	4		4		4		4
RED	2	2		2		2		2
MAX I (AM)	5	90		7		101		7
MAX II (PM)	5	77		10		88		10
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

	PHASES USED							
	1	2	3	4	5	6	7	8
ON/OFF	X	X		X		X		X

INHIBIT O/L	Overlaps							
	1	2	3	4	5	6	7	8
OLA	X							
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00				
2	00:00				
3	00:00				
4	06:00				
4	06:00				
4	06:40				
4	09:00				
4	14:30				
4	18:00				
4	20:30				
5	00:00				
5	09:00				
5	09:00				
5	20:00				

			COS -
PL 1 2 3 4	}		
PL 4			
PL 5			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	13	2	25	2	2	2	19	600	2	2	1902	19
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	10%	2%	10%	2%	2%	2%	8%	8%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	76	2	38	2	2	2	76	1731	2	2	964	70
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

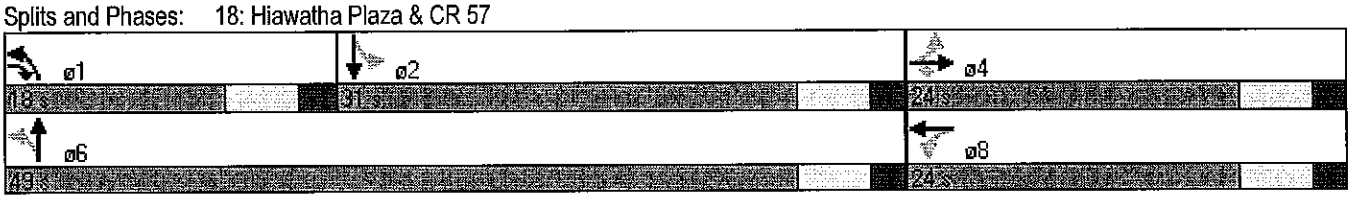
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	13	2	25	2	2	19	600	2	1902
Turn Type	Perm		pm+ov	Perm		pm+pt		Perm	
Protected Phases		4	1		8	1	6		2
Permitted Phases	4		4	8		6		2	
Detector Phase	4	4	1	8	8	1	6	2	2
Switch Phase									
Minimum Initial (s)	10.0	10.0	5.0	1.0	1.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	7.0	7.0	11.0	16.0	16.0	16.0
Total Split (s)	24.0	24.0	18.0	24.0	24.0	18.0	49.0	31.0	31.0
Total Split (%)	32.9%	32.9%	24.7%	32.9%	32.9%	24.7%	67.1%	42.5%	42.5%
Maximum Green (s)	18.0	18.0	12.0	18.0	18.0	12.0	43.0	25.0	25.0
Yellow Time (s)	4.0	4.0	4.0	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
Lost Time Adjust (s)	-2.0	0.0	-2.0	0.0	0.0	-2.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	4.0	4.0	4.0	3.0	3.0	4.0	4.0	4.0	4.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 73
Actuated Cycle Length: 73
Offset: 21 (29%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 18: Hiawatha Plaza & CR 57

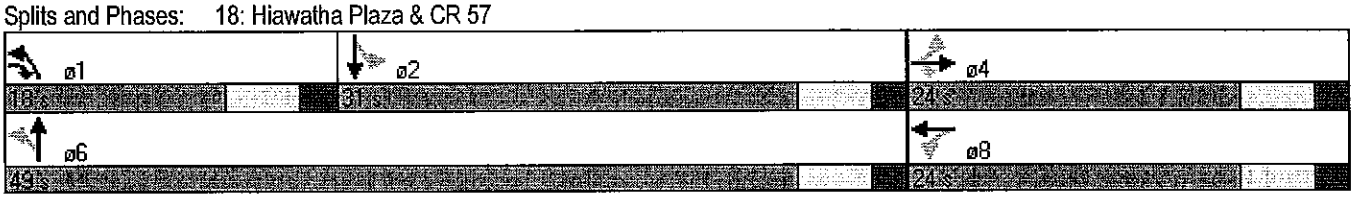


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	76	2	38	2	2	76	1731	2	964
Turn Type	Perm		pm+ov	Perm		pm+pt		Perm	
Protected Phases		4	1		8	1	6		2
Permitted Phases	4		4	8		6		2	
Detector Phase	4	4	1	8	8	1	6	2	2
Switch Phase									
Minimum Initial (s)	10.0	10.0	5.0	1.0	1.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	7.0	7.0	11.0	16.0	16.0	16.0
Total Split (s)	24.0	24.0	18.0	24.0	24.0	18.0	49.0	31.0	31.0
Total Split (%)	32.9%	32.9%	24.7%	32.9%	32.9%	24.7%	67.1%	42.5%	42.5%
Maximum Green (s)	18.0	18.0	12.0	18.0	18.0	12.0	43.0	25.0	25.0
Yellow Time (s)	4.0	4.0	4.0	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
Lost Time Adjust (s)	-2.0	0.0	-2.0	0.0	0.0	-2.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	4.0	4.0	4.0	3.0	3.0	4.0	4.0	4.0	4.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 73
Actuated Cycle Length: 73
Offset: 58 (79%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

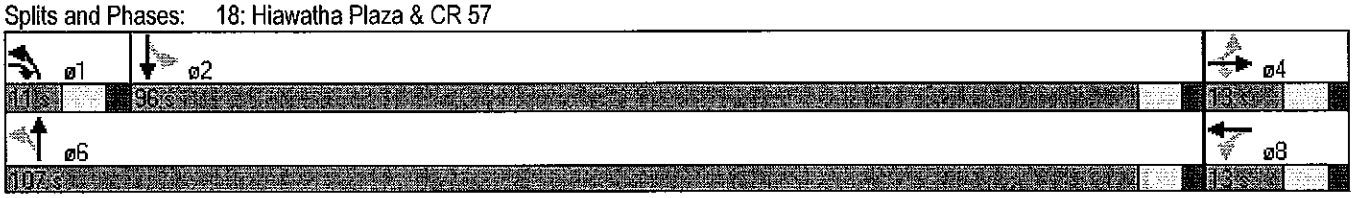
Splits and Phases: 18: Hiawatha Plaza & CR 57



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	13	2	25	2	2	19	600	2	1902
Turn Type	Perm		pm+ov	Perm		pm+pt		Perm	
Protected Phases		4	1		8	1	6		2
Permitted Phases	4		4	8		6		2	
Detector Phase	4	4	1	8	8	1	6	2	2
Switch Phase									
Minimum Initial (s)	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	10.0
Minimum Split (s)	13.0	13.0	11.0	13.0	13.0	11.0	16.0	16.0	16.0
Total Split (s)	13.0	13.0	11.0	13.0	13.0	11.0	107.0	96.0	96.0
Total Split (%)	10.8%	10.8%	9.2%	10.8%	10.8%	9.2%	89.2%	80.0%	80.0%
Maximum Green (s)	7.0	7.0	5.0	7.0	7.0	5.0	101.0	90.0	90.0
Yellow Time (s)	4.0	4.0	4.0	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
Lost Time Adjust (s)	-2.0	0.0	-2.0	0.0	0.0	-2.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	1.0	1.0	1.6	1.0	1.0	1.6	4.2	4.2	4.2
Minimum Gap (s)	1.0	1.0	1.6	1.0	1.0	1.6	4.2	4.2	4.2
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 19 (16%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 18: Hiawatha Plaza & CR 57

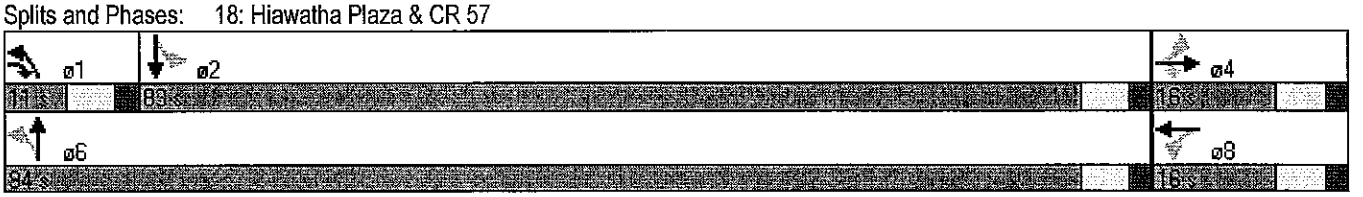


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	76	2	38	2	2	76	1731	2	964
Turn Type	Perm		pm+ov	Perm		pm+pt		Perm	
Protected Phases		4	1		8	1	6		2
Permitted Phases	4		4	8		6		2	
Detector Phase	4	4	1	8	8	1	6	2	2
Switch Phase									
Minimum Initial (s)	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	10.0
Minimum Split (s)	13.0	13.0	11.0	13.0	13.0	11.0	16.0	16.0	16.0
Total Split (s)	16.0	16.0	11.0	16.0	16.0	11.0	94.0	83.0	83.0
Total Split (%)	14.5%	14.5%	10.0%	14.5%	14.5%	10.0%	85.5%	75.5%	75.5%
Maximum Green (s)	10.0	10.0	5.0	10.0	10.0	5.0	88.0	77.0	77.0
Yellow Time (s)	4.0	4.0	4.0	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
Lost Time Adjust (s)	-2.0	0.0	-2.0	0.0	0.0	-2.0	-2.0	0.0	-2.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	1.0	1.0	1.6	1.0	1.0	1.6	4.2	4.2	4.2
Minimum Gap (s)	1.0	1.0	1.6	1.0	1.0	1.6	4.2	4.2	4.2
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 31 (28%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 18: Hiawatha Plaza & CR 57



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	2	25	2	2	2	19	600	2	2	1902	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width	13	13	11	16	16	16	12	12	12	12	12	12
Total Lost time (s)		6.0	4.0		6.0		4.0	4.0			4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			0.95	
Frt		1.00	0.85		0.95		1.00	1.00			1.00	
Flt Protected		0.96	1.00		0.98		0.95	1.00			1.00	
Satd. Flow (prot)		1726	1419		1983		1671	3518			3684	
Flt Permitted		1.00	1.00		1.00		0.07	1.00			0.95	
Satd. Flow (perm)		1801	1419		2016		130	3518			3517	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	2	28	2	2	2	21	667	2	2	2113	21
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	16	28	0	4	0	21	669	0	0	2136	0
Heavy Vehicles (%)	10%	2%	10%	2%	2%	2%	8%	8%	2%	2%	3%	3%
Turn Type	Perm		pm+ov	Perm			pm+pt			Perm		
Protected Phases		4	1		8		1	6			2	
Permitted Phases	4		4	8			6			2		
Actuated Green, G (s)		2.0	6.8		2.0		59.0	59.0			48.2	
Effective Green, g (s)		2.0	10.8		2.0		61.0	61.0			50.2	
Actuated g/C Ratio		0.03	0.15		0.03		0.84	0.84			0.69	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0	4.0		3.0		4.0	4.0			4.0	
Lane Grp Cap (vph)		49	288		55		252	2940			2419	
v/s Ratio Prot			0.01				0.01	c0.19				
v/s Ratio Perm		c0.01	0.01		0.00		0.06				c0.61	
v/c Ratio		0.33	0.10		0.07		0.08	0.23			0.88	
Uniform Delay, d1		34.8	26.9		34.6		11.4	1.2			9.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2		5.3	0.2		0.6		0.2	0.2			5.1	
Delay (s)		40.1	27.1		35.2		11.5	1.4			14.2	
Level of Service		D	C		D		B	A			B	
Approach Delay (s)		31.8			35.2			1.7			14.2	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	2	38	2	2	2	76	1731	2	2	964	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width	13	13	11	16	16	16	12	12	12	12	12	12
Total Lost time (s)		6.0	4.0		6.0		4.0	4.0			4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			0.95	
Frt		1.00	0.85		0.95		1.00	1.00			0.99	
Flt Protected		0.95	1.00		0.98		0.95	1.00			1.00	
Satd. Flow (prot)		1871	1561		1983		1787	3762			3724	
Flt Permitted		0.73	1.00		0.89		0.16	1.00			0.95	
Satd. Flow (perm)		1427	1561		1800		298	3762			3543	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	2	42	2	2	2	84	1923	2	2	1071	78
RTOR Reduction (vph)	0	0	15	0	2	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	86	27	0	4	0	84	1925	0	0	1146	0
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	1%	1%
Turn Type	Perm		pm+ov	Perm			pm+pt			Perm		
Protected Phases		4	1		8		1	6			2	
Permitted Phases	4		4	8			6			2		
Actuated Green, G (s)		9.5	15.8		9.5		51.5	51.5			39.2	
Effective Green, g (s)		9.5	19.8		9.5		53.5	53.5			41.2	
Actuated g/C Ratio		0.13	0.27		0.13		0.73	0.73			0.56	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0	4.0		3.0		4.0	4.0			4.0	
Lane Grp Cap (vph)		186	509		234		388	2757			2000	
v/s Ratio Prot			0.01				0.02	c0.51				
v/s Ratio Perm		c0.06	0.01		0.00		0.13				0.32	
v/c Ratio		0.46	0.05		0.02		0.22	0.70			0.57	
Uniform Delay, d1		29.4	19.7		27.7		4.9	5.3			10.2	
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2		2.5	0.1		0.0		0.4	1.5			1.2	
Delay (s)		31.9	19.7		27.7		5.3	6.8			11.4	
Level of Service		C	B		C		A	A			B	
Approach Delay (s)		27.9			27.7			6.8			11.4	
Approach LOS		C			C			A			B	

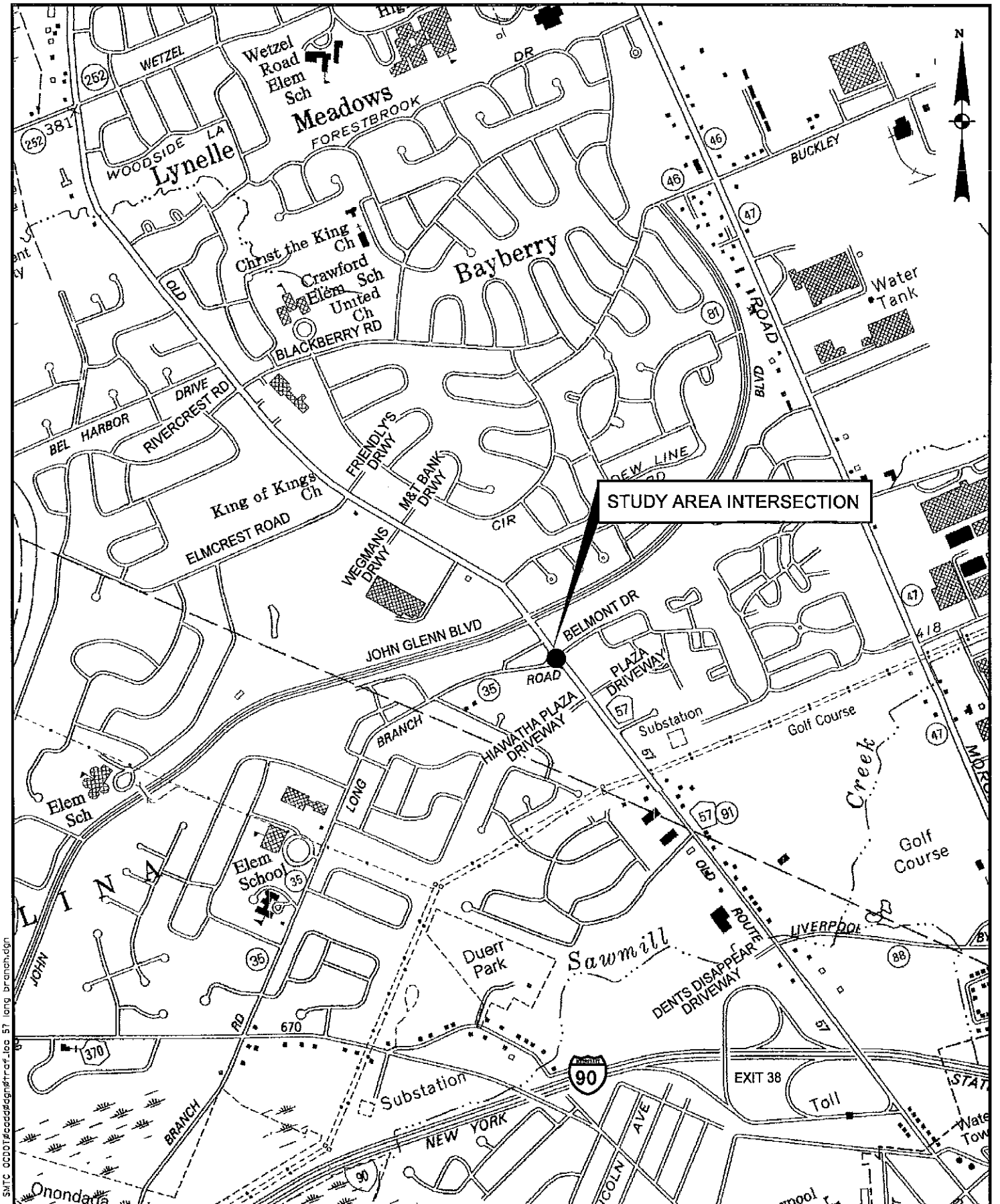
Intersection Summary				
HCM Average Control Delay	9.3	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	10.0	
Intersection Capacity Utilization	82.1%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	2	25	2	2	2	19	600	2	2	1902	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width	13	13	11	16	16	16	12	12	12	12	12	12
Total Lost time (s)		6.0	4.0		6.0		4.0	4.0			4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			0.95	
Frt		1.00	0.85		0.95		1.00	1.00			1.00	
Flt Protected		0.96	1.00		0.98		0.95	1.00			1.00	
Satd. Flow (prot)		1726	1419		1983		1671	3518			3684	
Flt Permitted		1.00	1.00		0.95		0.06	1.00			0.95	
Satd. Flow (perm)		1801	1419		1920		102	3518			3517	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	2	28	2	2	2	21	667	2	2	2113	21
RTOR Reduction (vph)	0	0	24	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	16	4	0	4	0	21	669	0	0	2136	0
Heavy Vehicles (%)	10%	2%	10%	2%	2%	2%	8%	8%	2%	2%	3%	3%
Turn Type	Perm		pm+ov	Perm			pm+pt			Perm		
Protected Phases		4	1		8		1	6			2	
Permitted Phases	4		4	8			6			2		
Actuated Green, G (s)		2.8	5.8		2.8		105.2	105.2			96.2	
Effective Green, g (s)		2.8	9.8		2.8		107.2	107.2			98.2	
Actuated g/C Ratio		0.02	0.08		0.02		0.89	0.89			0.82	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0			6.0	
Vehicle Extension (s)		1.0	1.6		1.0		1.6	4.2			4.2	
Lane Grp Cap (vph)		42	163		45		156	3143			2878	
v/s Ratio Prot			0.00				0.01	c0.19				
v/s Ratio Perm		c0.01	0.00		0.00		0.11				c0.61	
v/c Ratio		0.38	0.03		0.09		0.13	0.21			0.74	
Uniform Delay, d1		57.7	50.7		57.4		7.0	0.8			5.0	
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.57	
Incremental Delay, d2		2.1	0.0		0.3		0.1	0.2			0.9	
Delay (s)		59.8	50.7		57.7		7.2	1.0			8.8	
Level of Service		E	D		E		A	A			A	
Approach Delay (s)		54.0			57.7			1.2			8.8	
Approach LOS		D			E			A			A	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	2	38	2	2	2	76	1731	2	2	964	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	2000	1900
Lane Width	13	13	11	16	16	16	12	12	12	12	12	12
Total Lost time (s)		6.0	4.0		6.0		4.0	4.0			4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			0.95	
Frt		1.00	0.85		0.95		1.00	1.00			0.99	
Flt Protected		0.95	1.00		0.98		0.95	1.00			1.00	
Satd. Flow (prot)		1871	1561		1983		1787	3762			3724	
Flt Permitted		0.73	1.00		0.90		0.20	1.00			0.95	
Satd. Flow (perm)		1427	1561		1812		375	3762			3546	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	2	42	2	2	2	84	1923	2	2	1071	78
RTOR Reduction (vph)	0	0	35	0	2	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	86	7	0	4	0	84	1925	0	0	1146	0
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	1%	1%	2%	2%	1%	1%
Turn Type	Perm		pm+ov	Perm			pm+pt			Perm		
Protected Phases		4	1		8		1	6			2	
Permitted Phases	4		4	8			6			2		
Actuated Green, G (s)		10.7	15.1		10.7		87.3	87.3			76.9	
Effective Green, g (s)		10.7	19.1		10.7		89.3	89.3			78.9	
Actuated g/C Ratio		0.10	0.17		0.10		0.81	0.81			0.72	
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0			6.0	
Vehicle Extension (s)		1.0	1.6		1.0		1.6	4.2			4.2	
Lane Grp Cap (vph)		139	328		176		387	3054			2543	
v/s Ratio Prot			0.00				0.01	c0.51				
v/s Ratio Perm		c0.06	0.00		0.00		0.16				0.32	
v/c Ratio		0.62	0.02		0.02		0.22	0.63			0.45	
Uniform Delay, d1		47.7	37.7		44.9		3.4	4.0			6.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.08	
Incremental Delay, d2		5.7	0.0		0.0		0.1	1.0			0.5	
Delay (s)		53.3	37.7		44.9		3.5	5.0			7.5	
Level of Service		D	D		D		A	A			A	
Approach Delay (s)		48.2			44.9			4.9			7.5	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



LOCATION MAP
COUNTY ROAD 57/LONG BRANCH ROAD/
BELMONT DRIVE

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 9/10	FIGURE: B.4

gdaron
F:\Projects\2009\09-094 SMTC OCDOT\cadd\dgn\traf_loc 57 long branch.dgn

INTERSECTION DIAGRAM

Location: Old Route 57 at Longbranch Road

Legend: Sign; Signal Head; Signal with Span Wire; ## (Feet); Utility Pole

Drawn By: KK

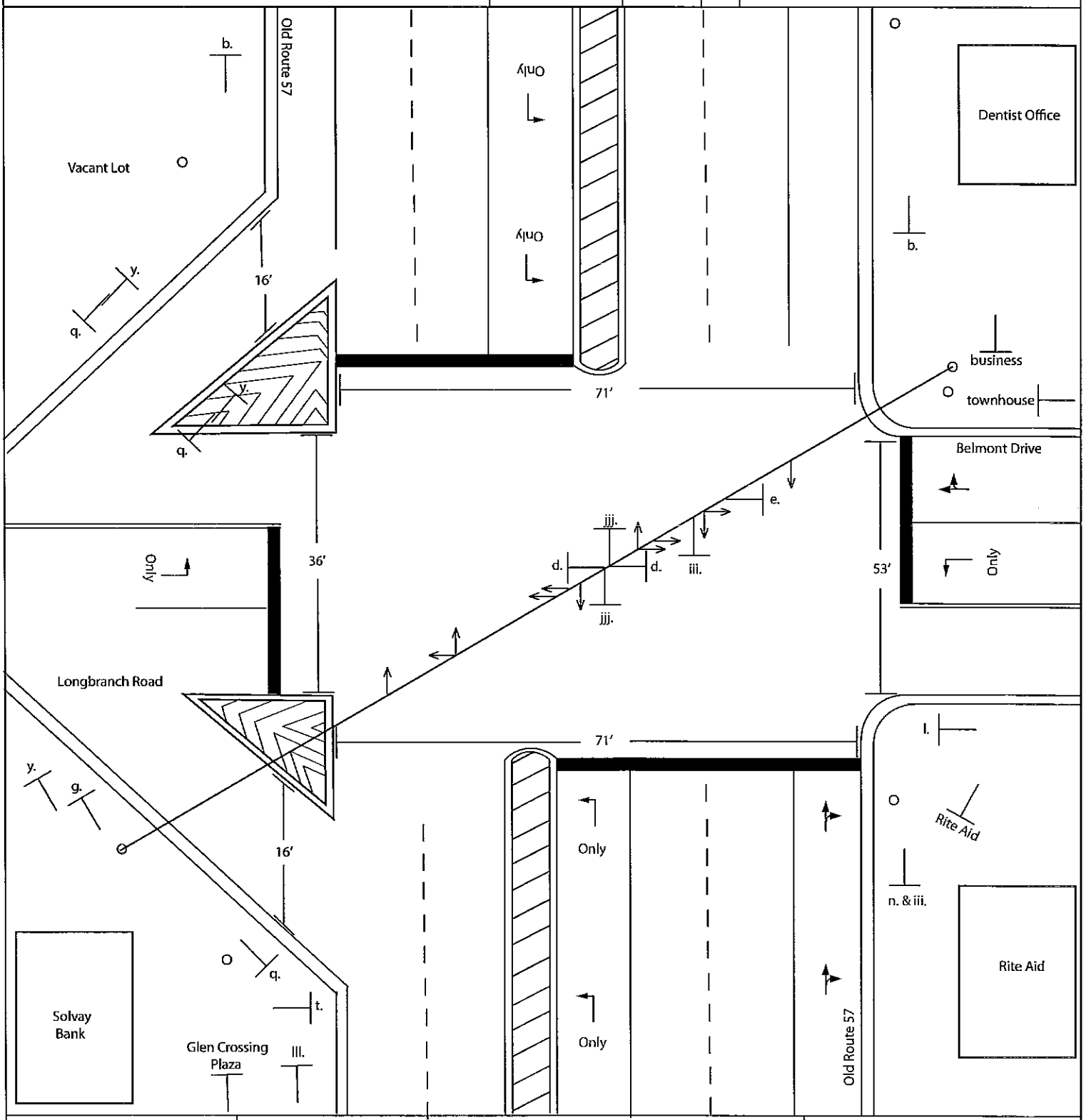
Date: May 2010

Prepared By: SMTC

N

Note:
Only actual pavement markings were drawn. An absence of arrows/striping indicates no pavement markings.

For sign definitions see Intersection Diagram Sign Index



Task: OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

Diagram is for presentation purposes only.
SMTC does not guarantee the accuracy or completeness of this diagram.

Diagram is not to scale


ONLY

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	119	13	228	82	19	87	44	549	19	63	1737	94
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	27%	27%	27%	3%	3%	3%	8%	8%	8%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	227	25	95	63	51	221	76	1661	70	176	875	202
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

INTERSECTION NAME: 57 @ Longbranch
INTERSECTION NUMBER: 65

INSTALLATION DATE:
PROGRAM DATE:

	PHASE (ON/OFF)							
INTERVAL	1	2	3	4	5	6	7	8
MEMORY								
EXT RECALL								
MAX RECALL		X				X		
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

	PHASE TIMINGS							
INTERVAL	1	2	3	4	5	6	7	8
MIN GREEN	5	10	5	5	5	10	5	
PASSAGE	2.5	4	2.5	2.5	2.5	4	2.5	
YELLOW	3.5	4	4	3.5	3.5	4	3.5	
RED	1.5	2	1.5	1.5	1.5	1.7	1.5	
MAX I	15	25	15	15	15	25	17	
MAX II	25	30	15	25	25	30	25	
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

			COS -
PL 1 2 3 4	}	FRE-OP ON 00:00 - 0600	
PL 4		0600 0640 0900 230 1800 2030	4/1/1 5/1/1 4/1/1 6/1/1 4/1/1 FRE-ON
PL 5		0900	FRE-OFF

PHASES USED								
	1	2	3	4	5	6	7	8
ON/OFF	X	X	X	X	X	X	X	

Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLA		X	X				X	
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1					
2					
3					
4					
4					
4					
4					
4					
4					
4					
5					
5					
5					
5					

INTERSECTION NAME: 57 @ Longbranch
INTERSECTION NUMBER: 65

INSTALLATION DATE: COORDINATION
PROGRAM DATE: OPTIMIZATION

	PHASE (ON/OFF)							
INTERVAL	1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL		X				X		
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

	PHASE TIMINGS							
INTERVAL	1	2	3	4	5	6	7	8
MIN GREEN	5	10	5	10	5	10	5	7
PASSAGE	1.6	3.4	1	1.7	1.6	3.4	1	1
YELLOW	4	4	4	4	4	4	4	4
RED	3	3	3	3	3	3	3	3
MAX I (AM)	7	55	5	25	8	54	10	20
MAX II (PM)	9	43	5	25	14	38	13	17
WALK				5				
PED CLEAR				20				
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

			COS -
PL 1 2 3 4	}		
PL 4			
PL 5			

PHASES USED								
	1	2	3	4	5	6	7	8
ON/OFF	X	X	X	X	X	X	X	X

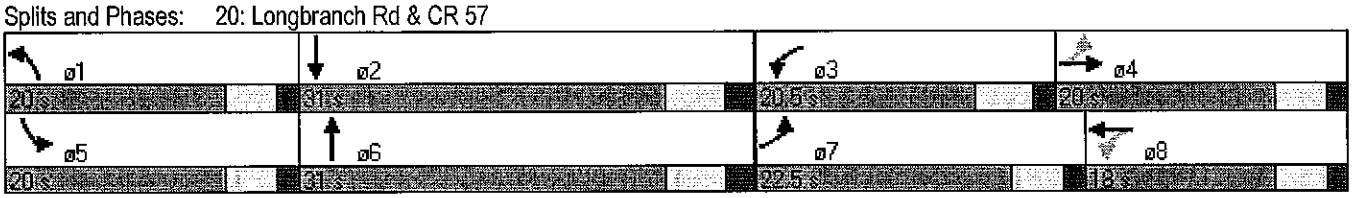
Ped Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLA				X				
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
⊘ 1					
⊘ 2					
⊘ 3					
⊘ 4					
⊘ 4					
⊘ 4					
⊘ 4					
⊘ 4					
⊘ 4					
⊘ 4					
⊘ 4					
⊘ 5					
⊘ 5					
⊘ 5					
⊘ 5					

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	119	13	228	82	19	44	549	63	1737	94
Turn Type	pm+pt		Free	pm+pt		Prot		Prot		Free
Protected Phases	7	4		3	8	1	6	5	2	
Permitted Phases	4		Free	8						Free
Detector Phase	7	4		3	8	1		5		
Switch Phase										
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	10.0	5.0	10.0	
Minimum Split (s)	10.0	10.0		10.5	10.0	10.0	16.0	10.0	16.0	
Total Split (s)	22.5	20.0	0.0	20.5	18.0	20.0	31.0	20.0	31.0	0.0
Total Split (%)	24.6%	21.9%	0.0%	22.4%	19.7%	21.9%	33.9%	21.9%	33.9%	0.0%
Maximum Green (s)	17.5	15.0		15.0	13.0	15.0	25.0	15.0	25.0	
Yellow Time (s)	3.5	3.5		4.0	3.5	3.5	4.0	3.5	4.0	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	1.5	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	2.0	3.5	3.0	3.0	4.0	3.0	4.0	2.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	4.0	2.5	4.0	
Minimum Gap (s)	2.5	2.5		2.5	2.5	2.5	4.0	2.5	4.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None	None	C-Max	None	C-Max	
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

Intersection Summary
Cycle Length: 91.5
Actuated Cycle Length: 91.5
Offset: 23 (25%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

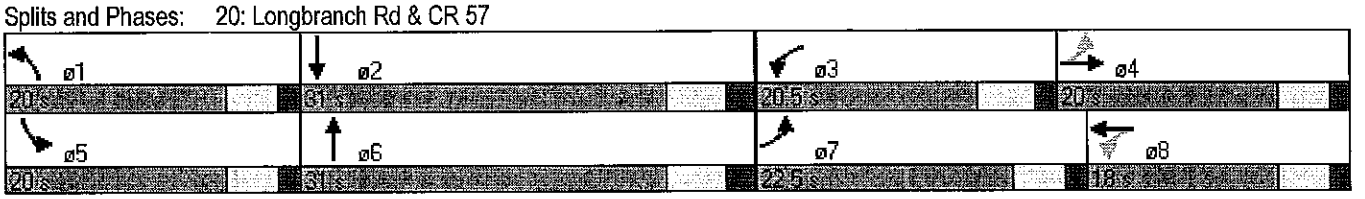
Splits and Phases: 20: Longbranch Rd & CR 57



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	227	25	95	63	51	76	1661	176	875	202
Turn Type	pm+pt		Free	pm+pt		Prot		Prot		Free
Protected Phases	7	4		3	8	1	6	5	2	
Permitted Phases	4		Free	8						Free
Detector Phase	7	4		3	8	1		5		
Switch Phase										
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	10.0	5.0	10.0	
Minimum Split (s)	10.0	10.0		10.5	10.0	10.0	16.0	10.0	16.0	
Total Split (s)	22.5	20.0	0.0	20.5	18.0	20.0	31.0	20.0	31.0	0.0
Total Split (%)	24.6%	21.9%	0.0%	22.4%	19.7%	21.9%	33.9%	21.9%	33.9%	0.0%
Maximum Green (s)	17.5	15.0		15.0	13.0	15.0	25.0	15.0	25.0	
Yellow Time (s)	3.5	3.5		4.0	3.5	3.5	4.0	3.5	4.0	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.0	1.5	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	2.0	3.5	3.0	3.0	4.0	3.0	4.0	2.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	4.0	2.5	4.0	
Minimum Gap (s)	2.5	2.5		2.5	2.5	2.5	4.0	2.5	4.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None	None	C-Max	None	C-Max	
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

Intersection Summary
Cycle Length: 91.5
Actuated Cycle Length: 91.5
Offset: 52 (57%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 20: Longbranch Rd & CR 57

