

## **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 if 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.

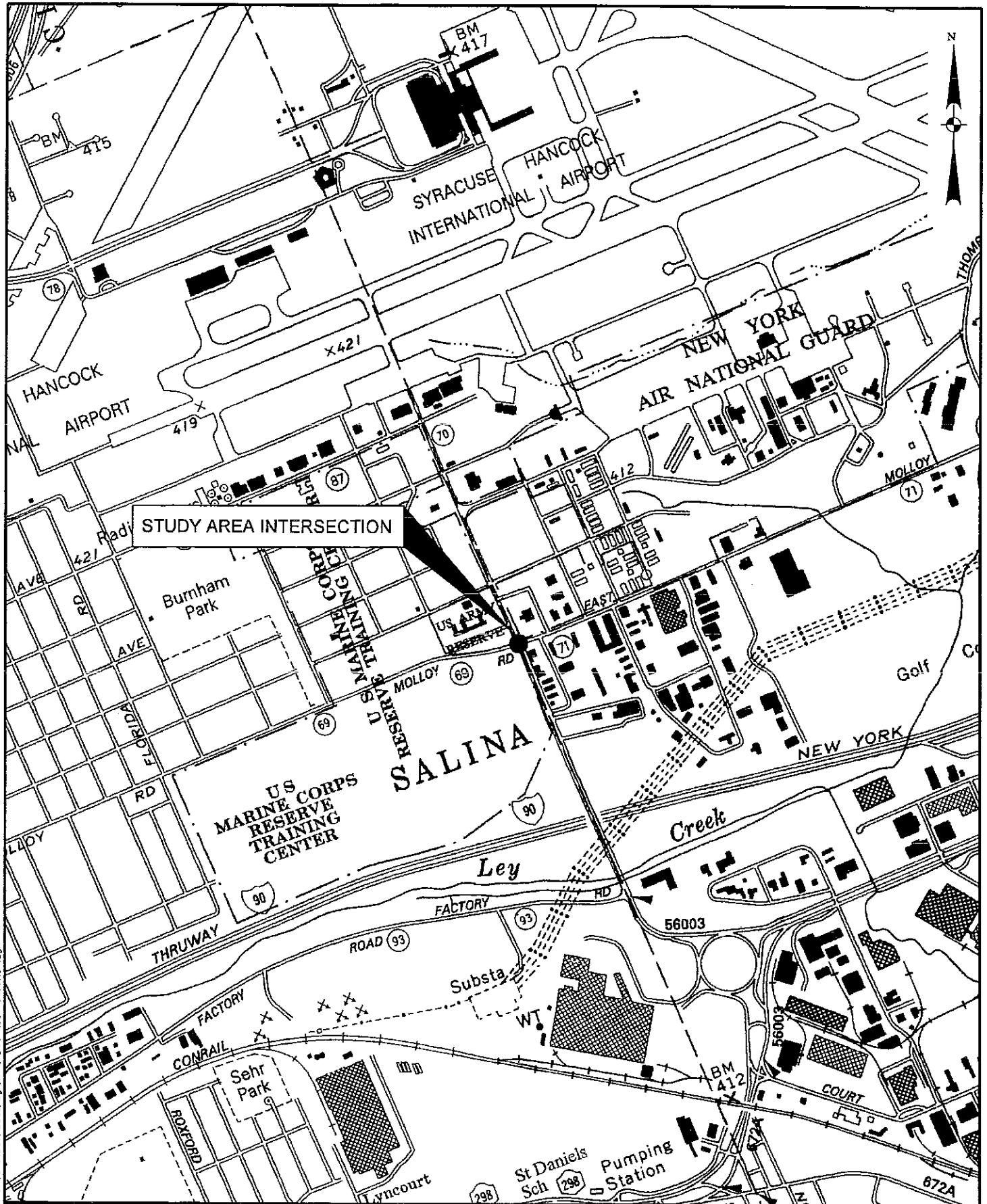
**LOS D** describes operations with control delay greater than 35 and up to 55 s/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion 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**