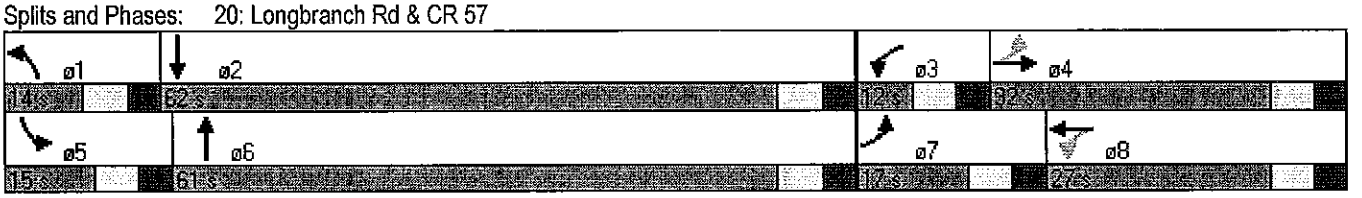


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	119	13	228	82	19	44	549	63	1737	94
Turn Type	pm+pt		Free	pm+pt		Prot		Prot		Free
Protected Phases	7	4		3	8	1	6	5	2	
Permitted Phases	4		Free	8						Free
Detector Phase	7	4		3	8	1	6	5	2	
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	7.0	5.0	10.0	5.0	10.0	
Minimum Split (s)	12.0	32.0		12.0	14.0	12.0	17.0	12.0	17.0	
Total Split (s)	17.0	32.0	0.0	12.0	27.0	14.0	61.0	15.0	62.0	0.0
Total Split (%)	14.2%	26.7%	0.0%	10.0%	22.5%	11.7%	50.8%	12.5%	51.7%	0.0%
Maximum Green (s)	10.0	25.0		5.0	20.0	7.0	54.0	8.0	55.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	2.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	1.0	1.7		1.0	1.0	1.6	3.4	1.6	3.4	
Minimum Gap (s)	1.0	1.7		1.0	1.0	1.6	3.4	1.6	3.4	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None	None	C-Min	None	C-Min	
Walk Time (s)		5.0								
Flash Dont Walk (s)		20.0								
Pedestrian Calls (#/hr)		20								

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 20: Longbranch Rd & CR 57

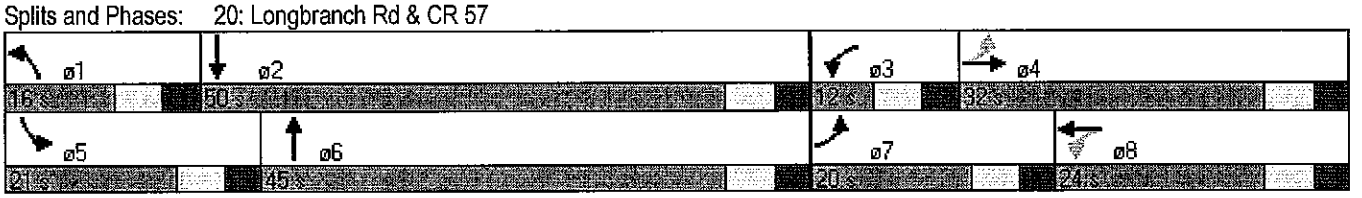


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	227	25	95	63	51	76	1661	176	875	202
Turn Type	pm+pt		Free	pm+pt		Prot		Prot		Free
Protected Phases	7	4		3	8	1	6	5	2	
Permitted Phases	4		Free	8						Free
Detector Phase	7	4		3	8	1	6	5	2	
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	7.0	5.0	10.0	5.0	10.0	
Minimum Split (s)	12.0	32.0		12.0	14.0	12.0	17.0	12.0	17.0	
Total Split (s)	20.0	32.0	0.0	12.0	24.0	16.0	45.0	21.0	50.0	0.0
Total Split (%)	18.2%	29.1%	0.0%	10.9%	21.8%	14.5%	40.9%	19.1%	45.5%	0.0%
Maximum Green (s)	13.0	25.0		5.0	17.0	9.0	38.0	14.0	43.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	2.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Vehicle Extension (s)	1.0	1.7		1.0	1.0	1.6	3.4	1.6	3.4	
Minimum Gap (s)	1.0	1.7		1.0	1.0	1.6	3.4	1.6	3.4	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None	None	C-Min	None	C-Min	
Walk Time (s)		5.0								
Flash Dont Walk (s)		20.0								
Pedestrian Calls (#/hr)		20								

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 96 (87%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 20: Longbranch Rd & CR 57



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	13	228	82	19	87	44	549	19	63	1737	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width	11	14	12	12	11	11	12	12	12	12	12	12
Total Lost time (s)	3.0	3.0	2.0	3.5	3.0		3.0	4.0		3.0	4.0	2.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.88		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1374	1596	1272	1752	1563		1671	5030		1752	3505	1568
Flt Permitted	0.68	1.00	1.00	0.54	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	985	1596	1272	994	1563		1671	5030		1752	3505	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	132	14	253	91	21	97	49	610	21	70	1930	104
RTOR Reduction (vph)	0	0	0	0	83	0	0	0	0	0	0	0
Lane Group Flow (vph)	132	14	253	91	35	0	49	631	0	70	1930	104
Heavy Vehicles (%)	27%	27%	27%	3%	3%	3%	8%	8%	8%	3%	3%	3%
Turn Type	pm+pt		Free	pm+pt			Prot			Prot		Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		Free	8								Free
Actuated Green, G (s)	20.3	7.0	91.5	28.4	11.3		5.4	38.4		7.5	40.5	91.5
Effective Green, g (s)	24.3	9.0	91.5	31.6	13.3		7.4	40.4		9.5	42.5	91.5
Actuated g/C Ratio	0.27	0.10	1.00	0.35	0.15		0.08	0.44		0.10	0.46	1.00
Clearance Time (s)	5.0	5.0		5.5	5.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)	327	157	1272	502	227		135	2221		182	1628	1568
v/s Ratio Prot	c0.07	0.01		0.04	0.02		0.03	0.13		c0.04	c0.55	
v/s Ratio Perm	c0.04		c0.20	0.02								0.07
v/c Ratio	0.40	0.09	0.20	0.18	0.15		0.36	0.28		0.38	1.19	0.07
Uniform Delay, d1	27.3	37.5	0.0	20.8	34.2		39.8	16.3		38.3	24.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.4	0.1	0.2		1.2	0.3		1.0	90.0	0.1
Delay (s)	27.9	37.7	0.4	20.9	34.4		41.0	16.6		39.3	114.5	0.1
Level of Service	C	D	A	C	C		D	B		D	F	A
Approach Delay (s)		10.8			28.5			18.4			106.4	
Approach LOS		B			C			B			F	

Intersection Summary			
HCM Average Control Delay	72.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	91.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	227	25	95	63	51	221	76	1661	70	176	875	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width	11	14	12	12	11	11	12	12	12	12	12	12
Total Lost time (s)	3.0	3.0	2.0	3.5	3.0		3.0	4.0		3.0	4.0	2.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	*1.00		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.88		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1662	1930	1538	1719	1536		1787	5904		1770	3539	1583
Flt Permitted	0.27	1.00	1.00	0.71	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	473	1930	1538	1293	1536		1787	5904		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	252	28	106	70	57	246	84	1846	78	196	972	224
RTOR Reduction (vph)	0	0	0	0	169	0	0	0	0	0	0	0
Lane Group Flow (vph)	252	28	106	70	134	0	84	1924	0	196	972	224
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	1%	1%	1%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt			Prot			Prot		Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		Free	8								Free
Actuated Green, G (s)	28.9	12.8	91.5	29.4	13.3		8.1	27.8		13.3	33.0	91.5
Effective Green, g (s)	32.9	14.8	91.5	33.4	15.3		10.1	29.8		15.3	35.0	91.5
Actuated g/C Ratio	0.36	0.16	1.00	0.37	0.17		0.11	0.33		0.17	0.38	1.00
Clearance Time (s)	5.0	5.0		5.5	5.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)	405	312	1538	556	257		197	1923		296	1354	1583
v/s Ratio Prot	c0.12	0.01		0.02	0.09		0.05	c0.33		c0.11	0.27	
v/s Ratio Perm	c0.10		0.07	0.02								c0.14
v/c Ratio	0.62	0.09	0.07	0.13	0.52		0.43	1.00		0.66	0.72	0.14
Uniform Delay, d1	22.9	32.6	0.0	19.2	34.8		38.0	30.9		35.7	24.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1	0.1	0.1	1.5		1.1	20.6		4.9	3.3	0.2
Delay (s)	25.4	32.7	0.1	19.3	36.2		39.1	51.5		40.6	27.3	0.2
Level of Service	C	C	A	B	D		D	D		D	C	A
Approach Delay (s)		19.0			33.0			51.0			24.8	
Approach LOS		B			C			D			C	

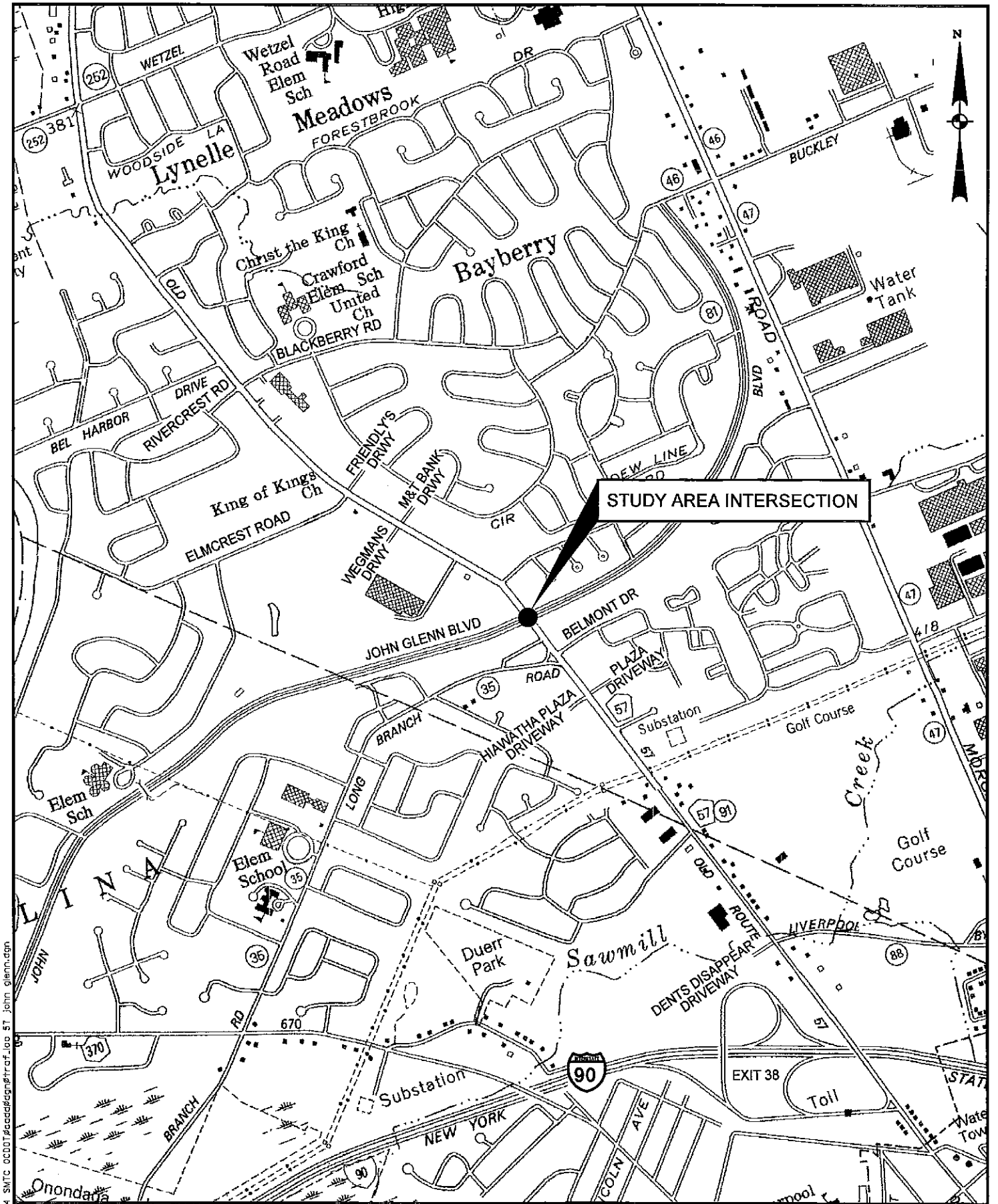
Intersection Summary				
HCM Average Control Delay	37.7	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	91.5	Sum of lost time (s)	13.0	
Intersection Capacity Utilization	83.9%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	13	228	82	19	87	44	549	19	63	1737	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width	11	14	12	12	11	11	12	12	12	12	12	12
Total Lost time (s)	5.0	5.0	2.0	5.0	5.0		5.0	5.0		5.0	5.0	2.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.88		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1374	1596	1272	1752	1563		1671	5030		1752	3505	1568
Flt Permitted	0.54	1.00	1.00	0.75	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	774	1596	1272	1380	1563		1671	5030		1752	3505	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	132	14	253	91	21	97	49	610	21	70	1930	104
RTOR Reduction (vph)	0	0	0	0	83	0	0	0	0	0	0	0
Lane Group Flow (vph)	132	14	253	91	35	0	49	631	0	70	1930	104
Heavy Vehicles (%)	27%	27%	27%	3%	3%	3%	8%	8%	8%	3%	3%	3%
Turn Type	pm+pt		Free	pm+pt			Prot			Prot		Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		Free	8								Free
Actuated Green, G (s)	26.4	16.8	120.0	22.8	15.0		5.5	61.0		6.4	61.9	120.0
Effective Green, g (s)	30.4	18.8	120.0	26.8	17.0		7.5	63.0		8.4	63.9	120.0
Actuated g/C Ratio	0.25	0.16	1.00	0.22	0.14		0.06	0.52		0.07	0.53	1.00
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	1.0	1.7		1.0	1.0		1.6	3.4		1.6	3.4	
Lane Grp Cap (vph)	254	250	1272	339	221		104	2641		123	1866	1568
v/s Ratio Prot	c0.05	0.01		0.02	0.02		0.03	0.13		c0.04	c0.55	
v/s Ratio Perm	c0.08		c0.20	0.04								0.07
v/c Ratio	0.52	0.06	0.20	0.27	0.16		0.47	0.24		0.57	1.03	0.07
Uniform Delay, d1	37.1	43.1	0.0	38.2	45.2		54.3	15.5		54.0	28.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.01	0.98		1.17	0.40	1.00
Incremental Delay, d2	0.7	0.0	0.4	0.2	0.1		1.2	0.2		0.3	17.7	0.0
Delay (s)	37.8	43.1	0.4	38.3	45.3		55.9	15.3		63.4	29.1	0.0
Level of Service	D	D	A	D	D		E	B		E	C	A
Approach Delay (s)		14.3			42.3			18.2			28.8	
Approach LOS		B			D			B			C	

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	227	25	95	63	51	221	76	1661	70	176	875	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width	11	14	12	12	11	11	12	12	12	12	12	12
Total Lost time (s)	5.0	5.0	2.0	5.0	5.0		5.0	5.0		5.0	5.0	2.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	*1.00		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.88		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1662	1930	1538	1719	1536		1787	5904		1770	3539	1583
Flt Permitted	0.18	1.00	1.00	0.74	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	315	1930	1538	1337	1536		1787	5904		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	252	28	106	70	57	246	84	1846	78	196	972	224
RTOR Reduction (vph)	0	0	0	0	143	0	0	0	0	0	0	0
Lane Group Flow (vph)	252	28	106	70	160	0	84	1924	0	196	972	224
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	1%	1%	1%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt			Prot			Prot		Free
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		Free	8								Free
Actuated Green, G (s)	33.5	20.2	110.0	25.1	16.0		6.9	38.9		13.8	45.8	110.0
Effective Green, g (s)	37.5	22.2	110.0	29.1	18.0		8.9	40.9		15.8	47.8	110.0
Actuated g/C Ratio	0.34	0.20	1.00	0.26	0.16		0.08	0.37		0.14	0.43	1.00
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	1.0	1.7		1.0	1.0		1.6	3.4		1.6	3.4	
Lane Grp Cap (vph)	295	390	1538	392	251		145	2195		254	1538	1583
v/s Ratio Prot	c0.12	0.01		0.02	0.10		0.05	c0.33		c0.11	0.27	
v/s Ratio Perm	c0.17		0.07	0.03								0.14
v/c Ratio	0.85	0.07	0.07	0.18	0.64		0.58	0.88		0.77	0.63	0.14
Uniform Delay, d1	29.9	35.6	0.0	31.0	43.0		48.7	32.2		45.4	24.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.02	0.97		1.00	1.15	1.00
Incremental Delay, d2	20.0	0.0	0.1	0.1	3.9		2.7	4.3		1.2	0.2	0.0
Delay (s)	49.9	35.6	0.1	31.1	46.8		52.3	35.5		46.8	27.9	0.0
Level of Service	D	D	A	C	D		D	D		D	C	A
Approach Delay (s)		35.2			43.9			36.2			26.1	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	33.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



LOCATION MAP
COUNTY ROAD 57/JOHN GLENN BOULEVARD

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 9/10	FIGURE: B.5

INTERSECTION DIAGRAM

Location: Old Route 57 ar John Glenn Blvd

Legend: Sign; Signal Head; Signal with Span Wire; ## (Feet); Utility Pole; Guardrail

Drawn By: JC

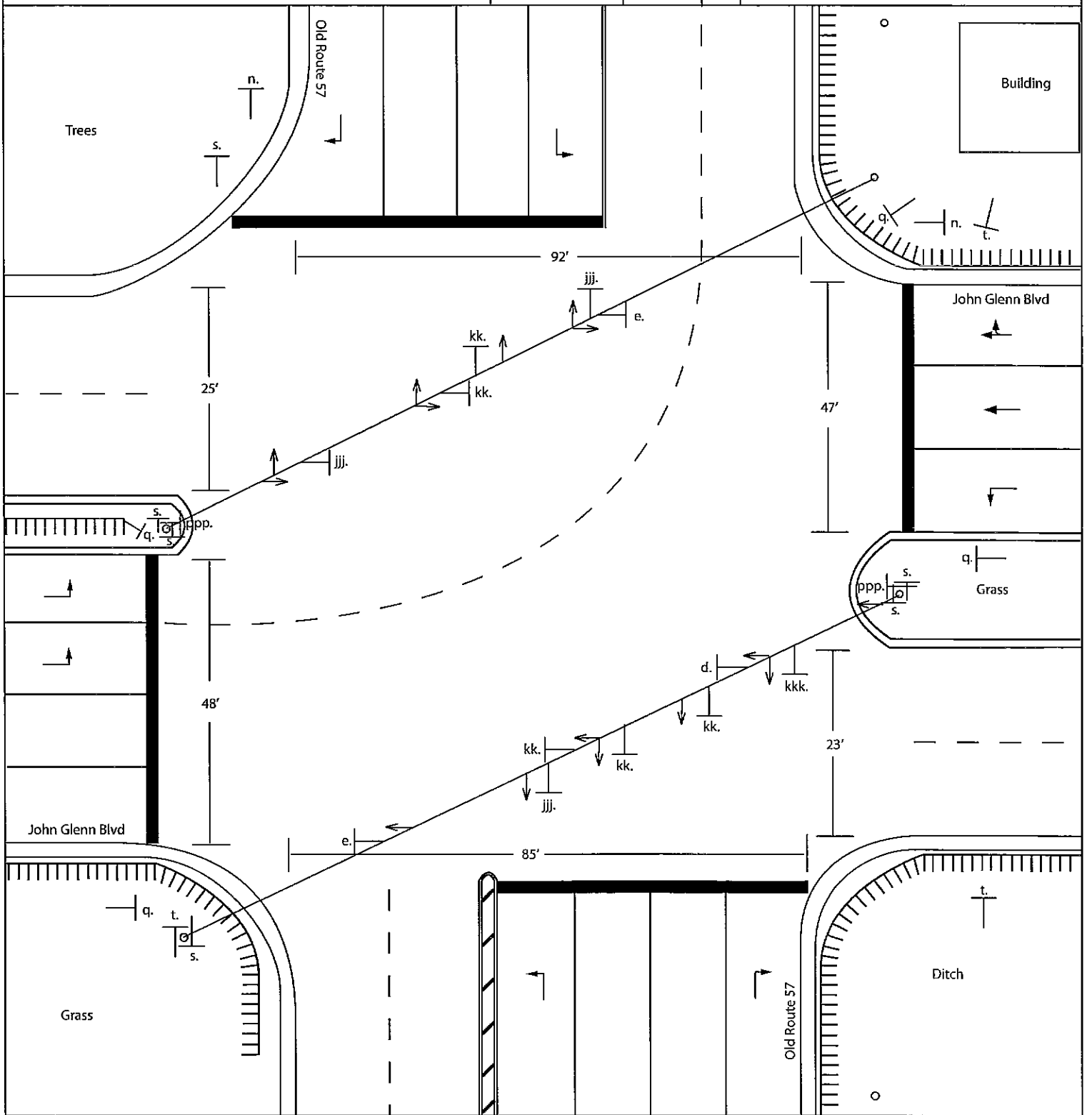
Date: May 2010

Prepared By: SMTC

N

Note:
Only actual pavement markings were drawn. An absence of arrows/striping indicates no pavement markings.

For sign definitions see Intersection Diagram Index.



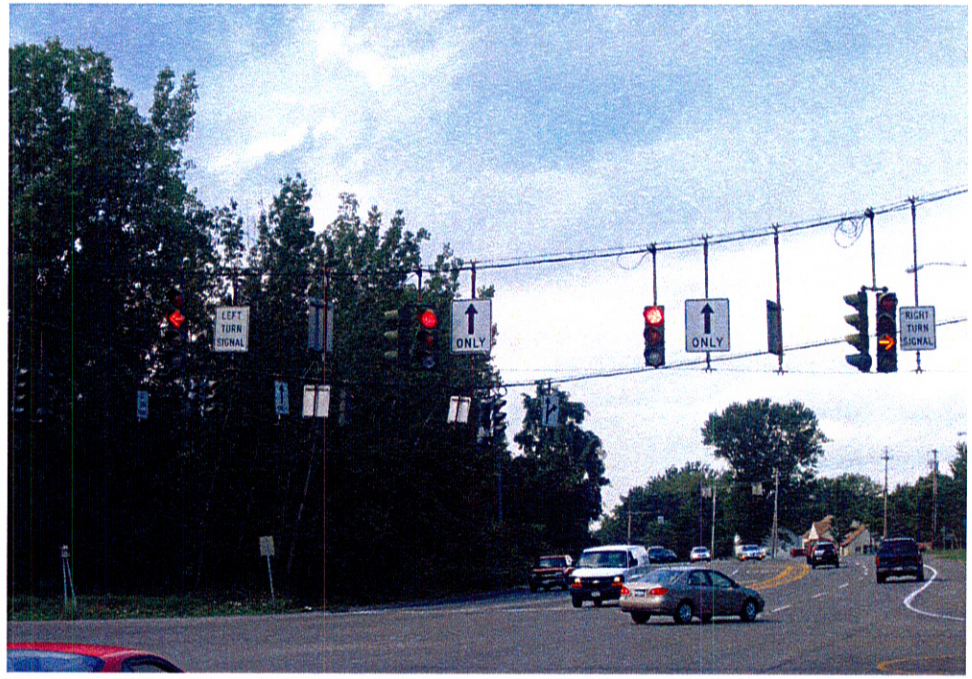
Task: OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

Diagram is for presentation purposes only.
SMTC does not guarantee the accuracy or completeness of this diagram.

Diagram is not to scale.


40


LEFT TURN SIGNAL
ONLY
ONLY
RIGHT TURN SIGNAL

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	365	539	317	165	425	68	127	521	106	94	1418	472
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	9%	9%	9%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	695	583	159	146	419	106	361	1589	159	100	948	422
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	772	648	177	162	466	118	401	1766	177	111	1053	469
Shared Lane Traffic (%)												
Lane Group Flow (vph)	772	825	0	162	584	0	401	1766	177	111	1053	469

Intersection Summary

INTERSECTION NAME: 57 @ John Glenn
INTERSECTION NUMBER: 40

INSTALLATION DATE:
PROGRAM DATE:

INTERVAL	PHASE (ON/OFF) 1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL								
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS 1	2	3	4	5	6	7	8
MIN GREEN	5	13	5	12	5	13	5	12
PASSAGE	3.5	4	3.5	3.5	3.5	3.5	3.5	3.5
YELLOW	4	4	4	4	4	4	4	4
RED	2	2	2	2	2	2	2	2
MAX I	15	22	18	22	15	22	18	22
MAX II	30	30	30	30	30	30	30	30
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

	PHASES USED 1	2	3	4	5	6	7	8
ON/OFF	X	X	X	X	X	X	X	X

INHIBIT O/L	PED Overlaps 1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00			FRE-ON	
2	00:00				
3	00:00				
4	06:00			FRE-OFF	
4	06:00		4/1/1		80 S
4	06:40		5/1/1		90 S
4	09:00		4/1/1		80 S
4	14:30		6/1/1		90 S
4	18:00		4/1/1		80 S
4	20:30			FRE-ON	
5	00:00			FRE-ON	
5	09:00			FRE-OFF	
5	09:00		4/1/1		
5	20:00			FRE-ON	

		COS -
PL 1, 2, 3, 4	FRE-OP ON 00:00 - 0600	
PL 4	0600	4/1/1
	0640	5/1/1
	0900	4/1/1
	230	6/1/1
	1800	4/1/1
	2030	FRE-ON
PL 5	0900	FRE-OFF

INTERSECTION NAME: 57 @ John Glenn
INTERSECTION NUMBER: 40

INSTALLATION DATE: COORDINATION
PROGRAM DATE: OPTIMIZATION

INTERVAL	PHASE (ON/OFF)							
	1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL		X				X		
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	10	5	10	5	10	5	10
PASSAGE	1.6	3.4	1.6	1.6	1.6	3.4	1.6	1.6
YELLOW	4	4	4	4	4	4	4	4
RED	2	2	2	2	2	2	2	2
MAX I (AM)	8	49	11	28	12	45	15	24
MAX II (PM)	21	30	10	25	5	46	21	14
WALK						5		
PED CLEAR						11		
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

	COS -		
PL 1 2 3 4			
PL 4			
PL 5			

PHASES USED								
	1	2	3	4	5	6	7	8
ON/OFF	X	X	X	X	X	X	X	X

Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLAP			X				X	
PED Overlaps						X		
OVERLAP C								
OVERLAP D								

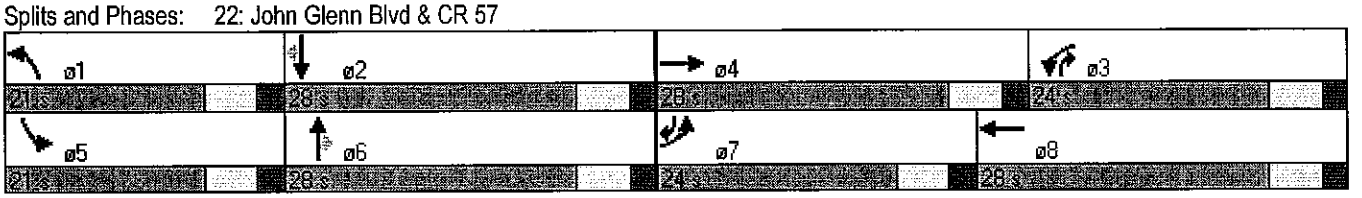
PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00				
2	00:00				
3	00:00				
4	06:00				
4	06:00				
4	06:40				
4	09:00				
4	14:30				
4	18:00				
4	20:30				
5	00:00				
5	09:00				
5	09:00				
5	20:00				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	365	539	165	425	127	521	106	94	1418	472
Turn Type	Prot		Prot		Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	3	8	1	6	3	5	2	7
Permitted Phases							6			2
Detector Phase	7	4	3	8	1	6	3	5	2	7
Switch Phase										
Minimum Initial (s)	5.0	12.0	5.0	12.0	5.0	13.0	5.0	5.0	13.0	5.0
Minimum Split (s)	11.0	18.0	11.0	18.0	11.0	19.0	11.0	11.0	19.0	11.0
Total Split (s)	24.0	28.0	24.0	28.0	21.0	28.0	24.0	21.0	28.0	24.0
Total Split (%)	23.8%	27.7%	23.8%	27.7%	20.8%	27.7%	23.8%	20.8%	27.7%	23.8%
Maximum Green (s)	18.0	22.0	18.0	22.0	15.0	22.0	18.0	15.0	22.0	18.0
Yellow Time (s)	4.0	4.0	4.0	4.0	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?										
Vehicle Extension (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	3.5
Minimum Gap (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	3.5
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Min	None	None	C-Min	None
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

Intersection Summary

Cycle Length: 101
Actuated Cycle Length: 101
Offset: 35 (35%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 22: John Glenn Blvd & CR 57

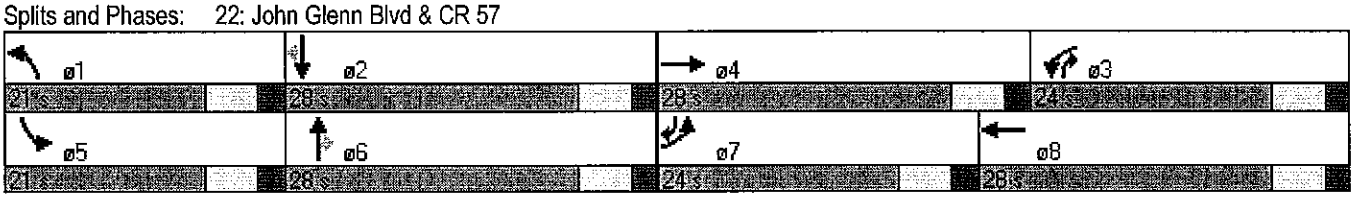


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	695	583	146	419	361	1589	159	100	948	422
Turn Type	Prot		Prot		Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	3	8	1	6	3	5	2	7
Permitted Phases							6			2
Detector Phase	7	4	3	8	1	6	3	5	2	7
Switch Phase										
Minimum Initial (s)	5.0	12.0	5.0	12.0	5.0	13.0	5.0	5.0	13.0	5.0
Minimum Split (s)	11.0	18.0	11.0	18.0	11.0	19.0	11.0	11.0	19.0	11.0
Total Split (s)	24.0	28.0	24.0	28.0	21.0	28.0	24.0	21.0	28.0	24.0
Total Split (%)	23.8%	27.7%	23.8%	27.7%	20.8%	27.7%	23.8%	20.8%	27.7%	23.8%
Maximum Green (s)	18.0	22.0	18.0	22.0	15.0	22.0	18.0	15.0	22.0	18.0
Yellow Time (s)	4.0	4.0	4.0	4.0	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?										
Vehicle Extension (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	3.5
Minimum Gap (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	3.5
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Min	None	None	C-Min	None
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

Intersection Summary

Cycle Length: 101
Actuated Cycle Length: 101
Offset: 60 (59%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 22: John Glenn Blvd & CR 57

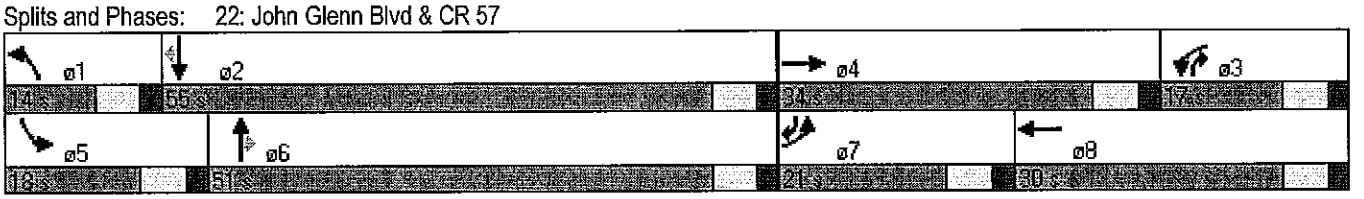


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	365	539	165	425	127	521	106	94	1418	472
Turn Type	Prot		Prot		Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	3	8	1	6	3	5	2	7
Permitted Phases							6			2
Detector Phase	7	4	3	8	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	11.0	16.0	11.0	16.0	11.0	16.0	11.0	11.0	22.0	11.0
Total Split (s)	21.0	34.0	17.0	30.0	14.0	51.0	17.0	18.0	55.0	21.0
Total Split (%)	17.5%	28.3%	14.2%	25.0%	11.7%	42.5%	14.2%	15.0%	45.8%	17.5%
Maximum Green (s)	15.0	28.0	11.0	24.0	8.0	45.0	11.0	12.0	49.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?										
Vehicle Extension (s)	1.6	1.6	1.6	1.6	1.6	3.4	1.6	1.6	3.4	1.6
Minimum Gap (s)	1.6	1.6	1.6	1.6	1.6	3.4	1.6	1.6	3.4	1.6
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Min	None	None	C-Min	None
Walk Time (s)									5.0	
Flash Dont Walk (s)									11.0	
Pedestrian Calls (#/hr)									0	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 22: John Glenn Blvd & CR 57

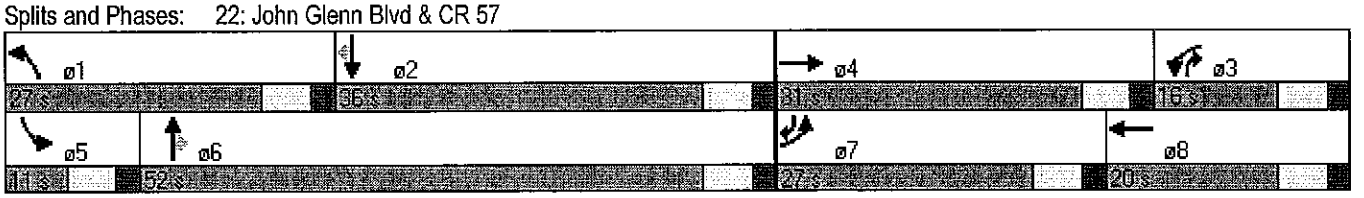


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	695	583	146	419	361	1589	159	100	948	422
Turn Type	Prot		Prot		Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	3	8	1	6	3	5	2	7
Permitted Phases							6			2
Detector Phase	7	4	3	8	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	5.0	10.0	5.0
Minimum Split (s)	11.0	16.0	11.0	16.0	11.0	16.0	11.0	11.0	22.0	11.0
Total Split (s)	27.0	31.0	16.0	20.0	27.0	52.0	16.0	11.0	36.0	27.0
Total Split (%)	24.5%	28.2%	14.5%	18.2%	24.5%	47.3%	14.5%	10.0%	32.7%	24.5%
Maximum Green (s)	21.0	25.0	10.0	14.0	21.0	46.0	10.0	5.0	30.0	21.0
Yellow Time (s)	4.0	4.0	4.0	4.0	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?										
Vehicle Extension (s)	1.6	1.6	1.6	1.6	1.6	3.4	1.6	1.6	3.4	1.6
Minimum Gap (s)	1.6	1.6	1.6	1.6	1.6	3.4	1.6	1.6	3.4	1.6
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Min	None	None	C-Min	None
Walk Time (s)									5.0	
Flash Dont Walk (s)									11.0	
Pedestrian Calls (#/hr)									0	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 22: John Glenn Blvd & CR 57



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	365	539	317	165	425	68	127	521	106	94	1418	472
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width	11	11	11	9	12	12	11	12	12	11	12	13
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.94		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3286	3200		1547	3367		1601	3486	1482	1711	3539	1636
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3286	3200		1547	3367		1601	3486	1482	1711	3539	1636
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	406	599	352	183	472	76	141	579	118	104	1576	524
RTOR Reduction (vph)	0	84	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	406	867	0	183	548	0	141	579	118	104	1576	524
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	9%	9%	9%	2%	2%	2%
Turn Type	Prot			Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8		1	6	3	5	2	7
Permitted Phases									6			2
Actuated Green, G (s)	16.4	22.0		15.3	20.9		13.2	29.6	44.9	10.1	26.5	42.9
Effective Green, g (s)	18.4	24.0		17.3	22.9		15.2	31.6	48.9	12.1	28.5	46.9
Actuated g/C Ratio	0.18	0.24		0.17	0.23		0.15	0.31	0.48	0.12	0.28	0.46
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	4.0	3.5
Lane Grp Cap (vph)	599	760		265	763		241	1091	718	205	999	824
v/s Ratio Prot	0.12	c0.27		0.12	c0.16		c0.09	c0.17	0.03	0.06	c0.45	0.12
v/s Ratio Perm									0.05			0.20
v/c Ratio	0.68	1.14		0.69	0.72		0.59	0.53	0.16	0.51	1.58	0.64
Uniform Delay, d1	38.5	38.5		39.3	36.1		40.0	28.6	14.6	41.7	36.2	20.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	78.9		7.8	3.4		3.8	1.8	0.1	2.3	264.7	1.7
Delay (s)	41.7	117.4		47.1	39.4		43.8	30.4	14.7	44.0	301.0	22.3
Level of Service	D	F		D	D		D	C	B	D	F	C
Approach Delay (s)		94.7			41.4			30.5			222.6	
Approach LOS		F			D			C			F	

Intersection Summary				
HCM Average Control Delay	131.6	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.12			
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	93.8%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	695	583	159	146	419	106	361	1589	159	100	948	422
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width	11	11	11	9	12	12	11	12	12	11	12	13
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3319	3311		1593	3432		1728	3762	1599	1711	3539	1636
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3319	3311		1593	3432		1728	3762	1599	1711	3539	1636
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	772	648	177	162	466	118	401	1766	177	111	1053	469
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	772	801	0	162	584	0	401	1766	177	111	1053	469
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Prot			Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8		1	6	3	5	2	7
Permitted Phases									6			2
Actuated Green, G (s)	18.0	22.0		16.8	20.8		16.2	26.3	43.1	11.9	22.0	40.0
Effective Green, g (s)	20.0	24.0		18.8	22.8		18.2	28.3	47.1	13.9	24.0	44.0
Actuated g/C Ratio	0.20	0.24		0.19	0.23		0.18	0.28	0.47	0.14	0.24	0.44
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	4.0	3.5
Lane Grp Cap (vph)	657	787		297	775		311	1054	746	235	841	778
v/s Ratio Prot	c0.23	0.24		0.10	c0.17		c0.23	c0.47	0.04	0.06	0.30	0.12
v/s Ratio Perm									0.07			0.17
v/c Ratio	1.18	1.02		0.55	0.75		1.29	1.68	0.24	0.47	1.25	0.60
Uniform Delay, d1	40.5	38.5		37.2	36.5		41.4	36.4	16.2	40.2	38.5	21.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	94.2	36.5		2.3	4.3		152.3	308.2	0.2	1.8	123.2	1.4
Delay (s)	134.7	75.0		39.5	40.8		193.7	344.5	16.4	41.9	161.7	23.2
Level of Service	F	E		D	D		F	F	B	D	F	C
Approach Delay (s)		103.8			40.5			293.9			113.8	
Approach LOS		F			D			F			F	

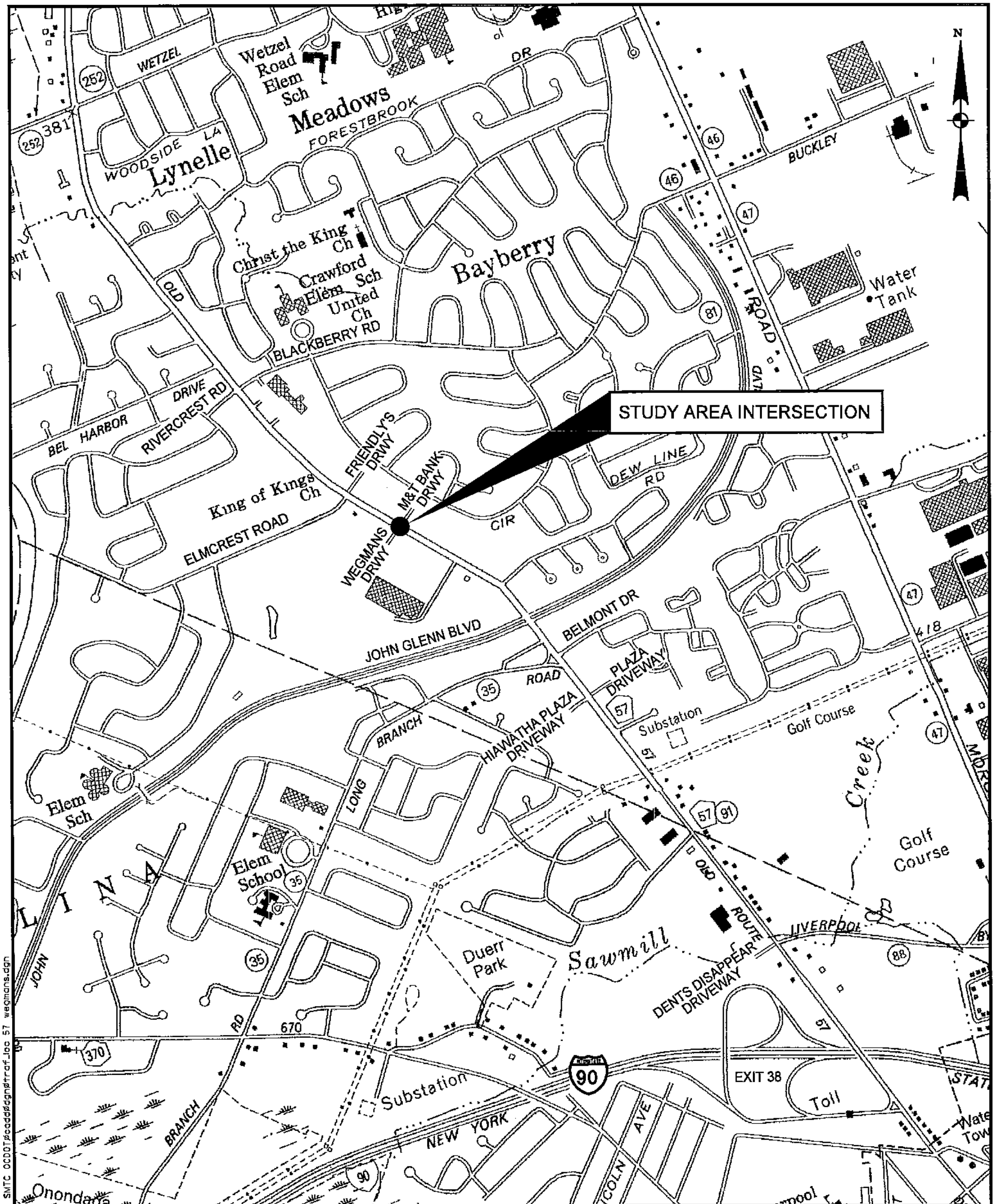
Intersection Summary				
HCM Average Control Delay	169.4	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.22			
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	95.4%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	365	539	317	165	425	68	127	521	106	94	1418	472
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width	11	11	11	9	12	12	11	12	12	11	12	13
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.94		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3286	3200		1547	3367		1601	3486	1482	1711	3539	1636
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3286	3200		1547	3367		1601	3486	1482	1711	3539	1636
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	406	599	352	183	472	76	141	579	118	104	1576	524
RTOR Reduction (vph)	0	71	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	406	881	0	183	548	0	141	579	118	104	1576	524
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	9%	9%	9%	2%	2%	2%
Turn Type	Prot			Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8		1	6	3	5	2	7
Permitted Phases									6			2
Actuated Green, G (s)	14.9	28.0		11.0	24.1		8.0	46.8	57.8	10.2	49.0	63.9
Effective Green, g (s)	16.9	30.0		13.0	26.1		10.0	48.8	61.8	12.2	51.0	67.9
Actuated g/C Ratio	0.14	0.25		0.11	0.22		0.08	0.41	0.51	0.10	0.42	0.57
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	1.6	1.6		1.6	1.6		1.6	3.4	1.6	1.6	3.4	1.6
Lane Grp Cap (vph)	463	800		168	732		133	1418	763	174	1504	980
v/s Ratio Prot	0.12	c0.28		c0.12	0.16		c0.09	0.17	0.02	0.06	c0.45	0.08
v/s Ratio Perm									0.06			0.24
v/c Ratio	0.88	1.10		1.09	0.75		1.06	0.41	0.15	0.60	1.05	0.53
Uniform Delay, d1	50.5	45.0		53.5	43.9		55.0	25.3	15.3	51.6	34.5	16.2
Progression Factor	1.00	1.00		1.00	1.00		1.28	0.74	0.70	1.17	0.80	0.50
Incremental Delay, d2	16.4	63.0		95.3	3.7		93.9	0.8	0.0	2.4	32.7	0.2
Delay (s)	66.9	108.0		148.8	47.6		164.6	19.7	10.7	62.7	60.2	8.3
Level of Service	E	F		F	D		F	B	B	E	E	A
Approach Delay (s)		95.7			72.9			42.8			48.0	
Approach LOS		F			E			D			D	

Intersection Summary			
HCM Average Control Delay	63.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	695	583	159	146	419	106	361	1589	159	100	948	422
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width	11	11	11	9	12	12	11	12	12	11	12	13
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3319	3311		1593	3432		1728	3762	1599	1711	3539	1636
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3319	3311		1593	3432		1728	3762	1599	1711	3539	1636
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	772	648	177	162	466	118	401	1766	177	111	1053	469
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	772	802	0	162	584	0	401	1766	177	111	1053	469
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Prot			Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8		1	6	3	5	2	7
Permitted Phases									6			2
Actuated Green, G (s)	21.0	25.0		10.0	14.0		21.0	46.0	56.0	5.0	30.0	51.0
Effective Green, g (s)	23.0	27.0		12.0	16.0		23.0	48.0	60.0	7.0	32.0	55.0
Actuated g/C Ratio	0.21	0.25		0.11	0.15		0.21	0.44	0.55	0.06	0.29	0.50
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	1.6	1.6		1.6	1.6		1.6	3.4	1.6	1.6	3.4	1.6
Lane Grp Cap (vph)	694	813		174	499		361	1642	872	109	1030	877
v/s Ratio Prot	c0.23	0.24		0.10	c0.17		c0.23	c0.47	0.02	0.06	0.30	0.11
v/s Ratio Perm									0.09			0.17
v/c Ratio	1.11	0.99		0.93	1.17		1.11	1.08	0.20	1.02	1.02	0.53
Uniform Delay, d1	43.5	41.3		48.6	47.0		43.5	31.0	12.8	51.5	39.0	18.8
Progression Factor	1.00	1.00		1.00	1.00		1.38	0.43	0.46	0.92	1.04	1.67
Incremental Delay, d2	69.3	28.0		48.0	96.4		69.4	41.0	0.0	85.4	32.0	0.3
Delay (s)	112.8	69.3		96.5	143.4		129.4	54.3	5.9	132.7	72.4	31.6
Level of Service	F	E		F	F		F	D	A	F	E	C
Approach Delay (s)		90.3			133.2			63.5			64.8	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM Average Control Delay	78.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



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LOCATION MAP COUNTY ROAD 57/WEGMANS DRIVEWAY/ M&T BANK DRIVEWAY	CME CREIGHTON MANNING ENGINEERING, LLP
TRAFFIC SIGNAL OPTIMIZATION ONONDAGA COUNTY SYRACUSE, NEW YORK	PROJECT: 09-094d DATE: 9/10 FIGURE: B.6

INTERSECTION DIAGRAM

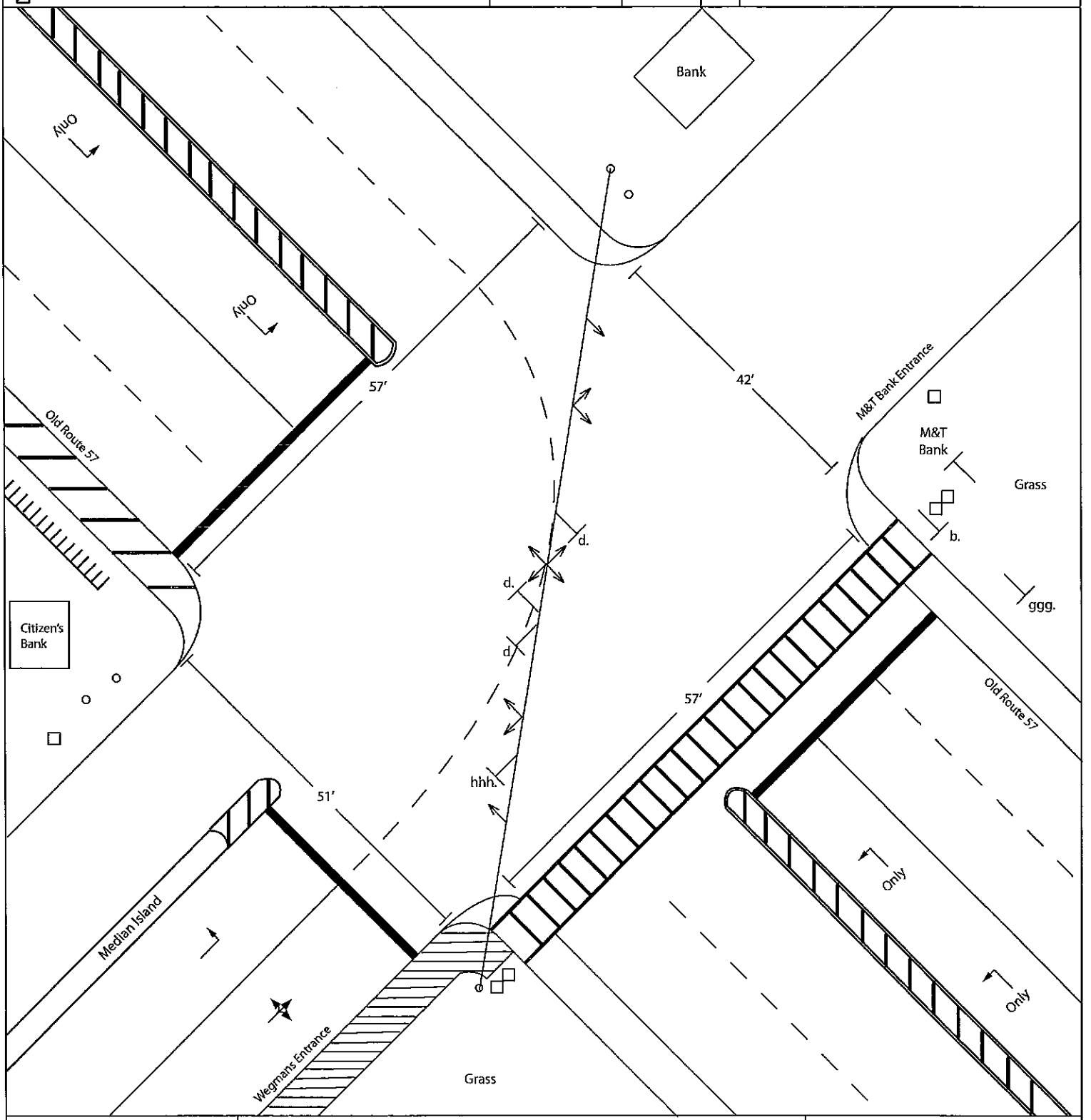
Location: Old Route 57 at Wegmans Plaza

Legend: Signal Head; Sidewalk; Sign; Signal with Span Wire; ## (Feet); Utility Pole; Light Pole; Guardrail; Pedestrian Signal

Drawn By: JC | Date: May 2010 | Prepared By: SMTC | N

Note:
Only actual pavement markings were drawn. An absence of arrows/striping indicates no pavement markings.

For sign definitions see Intersection Diagram Sign Index.



Task: OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

Diagram is for presentation purposes only.
SMTC does not guarantee the accuracy or completeness of this diagram.

Diagram is not to scale.


Walgreens

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	74	0	6	6	6	0	6	702	13	6	1859	70
Confl. Peds. (#/hr)	15		15	15		15	15		15	15		15
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	8%	8%	8%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)	45%											

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	246	6	13	6	19	25	25	1717	19	6	1145	140
Confl. Peds. (#/hr)	15		15	15		15	15		15	15		15
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)	46%											

Intersection Summary

INTERSECTION NAME: 57 @ WEGMANS INSTALLATION DATE:
INTERSECTION NUMBER: PROGRAM DATE:

INTERVAL	PHASE (ON/OFF)							
	1	2	3	4	5	6	7	8
MEMORY								
EXT RECALL								
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	10	6	6	5	10		
PASSAGE	2	4	4	2.3	2	4		
YELLOW	4	4	4	4	4	4		
RED	2	2	2	2	2	2		
MAX I	15	26	25	20	15	26		
MAX II	15	36	25	20	15	36		
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

PHASES USED								
	1	2	3	4	5	6	7	8
ON/OFF								

PED Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00			FRE-ON	
2	00:00				
3	00:00				
4	06:00			FRE-OFF	
4	06:00		4/1/1		80 S
4	06:40		5/1/1		90 S
4	09:00		4/1/1		80 S
4	14:30		6/1/1		90 S
4	18:00		4/1/1		80 S
4	20:30			FRE-ON	
5	00:00			FRE-ON	
5	09:00			FRE-OFF	
5	09:00		4/1/1		
5	20:00			FRE-ON	

		COS -
PL 1 2 3 4	FRE-OP ON 00:00 - 0600	
PL 4	0600	4/1/1
	0640	5/1/1
	0900	4/1/1
	230	6/1/1
	1800	4/1/1
	2030	FRE-ON
PL 5	0900	FRE-OFF

INTERSECTION NAME: 57 @ WEGMANS
INTERSECTION NUMBER:

INSTALLATION DATE:
PROGRAM DATE:

COORDINATION
OPTIMIZATION

INTERVAL	PHASE (ON/OFF)							
	1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL		X				X		
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	10	7	7	5	10		
PASSAGE	1.6	3.4	2.3	1.7	1.6	3.4		
YELLOW	4	4	4	4	4	4		
RED	2.5	2.5	2.5	2.5	2.5	2.5		
MAX I (AM)	5.5	55.5	7.5	26.5	6.5	54.5		
MAX II (PM)	5.5	45.5	7.5	25.5	5.5	45.5		
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

PHASES USED								
	1	2	3	4	5	6	7	8
ON/OFF	X	X	X	X	X	X		

Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLAP					X			
PED Overlaps				X				
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00				
2	00:00				
3	00:00				
4	06:00				
4	06:00				
4	06:40				
4	09:00				
4	14:30				
4	18:00				
4	20:30				
5	00:00				
5	09:00				
5	09:00				
5	20:00				

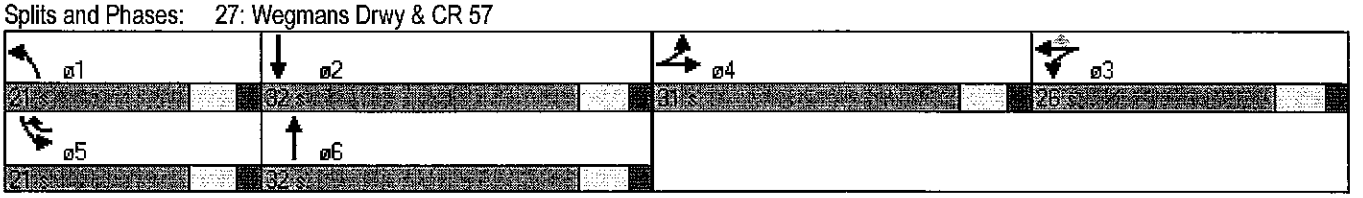
			COS -
PL 1 2 3 4	}		
PL 4			
PL 5			

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	74	0	6	6	702	6	1859
Turn Type	Split			Prot		Prot	
Protected Phases	4	4	3	1	6	5	2
Permitted Phases							
Detector Phase	4	4	3	1	6	5	2
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	5.0	10.0	5.0	10.0
Minimum Split (s)	31.0	31.0	12.0	11.0	16.0	11.0	16.0
Total Split (s)	31.0	31.0	26.0	21.0	32.0	21.0	32.0
Total Split (%)	28.2%	28.2%	23.6%	19.1%	29.1%	19.1%	29.1%
Maximum Green (s)	25.0	25.0	20.0	15.0	26.0	15.0	26.0
Yellow Time (s)	4.0	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.3	2.3	4.0	2.0	4.0	2.0	4.0
Minimum Gap (s)	2.3	2.3	4.0	2.0	4.0	2.0	4.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	C-Max	None	C-Max
Walk Time (s)	5.0	5.0					
Flash Dont Walk (s)	20.0	20.0					
Pedestrian Calls (#/hr)	15	15					

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 1 (1%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 27: Wegmans Drwy & CR 57

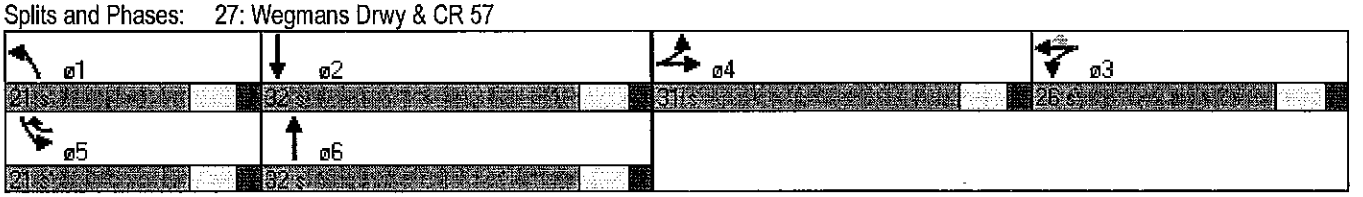


Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	246	6	19	25	25	1717	6	1145
Turn Type	Split			pm+ov	Prot		Prot	
Protected Phases	4	4	3	5	1	6	5	2
Permitted Phases				3				
Detector Phase	4	4	3	5	1	6	5	2
Switch Phase								
Minimum Initial (s)	6.0	6.0	6.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	31.0	31.0	12.0	11.0	11.0	16.0	11.0	16.0
Total Split (s)	31.0	31.0	26.0	21.0	21.0	32.0	21.0	32.0
Total Split (%)	28.2%	28.2%	23.6%	19.1%	19.1%	29.1%	19.1%	29.1%
Maximum Green (s)	25.0	25.0	20.0	15.0	15.0	26.0	15.0	26.0
Yellow Time (s)	4.0	4.0	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	2.3	2.3	4.0	2.0	2.0	4.0	2.0	4.0
Minimum Gap (s)	2.3	2.3	4.0	2.0	2.0	4.0	2.0	4.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Walk Time (s)	5.0	5.0						
Flash Dont Walk (s)	20.0	20.0						
Pedestrian Calls (#/hr)	15	15						

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 88 (80%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 27: Wegmans Drwy & CR 57

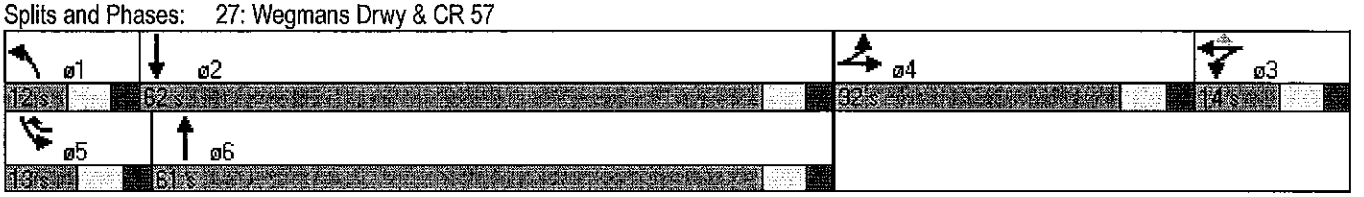


Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	74	0	6	6	702	6	1859
Turn Type	Split			Prot		Prot	
Protected Phases	4	4	3	1	6	5	2
Permitted Phases							
Detector Phase	4	4	3	1	6	5	2
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	5.0	10.0	5.0	10.0
Minimum Split (s)	31.5	31.5	13.5	11.5	16.5	11.5	16.5
Total Split (s)	32.0	32.0	14.0	12.0	61.0	13.0	62.0
Total Split (%)	26.7%	26.7%	11.7%	10.0%	50.8%	10.8%	51.7%
Maximum Green (s)	25.5	25.5	7.5	5.5	54.5	6.5	55.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	1.7	1.7	2.3	1.6	3.4	1.6	3.4
Minimum Gap (s)	1.7	1.7	2.3	1.6	3.4	1.6	3.4
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	C-Min	None	C-Min
Walk Time (s)	5.0	5.0					
Flash Dont Walk (s)	20.0	20.0					
Pedestrian Calls (#/hr)	15	15					

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 27: Wegmans Drwy & CR 57

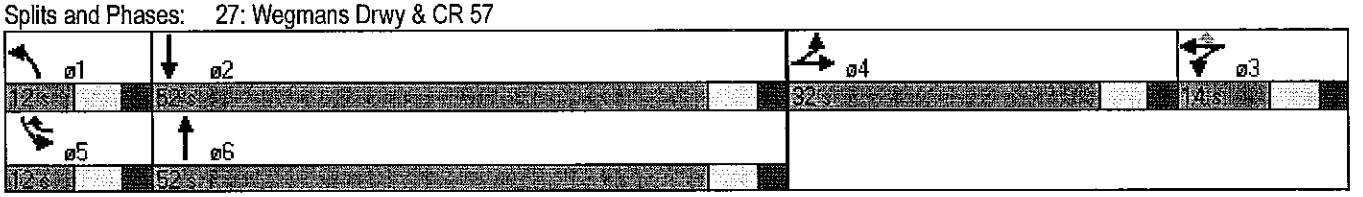


Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	246	6	19	25	25	1717	6	1145
Turn Type	Split			pm+ov	Prot		Prot	
Protected Phases	4	4	3	5	1	6	5	2
Permitted Phases				3				
Detector Phase	4	4	3	5	1	6	5	2
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	31.5	31.5	13.5	11.5	11.5	16.5	11.5	16.5
Total Split (s)	32.0	32.0	14.0	12.0	12.0	52.0	12.0	52.0
Total Split (%)	29.1%	29.1%	12.7%	10.9%	10.9%	47.3%	10.9%	47.3%
Maximum Green (s)	25.5	25.5	7.5	5.5	5.5	45.5	5.5	45.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	1.7	1.7	2.3	1.6	1.6	3.4	1.6	3.4
Minimum Gap (s)	1.7	1.7	2.3	1.6	1.6	3.4	1.6	3.4
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Min	None	C-Min
Walk Time (s)	5.0	5.0						
Flash Dont Walk (s)	20.0	20.0						
Pedestrian Calls (#/hr)	15	15						

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 38 (35%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

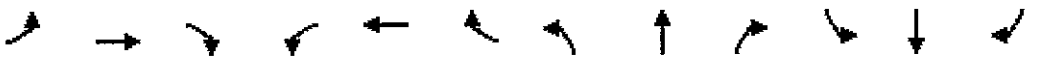
Splits and Phases: 27: Wegmans Drwy & CR 57



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	0	6	6	6	0	6	702	13	6	1859	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	11	11	12	11	11	12	11	11
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98			1.00		1.00	1.00		1.00	0.99	
Flt Protected	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1682			1792		1671	3221		1770	3399	
Flt Permitted	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1682			1792		1671	3221		1770	3399	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	82	0	7	7	7	0	7	780	14	7	2066	78
RTOR Reduction (vph)	0	6	0	0	0	0	0	1	0	0	1	0
Lane Group Flow (vph)	45	38	0	0	14	0	7	793	0	7	2143	0
Confl. Peds. (#/hr)	15		15	15		15	15		15	15		15
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	8%	8%	8%	2%	2%	2%
Turn Type	Split			Split		pm+ov	Prot			Prot		
Protected Phases	4	4		3	3	5	1	6		5	2	
Permitted Phases						3						
Actuated Green, G (s)	12.8	12.8			3.4		1.2	68.6		1.2	68.6	
Effective Green, g (s)	14.8	14.8			5.4		3.2	70.6		3.2	70.6	
Actuated g/C Ratio	0.13	0.13			0.05		0.03	0.64		0.03	0.64	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.3	2.3			4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	231	226			88		49	2067		51	2182	
v/s Ratio Prot	c0.03	0.02			c0.01		c0.00	0.25		0.00	c0.63	
v/s Ratio Perm												
v/c Ratio	0.19	0.17			0.16		0.14	0.38		0.14	0.98	
Uniform Delay, d1	42.3	42.1			50.1		52.1	9.4		52.1	19.1	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.2			1.2		0.5	0.5		0.4	15.5	
Delay (s)	42.5	42.4			51.3		52.6	9.9		52.5	34.6	
Level of Service	D	D			D		D	A		D	C	
Approach Delay (s)		42.5			51.3			10.3			34.6	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	246	6	13	6	19	25	25	1717	19	6	1145	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	11	11	12	11	11	12	11	11
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.95	0.95			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99			1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1701			1814	1516	1787	3448		1770	3353	
Flt Permitted	0.95	0.96			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1701			1814	1516	1787	3448		1770	3353	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	273	7	14	7	21	28	28	1908	21	7	1272	156
RTOR Reduction (vph)	0	4	0	0	0	25	0	0	0	0	5	0
Lane Group Flow (vph)	147	143	0	0	28	3	28	1929	0	7	1423	0
Confl. Peds. (#/hr)	15		15	15		15	15		15	15		15
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Split			Split		pm+ov	Prot			Prot		
Protected Phases	4	4		3	3	5	1	6		5	2	
Permitted Phases						3						
Actuated Green, G (s)	16.9	16.9			5.5	8.8	4.3	60.3		3.3	59.3	
Effective Green, g (s)	18.9	18.9			7.5	12.8	6.3	62.3		5.3	61.3	
Actuated g/C Ratio	0.17	0.17			0.07	0.12	0.06	0.57		0.05	0.56	
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.3	2.3			4.0	2.0	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	295	292			124	232	102	1953		85	1869	
v/s Ratio Prot	c0.09	0.08			c0.02	0.00	c0.02	c0.56		0.00	0.42	
v/s Ratio Perm						0.00						
v/c Ratio	0.50	0.49			0.23	0.01	0.27	0.99		0.08	0.76	
Uniform Delay, d1	41.3	41.2			48.5	43.0	49.7	23.5		50.0	18.7	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.8			1.3	0.0	0.5	17.6		0.2	3.0	
Delay (s)	42.0	41.9			49.8	43.0	50.2	41.1		50.2	21.7	
Level of Service	D	D			D	D	D	D		D	C	
Approach Delay (s)		42.0			46.4			41.2			21.9	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	33.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	0	6	6	6	0	6	702	13	6	1859	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	11	11	12	11	11	12	11	11
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	0.95	0.95			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98			1.00		1.00	1.00		1.00	0.99	
Flt Protected	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1682			1792		1671	3221		1770	3399	
Flt Permitted	0.95	0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1682			1792		1671	3221		1770	3399	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	82	0	7	7	7	0	7	780	14	7	2066	78
RTOR Reduction (vph)	0	6	0	0	0	0	0	1	0	0	1	0
Lane Group Flow (vph)	45	38	0	0	14	0	7	793	0	7	2143	0
Confl. Peds. (#/hr)	15		15	15		15	15		15	15		15
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	8%	8%	8%	2%	2%	2%
Turn Type	Split			Split		pm+ov	Prot			Prot		
Protected Phases	4	4		3	3	5	1	6		5	2	
Permitted Phases						3						
Actuated Green, G (s)	12.9	12.9			2.9		1.2	77.0		1.2	77.0	
Effective Green, g (s)	14.9	14.9			4.9		3.2	79.0		3.2	79.0	
Actuated g/C Ratio	0.12	0.12			0.04		0.03	0.66		0.03	0.66	
Clearance Time (s)	6.5	6.5			6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	1.7	1.7			2.3		1.6	3.4		1.6	3.4	
Lane Grp Cap (vph)	213	209			73		45	2120		47	2238	
v/s Ratio Prot	c0.03	0.02			c0.01		c0.00	0.25		0.00	c0.63	
v/s Ratio Perm												
v/c Ratio	0.21	0.18			0.19		0.16	0.37		0.15	0.96	
Uniform Delay, d1	47.3	47.1			55.6		57.1	9.3		57.1	18.9	
Progression Factor	1.00	1.00			1.00		0.82	0.91		1.32	0.38	
Incremental Delay, d2	0.2	0.2			0.7		0.5	0.4		0.4	8.4	
Delay (s)	47.4	47.2			56.4		47.5	8.8		75.6	15.5	
Level of Service	D	D			E		D	A		E	B	
Approach Delay (s)		47.3			56.4			9.2			15.7	
Approach LOS		D			E			A			B	