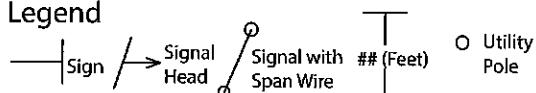


# INTERSECTION DIAGRAM

Location

East Molloy Road at Townline Road

## Legend



Drawn By

KK

Prepared By

SMTC

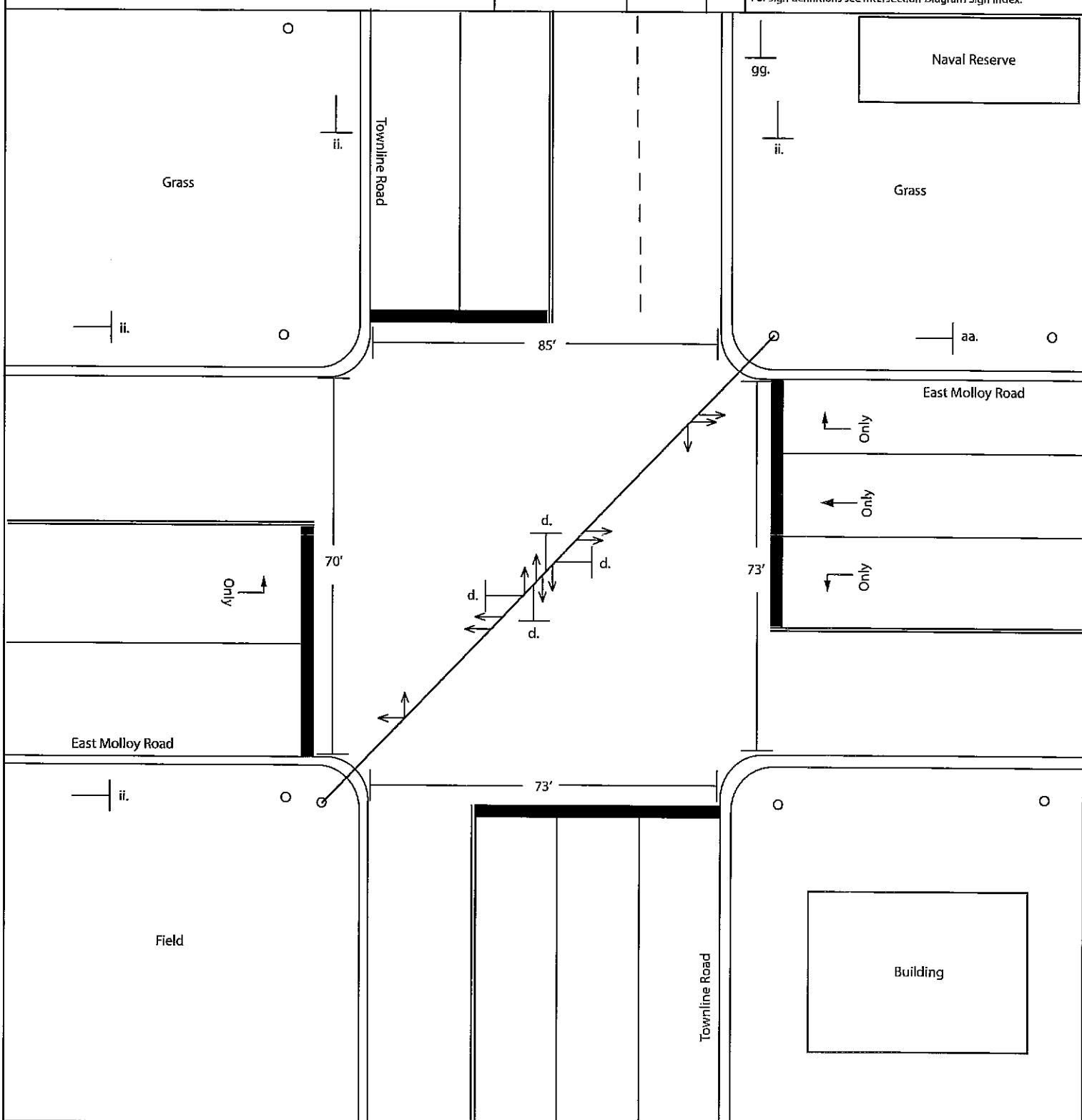
Date May 2010



Note:

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

For sign definitions see Intersection Diagram Sign Index.

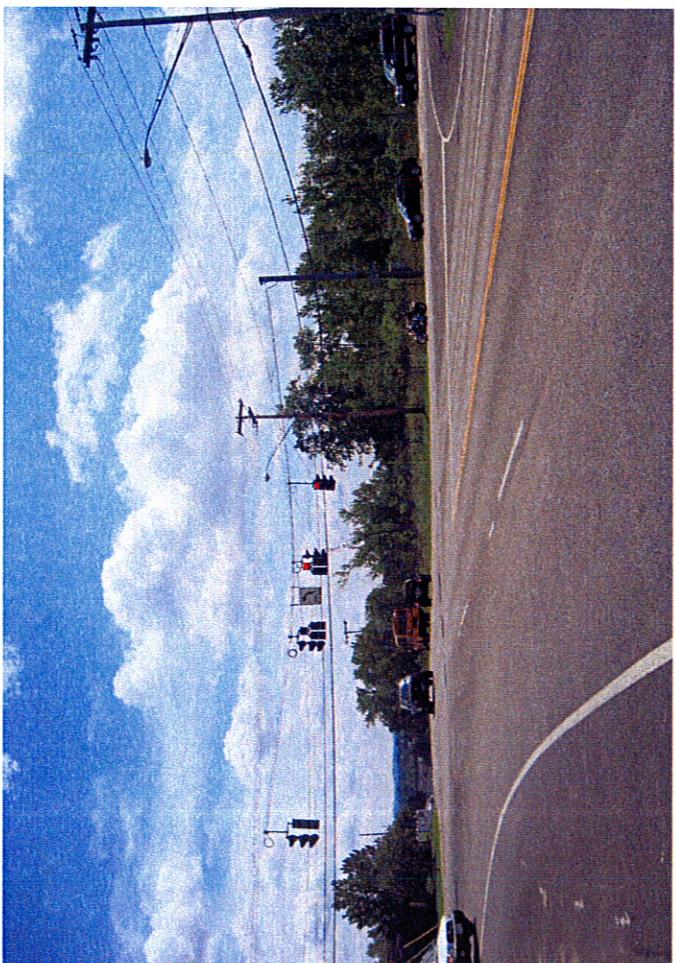
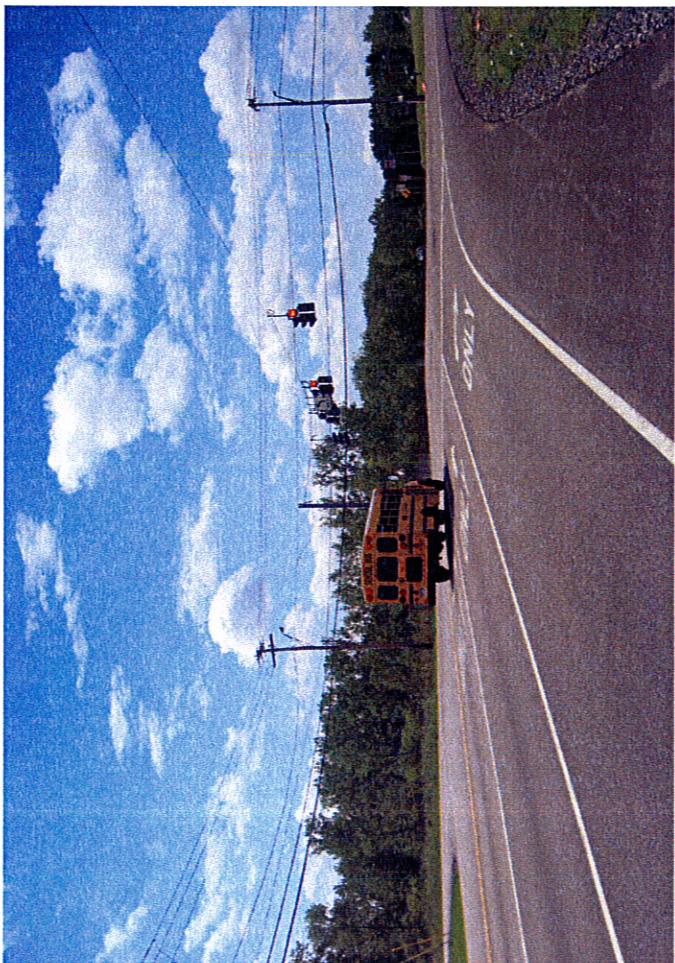
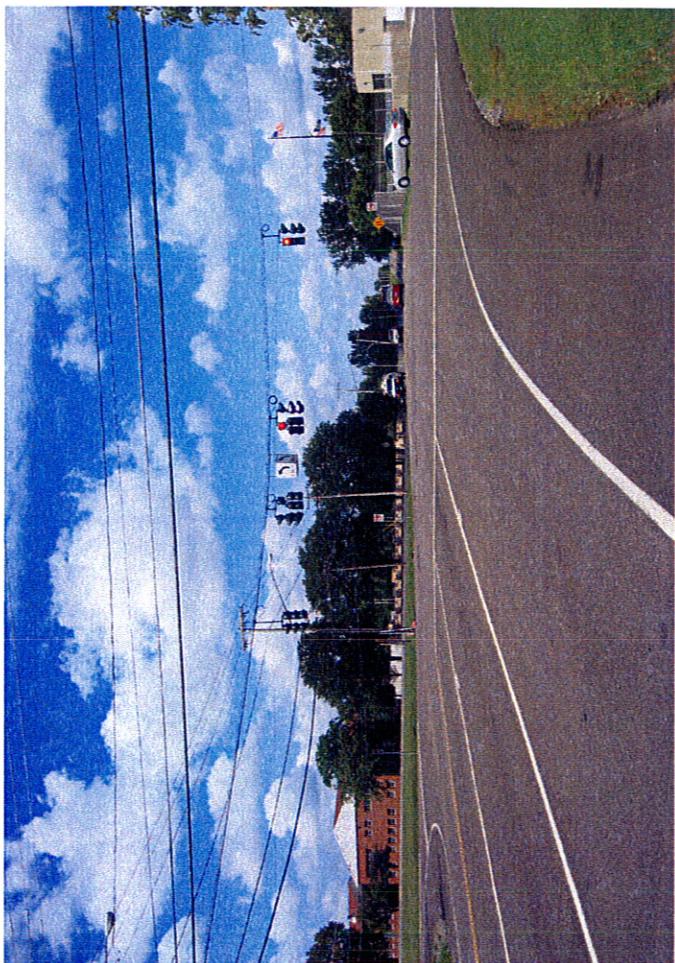