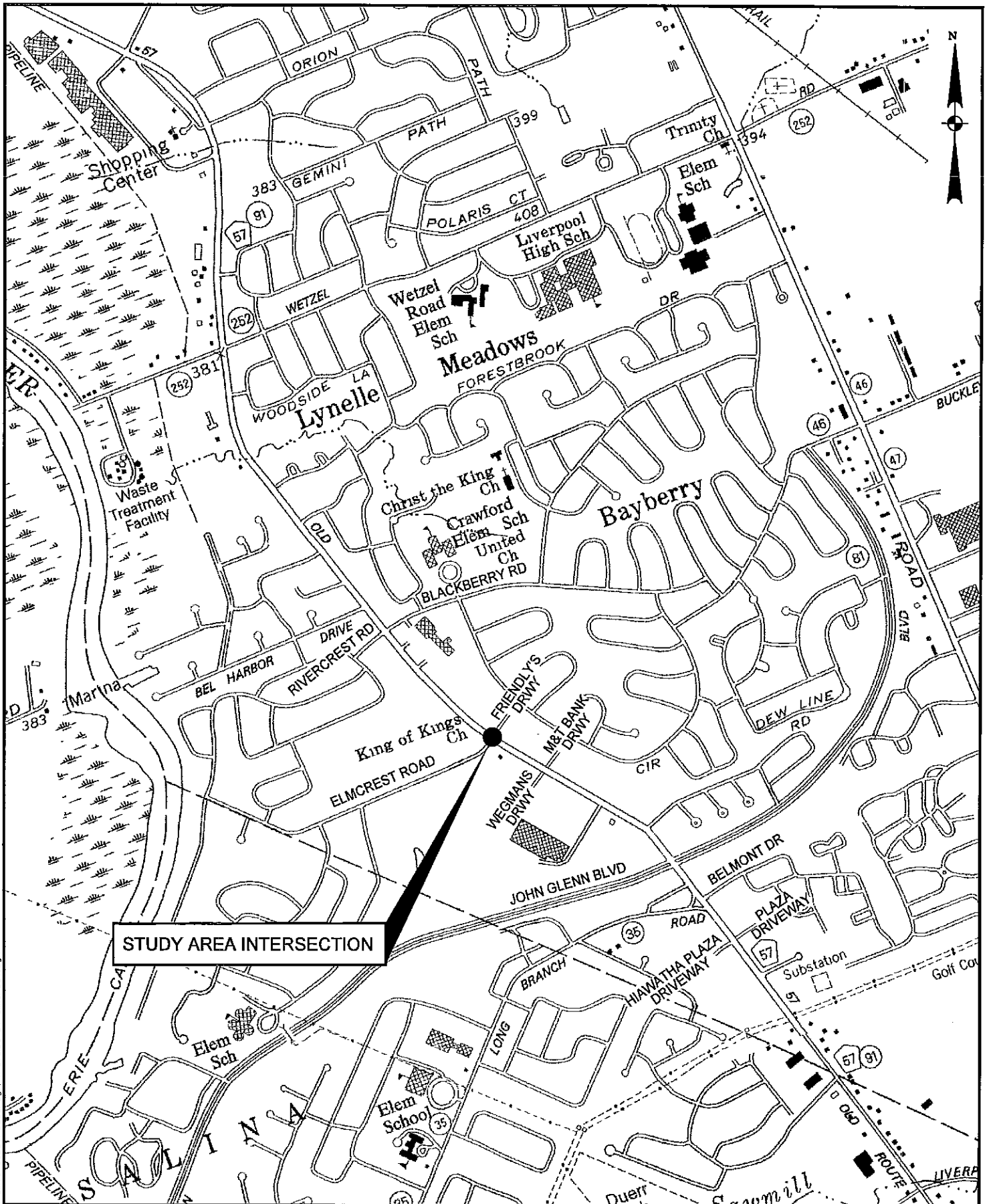
Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	246	6	13	6	19	25	25	1717	19	6	1145	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	11	11	12	11	11	12	11	11
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	0.95	0.95			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99			1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	1701			1814	1514	1787	3448		1770	3353	
Flt Permitted	0.95	0.96			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1715	1701			1814	1514	1787	3448		1770	3353	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	273	7	14	7	21	28	28	1908	21	7	1272	156
RTOR Reduction (vph)	0	4	0	0	0	25	0	0	0	0	7	0
Lane Group Flow (vph)	147	143	0	0	28	3	28	1929	0	7	1421	0
Confl. Peds. (#/hr)	15		15	15		15	15		15	15		15
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Split			Split		pm+ov	Prot			Prot		
Protected Phases	4	4		3	3	5	1	6		5	2	
Permitted Phases						3						
Actuated Green, G (s)	16.5	16.5			4.5	7.6	3.5	59.9		3.1	59.5	
Effective Green, g (s)	18.5	18.5			6.5	11.6	5.5	61.9		5.1	61.5	
Actuated g/C Ratio	0.17	0.17			0.06	0.11	0.05	0.56		0.05	0.56	
Clearance Time (s)	6.5	6.5			6.5	6.5	6.5	6.5		6.5	6.5	
Vehicle Extension (s)	1.7	1.7			2.3	1.6	1.6	3.4		1.6	3.4	
Lane Grp Cap (vph)	288	286			107	222	89	1940		82	1875	
v/s Ratio Prot	c0.09	0.08			c0.02	0.00	c0.02	c0.56		0.00	0.42	
v/s Ratio Perm						0.00						
v/c Ratio	0.51	0.50			0.26	0.01	0.31	0.99		0.09	0.76	
Uniform Delay, d1	41.6	41.5			49.5	44.1	50.4	23.9		50.2	18.6	
Progression Factor	1.00	1.00			1.00	1.00	1.12	0.51		1.24	0.62	
Incremental Delay, d2	0.6	0.5			0.8	0.0	0.1	4.9		0.1	2.4	
Delay (s)	42.3	42.0			50.2	44.1	56.7	17.1		62.3	13.9	
Level of Service	D	D			D	D	E	B		E	B	
Approach Delay (s)		42.2			47.2			17.7			14.1	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



LOCATION MAP
COUNTY ROAD 57/ELMCREST ROAD/
FRIENDLY'S DRIVEWAY

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 9/10	FIGURE: B.7

INTERSECTION DIAGRAM

Location: Old Route 57 at Elmcrest Road

Legend: Signal Head; Signal with Span Wire; ## (Feet); Utility Pole; Sign; Light Pole; Pedestrian Signal

Drawn By: JC

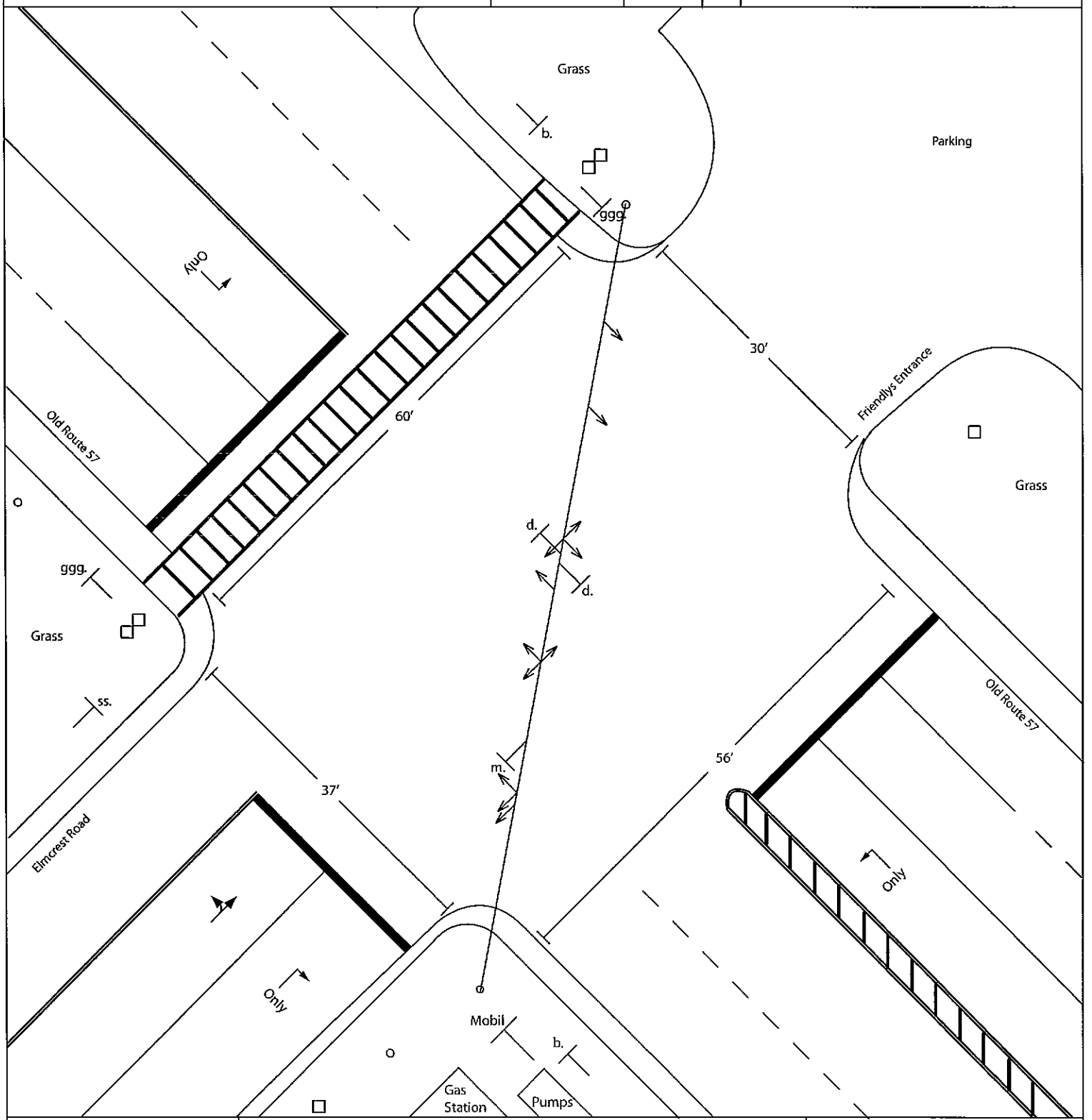
Date: May 2010

Prepared By: SMTC

N

Note:
Only actual pavement markings were drawn. An absence of arrows/striping indicates no pavement markings.

For sign definitions see Intersection Diagam Sign Index.



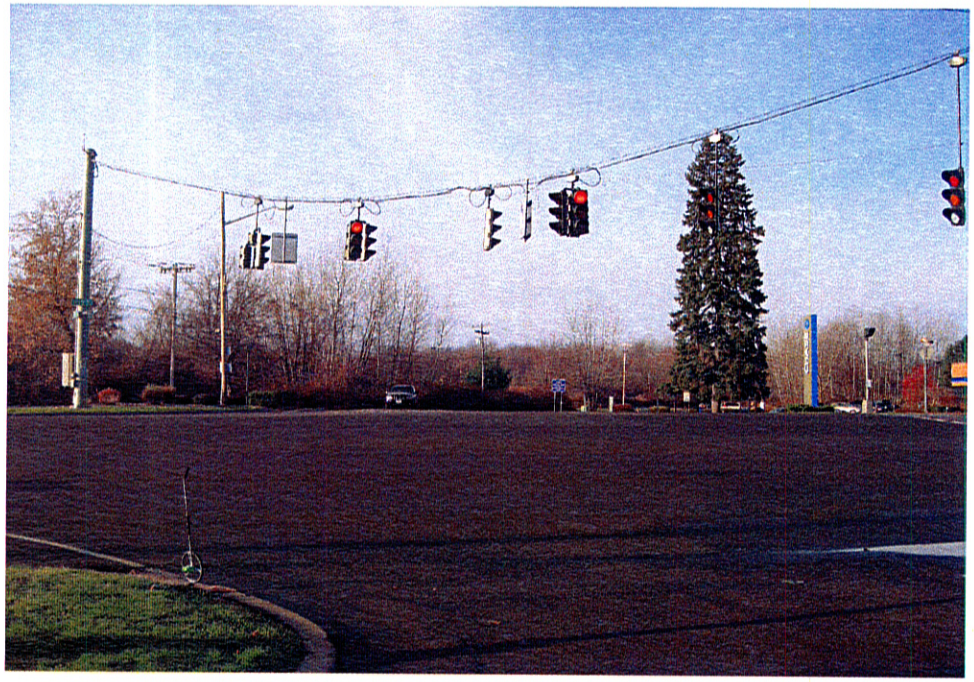
Task: OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

Diagram is for presentation purposes only.
SMTC does not guarantee the accuracy or completeness of this diagram.

Diagram is not to scale.


ONLY



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	44	6	200	6	0	6	81	682	13	19	1728	38
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	10%	10%	10%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	76	6	81	6	0	6	164	1819	6	13	1203	70
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

INTERSECTION NAME: 57 @ Elmcrest
INTERSECTION NUMBER: 66

INSTALLATION DATE:
PROGRAM DATE:

INTERVAL	PHASE (ON/OFF) 1	2	3	4	5	6	7	8
MEMORY								
EXT RECALL								
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS 1	2	3	4	5	6	7	8
MIN GREEN	8	10		8	8	10		8
PASSAGE	2.8	2.8		2.8	2.8	2.8		2.8
YELLOW	3.5	3.5		3.5	3.5	3.5		3.5
RED	1.5	1.5		1.5	1.5	1.5		1.5
MAX I	18	35		24	18	35		24
MAX II	15	25		20	15	25		20
WALK				7				
PED CLEAR				10				
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

	PHASES USED 1	2	3	4	5	6	7	8
ON/OFF								

INHIBIT O/L	PED Overlaps 1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00			FRE-ON	
2	00:00				
3	00:00				
4	06:00			FRE-OFF	
4	06:00		4/1/1		80 S
4	06:40		5/1/1		90 S
4	09:00		4/1/1		80 S
4	14:30		6/1/1		90 S
4	18:00		4/1/1		80 S
4	20:30			FRE-ON	
5	00:00			FRE-ON	
5	09:00			FRE-OFF	
5	09:00		4/1/1		
5	20:00			FRE-ON	

		COS -
PL 1 2 3 4	FRE-OP ON 00:00 - 0600	
PL 4	0600	4/1/1
	0640	5/1/1
	0900	4/1/1
	230	6/1/1
	1800	4/1/1
	2030	FRE-ON
PL 5	0900	FRE-OFF

INTERSECTION NAME: 57 @ Elmcrest
INTERSECTION NUMBER: 66

INSTALLATION DATE: COORDINATION
PROGRAM DATE: OPTIMIZATION

INTERVAL	PHASE (ON/OFF) 1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL		X				X		
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS 1	2	3	4	5	6	7	8
MIN GREEN	5	10		7	5	10		7
PASSAGE	1.6	3.4		2.3	1.6	3.4		1
YELLOW	4	4		4	4	4		4
RED	2.5	2.5		2.5	2.5	2.5		2.5
MAX I (AM)	9.5	65.5		25.5	5.5	69.5		25.5
MAX II (PM)	23.5	41.5		25.5	5.55	59.5		25.5
WALK				5				
PED CLEAR				20				
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

PHASES USED	1	2	3	4	5	6	7	8
ON/OFF	X	X		X	X	X		X

Overlaps	1	2	3	4	5	6	7	8
INHIBIT O/L								
OLAP	X							
PED Overlaps				X				
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00				
2	00:00				
3	00:00				
4	06:00				
4	06:00				
4	06:40				
4	09:00				
4	14:30				
4	18:00				
4	20:30				
5	00:00				
5	09:00				
5	09:00				
5	20:00				

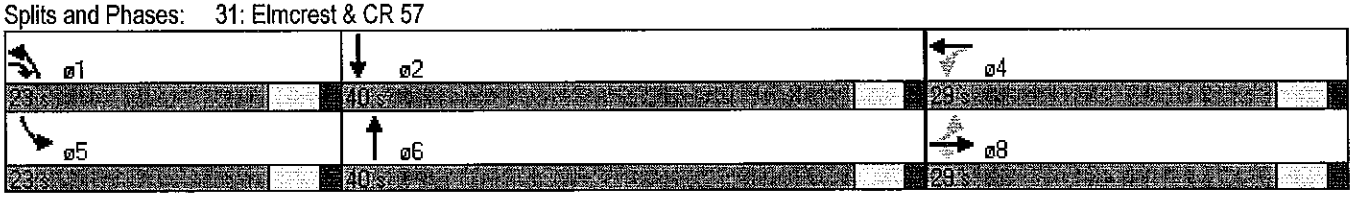
		COS -	
PL 1 2 3 4	}		
PL 4			
PL 5			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	44	6	200	6	0	81	682	19	1728
Turn Type	Perm		pm+ov	Perm		Prot		Prot	
Protected Phases		8	1		4	1	6	5	2
Permitted Phases	8		8	4					
Detector Phase	8	8	1	4	4	1		5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	10.0	8.0	10.0
Minimum Split (s)	13.0	13.0	13.0	22.0	22.0	13.0	15.0	13.0	15.0
Total Split (s)	29.0	29.0	23.0	29.0	29.0	23.0	40.0	23.0	40.0
Total Split (%)	31.5%	31.5%	25.0%	31.5%	31.5%	25.0%	43.5%	25.0%	43.5%
Maximum Green (s)	24.0	24.0	18.0	24.0	24.0	18.0	35.0	18.0	35.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	-2.0	-2.0	-1.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag			Lead			Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Minimum Gap (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Walk Time (s)				7.0	7.0				
Flash Dont Walk (s)				10.0	10.0				
Pedestrian Calls (#/hr)				15	15				

Intersection Summary

Cycle Length: 92
Actuated Cycle Length: 92
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 31: Elmcrest & CR 57

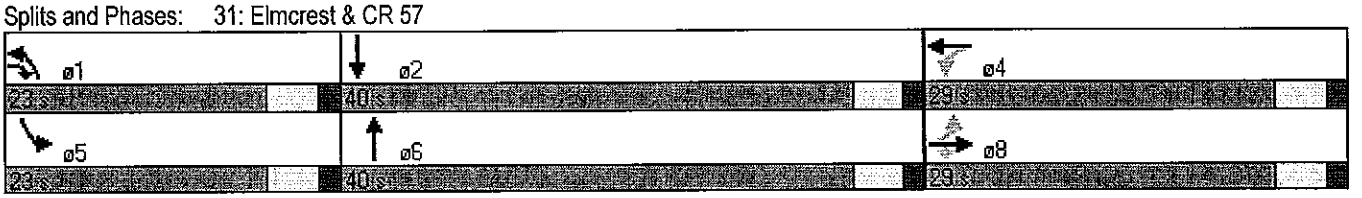


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	76	6	81	6	0	164	1819	13	1203
Turn Type	Perm		pm+ov	Perm		Prot		Prot	
Protected Phases		8	1		4	1	6	5	2
Permitted Phases	8		8	4					
Detector Phase	8	8	1	4	4	1		5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	10.0	8.0	10.0
Minimum Split (s)	13.0	13.0	13.0	22.0	22.0	13.0	15.0	13.0	15.0
Total Split (s)	29.0	29.0	23.0	29.0	29.0	23.0	40.0	23.0	40.0
Total Split (%)	31.5%	31.5%	25.0%	31.5%	31.5%	25.0%	43.5%	25.0%	43.5%
Maximum Green (s)	24.0	24.0	18.0	24.0	24.0	18.0	35.0	18.0	35.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	-2.0	-2.0	-1.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag			Lead			Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Minimum Gap (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Walk Time (s)				7.0	7.0				
Flash Dont Walk (s)				10.0	10.0				
Pedestrian Calls (#/hr)				15	15				

Intersection Summary

Cycle Length: 92
Actuated Cycle Length: 92
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 31: Elmcrest & CR 57

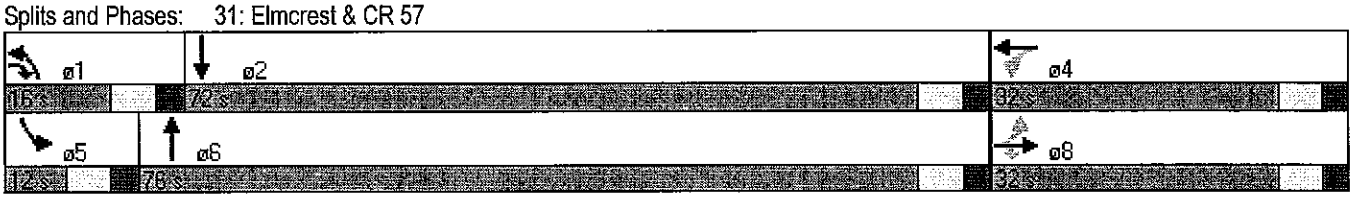


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	44	6	200	6	0	81	682	19	1728
Turn Type	Perm		pm+ov	Perm		Prot		Prot	
Protected Phases		8	1		4	1	6	5	2
Permitted Phases	8		8	4					
Detector Phase	8	8	1	4	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	7.0	7.0	5.0	7.0	7.0	5.0	10.0	5.0	10.0
Minimum Split (s)	13.5	13.5	11.5	31.5	31.5	11.5	16.5	11.5	16.5
Total Split (s)	32.0	32.0	16.0	32.0	32.0	16.0	76.0	12.0	72.0
Total Split (%)	26.7%	26.7%	13.3%	26.7%	26.7%	13.3%	63.3%	10.0%	60.0%
Maximum Green (s)	25.5	25.5	9.5	25.5	25.5	9.5	69.5	5.5	65.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-1.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	5.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	1.0	1.0	1.6	2.3	2.3	1.6	3.4	1.6	3.4
Minimum Gap (s)	1.0	1.0	1.6	2.3	2.3	1.6	3.4	1.6	3.4
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Walk Time (s)				5.0	5.0				
Flash Dont Walk (s)				20.0	20.0				
Pedestrian Calls (#/hr)				15	15				

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 99 (83%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 31: Elmcrest & CR 57

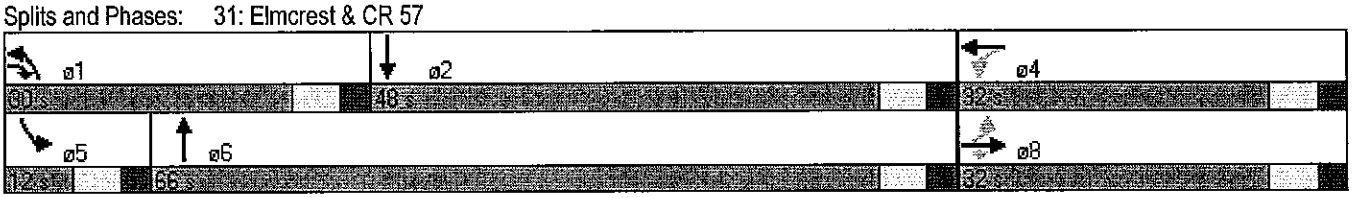


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	76	6	81	6	0	164	1819	13	1203
Turn Type	Perm		pm+ov	Perm		Prot		Prot	
Protected Phases		8	1		4	1	6	5	2
Permitted Phases	8		8	4					
Detector Phase	8	8	1	4	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	7.0	7.0	5.0	7.0	7.0	5.0	10.0	5.0	10.0
Minimum Split (s)	13.5	13.5	11.5	31.5	31.5	11.5	16.5	11.5	16.5
Total Split (s)	32.0	32.0	30.0	32.0	32.0	30.0	66.0	12.0	48.0
Total Split (%)	29.1%	29.1%	27.3%	29.1%	29.1%	27.3%	60.0%	10.9%	43.6%
Maximum Green (s)	25.5	25.5	23.5	25.5	25.5	23.5	59.5	5.5	41.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-1.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	5.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	1.0	1.0	1.6	2.3	2.3	1.6	3.4	1.6	3.4
Minimum Gap (s)	1.0	1.0	1.6	2.3	2.3	1.6	3.4	1.6	3.4
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Walk Time (s)				5.0	5.0				
Flash Dont Walk (s)				20.0	20.0				
Pedestrian Calls (#/hr)				15	15				

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 45 (41%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 31: Elmcrest & CR 57



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	6	200	6	0	6	81	682	13	19	1728	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	2100	1900
Lane Width	12	12	13	16	16	16	11	12	12	13	12	12
Total Lost time (s)		3.0	4.0		3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.93		1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1686	1545		1814		1586	3273		1829	3899	
Flt Permitted		0.75	1.00		0.87		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1318	1545		1627		1586	3273		1829	3899	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	49	7	222	7	0	7	90	758	14	21	1920	42
RTOR Reduction (vph)	0	0	1	0	6	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	56	221	0	8	0	90	771	0	21	1961	0
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	10%	10%	10%	2%	2%	2%
Turn Type	Perm		pm+ov	Perm			Prot			Prot		
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4								
Actuated Green, G (s)		8.8	20.1		8.8		11.3	65.0		3.2	56.9	
Effective Green, g (s)		10.8	22.1		10.8		13.3	67.0		5.2	58.9	
Actuated g/C Ratio		0.12	0.24		0.12		0.14	0.73		0.06	0.64	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.8	2.8		2.8		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)		155	438		191		229	2384		103	2496	
v/s Ratio Prot			c0.07				0.06	0.24		0.01	c0.50	
v/s Ratio Perm		0.04	0.08		0.00							
v/c Ratio		0.36	0.51		0.04		0.39	0.32		0.20	0.79	
Uniform Delay, d1		37.4	30.2		36.0		35.7	4.4		41.4	12.0	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.3	0.8		0.1		1.0	0.4		0.9	2.6	
Delay (s)		38.7	31.0		36.1		36.7	4.8		42.3	14.6	
Level of Service		D	C		D		D	A		D	B	
Approach Delay (s)		32.6			36.1			8.1			14.8	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	92.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	6	81	6	0	6	164	1819	6	13	1203	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	2100	1900
Lane Width	12	12	13	16	16	16	11	12	12	13	12	12
Total Lost time (s)		3.0	4.0		3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1816	1669		1959		1728	3572		1829	3879	
Flt Permitted		0.73	1.00		0.87		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1391	1669		1750		1728	3572		1829	3879	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	7	90	7	0	7	182	2021	7	14	1337	78
RTOR Reduction (vph)	0	0	8	0	6	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	91	82	0	8	0	182	2028	0	14	1412	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm		pm+ov	Perm			Prot			Prot		
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4								
Actuated Green, G (s)		10.0	24.6		10.0		14.6	65.4		1.6	52.4	
Effective Green, g (s)		12.0	26.6		12.0		16.6	67.4		3.6	54.4	
Actuated g/C Ratio		0.13	0.29		0.13		0.18	0.73		0.04	0.59	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.8	2.8		2.8		2.8	2.8		2.8	2.8	
Lane Grp Cap (vph)		181	555		228		312	2617		72	2294	
v/s Ratio Prot			0.03				c0.11	c0.57		0.01	0.36	
v/s Ratio Perm		c0.07	0.02		0.00							
v/c Ratio		0.50	0.15		0.03		0.58	0.77		0.19	0.62	
Uniform Delay, d1		37.2	24.3		34.9		34.5	7.6		42.8	12.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.0	0.1		0.1		2.6	2.3		1.2	1.2	
Delay (s)		39.2	24.4		35.0		37.1	9.9		44.0	13.3	
Level of Service		D	C		C		D	A		D	B	
Approach Delay (s)		31.8			35.0			12.2			13.6	
Approach LOS		C			C			B			B	

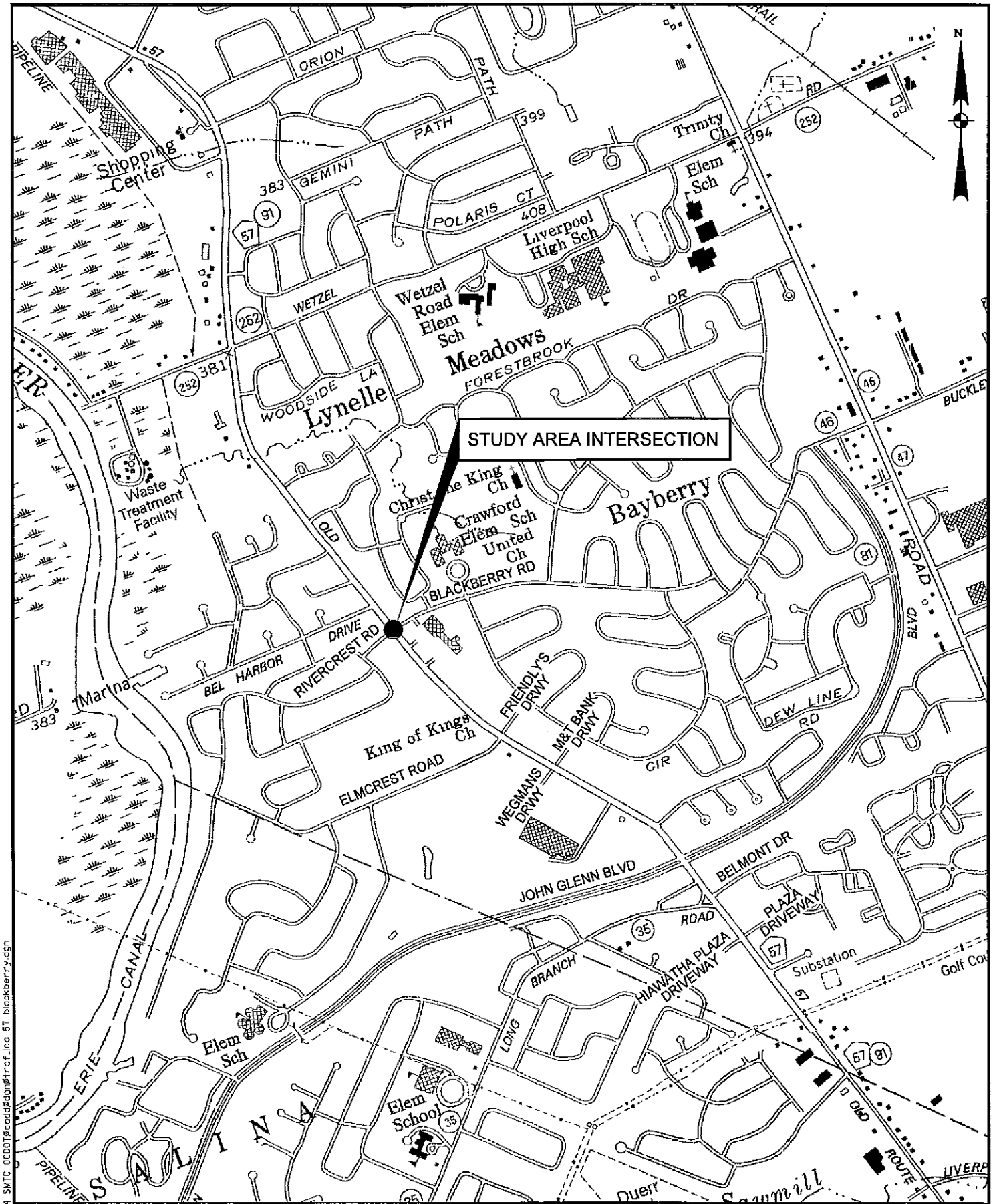
Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	92.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	6	200	6	0	6	81	682	13	19	1728	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	2100	1900
Lane Width	12	12	13	16	16	16	11	12	12	13	12	12
Total Lost time (s)		4.5	5.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.93		1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1686	1545		1814		1586	3273		1829	3899	
Flt Permitted		0.74	1.00		0.87		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1307	1545		1622		1586	3273		1829	3899	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	49	7	222	7	0	7	90	758	14	21	1920	42
RTOR Reduction (vph)	0	0	8	0	6	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	56	214	0	8	0	90	771	0	21	1961	0
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	10%	10%	10%	2%	2%	2%
Turn Type	Perm		pm+ov	Perm			Prot			Prot		
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4								
Actuated Green, G (s)		13.1	23.6		13.1		10.5	85.0		2.4	76.9	
Effective Green, g (s)		15.1	25.6		15.1		12.5	87.0		4.4	78.9	
Actuated g/C Ratio		0.13	0.21		0.13		0.10	0.72		0.04	0.66	
Clearance Time (s)		6.5	6.5		6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		1.0	1.6		2.3		1.6	3.4		1.6	3.4	
Lane Grp Cap (vph)		164	400		204		165	2373		67	2564	
v/s Ratio Prot			c0.05				c0.06	0.24		0.01	c0.50	
v/s Ratio Perm		0.04	0.09		0.00							
v/c Ratio		0.34	0.54		0.04		0.55	0.32		0.31	0.76	
Uniform Delay, d1		47.9	41.9		46.1		51.1	5.9		56.3	14.2	
Progression Factor		1.00	1.00		1.00		1.10	0.98		1.10	0.62	
Incremental Delay, d2		0.5	0.7		0.0		1.9	0.4		0.5	1.1	
Delay (s)		48.4	42.6		46.1		58.0	6.2		62.6	9.9	
Level of Service		D	D		D		E	A		E	A	
Approach Delay (s)		43.8			46.1			11.6			10.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	6	81	6	0	6	164	1819	6	13	1203	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	2100	1900
Lane Width	12	12	13	16	16	16	11	12	12	13	12	12
Total Lost time (s)		4.5	5.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1816	1669		1959		1728	3572		1829	3879	
Flt Permitted		0.73	1.00		0.87		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1391	1669		1739		1728	3572		1829	3879	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	7	90	7	0	7	182	2021	7	14	1337	78
RTOR Reduction (vph)	0	0	7	0	6	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	91	83	0	8	0	182	2028	0	14	1412	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm		pm+ov	Perm			Prot			Prot		
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4								
Actuated Green, G (s)		13.8	29.4		13.8		15.6	74.4		2.3	61.1	
Effective Green, g (s)		15.8	31.4		15.8		17.6	76.4		4.3	63.1	
Actuated g/C Ratio		0.14	0.29		0.14		0.16	0.69		0.04	0.57	
Clearance Time (s)		6.5	6.5		6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		1.0	1.6		2.3		1.6	3.4		1.6	3.4	
Lane Grp Cap (vph)		200	560		250		276	2481		71	2225	
v/s Ratio Prot			0.02				c0.11	c0.57		0.01	0.36	
v/s Ratio Perm		c0.07	0.03		0.00							
v/c Ratio		0.46	0.15		0.03		0.66	0.82		0.20	0.63	
Uniform Delay, d1		43.2	29.3		40.5		43.4	11.9		51.2	15.7	
Progression Factor		1.00	1.00		1.00		1.20	0.74		0.85	0.95	
Incremental Delay, d2		0.6	0.0		0.0		2.3	1.7		0.4	1.2	
Delay (s)		43.8	29.4		40.6		54.5	10.5		43.9	16.2	
Level of Service		D	C		D		D	B		D	B	
Approach Delay (s)		36.6			40.6			14.1			16.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