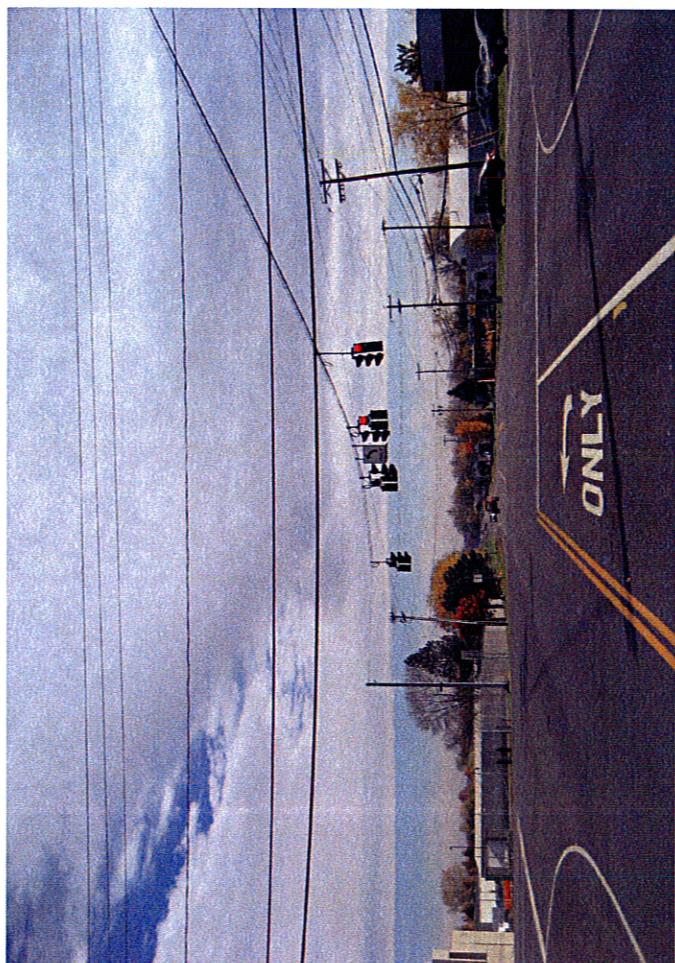
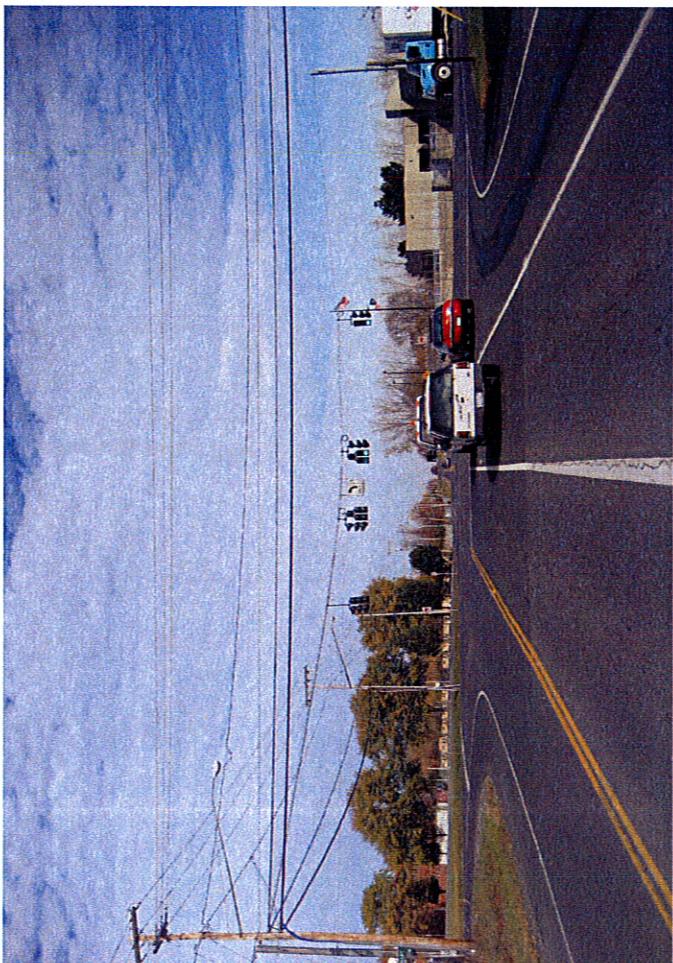
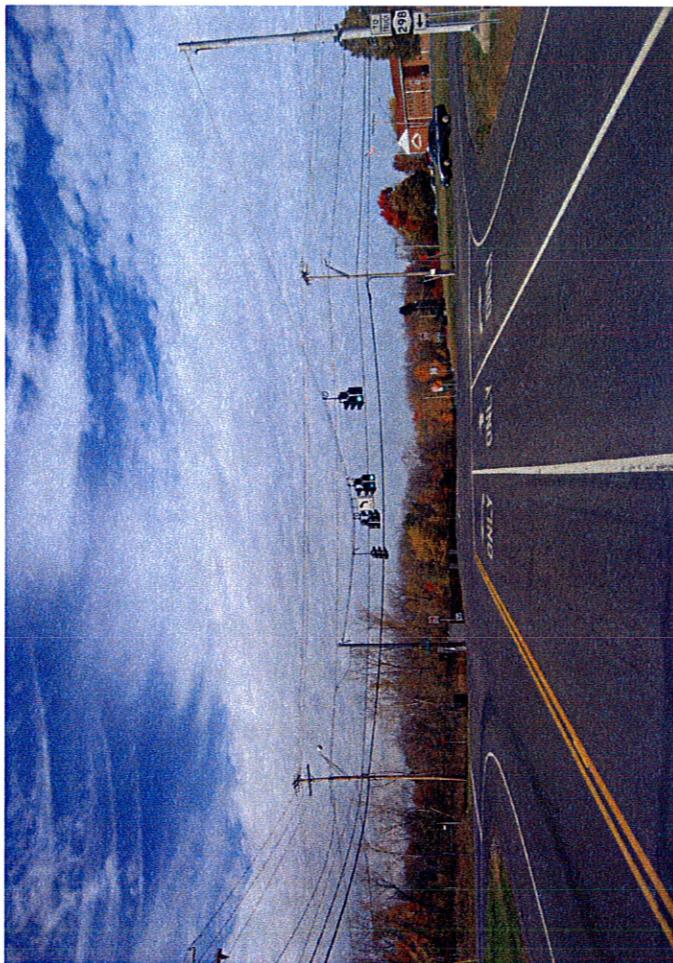
Task