LOCATION MAP
COUNTY ROAD 57/BLACKBERRY ROAD/
RIVERCREST ROAD

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 9/10	FIGURE: B.8

INTERSECTION DIAGRAM

Location

Old Route 57 at Blackberry Road/Rivercrest Road

Legend

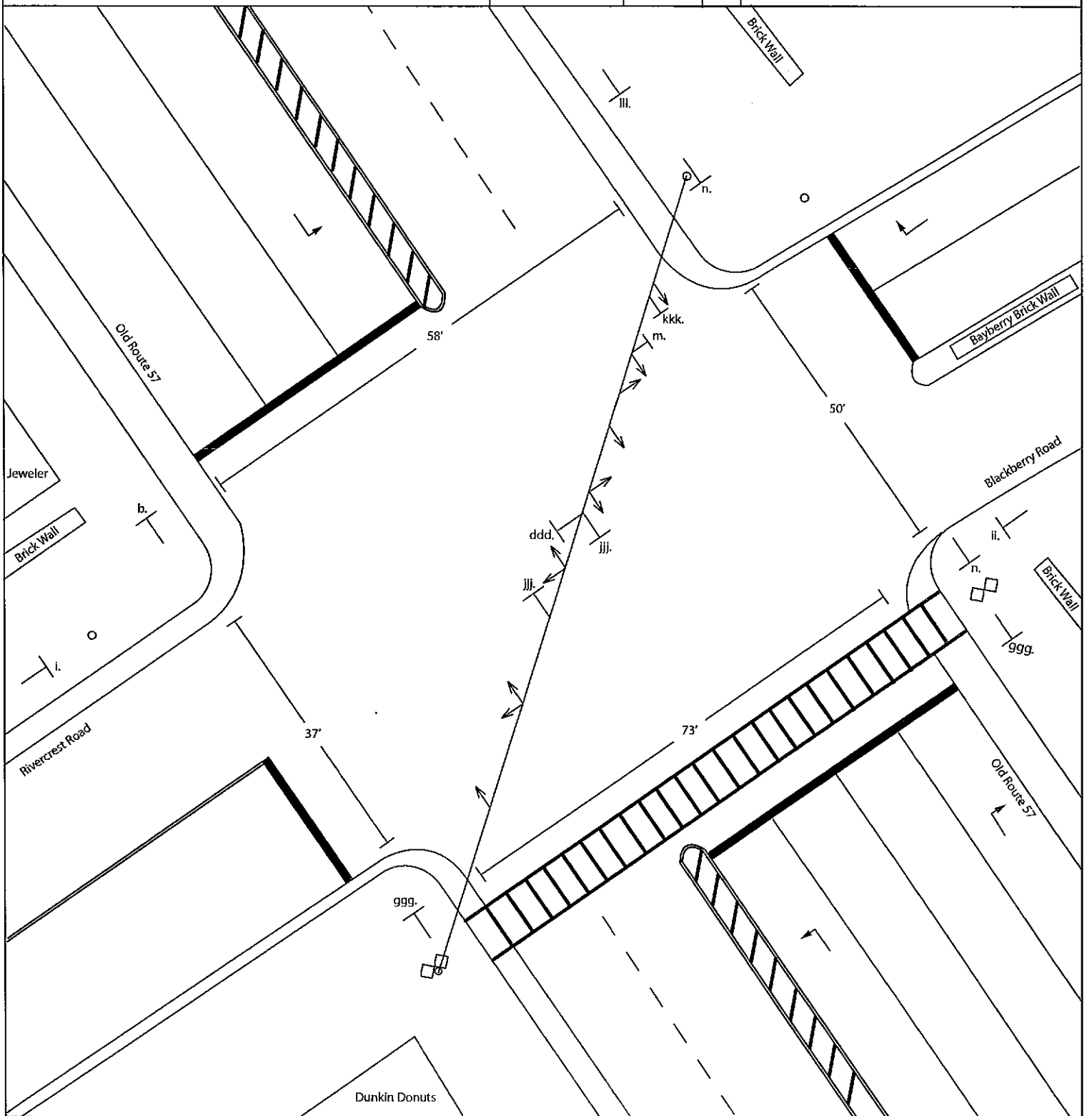
Sign | Signal Head | Signal with Span Wire | ## (Feet) | Utility Pole | Pedestrian Signal

Drawn By	JC	Prepared By	SMTC
Date	May 2010		

N

Note:
Only actual pavement markings were drawn. An absence of arrows/striping indicates no pavement markings.

For sign definitions see Intersection Diagam Sign Index.



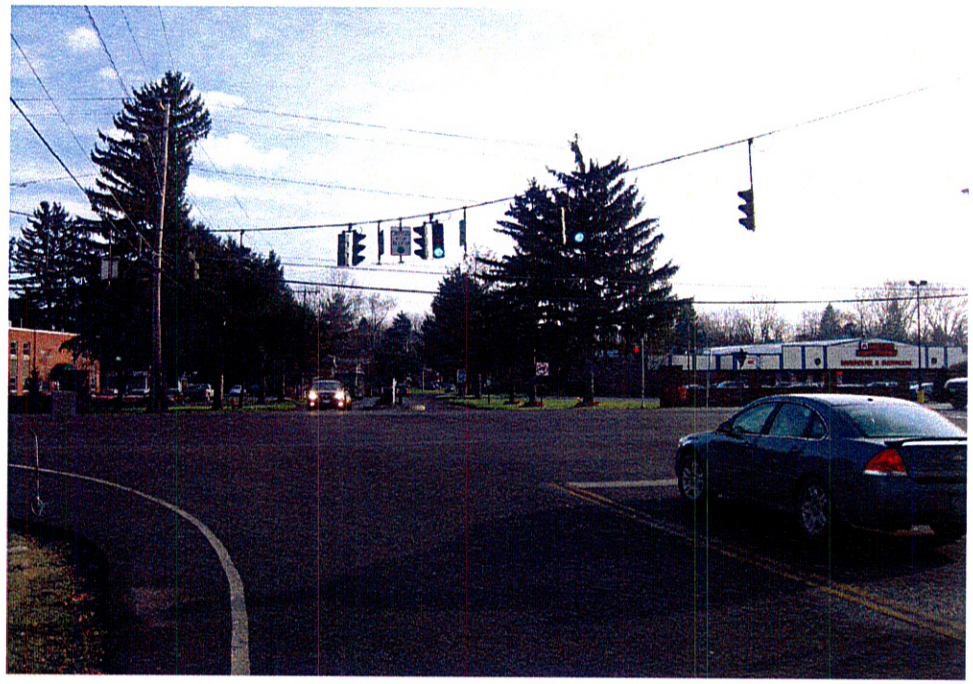
Task

OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

Diagram is for presentation purposes only.
SMTC does not guarantee the accuracy or completeness of this diagram.

Diagram is not to scale.




Ryder


ONLY

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	51	51	75	290	38	38	6	639	67	140	1420	70
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	9%	9%	9%	10%	10%	10%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	63	25	19	195	38	178	38	1585	233	114	1072	25
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

INTERSECTION NAME: 57 @ Bayberry
INTERSECTION NUMBER: 39

INSTALLATION DATE:
PROGRAM DATE:

INTERVAL	PHASE (ON/OFF)							
	1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL								
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	12	4		5	12		
PASSAGE	3.5	3	3.5		3.5	3		
YELLOW	3.5	4	3.5		3.5	4		
RED	2	2	2		2	2		
MAX I	20	25	27		22	25		
MAX II	20	25	27		25	25		
WALK			10					
PED CLEAR			14					
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

	PHASES USED							
	1	2	3	4	5	6	7	8
ON/OFF	X	X	X		X	X		

INHIBIT O/L	PED Overlaps							
	1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00			FRE-ON	
2	00:00				
3	00:00				
4	06:00			FRE-OFF	
4	06:00		4/1/1		80 S
4	06:40		5/1/1		90 S
4	09:00		4/1/1		80 S
4	14:30		6/1/1		90 S
4	18:00		4/1/1		80 S
4	20:30			FRE-ON	
5	00:00			FRE-ON	
5	09:00			FRE-OFF	
5	09:00		4/1/1		
5	20:00			FRE-ON	

		COS -
PL 1, 2, 3, 4	FRE-OP ON 00:00 - 0600	
PL 4	0600	4/1/1
	0640	5/1/1
	0900	4/1/1
	230	6/1/1
	1800	4/1/1
	2030	FRE-ON
PL 5	0900	FRE-OFF

INTERSECTION NAME: 57 @ Bayberry
INTERSECTION NUMBER: 39

INSTALLATION DATE: COORDINATION
PROGRAM DATE: OPTIMIZATION

INTERVAL	PHASE (ON/OFF)							
	1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL		X				X		
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	10		7	5	10		7
PASSAGE	1.6	3.4		1	1.6	3.4		1
YELLOW	4	4		4	4	4		4
RED	2.5	2.5		2.5	2.5	2.5		2.5
MAX I (AM)	5.5	67.5		27.5	17.5	55.5		27.5
MAX II (PM)	5.5	50.5		34.5	8.5	47.5		34.5
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

	COS -
PL 1 2 3 4	
PL 4	
PL 5	

PHASES USED								
	1	2	3	4	5	6	7	8
ON/OFF	X	X		X	X	X		X

Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLAP					X			
PED Overlaps				X				
OVERLAP C								
OVERLAP D								

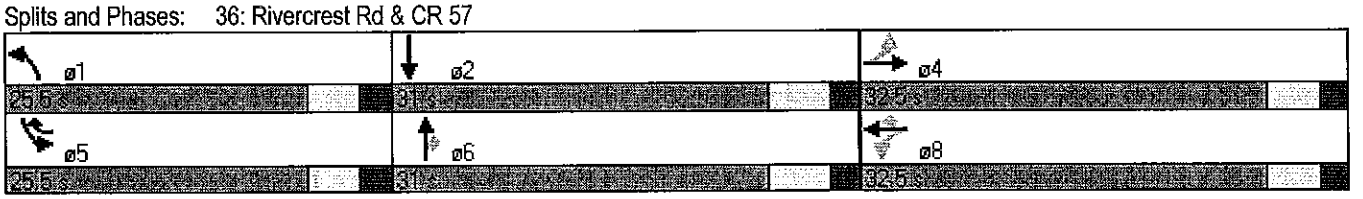
PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00				
2	00:00				
3	00:00				
4	06:00				
4	06:00				
4	06:40				
4	09:00				
4	14:30				
4	18:00				
4	20:30				
5	00:00				
5	09:00				
5	09:00				
5	20:00				

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	51	51	290	38	38	6	639	67	140	1420
Turn Type	Perm		Perm		pm+ov	Prot		Perm	Prot	
Protected Phases		4		8	5	1	6		5	2
Permitted Phases	4		8		8			6		
Detector Phase	4	4	8	8	5	1	6		5	2
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	5.0	5.0	12.0	12.0	5.0	12.0
Minimum Split (s)	29.5	29.5	9.5	9.5	10.5	10.5	18.0	18.0	10.5	18.0
Total Split (s)	32.5	32.5	32.5	32.5	25.5	25.5	31.0	31.0	25.5	31.0
Total Split (%)	36.5%	36.5%	36.5%	36.5%	28.7%	28.7%	34.8%	34.8%	28.7%	34.8%
Maximum Green (s)	27.0	27.0	27.0	27.0	20.0	20.0	25.0	25.0	20.0	25.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	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)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	4.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.5	3.0
Minimum Gap (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.5	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
Walk Time (s)	10.0	10.0								
Flash Dont Walk (s)	14.0	14.0								
Pedestrian Calls (#/hr)	0	0								

Intersection Summary

Cycle Length: 89
Actuated Cycle Length: 89
Offset: 12 (13%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 36: Rivercrest Rd & CR 57

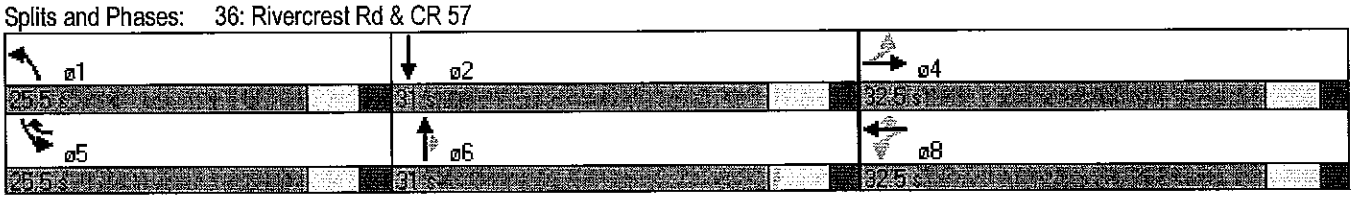


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	63	25	195	38	178	38	1585	233	114	1072
Turn Type	Perm		Perm		pm+ov	Prot		Perm	Prot	
Protected Phases		4		8	5	1	6		5	2
Permitted Phases	4		8		8			6		
Detector Phase	4	4	8	8	5	1	6		5	2
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	5.0	5.0	12.0	12.0	5.0	12.0
Minimum Split (s)	29.5	29.5	9.5	9.5	10.5	10.5	18.0	18.0	10.5	18.0
Total Split (s)	32.5	32.5	32.5	32.5	25.5	25.5	31.0	31.0	25.5	31.0
Total Split (%)	36.5%	36.5%	36.5%	36.5%	28.7%	28.7%	34.8%	34.8%	28.7%	34.8%
Maximum Green (s)	27.0	27.0	27.0	27.0	20.0	20.0	25.0	25.0	20.0	25.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	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)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	4.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.5	3.0
Minimum Gap (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.5	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
Walk Time (s)	10.0	10.0								
Flash Dont Walk (s)	14.0	14.0								
Pedestrian Calls (#/hr)	0	0								

Intersection Summary

Cycle Length: 89
Actuated Cycle Length: 89
Offset: 34 (38%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 36: Rivercrest Rd & CR 57

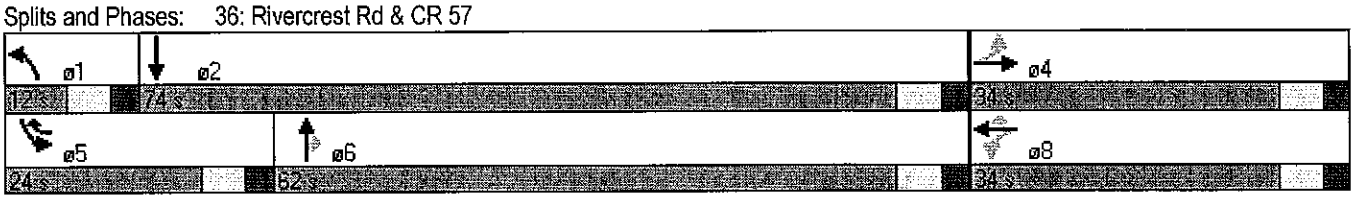


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	51	51	290	38	38	6	639	67	140	1420
Turn Type	Perm		Perm		pm+ov	Prot		Perm	Prot	
Protected Phases		4		8	5	1	6		5	2
Permitted Phases	4		8		8			6		
Detector Phase	4	4	8	8	5	1	6		5	2
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	31.5	31.5	13.5	13.5	11.5	11.5	16.5	16.5	11.5	16.5
Total Split (s)	34.0	34.0	34.0	34.0	24.0	12.0	62.0	62.0	24.0	74.0
Total Split (%)	28.3%	28.3%	28.3%	28.3%	20.0%	10.0%	51.7%	51.7%	20.0%	61.7%
Maximum Green (s)	27.5	27.5	27.5	27.5	17.5	5.5	55.5	55.5	17.5	67.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.6	1.6	3.4	3.4	1.6	3.4
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.6	1.6	3.4	3.4	1.6	3.4
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
Walk Time (s)	5.0	5.0								
Flash Dont Walk (s)	20.0	20.0								
Pedestrian Calls (#/hr)	0	0								

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 90 (75%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 36: Rivercrest Rd & CR 57

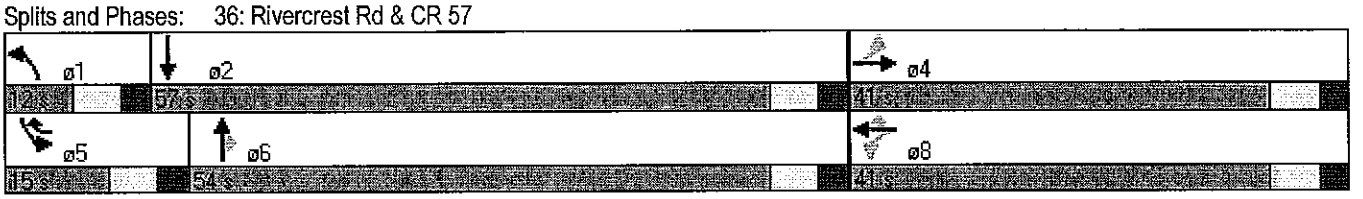


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	63	25	195	38	178	38	1585	233	114	1072
Turn Type	Perm		Perm		pm+ov	Prot		Perm	Prot	
Protected Phases		4		8	5	1	6		5	2
Permitted Phases	4		8		8			6		
Detector Phase	4	4	8	8	5	1	6		5	2
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	31.5	31.5	13.5	13.5	11.5	11.5	16.5	16.5	11.5	16.5
Total Split (s)	41.0	41.0	41.0	41.0	15.0	12.0	54.0	54.0	15.0	57.0
Total Split (%)	37.3%	37.3%	37.3%	37.3%	13.6%	10.9%	49.1%	49.1%	13.6%	51.8%
Maximum Green (s)	34.5	34.5	34.5	34.5	8.5	5.5	47.5	47.5	8.5	50.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.6	1.6	3.4	3.4	1.6	3.4
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.6	1.6	3.4	3.4	1.6	3.4
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
Walk Time (s)	5.0	5.0								
Flash Dont Walk (s)	20.0	20.0								
Pedestrian Calls (#/hr)	0	0								

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 44 (40%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 36: Rivercrest Rd & CR 57



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	51	75	290	38	38	6	639	67	140	1420	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width	16	16	16	10	10	11	12	12	12	12	12	12
Total Lost time (s)		3.5			3.5	3.5	3.5	4.0	4.0	3.5	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.94			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		2002			1558	1432	1641	3455	1468	1752	3480	
Flt Permitted		0.66			0.57	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1343			932	1432	1641	3455	1468	1752	3480	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	57	83	322	42	42	7	710	74	156	1578	78
RTOR Reduction (vph)	0	30	0	0	0	21	0	0	0	0	3	0
Lane Group Flow (vph)	0	167	0	0	364	21	7	710	74	156	1653	0
Heavy Vehicles (%)	0%	0%	0%	9%	9%	9%	10%	10%	10%	3%	3%	3%
Turn Type	Perm			Perm		pm+ov	Prot		Perm	Prot		
Protected Phases		4			8	5	1	6		5	2	
Permitted Phases	4			8		8			6			
Actuated Green, G (s)		27.0			27.0	40.6	1.5	31.4	31.4	13.6	43.5	
Effective Green, g (s)		29.0			29.0	44.6	3.5	33.4	33.4	15.6	45.5	
Actuated g/C Ratio		0.33			0.33	0.50	0.04	0.38	0.38	0.18	0.51	
Clearance Time (s)		5.5			5.5	5.5	5.5	6.0	6.0	5.5	6.0	
Vehicle Extension (s)		3.5			3.5	3.5	3.5	3.0	3.0	3.5	3.0	
Lane Grp Cap (vph)		438			304	774	65	1297	551	307	1779	
v/s Ratio Prot						0.00	0.00	0.21		c0.09	c0.48	
v/s Ratio Perm		0.12			c0.39	0.01			0.05			
v/c Ratio		0.38			1.20	0.03	0.11	0.55	0.13	0.51	0.93	
Uniform Delay, d1		23.1			30.0	11.2	41.2	21.9	18.3	33.2	20.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.7			116.3	0.0	0.9	1.7	0.5	1.6	10.1	
Delay (s)		23.8			146.3	11.2	42.1	23.5	18.8	34.8	30.3	
Level of Service		C			F	B	D	C	B	C	C	
Approach Delay (s)		23.8			132.3			23.2			30.7	
Approach LOS		C			F			C			C	

Intersection Summary			
HCM Average Control Delay	41.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	25	19	195	38	178	38	1585	233	114	1072	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width	16	16	16	10	10	11	12	12	12	12	12	12
Total Lost time (s)		3.5			3.5	3.5	3.5	4.0	4.0	3.5	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.98			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		2042			1685	1546	1787	3762	1599	1770	3527	
Flt Permitted		0.61			0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1289			1207	1546	1787	3762	1599	1770	3527	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	70	28	21	217	42	198	42	1761	259	127	1191	28
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	110	0	0	259	198	42	1761	259	127	1218	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm			Perm		pm+ov	Prot		Perm	Prot		
Protected Phases		4			8	5	1	6		5	2	
Permitted Phases	4			8		8			6			
Actuated Green, G (s)		22.9			22.9	35.2	5.5	36.8	36.8	12.3	43.6	
Effective Green, g (s)		24.9			24.9	39.2	7.5	38.8	38.8	14.3	45.6	
Actuated g/C Ratio		0.28			0.28	0.44	0.08	0.44	0.44	0.16	0.51	
Clearance Time (s)		5.5			5.5	5.5	5.5	6.0	6.0	5.5	6.0	
Vehicle Extension (s)		3.5			3.5	3.5	3.5	3.0	3.0	3.5	3.0	
Lane Grp Cap (vph)		361			338	742	151	1640	697	284	1807	
v/s Ratio Prot						0.04	0.02	c0.47		c0.07	c0.35	
v/s Ratio Perm		0.09			c0.21	0.09			0.16			
v/c Ratio		0.30			0.77	0.27	0.28	1.07	0.37	0.45	0.67	
Uniform Delay, d1		25.2			29.4	15.8	38.2	25.1	16.9	33.8	16.2	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6			10.2	0.2	1.2	45.0	1.5	1.3	2.0	
Delay (s)		25.8			39.6	16.0	39.4	70.1	18.4	35.1	18.2	
Level of Service		C			D	B	D	E	B	D	B	
Approach Delay (s)		25.8			29.4			63.0			19.8	
Approach LOS		C			C			E			B	

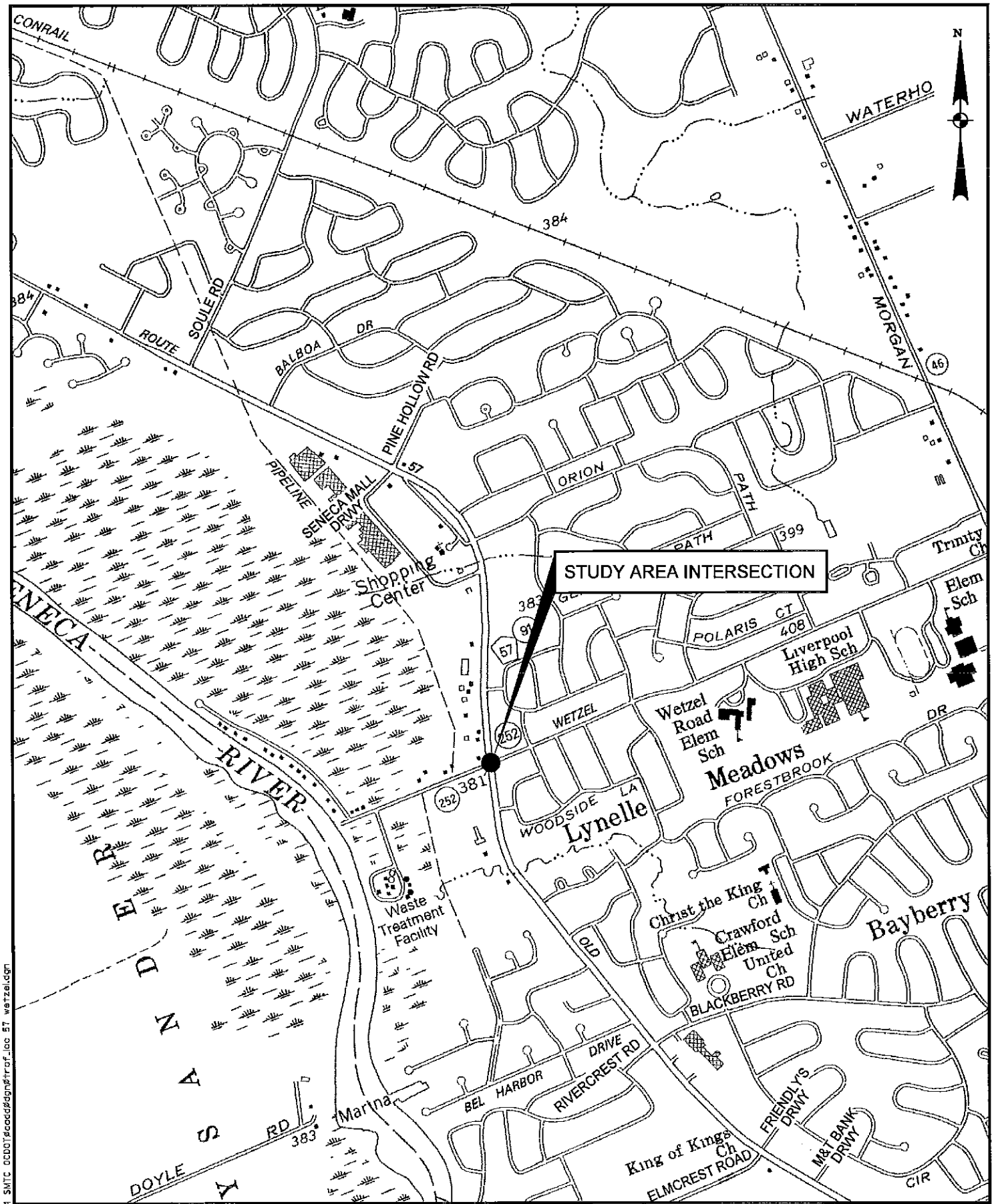
Intersection Summary			
HCM Average Control Delay	43.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	51	75	290	38	38	6	639	67	140	1420	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width	16	16	16	10	10	11	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.94			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		2002			1558	1432	1641	3455	1468	1752	3480	
Flt Permitted		0.62			0.57	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1269			929	1432	1641	3455	1468	1752	3480	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	57	83	322	42	42	7	710	74	156	1578	78
RTOR Reduction (vph)	0	19	0	0	0	14	0	0	0	0	3	0
Lane Group Flow (vph)	0	178	0	0	364	28	7	710	74	156	1653	0
Heavy Vehicles (%)	0%	0%	0%	9%	9%	9%	10%	10%	10%	3%	3%	3%
Turn Type	Perm			Perm		pm+ov	Prot		Perm	Prot		
Protected Phases		4			8	5	1	6		5	2	
Permitted Phases	4			8		8			6			
Actuated Green, G (s)		38.4			38.4	52.4	1.1	48.1	48.1	14.0	61.0	
Effective Green, g (s)		40.4			40.4	56.4	3.1	50.1	50.1	16.0	63.0	
Actuated g/C Ratio		0.34			0.34	0.47	0.03	0.42	0.42	0.13	0.52	
Clearance Time (s)		6.5			6.5	6.5	6.5	6.5	6.5	6.5	6.5	
Vehicle Extension (s)		1.0			1.0	1.6	1.6	3.4	3.4	1.6	3.4	
Lane Grp Cap (vph)		427			313	727	42	1442	613	234	1827	
v/s Ratio Prot						0.01	0.00	0.21		c0.09	c0.47	
v/s Ratio Perm		0.14			c0.39	0.01			0.05			
v/c Ratio		0.42			1.16	0.04	0.17	0.49	0.12	0.67	0.90	
Uniform Delay, d1		30.7			39.8	17.2	57.2	25.6	21.4	49.5	25.8	
Progression Factor		1.00			1.00	1.00	0.86	0.95	1.09	1.00	1.00	
Incremental Delay, d2		0.2			102.6	0.0	0.7	1.2	0.4	5.5	7.9	
Delay (s)		30.9			142.4	17.2	50.0	25.6	23.8	54.9	33.7	
Level of Service		C			F	B	D	C	C	D	C	
Approach Delay (s)		30.9			129.5			25.6			35.5	
Approach LOS		C			F			C			D	

Intersection Summary			
HCM Average Control Delay	44.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	25	19	195	38	178	38	1585	233	114	1072	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Lane Width	16	16	16	10	10	11	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.98			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		2042			1685	1546	1787	3762	1599	1770	3527	
Flt Permitted		0.54			0.68	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1126			1199	1546	1787	3762	1599	1770	3527	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	70	28	21	217	42	198	42	1761	259	127	1191	28
RTOR Reduction (vph)	0	7	0	0	0	3	0	0	0	0	1	0
Lane Group Flow (vph)	0	112	0	0	259	195	42	1761	259	127	1218	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm			Perm		pm+ov	Prot		Perm	Prot		
Protected Phases		4			8	5	1	6		5	2	
Permitted Phases	4			8		8			6			
Actuated Green, G (s)		26.6			26.6	36.6	4.0	53.9	53.9	10.0	59.9	
Effective Green, g (s)		28.6			28.6	40.6	6.0	55.9	55.9	12.0	61.9	
Actuated g/C Ratio		0.26			0.26	0.37	0.05	0.51	0.51	0.11	0.56	
Clearance Time (s)		6.5			6.5	6.5	6.5	6.5	6.5	6.5	6.5	
Vehicle Extension (s)		1.0			1.0	1.6	1.6	3.4	3.4	1.6	3.4	
Lane Grp Cap (vph)		293			312	634	97	1912	813	193	1985	
v/s Ratio Prot						0.03	0.02	c0.47		c0.07	0.35	
v/s Ratio Perm		0.10			c0.22	0.09			0.16			
v/c Ratio		0.38			0.83	0.31	0.43	0.92	0.32	0.66	0.61	
Uniform Delay, d1		33.4			38.4	24.7	50.4	25.0	15.9	47.0	16.1	
Progression Factor		1.00			1.00	1.00	1.09	0.82	0.91	1.00	1.00	
Incremental Delay, d2		0.3			16.2	0.1	0.8	6.4	0.7	6.0	1.4	
Delay (s)		33.7			54.6	24.8	55.5	26.9	15.1	53.1	17.5	
Level of Service		C			D	C	E	C	B	D	B	
Approach Delay (s)		33.7			41.7			26.0			20.8	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



LOCATION MAP
COUNTY ROAD 57/WETZEL ROAD

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 9/10	FIGURE: B.9

INTERSECTION DIAGRAM

Location: Old Route 57 ar Wetzel Road

Legend: Sign; Signal Head; Signal with Span Wire; ## (Feet); Utility Pole; Fire Hydrant

Drawn By: JC

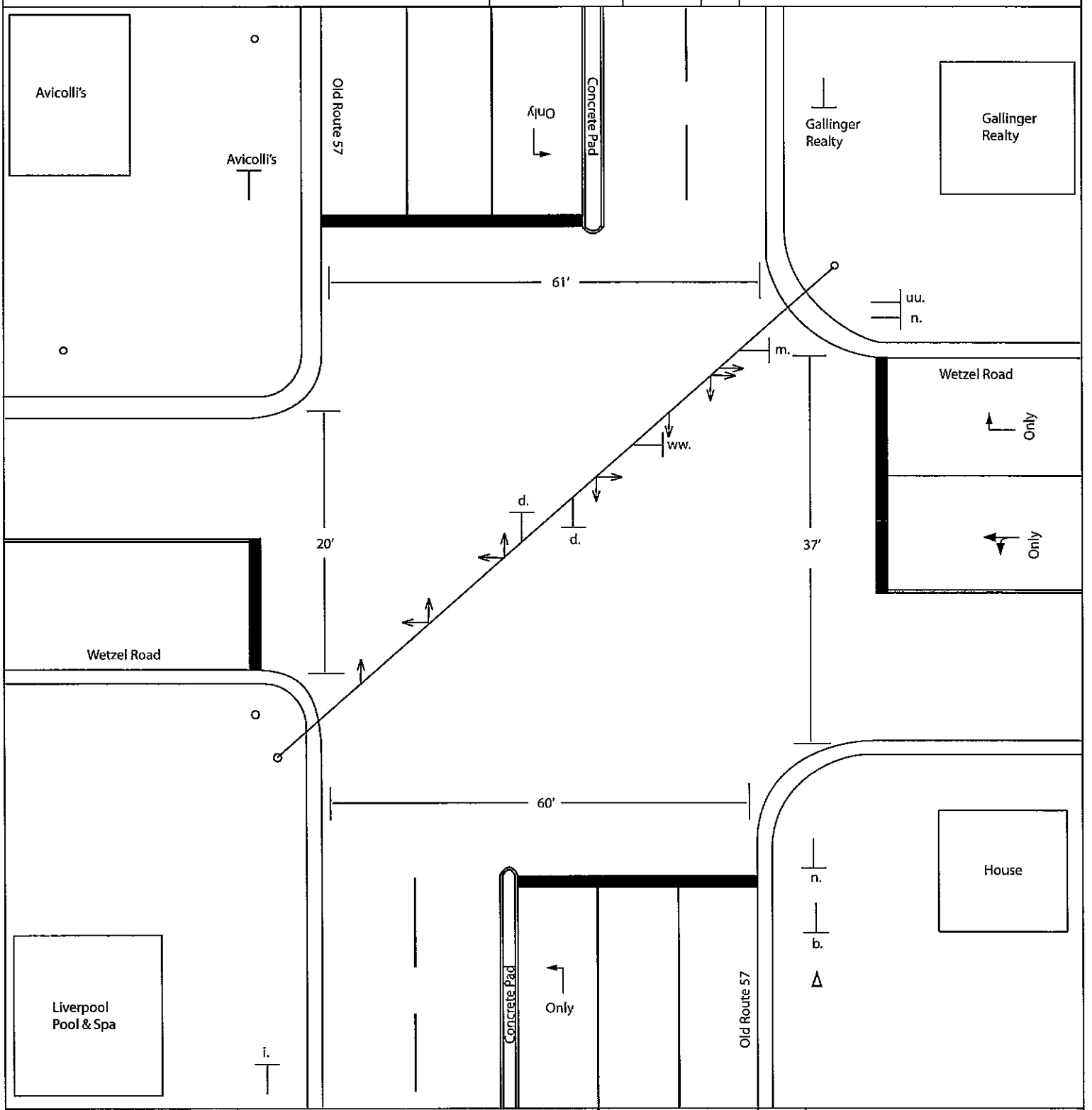
Date: May 2010

Prepared By: SMTC

N

Note:
Only actual pavement markings were drawn. An absence of arrows/striping indicates no pavement markings.

For sign definitions see Intersection Diagram Index.



Task

OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

Diagram is for presentation purposes only.
SMTC does not guarantee the accuracy or completeness of this diagram.

Diagram is not to scale.


NO TURN ON RED
STOP LINE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	6	6	6	216	6	101	19	552	233	317	1275	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	18%	18%	29%	29%	29%	8%	8%	8%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	32	6	13	127	19	330	19	1446	140	260	1027	13
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

INTERSECTION NAME: 57 @ Wetzel
INTERSECTION NUMBER: 41

INSTALLATION DATE:
PROGRAM DATE:

	PHASE (ON/OFF)							
INTERVAL	1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL								
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

	PHASE TIMINGS							
INTERVAL	1	2	3	4	5	6	7	8
MIN GREEN	5	12		8	5	12		8
PASSAGE	3	3		3	3	3		3
YELLOW	4	4		4	4	4		4
RED	2	2		2	2	2		2
MAX I	15	35		20	25	35		25
MAX II	15	35		20	25	35		25
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

		COS -
PL 1 2 3 4	FRE-OP ON 00:00 - 0600	
PL 4	0600 0640 0900 230 1800 2030	4/1/1 5/1/1 4/1/1 6/1/1 4/1/1 FRE-ON
PL 5	0900	FRE-OFF

PHASES USED								
	1	2	3	4	5	6	7	8
ON/OFF	X	X		X	X	X		X

PED Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00			FRE-ON	
2	00:00				
3	00:00				
4	06:00			FRE-OFF	
4	06:00		4/1/1		80 S
4	06:40		5/1/1		90 S
4	09:00		4/1/1		80 S
4	14:30		6/1/1		90 S
4	18:00		4/1/1		80 S
4	20:30			FRE-ON	
5	00:00			FRE-ON	
5	09:00			FRE-OFF	
5	09:00		4/1/1		
5	20:00			FRE-ON	

INTERSECTION NAME: 57 @ Wetzel
INTERSECTION NUMBER: 41

INSTALLATION DATE: COORDINATION
PROGRAM DATE: OPTIMIZATION

INTERVAL	PHASE (ON/OFF)							
	1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL		X				X		
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	10		7	5	10		7
PASSAGE	1.6	3.4		1	1.6	3.4		1
YELLOW	4	4		4	4	4		4
RED	2.5	2.5		2.5	2.5	2.5		2.5
MAX I (AM)	5.5	28.5		16.5	13.5	20.5		16.5
MAX II (PM)	5.5	45.5		9.5	12.5	38.5		9.5
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

	COS -		
PL 1 2 3 4			
PL 4			
PL 5			

PHASES USED								
	1	2	3	4	5	6	7	8
ON/OFF	X	X		X	X	X		X

Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLAP					X			
OVERLAP B								
OVERLAP C								
OVERLAP D								

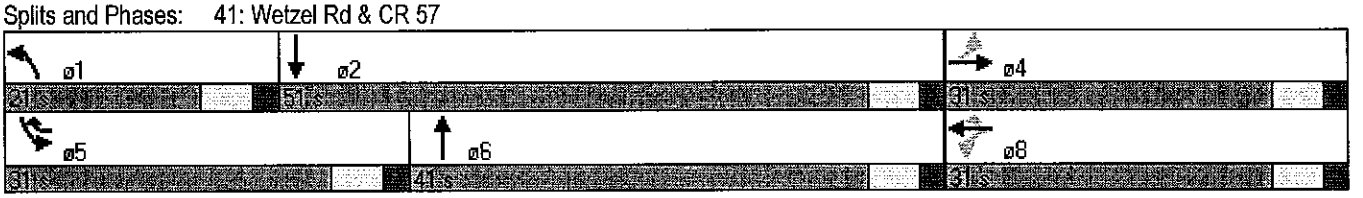
PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00				
2	00:00				
3	00:00				
4	06:00				
4	06:00				
4	06:40				
4	09:00				
4	14:30				
4	18:00				
4	20:30				
5	00:00				
5	09:00				
5	09:00				
5	20:00				

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	6	6	216	6	101	19	552	317	1275
Turn Type	Perm		Perm		pm+ov	Prot		Prot	
Protected Phases		4		8	5	1	6	5	2
Permitted Phases	4		8		8				
Detector Phase	4	4	8	8	5	1	6	5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	5.0	5.0	12.0	5.0	12.0
Minimum Split (s)	14.0	14.0	14.0	14.0	11.0	11.0	18.0	11.0	18.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0	21.0	41.0	31.0	51.0
Total Split (%)	30.1%	30.1%	30.1%	30.1%	30.1%	20.4%	39.8%	30.1%	49.5%
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	15.0	35.0	25.0	45.0
Yellow Time (s)	4.0	4.0	4.0	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag					Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 103
Actuated Cycle Length: 103
Offset: 77 (75%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 41: Wetzel Rd & CR 57

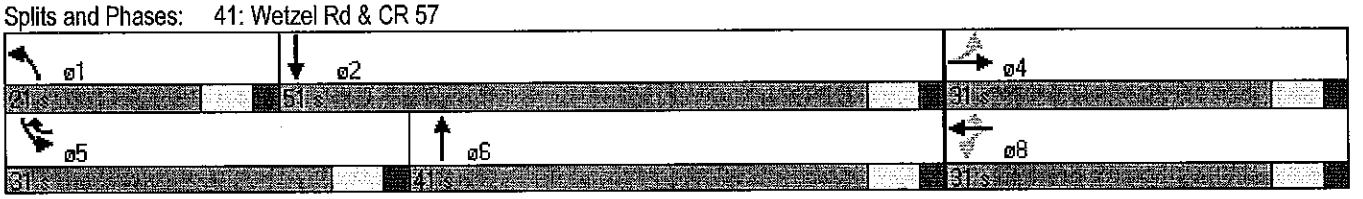


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	32	6	127	19	330	19	1446	260	1027
Turn Type	Perm		Perm		pm+ov	Prot		Prot	
Protected Phases		4		8	5	1	6	5	2
Permitted Phases	4		8		8				
Detector Phase	4	4	8	8	5	1	6	5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	5.0	5.0	12.0	5.0	12.0
Minimum Split (s)	14.0	14.0	14.0	14.0	11.0	11.0	18.0	11.0	18.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0	21.0	41.0	31.0	51.0
Total Split (%)	30.1%	30.1%	30.1%	30.1%	30.1%	20.4%	39.8%	30.1%	49.5%
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	15.0	35.0	25.0	45.0
Yellow Time (s)	4.0	4.0	4.0	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag					Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 103
Actuated Cycle Length: 103
Offset: 88 (85%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

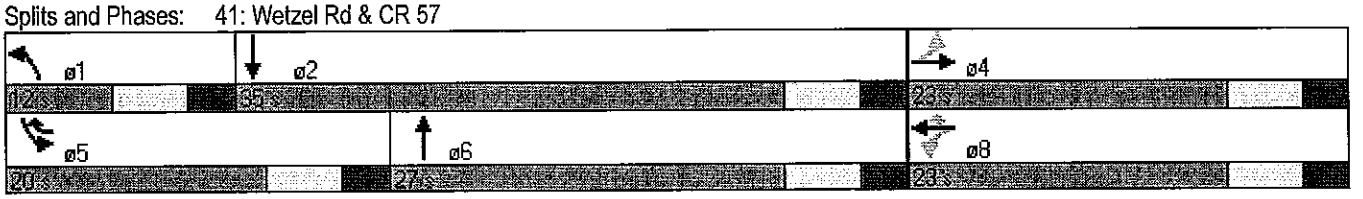
Splits and Phases: 41: Wetzel Rd & CR 57



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	6	6	216	6	101	19	552	317	1275
Turn Type	Perm		Perm		pm+ov	Prot		Prot	
Protected Phases		4		8	5	1	6	5	2
Permitted Phases	4		8		8				
Detector Phase	4	4	8	8	5	1	6	5	2
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	13.5	13.5	13.5	13.5	11.5	11.5	16.5	11.5	16.5
Total Split (s)	23.0	23.0	23.0	23.0	20.0	12.0	27.0	20.0	35.0
Total Split (%)	32.9%	32.9%	32.9%	32.9%	28.6%	17.1%	38.6%	28.6%	50.0%
Maximum Green (s)	16.5	16.5	16.5	16.5	13.5	5.5	20.5	13.5	28.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.6	1.6	3.4	1.6	3.4
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.6	1.6	3.4	1.6	3.4
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 37 (53%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 41: Wetzel Rd & CR 57

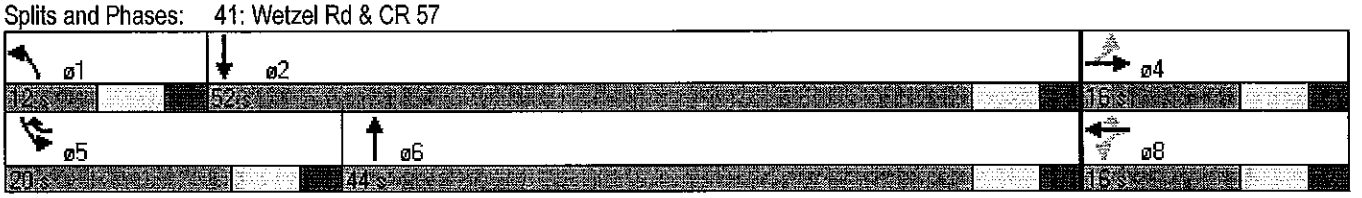


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	32	6	127	19	330	19	1446	260	1027
Turn Type	Perm		Perm		pm+ov	Prot		Prot	
Protected Phases		4		8	5	1	6	5	2
Permitted Phases	4		8		8				
Detector Phase	4	4	8	8	5	1	6	5	2
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	13.5	13.5	13.5	13.5	11.5	11.5	16.5	11.5	16.5
Total Split (s)	16.0	16.0	16.0	16.0	20.0	12.0	44.0	20.0	52.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	25.0%	15.0%	55.0%	25.0%	65.0%
Maximum Green (s)	9.5	9.5	9.5	9.5	13.5	5.5	37.5	13.5	45.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.6	1.6	3.4	1.6	3.4
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.6	1.6	3.4	1.6	3.4
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 33 (41%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 41: Wetzel Rd & CR 57



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	6	6	216	6	101	19	552	233	317	1275	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	13	14	12	12	12	12	12	12
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.95			1.00	0.85	1.00	0.96		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1412			1451	1335	1671	3194		1752	3505	
Flt Permitted		0.90			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1293			1091	1335	1671	3194		1752	3505	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	7	7	240	7	112	21	613	259	352	1417	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	16	0	0	247	112	21	872	0	352	1417	0
Heavy Vehicles (%)	18%	18%	18%	29%	29%	29%	8%	8%	8%	3%	3%	3%
Turn Type	Perm			Perm		pm+ov	Prot			Prot		
Protected Phases		4			8	5	1	6		5	2	
Permitted Phases	4			8		8						
Actuated Green, G (s)		24.0			24.0	47.2	3.3	37.8		23.2	57.7	
Effective Green, g (s)		26.0			26.0	51.2	5.3	39.8		25.2	59.7	
Actuated g/C Ratio		0.25			0.25	0.50	0.05	0.39		0.24	0.58	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		326			275	715	86	1234		429	2032	
v/s Ratio Prot						0.04	0.01	0.27		c0.20	c0.40	
v/s Ratio Perm		0.01			c0.23	0.05						
v/c Ratio		0.05			0.90	0.16	0.24	0.71		0.82	0.70	
Uniform Delay, d1		29.1			37.2	14.1	46.9	26.7		36.8	15.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			29.1	0.1	1.5	3.4		11.9	2.0	
Delay (s)		29.2			66.3	14.2	48.4	30.1		48.7	17.3	
Level of Service		C			E	B	D	C		D	B	
Approach Delay (s)		29.2			50.1			30.5			23.5	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	103.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	6	13	127	19	330	19	1446	140	260	1027	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	13	14	12	12	12	12	12	12
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1662			1809	1656	1787	3527		1770	3533	
Flt Permitted		0.72			0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1230			1408	1656	1787	3527		1770	3533	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	7	14	141	21	367	21	1607	156	289	1141	14
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	46	0	0	162	367	21	1763	0	289	1154	0
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	2%	2%	2%
Turn Type	Perm			Perm		pm+ov	Prot			Prot		
Protected Phases		4			8	5	1	6		5	2	
Permitted Phases	4			8		8						
Actuated Green, G (s)		17.1			17.1	38.7	3.2	46.3		21.6	64.7	
Effective Green, g (s)		19.1			19.1	42.7	5.2	48.3		23.6	66.7	
Actuated g/C Ratio		0.19			0.19	0.41	0.05	0.47		0.23	0.65	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		228			261	751	90	1654		406	2288	
v/s Ratio Prot						0.11	0.01	c0.50		c0.16	0.33	
v/s Ratio Perm		0.04			c0.12	0.11						
v/c Ratio		0.20			0.62	0.49	0.23	1.07		0.71	0.50	
Uniform Delay, d1		35.5			38.6	22.1	47.0	27.4		36.6	9.5	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			4.5	0.5	1.3	42.1		5.8	0.8	
Delay (s)		35.9			43.1	22.6	48.3	69.4		42.4	10.3	
Level of Service		D			D	C	D	E		D	B	
Approach Delay (s)		35.9			28.9			69.2			16.7	
Approach LOS		D			C			E			B	

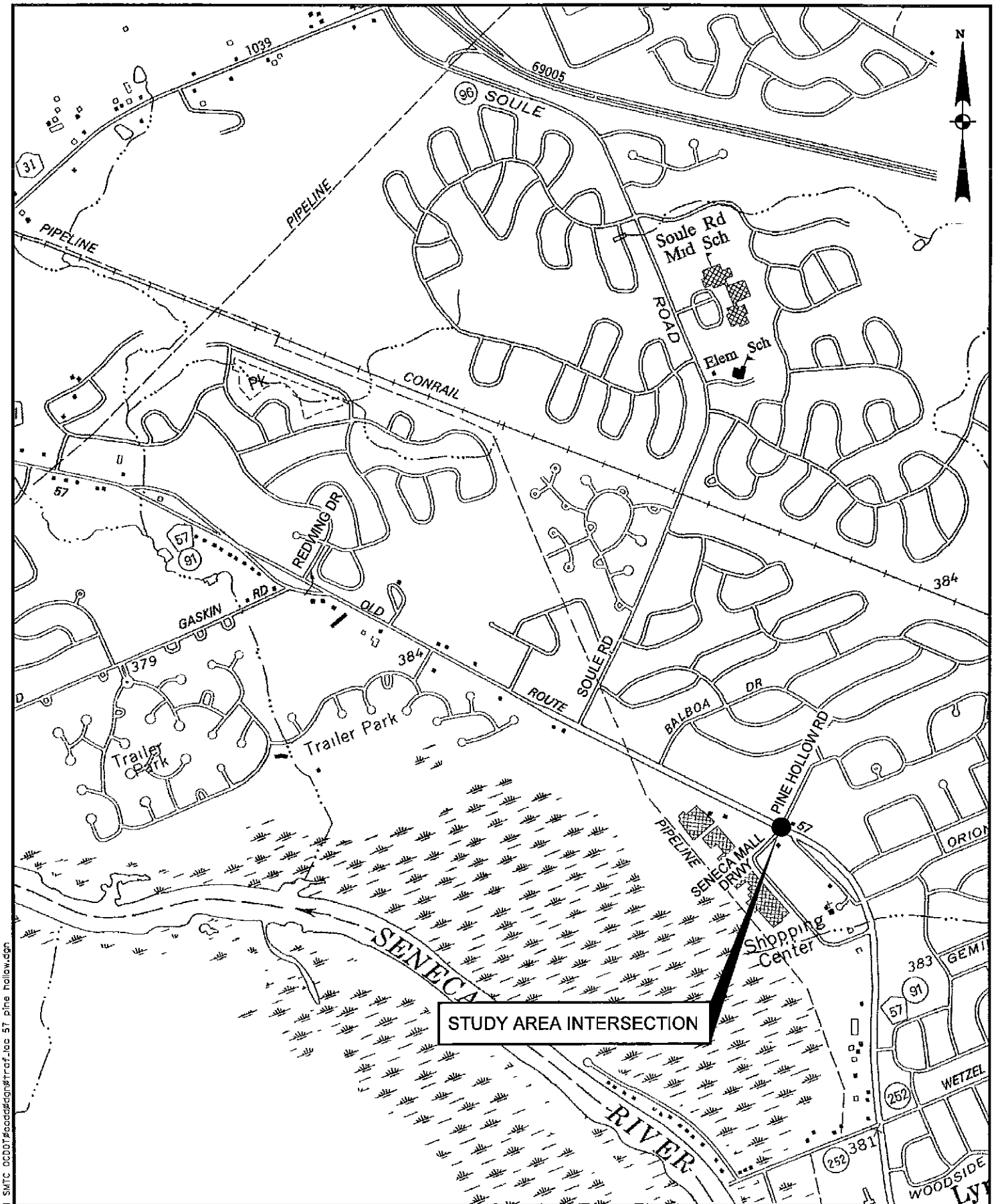
Intersection Summary			
HCM Average Control Delay	43.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	103.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	6	6	216	6	101	19	552	233	317	1275	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	13	14	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.95			1.00	0.85	1.00	0.96		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1412			1451	1335	1671	3194		1752	3505	
Flt Permitted		0.88			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1269			1091	1335	1671	3194		1752	3505	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	7	7	240	7	112	21	613	259	352	1417	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	16	0	0	247	112	21	872	0	352	1417	0
Heavy Vehicles (%)	18%	18%	18%	29%	29%	29%	8%	8%	8%	3%	3%	3%
Turn Type	Perm			Perm		pm+ov	Prot			Prot		
Protected Phases		4			8	5	1	6		5	2	
Permitted Phases	4			8		8						
Actuated Green, G (s)		15.7			15.7	29.3	2.2	21.2		13.6	32.6	
Effective Green, g (s)		17.7			17.7	33.3	4.2	23.2		15.6	34.6	
Actuated g/C Ratio		0.25			0.25	0.48	0.06	0.33		0.22	0.49	
Clearance Time (s)		6.5			6.5	6.5	6.5	6.5		6.5	6.5	
Vehicle Extension (s)		1.0			1.0	1.6	1.6	3.4		1.6	3.4	
Lane Grp Cap (vph)		321			276	721	100	1059		390	1732	
v/s Ratio Prot						0.03	0.01	0.27		c0.20	c0.40	
v/s Ratio Perm		0.01			c0.23	0.05						
v/c Ratio		0.05			0.89	0.16	0.21	0.82		0.90	0.82	
Uniform Delay, d1		19.8			25.3	10.4	31.3	21.5		26.5	15.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		0.96	0.53	
Incremental Delay, d2		0.0			28.0	0.0	0.4	7.3		14.4	2.5	
Delay (s)		19.8			53.2	10.4	31.7	28.8		39.8	10.4	
Level of Service		B			D	B	C	C		D	B	
Approach Delay (s)		19.8			39.9			28.8			16.2	
Approach LOS		B			D			C			B	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	6	13	127	19	330	19	1446	140	260	1027	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	13	14	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1662			1809	1656	1787	3527		1770	3533	
Flt Permitted		0.57			0.79	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		970			1483	1656	1787	3527		1770	3533	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	7	14	141	21	367	21	1607	156	289	1141	14
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	45	0	0	162	367	21	1763	0	289	1154	0
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	2%	2%	2%
Turn Type	Perm			Perm		pm+ov	Prot			Prot		
Protected Phases		4			8	5	1	6		5	2	
Permitted Phases	4			8		8						
Actuated Green, G (s)		9.1			9.1	22.3	2.2	38.2		13.2	49.2	
Effective Green, g (s)		11.1			11.1	26.3	4.2	40.2		15.2	51.2	
Actuated g/C Ratio		0.14			0.14	0.33	0.05	0.50		0.19	0.64	
Clearance Time (s)		6.5			6.5	6.5	6.5	6.5		6.5	6.5	
Vehicle Extension (s)		1.0			1.0	1.6	1.6	3.4		1.6	3.4	
Lane Grp Cap (vph)		135			206	638	94	1772		336	2261	
v/s Ratio Prot						0.11	0.01	c0.50		c0.16	0.33	
v/s Ratio Perm		0.05			c0.11	0.11						
v/c Ratio		0.33			0.79	0.58	0.22	0.99		0.86	0.51	
Uniform Delay, d1		31.1			33.3	22.2	36.3	19.8		31.4	7.7	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.17	0.44	
Incremental Delay, d2		0.5			16.5	0.8	0.4	20.2		14.1	0.6	
Delay (s)		31.6			49.8	23.0	36.8	40.0		51.0	3.9	
Level of Service		C			D	C	D	D		D	A	
Approach Delay (s)		31.6			31.2			40.0			13.4	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



LOCATION MAP
COUNTY ROAD 57/PINE HOLLOW ROAD/
SENECA MALL DRIVEWAY

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 9/10	FIGURE: B.10

gdoran
F:\Projects\2009\09-094 SMTC OCDOT\cadd\dgn\traf_loc 57 pine hollow.dgn

INTERSECTION DIAGRAM

Location

Old Route 57 at Pine Hollow Drive

Legend

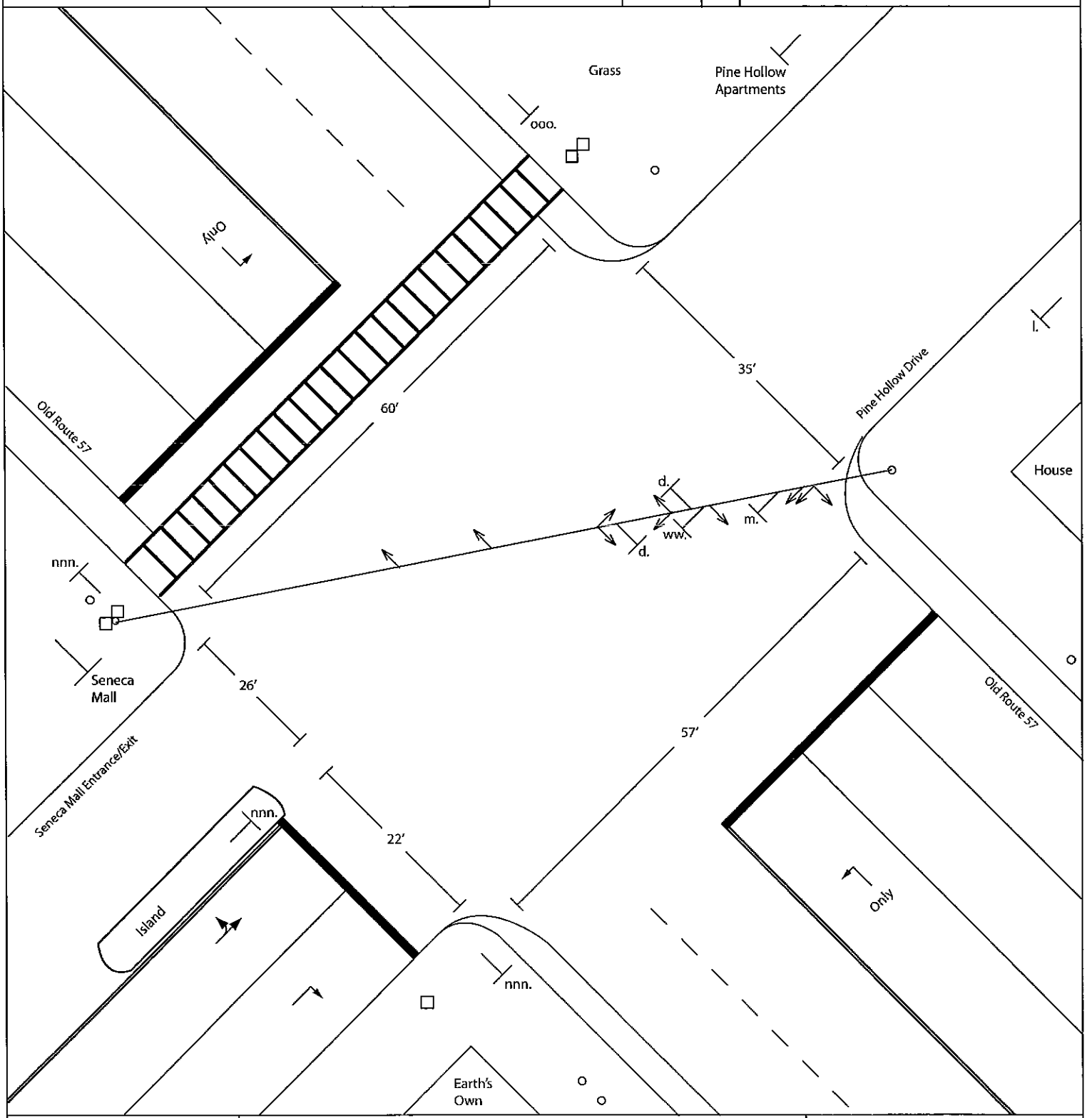
Signal Head | Sign | Signal with Span Wire | ## (Feet) | Utility Pole | Light Pole | Pedestrian Signal

Drawn By	JC	Prepared By	SMTC
Date	May 2010		

N

Note:
Only actual pavement markings were drawn. An absence of arrows/striping indicates no pavement markings.

For sign definitions see Intersection Diagram Sign Index.



Task

OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

Diagram is for presentation purposes only.
SMTC does not guarantee the accuracy or completeness of this diagram.

Diagram is not to scale.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	38	6	38	133	13	25	44	533	13	6	1439	38
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	8%	8%	8%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	165	44	159	57	32	13	190	1401	63	32	1015	101
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

INTERSECTION NAME: 57 @ SENECA MALL
INTERSECTION NUMBER:

INSTALLATION DATE:
PROGRAM DATE:

INTERVAL	PHASE (ON/OFF) 1	2	3	4	5	6	7	8
MEMORY								
EXT RECALL								
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS 1	2	3	4	5	6	7	8
MIN GREEN	8	10		6	8	10		6
PASSAGE	1	3		3.5	3.5	3.5		3.5
YELLOW	3.5	3.5		3.5	3.5	3.5		3.5
RED	1.5	1.5		1.5	1.5	1.5		1.5
MAX I	17	27		25	17	27		25
MAX II	17	35		25	15	35		25
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

PHASES USED	1	2	3	4	5	6	7	8
ON/OFF								

PED Overlaps INHIBIT O/L	1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00			FRE-ON	
2	00:00				
3	00:00				
4	06:00			FRE-OFF	
4	06:00		4/1/1		80 S
4	06:40		5/1/1		90 S
4	09:00		4/1/1		80 S
4	14:30		6/1/1		90 S
4	18:00		4/1/1		80 S
4	20:30			FRE-ON	
5	00:00			FRE-ON	
5	09:00			FRE-OFF	
5	09:00		4/1/1		
5	20:00			FRE-ON	

		COS -
PL 1, 2, 3, 4	FRE-OP ON 00:00 - 0600	
PL 4	0600	4/1/1
	0640	5/1/1
	0900	4/1/1
	230	6/1/1
	1800	4/1/1
	2030	FRE-ON
PL 5	0900	FRE-OFF

INTERSECTION NAME: 57 @ SENECA MALL
INTERSECTION NUMBER:

INSTALLATION DATE:
PROGRAM DATE:

COORDINATION
OPTIMIZATION

INTERVAL	PHASE (ON/OFF)							
	1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL		X				X		
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	10		7	5	10		7
PASSAGE	1.6	3.4		1.7	1.6	3.4		1
YELLOW	4	4		4	4	4		4
RED	2.5	2.5		2.5	2.5	2.5		2.5
MAX I (AM)	5.5	19.5		25.5	5.5	19.5		25.5
MAX II (PM)	5.5	29.5		25.5	8.5	26.5		25.5
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

PHASES USED								
	1	2	3	4	5	6	7	8
ON/OFF	X	X		X	X	X		X

Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLAP					X			
PED Overlaps								X
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00				
2	00:00				
3	00:00				
4	06:00				
4	06:00				
4	06:40				
4	09:00				
4	14:30				
4	18:00				
4	20:30				
5	00:00				
5	09:00				
5	09:00				
5	20:00				

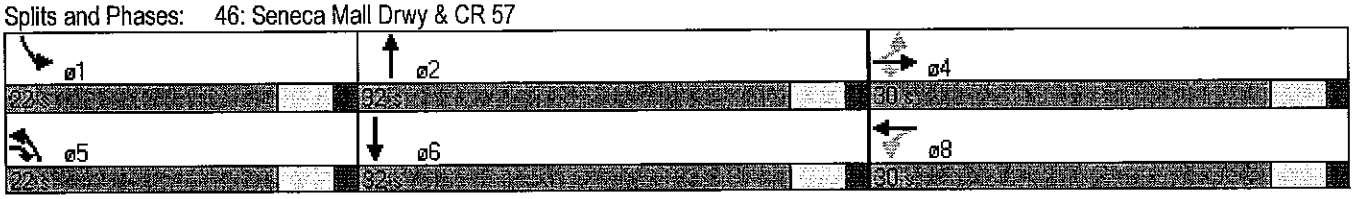
			COS -
PL 1 2 3 4	}		
PL 4			
PL 5			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	38	6	38	133	13	44	533	6	1439
Turn Type	Perm		pm+ov	Perm		Prot		Prot	
Protected Phases		4	5		8	5	2	1	6
Permitted Phases	4		4	8					
Detector Phase	4	4	5	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	6.0	8.0	6.0	6.0	8.0	10.0	8.0	10.0
Minimum Split (s)	11.0	11.0	13.0	30.0	30.0	13.0	15.0	13.0	15.0
Total Split (s)	30.0	30.0	22.0	30.0	30.0	22.0	32.0	22.0	32.0
Total Split (%)	35.7%	35.7%	26.2%	35.7%	35.7%	26.2%	38.1%	26.2%	38.1%
Maximum Green (s)	25.0	25.0	17.0	25.0	25.0	17.0	27.0	17.0	27.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag			Lead			Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	1.0	3.5
Minimum Gap (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	1.0	3.5
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Walk Time (s)				5.0	5.0				
Flash Dont Walk (s)				20.0	20.0				
Pedestrian Calls (#/hr)				0	0				

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 22 (26%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 46: Seneca Mall Drwy & CR 57

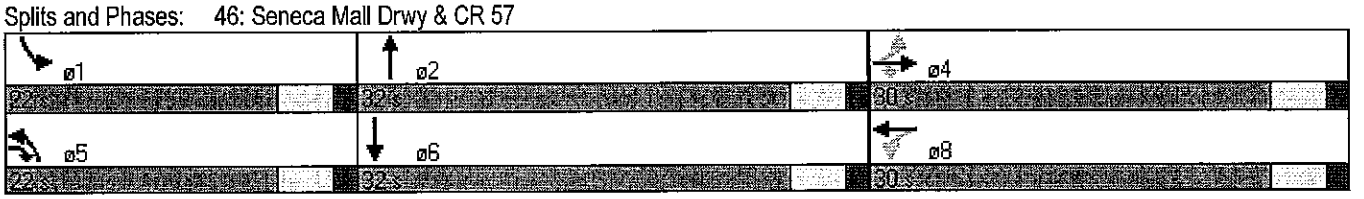


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	165	44	159	57	32	190	1401	32	1015
Turn Type	Perm		pm+ov	Perm		Prot		Prot	
Protected Phases		4	5		8	5	2	1	6
Permitted Phases	4		4	8					
Detector Phase	4	4	5	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	6.0	8.0	6.0	6.0	8.0	10.0	8.0	10.0
Minimum Split (s)	11.0	11.0	13.0	30.0	30.0	13.0	15.0	13.0	15.0
Total Split (s)	30.0	30.0	22.0	30.0	30.0	22.0	32.0	22.0	32.0
Total Split (%)	35.7%	35.7%	26.2%	35.7%	35.7%	26.2%	38.1%	26.2%	38.1%
Maximum Green (s)	25.0	25.0	17.0	25.0	25.0	17.0	27.0	17.0	27.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag			Lead			Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	1.0	3.5
Minimum Gap (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	1.0	3.5
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Walk Time (s)				5.0	5.0				
Flash Dont Walk (s)				20.0	20.0				
Pedestrian Calls (#/hr)				0	0				

Intersection Summary

Cycle Length: 84
Actuated Cycle Length: 84
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 46: Seneca Mall Drwy & CR 57

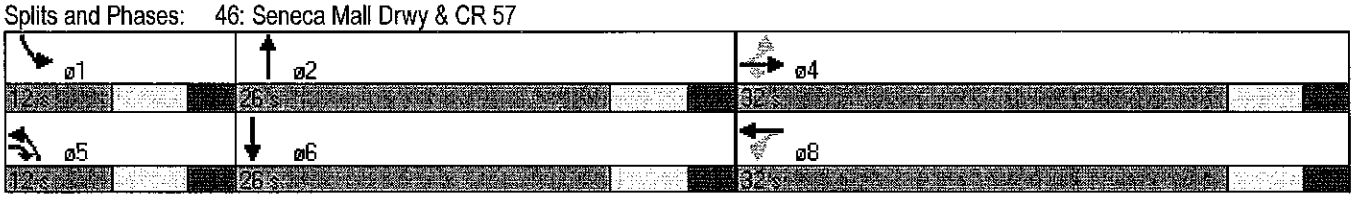


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	38	6	38	133	13	44	533	6	1439
Turn Type	Perm		pm+ov	Perm		Prot		Prot	
Protected Phases		4	5		8	5	2	1	6
Permitted Phases	4		4	8					
Detector Phase	4	4	5	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	5.0	7.0	7.0	5.0	10.0	5.0	10.0
Minimum Split (s)	13.5	13.5	11.5	31.5	31.5	11.5	16.5	11.5	16.5
Total Split (s)	32.0	32.0	12.0	32.0	32.0	12.0	26.0	12.0	26.0
Total Split (%)	45.7%	45.7%	17.1%	45.7%	45.7%	17.1%	37.1%	17.1%	37.1%
Maximum Green (s)	25.5	25.5	5.5	25.5	25.5	5.5	19.5	5.5	19.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	1.7	1.7	1.6	1.0	1.0	1.6	3.4	1.6	3.4
Minimum Gap (s)	1.7	1.7	1.6	1.0	1.0	1.6	3.4	1.6	3.4
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Walk Time (s)				5.0	5.0				
Flash Dont Walk (s)				20.0	20.0				
Pedestrian Calls (#/hr)				0	0				

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 70
Offset: 41 (59%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 46: Seneca Mall Drwy & CR 57

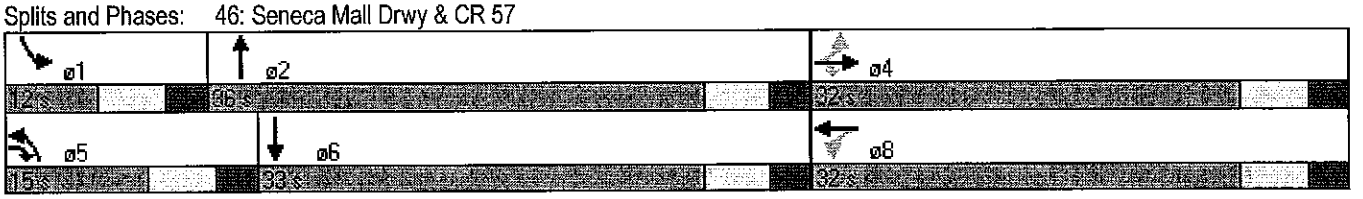


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	165	44	159	57	32	190	1401	32	1015
Turn Type	Perm		pm+ov	Perm		Prot		Prot	
Protected Phases		4	5		8	5	2	1	6
Permitted Phases	4		4	8					
Detector Phase	4	4	5	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	5.0	7.0	7.0	5.0	10.0	5.0	10.0
Minimum Split (s)	13.5	13.5	11.5	31.5	31.5	11.5	16.5	11.5	16.5
Total Split (s)	32.0	32.0	15.0	32.0	32.0	15.0	36.0	12.0	33.0
Total Split (%)	40.0%	40.0%	18.8%	40.0%	40.0%	18.8%	45.0%	15.0%	41.3%
Maximum Green (s)	25.5	25.5	8.5	25.5	25.5	8.5	29.5	5.5	26.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	1.7	1.7	1.6	1.0	1.0	1.6	3.4	1.6	3.4
Minimum Gap (s)	1.7	1.7	1.6	1.0	1.0	1.6	3.4	1.6	3.4
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Walk Time (s)				5.0	5.0				
Flash Dont Walk (s)				20.0	20.0				
Pedestrian Calls (#/hr)				0	0				

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 45 (56%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 46: Seneca Mall Drwy & CR 57



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	6	38	133	13	25	44	533	13	6	1439	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	16	16	16	11	12	12	11	12	12
Total Lost time (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.98		1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1700	1615		1935		1616	3331		1711	3526	
Flt Permitted		0.76	1.00		0.74		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1355	1615		1489		1616	3331		1711	3526	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	42	7	42	148	14	28	49	592	14	7	1599	42
RTOR Reduction (vph)	0	0	1	0	9	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	49	41	0	181	0	49	605	0	7	1640	0
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	8%	8%	8%	2%	2%	2%
Turn Type	Perm		pm+ov	Perm			Prot			Prot		
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		15.8	23.3		15.8		7.5	51.6		1.6	45.7	
Effective Green, g (s)		17.8	27.3		17.8		9.5	53.6		3.6	47.7	
Actuated g/C Ratio		0.21	0.33		0.21		0.11	0.64		0.04	0.57	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.5	3.5		3.5		3.5	3.0		1.0	3.5	
Lane Grp Cap (vph)		287	583		316		183	2125		73	2002	
v/s Ratio Prot			0.01				c0.03	0.18		0.00	c0.47	
v/s Ratio Perm		0.04	0.02		c0.12							
v/c Ratio		0.17	0.07		0.57		0.27	0.28		0.10	0.82	
Uniform Delay, d1		27.1	19.6		29.7		34.1	6.7		38.6	14.7	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.1		2.7		0.9	0.3		0.2	3.9	
Delay (s)		27.4	19.6		32.4		35.0	7.1		38.8	18.5	
Level of Service		C	B		C		D	A		D	B	
Approach Delay (s)		23.8			32.4			9.1			18.6	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	44	159	57	32	13	190	1401	63	32	1015	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	16	16	16	11	12	12	11	12	12
Total Lost time (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1706	1615		2060		1728	3551		1728	3526	
Flt Permitted		0.70	1.00		0.68		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1243	1615		1435		1728	3551		1728	3526	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	183	49	177	63	36	14	211	1557	70	36	1128	112
RTOR Reduction (vph)	0	0	6	0	7	0	0	3	0	0	8	0
Lane Group Flow (vph)	0	232	171	0	106	0	211	1624	0	36	1232	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm		pm+ov	Perm			Prot			Prot		
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		20.2	35.0		20.2		14.8	44.0		4.8	34.0	
Effective Green, g (s)		22.2	39.0		22.2		16.8	46.0		6.8	36.0	
Actuated g/C Ratio		0.26	0.46		0.26		0.20	0.55		0.08	0.43	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.5	3.5		3.5		3.5	3.0		1.0	3.5	
Lane Grp Cap (vph)		329	808		379		346	1945		140	1511	
v/s Ratio Prot			0.04				c0.12	c0.46		0.02	0.35	
v/s Ratio Perm		c0.19	0.06		0.07							
v/c Ratio		0.71	0.21		0.28		0.61	0.84		0.26	0.82	
Uniform Delay, d1		27.9	13.4		24.6		30.6	15.8		36.2	21.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		7.0	0.2		0.5		3.2	4.4		0.4	5.0	
Delay (s)		34.9	13.5		25.0		33.8	20.3		36.6	26.0	
Level of Service		C	B		C		C	C		D	C	
Approach Delay (s)		25.6			25.0			21.8			26.3	
Approach LOS		C			C			C			C	

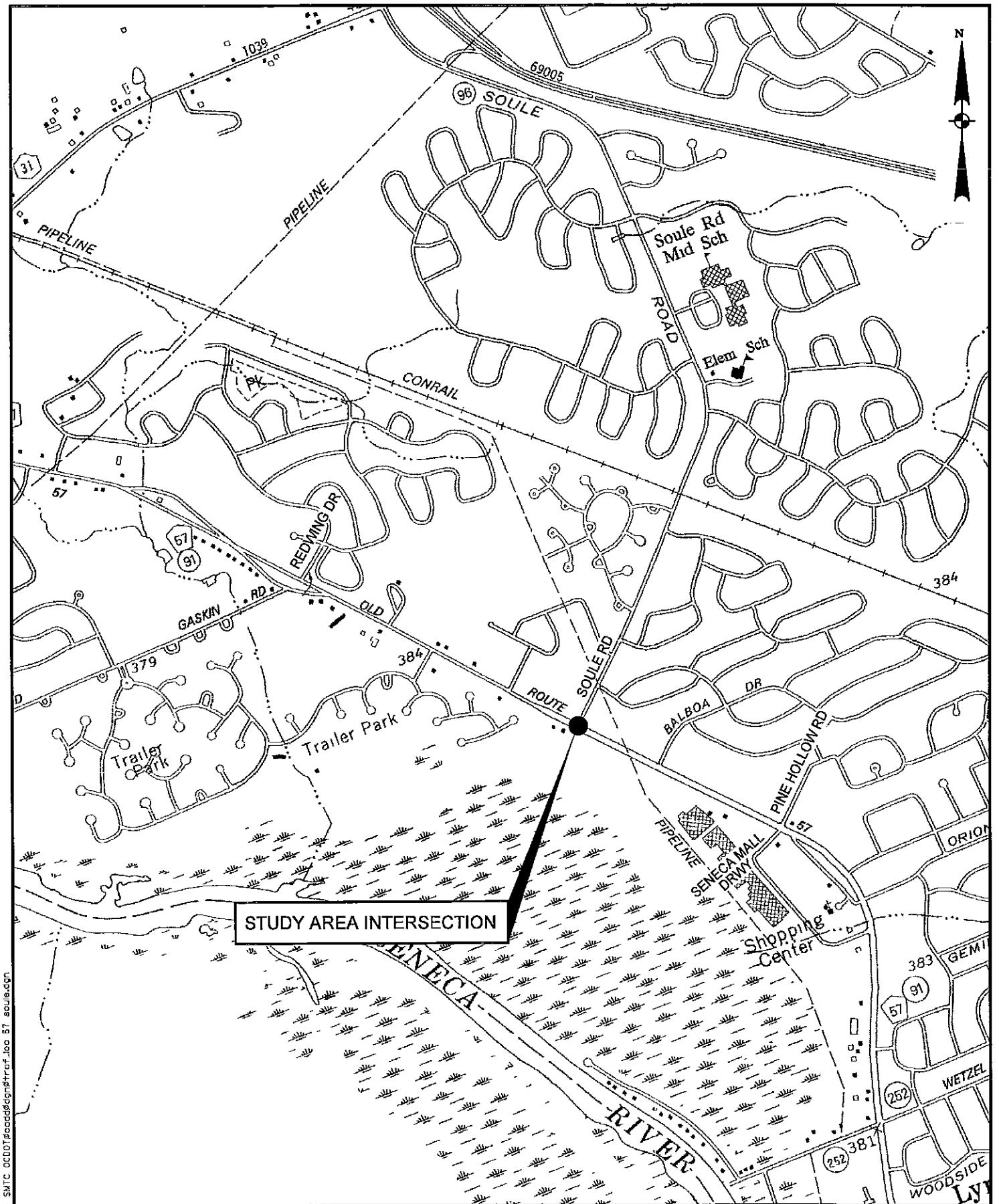
Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	6	38	133	13	25	44	533	13	6	1439	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	16	16	16	11	12	12	11	12	12
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.98		1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1700	1615		1935		1616	3331		1711	3526	
Flt Permitted		0.73	1.00		0.74		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1291	1615		1489		1616	3331		1711	3526	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	42	7	42	148	14	28	49	592	14	7	1599	42
RTOR Reduction (vph)	0	0	1	0	12	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	49	41	0	178	0	49	605	0	7	1639	0
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	8%	8%	8%	2%	2%	2%
Turn Type	Perm		pm+ov	Perm			Prot			Prot		
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		12.1	17.5		12.1		5.4	37.3		1.1	33.0	
Effective Green, g (s)		14.1	21.5		14.1		7.4	39.3		3.1	35.0	
Actuated g/C Ratio		0.20	0.31		0.20		0.11	0.56		0.04	0.50	
Clearance Time (s)		6.5	6.5		6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		1.7	1.6		1.0		1.6	3.4		1.6	3.4	
Lane Grp Cap (vph)		260	600		300		171	1870		76	1763	
v/s Ratio Prot			0.01				c0.03	c0.18		0.00	c0.46	
v/s Ratio Perm		0.04	0.02		c0.12							
v/c Ratio		0.19	0.07		0.59		0.29	0.32		0.09	0.93	
Uniform Delay, d1		23.2	17.2		25.4		28.9	8.2		32.1	16.4	
Progression Factor		1.00	1.00		1.00		1.34	0.39		0.79	0.90	
Incremental Delay, d2		0.1	0.0		2.1		0.2	0.3		0.2	9.1	
Delay (s)		23.3	17.2		27.4		39.0	3.5		25.7	23.9	
Level of Service		C	B		C		D	A		C	C	
Approach Delay (s)		20.5			27.4			6.1			23.9	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	44	159	57	32	13	190	1401	63	32	1015	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	16	16	16	11	12	12	11	12	12
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1706	1615		2060		1728	3551		1728	3526	
Flt Permitted		0.72	1.00		0.65		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1274	1615		1367		1728	3551		1728	3526	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	183	49	177	63	36	14	211	1557	70	36	1128	112
RTOR Reduction (vph)	0	0	8	0	7	0	0	3	0	0	8	0
Lane Group Flow (vph)	0	232	169	0	106	0	211	1624	0	36	1232	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm		pm+ov	Perm			Prot			Prot		
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		18.4	30.6		18.4		12.2	38.5		3.6	29.9	
Effective Green, g (s)		20.4	34.6		20.4		14.2	40.5		5.6	31.9	
Actuated g/C Ratio		0.25	0.43		0.25		0.18	0.51		0.07	0.40	
Clearance Time (s)		6.5	6.5		6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		1.7	1.6		1.0		1.6	3.4		1.6	3.4	
Lane Grp Cap (vph)		325	789		349		307	1798		121	1406	
v/s Ratio Prot			0.04				c0.12	c0.46		0.02	0.35	
v/s Ratio Perm		c0.18	0.07		0.08							
v/c Ratio		0.71	0.21		0.30		0.69	0.90		0.30	0.88	
Uniform Delay, d1		27.1	14.2		24.1		30.8	18.0		35.3	22.2	
Progression Factor		1.00	1.00		1.00		0.78	1.03		1.20	0.68	
Incremental Delay, d2		6.1	0.0		0.2		2.2	3.6		0.4	6.9	
Delay (s)		33.2	14.2		24.2		26.2	22.1		42.7	22.1	
Level of Service		C	B		C		C	C		D	C	
Approach Delay (s)		25.0			24.2			22.6			22.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



LOCATION MAP
COUNTY ROAD 57/SOULE ROAD

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 9/10	FIGURE: B.11

ddaron
F:\Projects\2009\09-094 SMTC OCDOT\cadd\dgn\traf_loc 57 soule.dgn

INTERSECTION DIAGRAM

Location

Old Route 57 at Soule Road

Legend

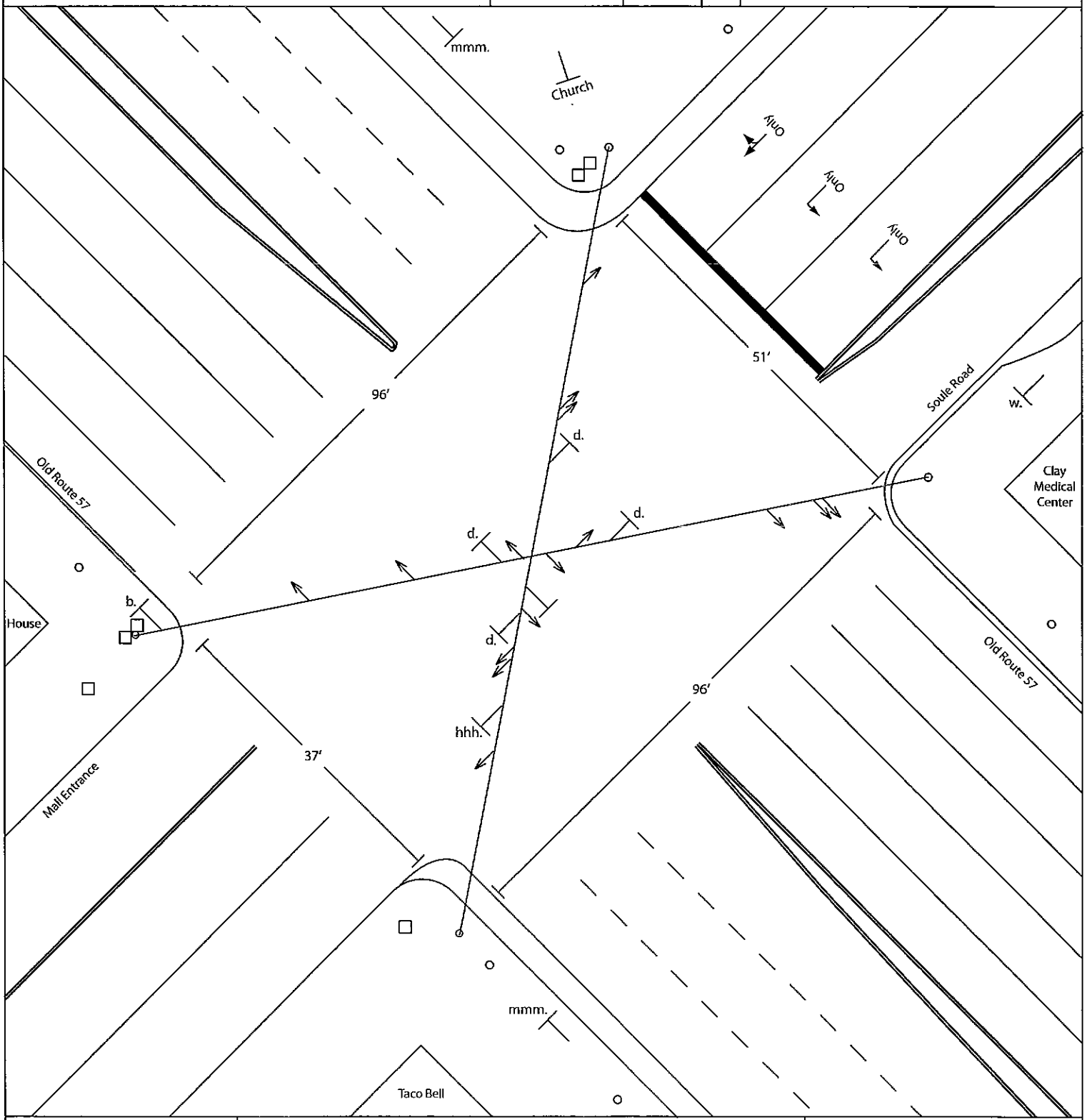
Signal Head | Sign | Signal with Span Wire | ## (Feet) | Light Pole | Utility Pole | Pedestrian Signal

Drawn By	JC	Prepared By	SMTC
Date	May 2010		

N

Note:
Only actual pavement markings were drawn. An absence of arrows/striping indicates no pavement markings.

For sign definitions see Intersection Diagram Sign Index.



Task

OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

Diagram is for presentation purposes only.
SMTC does not guarantee the accuracy or completeness of this diagram.

Diagram is not to scale.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	13	6	6	444	13	101	0	292	304	304	1034	13
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	8%	8%	8%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	114	95	13	412	63	197	44	1002	533	184	723	51
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

INTERSECTION NAME: 57 @ Soule Rd.
INTERSECTION NUMBER: 50

INSTALLATION DATE:
PROGRAM DATE:

INTERVAL	PHASE (ON/OFF) 1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL								
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

INTERVAL	PHASE TIMINGS 1	2	3	4	5	6	7	8
MIN GREEN	3.5	5		5	3.5	5	5	
PASSAGE	3.2	3		3.2	3.2	3.2	3.2	
YELLOW	4	4		4	4	4	4	
RED	2	2		2	2	2	2	
MAX I	15	22		25	15	18	14	
MAX II	15	45		25	15	45	10	
WALK			10					
PED CLEAR			15					
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

PHASES USED	1	2	3	4	5	6	7	8
ON/OFF	X	X		X	X	X	X	

PED Overlaps	1	2	3	4	5	6	7	8
INHIBIT O/L								
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00			FRE-ON	
2	00:00				
3	00:00				
4	06:00			FRE-OFF	
4	06:00		4/1/1		80 S
4	06:40		5/1/1		90 S
4	09:00		4/1/1		80 S
4	14:30		6/1/1		90 S
4	18:00		4/1/1		80 S
4	20:30			FRE-ON	
5	00:00			FRE-ON	
5	09:00			FRE-OFF	
5	09:00		4/1/1		
5	20:00			FRE-ON	

		COS -
PL 1, 2, 3, 4	FRE-OP ON 00:00 - 0600	
PL 4	0600	4/1/1
	0640	5/1/1
	0900	4/1/1
	230	6/1/1
	1800	4/1/1
	2030	FRE-ON
PL 5	0900	FRE-OFF

INTERSECTION NAME: 57 @ Soule Rd.
INTERSECTION NUMBER: 50

INSTALLATION DATE: COORDINATION
PROGRAM DATE: OPTIMIZATION

	PHASE (ON/OFF)							
INTERVAL	1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL		X				X		
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

	PHASE TIMINGS							
INTERVAL	1	2	3	4	5	6	7	8
MIN GREEN	5	10		10	5	10	7	
PASSAGE	1.6	3.4		1	1.6	3.4	1	
YELLOW	4	4		4	4	4	4	
RED	3	3		3	3	3	3	
MAX I (AM)	5	20		10	15	10	7	
MAX II (PM)	5	29		11	11	23	7	
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

	COS -
PL 1 2 3 4	
PL 4	
PL 5	

PHASES USED								
	1	2	3	4	5	6	7	8
ON/OFF	X	X		X	X	X	X	

Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLAP				X				
OVERLAP B								
OVERLAP C								
OVERLAP D								

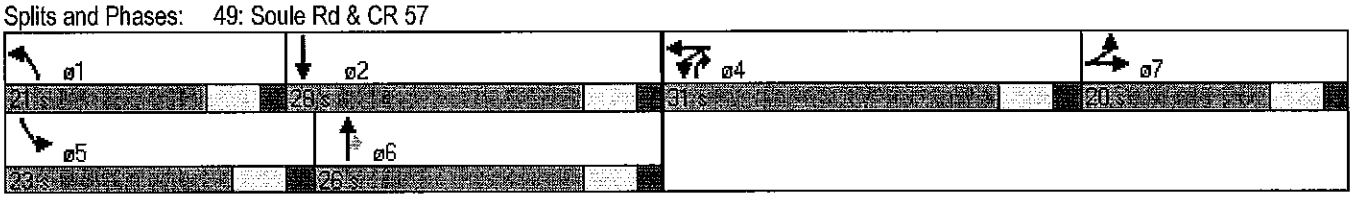
PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00				
2	00:00				
3	00:00				
4	06:00				
4	06:00				
4	06:40				
4	09:00				
4	14:30				
4	18:00				
4	20:30				
5	00:00				
5	09:00				
5	09:00				
5	20:00				

Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	ø1
Lane Configurations									
Volume (vph)	13	6	444	13	292	304	304	1034	
Turn Type	Split		Split			pm+ov	Prot		
Protected Phases	7	7	4	4	6	4	5	2	1
Permitted Phases						6			
Detector Phase	7	7	4	4	6		5	2	
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.5	5.0	3.5
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	9.5	11.0	9.5
Total Split (s)	20.0	20.0	31.0	31.0	26.0	31.0	23.0	28.0	21.0
Total Split (%)	20.0%	20.0%	31.0%	31.0%	26.0%	31.0%	23.0%	28.0%	21%
Maximum Green (s)	14.0	14.0	25.0	25.0	20.0	25.0	17.0	22.0	15.0
Yellow Time (s)	4.0	4.0	4.0	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag					Lag		Lead	Lag	Lead
Lead-Lag Optimize?									
Vehicle Extension (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.0	3.2
Minimum Gap (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 87 (87%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 49: Soule Rd & CR 57

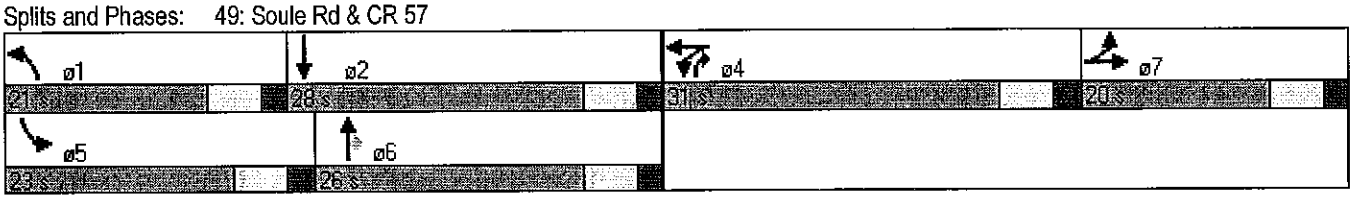


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	114	95	412	63	44	1002	533	184	723
Turn Type	Split		Split		Prot		pm+ov	Prot	
Protected Phases	7	7	4	4	1	6	4	5	2
Permitted Phases							6		
Detector Phase	7	7	4	4	1	6		5	2
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	3.5	5.0	5.0	3.5	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	9.5	11.0	11.0	9.5	11.0
Total Split (s)	20.0	20.0	31.0	31.0	21.0	26.0	31.0	23.0	28.0
Total Split (%)	20.0%	20.0%	31.0%	31.0%	21.0%	26.0%	31.0%	23.0%	28.0%
Maximum Green (s)	14.0	14.0	25.0	25.0	15.0	20.0	25.0	17.0	22.0
Yellow Time (s)	4.0	4.0	4.0	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag					Lead	Lag		Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.0
Minimum Gap (s)	3.2	3.2	3.2	3.2	3.0	3.2	3.2	3.2	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 34 (34%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 49: Soule Rd & CR 57

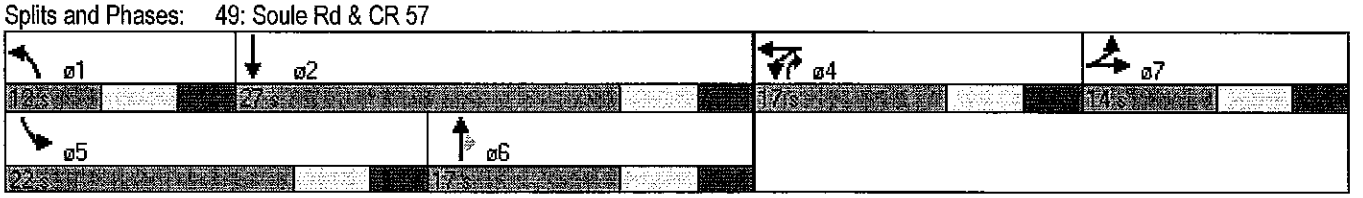


Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT	ø1
Lane Configurations									
Volume (vph)	13	6	444	13	292	304	304	1034	
Turn Type	Split		Split			pm+ov	Prot		
Protected Phases	7	7	4	4	6	4	5	2	1
Permitted Phases						6			
Detector Phase	7	7	4	4	6		5	2	
Switch Phase									
Minimum Initial (s)	7.0	7.0	10.0	10.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	14.0	14.0	17.0	17.0	17.0	17.0	12.0	17.0	12.0
Total Split (s)	14.0	14.0	17.0	17.0	17.0	17.0	22.0	27.0	12.0
Total Split (%)	20.0%	20.0%	24.3%	24.3%	24.3%	24.3%	31.4%	38.6%	17%
Maximum Green (s)	7.0	7.0	10.0	10.0	10.0	10.0	15.0	20.0	5.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag					Lag		Lead	Lag	Lead
Lead-Lag Optimize?									
Vehicle Extension (s)	1.0	1.0	1.0	1.0	3.4	1.0	1.6	3.4	1.6
Minimum Gap (s)	1.0	1.0	1.0	1.0	3.4	1.0	1.6	3.4	1.6
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	C-Min	None	None	C-Min	None
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 49: Soule Rd & CR 57

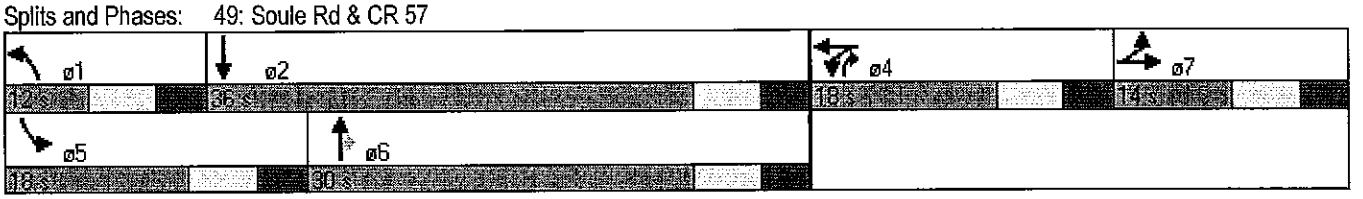


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	114	95	412	63	44	1002	533	184	723
Turn Type	Split		Split		Prot		pm+ov	Prot	
Protected Phases	7	7	4	4	1	6	4	5	2
Permitted Phases							6		
Detector Phase	7	7	4	4	1	6		5	2
Switch Phase									
Minimum Initial (s)	7.0	7.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	14.0	14.0	17.0	17.0	12.0	17.0	17.0	12.0	17.0
Total Split (s)	14.0	14.0	18.0	18.0	12.0	30.0	18.0	18.0	36.0
Total Split (%)	17.5%	17.5%	22.5%	22.5%	15.0%	37.5%	22.5%	22.5%	45.0%
Maximum Green (s)	7.0	7.0	11.0	11.0	5.0	23.0	11.0	11.0	29.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag					Lead	Lag		Lead	Lag
Lead-Lag Optimize?									
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.6	3.4	1.0	1.6	3.4
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.6	3.4	1.0	1.6	3.4
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Min	None	None	C-Min
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 49: Soule Rd & CR 57



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	6	6	444	13	101	0	292	304	304	1034	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	12	12	14	14	13	12	14	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		0.97	1.00			0.91	1.00	1.00	0.91	
Frt	1.00	0.93		1.00	0.87			1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1743	1643		3502	1756			4803	1595	1770	5076	
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1743	1643		3502	1756			4803	1595	1770	5076	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	7	7	493	14	112	0	324	338	338	1149	14
RTOR Reduction (vph)	0	7	0	0	87	0	0	0	169	0	1	0
Lane Group Flow (vph)	14	7	0	493	39	0	0	324	169	338	1162	0
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	8%	8%	8%	2%	2%	2%
Turn Type	Split			Split			Prot		pm+ov	Prot		
Protected Phases	7	7		4	4		1	6	4	5	2	
Permitted Phases									6			
Actuated Green, G (s)	4.3	4.3		19.9	19.9			26.2	46.1	25.6	57.8	
Effective Green, g (s)	6.3	6.3		21.9	21.9			28.2	50.1	27.6	59.8	
Actuated g/C Ratio	0.06	0.06		0.22	0.22			0.28	0.50	0.28	0.60	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.2	3.2		3.2	3.2			3.2	3.2	3.2	3.0	
Lane Grp Cap (vph)	110	104		767	385			1354	863	489	3035	
v/s Ratio Prot	c0.01	0.00		c0.14	0.02			0.07	0.04	c0.19	c0.23	
v/s Ratio Perm									0.06			
v/c Ratio	0.13	0.07		0.64	0.10			0.24	0.20	0.69	0.38	
Uniform Delay, d1	44.3	44.1		35.5	31.2			27.6	13.8	32.4	10.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.3		1.9	0.1			0.4	0.1	4.3	0.4	
Delay (s)	44.8	44.4		37.4	31.3			28.1	13.9	36.6	10.8	
Level of Service	D	D		D	C			C	B	D	B	
Approach Delay (s)		44.6			36.1			20.8			16.7	
Approach LOS		D			D			C			B	

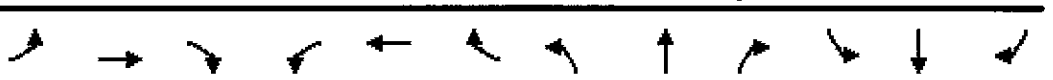
Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	95	13	412	63	197	44	1002	533	184	723	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	12	12	14	14	13	12	14	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	
Frt	1.00	0.98		1.00	0.89		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1847	1848		3467	1779		1847	5136	1706	1770	5035	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1847	1848		3467	1779		1847	5136	1706	1770	5035	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	127	106	14	458	70	219	49	1113	592	204	803	57
RTOR Reduction (vph)	0	5	0	0	120	0	0	0	172	0	6	0
Lane Group Flow (vph)	127	115	0	458	169	0	49	1113	420	204	854	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Split			Split			Prot		pm+ov	Prot		
Protected Phases	7	7		4	4		1	6	4	5	2	
Permitted Phases									6			
Actuated Green, G (s)	11.7	11.7		19.8	19.8		7.2	28.9	48.7	15.6	37.3	
Effective Green, g (s)	13.7	13.7		21.8	21.8		9.2	30.9	52.7	17.6	39.3	
Actuated g/C Ratio	0.14	0.14		0.22	0.22		0.09	0.31	0.53	0.18	0.39	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.2	3.2		3.2	3.2		3.2	3.2	3.2	3.2	3.0	
Lane Grp Cap (vph)	253	253		756	388		170	1587	967	312	1979	
v/s Ratio Prot	c0.07	0.06		c0.13	0.09		0.03	c0.22	0.09	c0.12	0.17	
v/s Ratio Perm									0.15			
v/c Ratio	0.50	0.45		0.61	0.43		0.29	0.70	0.43	0.65	0.43	
Uniform Delay, d1	40.0	39.7		35.2	33.8		42.3	30.5	14.5	38.4	22.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	1.4		1.4	0.8		1.0	2.6	0.3	4.9	0.7	
Delay (s)	41.7	41.1		36.6	34.6		43.4	33.1	14.8	43.3	22.9	
Level of Service	D	D		D	C		D	C	B	D	C	
Approach Delay (s)		41.4			35.9			27.2			26.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

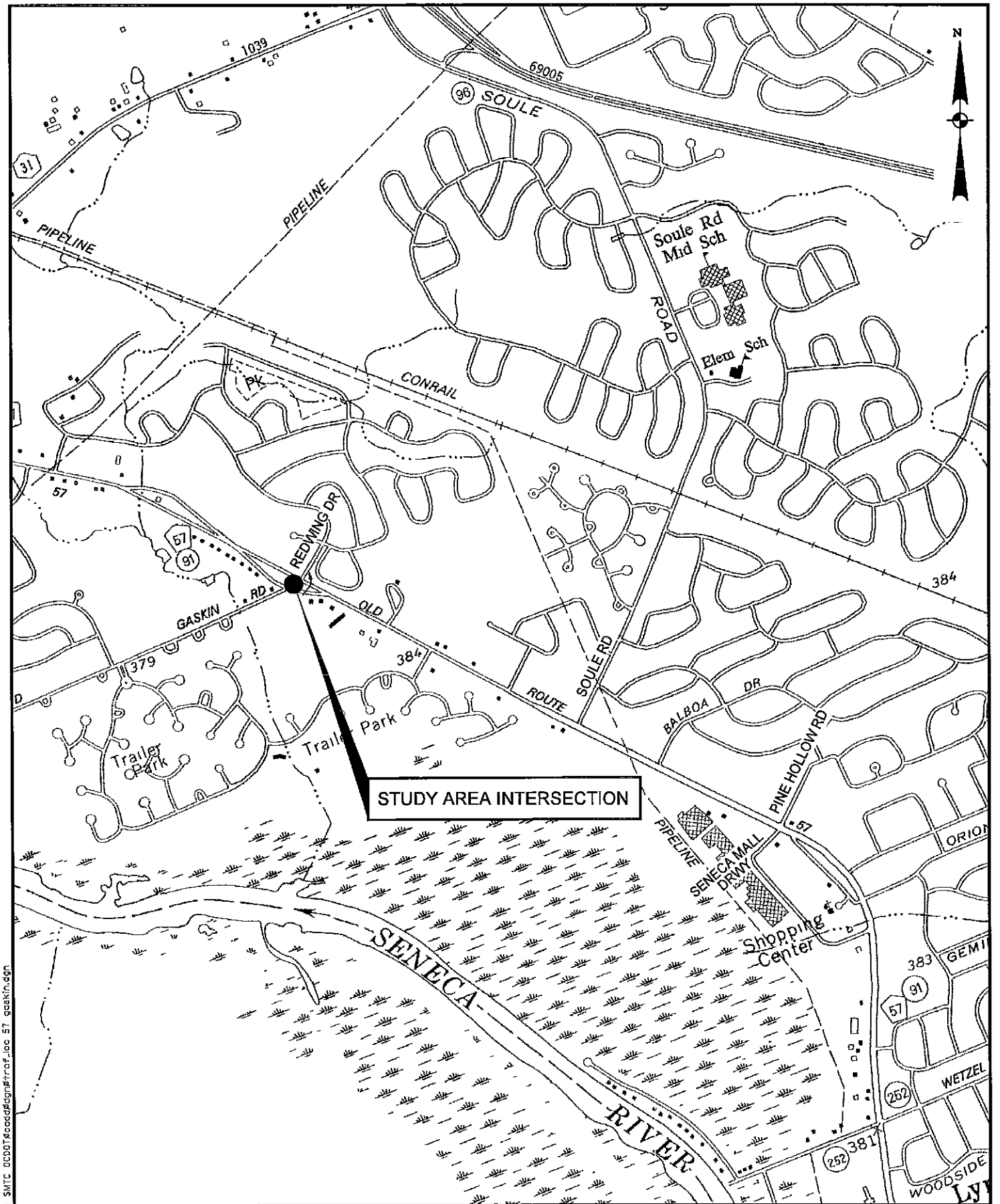
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	6	6	444	13	101	0	292	304	304	1034	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	12	12	14	14	13	12	14	12	12	12
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00		0.97	1.00			0.91	1.00	1.00	0.91	
Frt	1.00	0.93		1.00	0.87			1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1743	1643		3502	1756			4803	1595	1770	5076	
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1743	1643		3502	1756			4803	1595	1770	5076	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	14	7	7	493	14	112	0	324	338	338	1149	14
RTOR Reduction (vph)	0	7	0	0	93	0	0	0	201	0	1	0
Lane Group Flow (vph)	14	7	0	493	33	0	0	324	137	338	1162	0
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	8%	8%	8%	2%	2%	2%
Turn Type	Split			Split			Prot		pm+ov	Prot		
Protected Phases	7	7		4	4		1	6	4	5	2	
Permitted Phases									6			
Actuated Green, G (s)	2.8	2.8		10.0	10.0			14.3	24.3	14.9	36.2	
Effective Green, g (s)	4.8	4.8		12.0	12.0			16.3	28.3	16.9	38.2	
Actuated g/C Ratio	0.07	0.07		0.17	0.17			0.23	0.40	0.24	0.55	
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0	7.0	7.0	7.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0			3.4	1.0	1.6	3.4	
Lane Grp Cap (vph)	120	113		600	301			1118	759	427	2770	
v/s Ratio Prot	c0.01	0.00		c0.14	0.02			0.07	0.03	c0.19	c0.23	
v/s Ratio Perm									0.05			
v/c Ratio	0.12	0.07		0.82	0.11			0.29	0.18	0.79	0.42	
Uniform Delay, d1	30.6	30.5		28.0	24.5			22.1	13.4	24.9	9.4	
Progression Factor	1.00	1.00		1.00	1.00			0.53	0.65	0.82	0.76	
Incremental Delay, d2	0.2	0.1		8.5	0.1			0.6	0.0	7.4	0.4	
Delay (s)	30.8	30.6		36.4	24.6			12.4	8.7	27.9	7.5	
Level of Service	C	C		D	C			B	A	C	A	
Approach Delay (s)		30.7			34.0			10.5			12.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	95	13	412	63	197	44	1002	533	184	723	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	12	12	14	14	13	12	14	12	12	12
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	
Frt	1.00	0.98		1.00	0.89		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1847	1848		3467	1779		1847	5136	1706	1770	5035	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1847	1848		3467	1779		1847	5136	1706	1770	5035	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	127	106	14	458	70	219	49	1113	592	204	803	57
RTOR Reduction (vph)	0	6	0	0	140	0	0	0	144	0	10	0
Lane Group Flow (vph)	127	114	0	458	149	0	49	1113	448	204	851	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Split			Split			Prot		pm+ov	Prot		
Protected Phases	7	7		4	4		1	6	4	5	2	
Permitted Phases									6			
Actuated Green, G (s)	7.1	7.1		11.4	11.4		3.0	23.0	34.4	10.5	30.5	
Effective Green, g (s)	9.1	9.1		13.4	13.4		5.0	25.0	38.4	12.5	32.5	
Actuated g/C Ratio	0.11	0.11		0.17	0.17		0.06	0.31	0.48	0.16	0.41	
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.6	3.4	1.0	1.6	3.4	
Lane Grp Cap (vph)	210	210		581	298		115	1605	926	277	2045	
v/s Ratio Prot	c0.07	0.06		c0.13	0.08		0.03	c0.22	0.08	c0.12	0.17	
v/s Ratio Perm									0.18			
v/c Ratio	0.60	0.54		0.79	0.50		0.43	0.69	0.48	0.74	0.42	
Uniform Delay, d1	33.7	33.5		31.9	30.3		36.1	24.1	14.1	32.2	17.0	
Progression Factor	1.00	1.00		1.00	1.00		1.34	0.57	0.53	1.05	1.23	
Incremental Delay, d2	3.3	1.5		6.5	0.5		0.5	1.4	0.1	7.8	0.6	
Delay (s)	37.1	35.0		38.4	30.7		48.8	15.2	7.5	41.6	21.4	
Level of Service	D	D		D	C		D	B	A	D	C	
Approach Delay (s)		36.1			35.4			13.5			25.3	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



LOCATION MAP
COUNTY ROAD 57/GASKIN ROAD/
REDWING DRIVE

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 9/10	FIGURE: B.12

daaron
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INTERSECTION DIAGRAM

Location

Old Route 57 at Gaskin Road

Legend

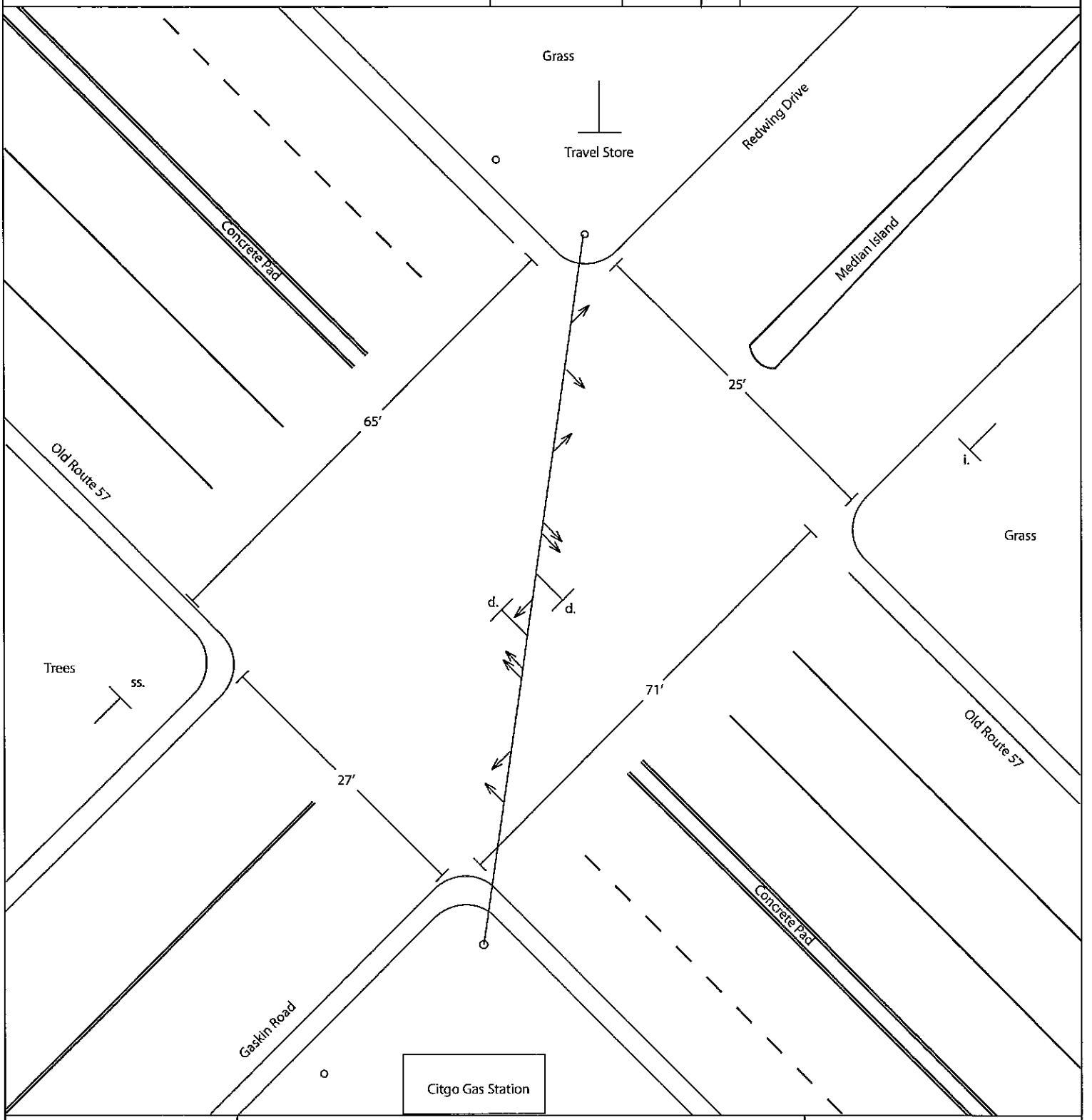
Sign | Signal Head | Signal with Span Wire | ## (Feet) | Utility Pole

Drawn By	JC	Prepared By	SMTC
Date	May 2010		

N

Note:
Only actual pavement markings were drawn. An absence of arrows/striping indicates no pavement markings.

For sign definitions see Intersection Diagram Sign Index.



Task

OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

Diagram is for presentation purposes only.
SMTC does not guarantee the accuracy or completeness of this diagram.

Diagram is not to scale.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	32	6	412	285	19	25	82	273	38	6	520	19
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	14%	14%	14%	8%	8%	8%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	57	32	228	127	19	19	254	717	222	44	482	32
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												

Intersection Summary

INTERSECTION NAME: 57 @ Gaskin Rd.
INTERSECTION NUMBER: 73

INSTALLATION DATE:
PROGRAM DATE:

	PHASE (ON/OFF)							
INTERVAL	1	2	3	4	5	6	7	8
MEMORY								
EXT RECALL								
MAX RECALL		X				X		
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

	PHASE TIMINGS							
INTERVAL	1	2	3	4	5	6	7	8
MIN GREEN	8	10	8	0	8	10	8	0
PASSAGE	4	4	4	0	4	4	4	0
YELLOW	4	4	4	0	4	4	4	0
RED	2	2	2	0	2	2	2	0
MAX I	15	30	25	0	15	30	25	0
MAX II	30	30	30	0	30	30	30	0
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

PHASES USED								
	1	2	3	4	5	6	7	8
ON/OFF	X	X	X		X	X	X	

PED Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00			FRE-ON	
2	00:00				
3	00:00				
4	06:00			FRE-OFF	
4	06:00		4/1/1		80 S
4	06:40		5/1/1		90 S
4	09:00		4/1/1		80 S
4	14:30		6/1/1		90 S
4	18:00		4/1/1		80 S
4	20:30			FRE-ON	
5	00:00			FRE-ON	
5	09:00			FRE-OFF	
5	09:00		4/1/1		
5	20:00			FRE-ON	

		COS -
PL 1 2 3 4	FRE-OP ON 00:00 - 0600	
PL 4	0600	4/1/1
	0640	5/1/1
	0900	4/1/1
	230	6/1/1
	1800	4/1/1
	2030	FRE-ON
PL 5	0900	FRE-OFF

INTERSECTION NAME: 57 @ Gaskin Rd.
INTERSECTION NUMBER: 73

INSTALLATION DATE: COORDINATION
PROGRAM DATE: OPTIMIZATION

	PHASE (ON/OFF)							
INTERVAL	1	2	3	4	5	6	7	8
MEMORY		X				X		
EXT RECALL		X				X		
MAX RECALL								
CNA I								
CNA II								
FL WALK								
SOFT RECALL								
WALK REST								
COND PED								
FWTPCL								

	PHASE TIMINGS							
INTERVAL	1	2	3	4	5	6	7	8
MIN GREEN	5	10	7		5	10	10	
PASSAGE	1.6	3.4	1		1.6	3.4	1	
YELLOW	4	4	4		4	4	4	
RED	2.5	2.5	2.5		2.5	2.5	2.5	
MAX I (AM)	5.5	11.5	33.5		5.5	11.5	33.5	
MAX II (PM)	17.5	19.5	23.5		5.5	31.5	23.5	
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

			COS -
PL 1 2 3 4	}		
PL 4			
PL 5			

PHASES USED								
	1	2	3	4	5	6	7	8
ON/OFF	X	X	X		X	X	X	

PED Overlaps								
INHIBIT O/L	1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

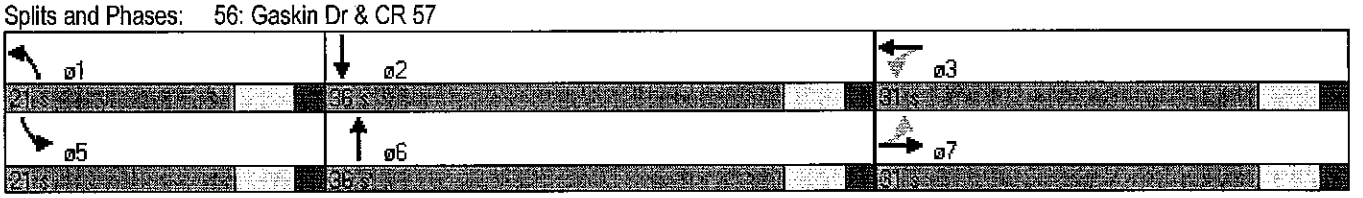
PLAN	TIME	CKT	COS	CKT	CYCLE LENGTH
1	00:00				
2	00:00				
3	00:00				
4	06:00				
4	06:00				
4	06:40				
4	09:00				
4	14:30				
4	18:00				
4	20:30				
5	00:00				
5	09:00				
5	09:00				
5	20:00				

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	32	6	285	19	82	273	6	520
Turn Type	Perm		Perm		Prot		Prot	
Protected Phases		7		3	1	6	5	2
Permitted Phases	7		3					
Detector Phase	7	7	3	3	1	6	5	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	10.0	8.0	10.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	16.0	14.0	16.0
Total Split (s)	31.0	31.0	31.0	31.0	21.0	36.0	21.0	36.0
Total Split (%)	35.2%	35.2%	35.2%	35.2%	23.9%	40.9%	23.9%	40.9%
Maximum Green (s)	25.0	25.0	25.0	25.0	15.0	30.0	15.0	30.0
Yellow Time (s)	4.0	4.0	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 88
Actuated Cycle Length: 88
Offset: 27 (31%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 56: Gaskin Dr & CR 57

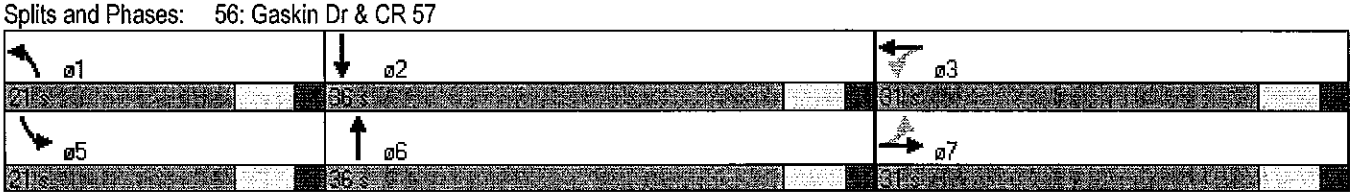


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	57	32	127	19	254	717	44	482
Turn Type	Perm		Perm		Prot		Prot	
Protected Phases		7		3	1	6	5	2
Permitted Phases	7		3					
Detector Phase	7	7	3	3	1	6	5	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	10.0	8.0	10.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	16.0	14.0	16.0
Total Split (s)	31.0	31.0	31.0	31.0	21.0	36.0	21.0	36.0
Total Split (%)	35.2%	35.2%	35.2%	35.2%	23.9%	40.9%	23.9%	40.9%
Maximum Green (s)	25.0	25.0	25.0	25.0	15.0	30.0	15.0	30.0
Yellow Time (s)	4.0	4.0	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 88
Actuated Cycle Length: 88
Offset: 14 (16%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 56: Gaskin Dr & CR 57

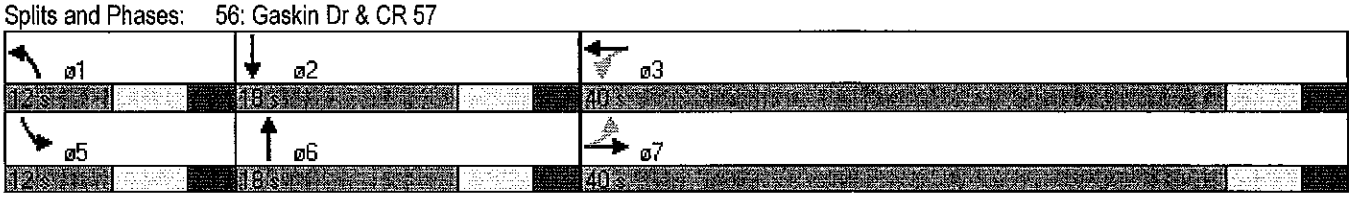


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	32	6	285	19	82	273	6	520
Turn Type	Perm		Perm		Prot		Prot	
Protected Phases		7		3	1	6	5	2
Permitted Phases	7		3					
Detector Phase	7	7	3	3	1	6	5	2
Switch Phase								
Minimum Initial (s)	10.0	10.0	7.0	7.0	5.0	10.0	5.0	10.0
Minimum Split (s)	16.5	16.5	13.5	13.5	11.5	16.5	11.5	16.5
Total Split (s)	40.0	40.0	40.0	40.0	12.0	18.0	12.0	18.0
Total Split (%)	57.1%	57.1%	57.1%	57.1%	17.1%	25.7%	17.1%	25.7%
Maximum Green (s)	33.5	33.5	33.5	33.5	5.5	11.5	5.5	11.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.6	3.4	1.6	3.4
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.6	3.4	1.6	3.4
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Min	None	C-Min
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 70
Actual Cycle Length: 70
Offset: 60 (86%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 56: Gaskin Dr & CR 57

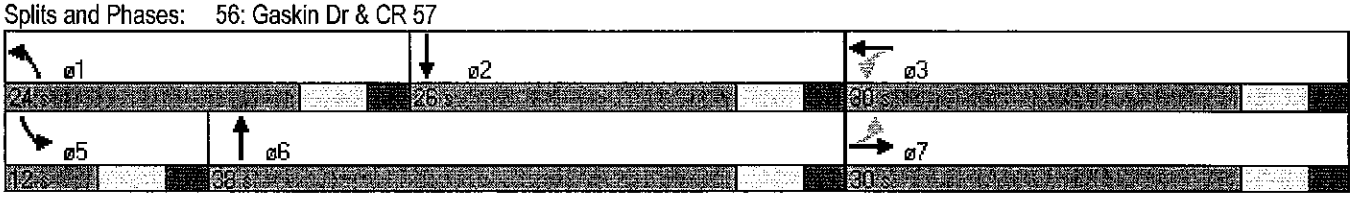


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	57	32	127	19	254	717	44	482
Turn Type	Perm		Perm		Prot		Prot	
Protected Phases		7		3	1	6	5	2
Permitted Phases	7		3					
Detector Phase	7	7	3	3	1	6	5	2
Switch Phase								
Minimum Initial (s)	10.0	10.0	7.0	7.0	5.0	10.0	5.0	10.0
Minimum Split (s)	16.5	16.5	13.5	13.5	11.5	16.5	11.5	16.5
Total Split (s)	30.0	30.0	30.0	30.0	24.0	38.0	12.0	26.0
Total Split (%)	37.5%	37.5%	37.5%	37.5%	30.0%	47.5%	15.0%	32.5%
Maximum Green (s)	23.5	23.5	23.5	23.5	17.5	31.5	5.5	19.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.6	3.4	1.6	3.4
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.6	3.4	1.6	3.4
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	C-Min	None	C-Min
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 50 (63%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 56: Gaskin Dr & CR 57



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	6	412	285	19	25	82	273	38	6	520	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	16	16	16	12	12	12	12	12	12
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.88			0.99		1.00	0.98		1.00	0.99	
Flt Protected		1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1881			1792		1671	3282		1752	3486	
Flt Permitted		0.96			0.26		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1820			482		1671	3282		1752	3486	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	7	458	317	21	28	91	303	42	7	578	21
RTOR Reduction (vph)	0	314	0	0	3	0	0	9	0	0	3	0
Lane Group Flow (vph)	0	187	0	0	363	0	91	336	0	7	596	0
Heavy Vehicles (%)	0%	0%	0%	14%	14%	14%	8%	8%	8%	3%	3%	3%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		7			3		1	6		5	2	
Permitted Phases	7			3								
Actuated Green, G (s)		25.0			25.0		9.6	43.4		1.6	35.4	
Effective Green, g (s)		27.0			27.0		11.6	45.4		3.6	37.4	
Actuated g/C Ratio		0.31			0.31		0.13	0.52		0.04	0.42	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)		558			148		220	1693		72	1482	
v/s Ratio Prot							c0.05	0.10		0.00	c0.17	
v/s Ratio Perm		0.10			c0.75							
v/c Ratio		0.34			2.45		0.41	0.20		0.10	0.40	
Uniform Delay, d1		23.6			30.5		35.1	11.5		40.6	17.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			672.2		1.7	0.3		0.8	0.8	
Delay (s)		24.1			702.7		36.8	11.7		41.4	18.4	
Level of Service		C			F		D	B		D	B	
Approach Delay (s)		24.1			702.7			17.0			18.6	
Approach LOS		C			F			B			B	

Intersection Summary			
HCM Average Control Delay	150.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	32	228	127	19	19	254	717	222	44	482	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	16	16	16	12	12	12	12	12	12
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.90			0.98		1.00	0.96		1.00	0.99	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1927			2001		1787	3447		1770	3506	
Flt Permitted		0.92			0.39		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1786			812		1787	3447		1770	3506	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	63	36	253	141	21	21	282	797	247	49	536	36
RTOR Reduction (vph)	0	112	0	0	6	0	0	26	0	0	5	0
Lane Group Flow (vph)	0	240	0	0	177	0	282	1018	0	49	567	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		7			3		1	6		5	2	
Permitted Phases	7			3								
Actuated Green, G (s)		21.0			21.0		15.8	43.0		6.0	33.2	
Effective Green, g (s)		23.0			23.0		17.8	45.0		8.0	35.2	
Actuated g/C Ratio		0.26			0.26		0.20	0.51		0.09	0.40	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)		467			212		361	1763		161	1402	
v/s Ratio Prot							c0.16	c0.30		0.03	0.16	
v/s Ratio Perm		0.13			c0.22							
v/c Ratio		0.51			0.84		0.78	0.58		0.30	0.40	
Uniform Delay, d1		27.7			30.7		33.3	14.9		37.4	18.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.3			24.6		11.1	1.4		1.5	0.9	
Delay (s)		29.0			55.3		44.3	16.3		38.9	19.8	
Level of Service		C			E		D	B		D	B	
Approach Delay (s)		29.0			55.3			22.3			21.3	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	6	412	285	19	25	82	273	38	6	520	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	16	16	16	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.88			0.99		1.00	0.98		1.00	0.99	
Flt Protected		1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1881			1792		1671	3282		1752	3486	
Flt Permitted		0.96			0.42		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1803			776		1671	3282		1752	3486	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	7	458	317	21	28	91	303	42	7	578	21
RTOR Reduction (vph)	0	188	0	0	5	0	0	14	0	0	4	0
Lane Group Flow (vph)	0	313	0	0	361	0	91	331	0	7	595	0
Heavy Vehicles (%)	0%	0%	0%	14%	14%	14%	8%	8%	8%	3%	3%	3%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		7			3		1	6		5	2	
Permitted Phases	7			3								
Actuated Green, G (s)		31.9			31.9		4.4	17.5		1.1	14.2	
Effective Green, g (s)		33.9			33.9		6.4	19.5		3.1	16.2	
Actuated g/C Ratio		0.48			0.48		0.09	0.28		0.04	0.23	
Clearance Time (s)		6.5			6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		1.0			1.0		1.6	3.4		1.6	3.4	
Lane Grp Cap (vph)		873			376		153	914		78	807	
v/s Ratio Prot							c0.05	c0.10		0.00	c0.17	
v/s Ratio Perm		0.17			c0.47							
v/c Ratio		0.36			0.96		0.59	0.36		0.09	0.74	
Uniform Delay, d1		11.3			17.4		30.6	20.3		32.1	24.9	
Progression Factor		1.00			1.00		0.79	0.42		1.00	1.00	
Incremental Delay, d2		0.1			35.9		4.0	1.1		0.2	6.0	
Delay (s)		11.4			53.4		28.3	9.6		32.3	30.9	
Level of Service		B			D		C	A		C	C	
Approach Delay (s)		11.4			53.4			13.5			30.9	
Approach LOS		B			D			B			C	

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	32	228	127	19	19	254	717	222	44	482	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	16	16	16	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.90			0.98		1.00	0.96		1.00	0.99	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1927			2001		1787	3447		1770	3506	
Flt Permitted		0.92			0.39		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1782			807		1787	3447		1770	3506	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	63	36	253	141	21	21	282	797	247	49	536	36
RTOR Reduction (vph)	0	128	0	0	7	0	0	31	0	0	5	0
Lane Group Flow (vph)	0	224	0	0	176	0	282	1013	0	49	567	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		7			3		1	6		5	2	
Permitted Phases	7			3								
Actuated Green, G (s)		17.6			17.6		15.4	39.1		3.8	27.5	
Effective Green, g (s)		19.6			19.6		17.4	41.1		5.8	29.5	
Actuated g/C Ratio		0.25			0.25		0.22	0.51		0.07	0.37	
Clearance Time (s)		6.5			6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		1.0			1.0		1.6	3.4		1.6	3.4	
Lane Grp Cap (vph)		437			198		389	1771		128	1293	
v/s Ratio Prot							c0.16	c0.29		0.03	0.16	
v/s Ratio Perm		0.13			c0.22							
v/c Ratio		0.51			0.89		0.72	0.57		0.38	0.44	
Uniform Delay, d1		26.1			29.2		29.1	13.4		35.4	19.0	
Progression Factor		1.00			1.00		1.33	0.68		1.00	1.00	
Incremental Delay, d2		0.4			34.1		4.2	1.0		0.7	1.1	
Delay (s)		26.5			63.3		42.9	10.1		36.1	20.1	
Level of Service		C			E		D	B		D	C	
Approach Delay (s)		26.5			63.3			17.1			21.4	
Approach LOS		C			E			B			C	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			