OCDOT Signal Optimization

Data Source: SMTC, ODOT, 2009.

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





Volume  
SMTC OCDOT Signal Optimization

3: Hosman Road & Town Line Road

2009 Existing - Hosman Corridor\_AM Peak



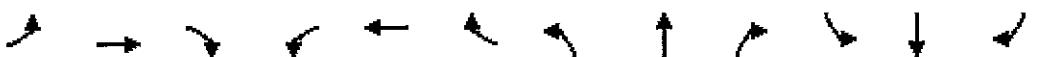
Lane Group	EBL	EPH	EBR	WBL	WBT	WBK	NBL	NBT	NBR	SBL	SBT	SEF
Volume (vph)	5	310	70	125	40	95	25	140	255	245	170	5
Conf. Peds. (#/hr)												
Conf. Bikes (#/hr)												
Peak-Hour Factor	0.50	0.88	0.80	0.70	0.50	0.84	0.69	0.82	0.73	0.86	0.70	0.60
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	0%	1%	1%	0%	0%	0%
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

Volume  
SMTC OCDOT Signal Optimization

3: Hosman Road & Town Line Road

2009 Existing - Hosman Corridor\_PM Peak



Lane Group	RBL	EBL	EBC	FBR	WBL	WBC	WCR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	5	135	50	225	230	310	100	290	140	105	95	10	
Conf. Peds. (#/hr)													
Conf. Bikes (#/hr)													
Peak Hour Factor	0.50	0.88	0.80	0.70	0.50	0.84	0.69	0.82	0.73	0.86	0.70	0.50	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	0%	1%	1%	0%	0%	0%	
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

**HOSMAN ROAD (C.R. NO. 71)**

**TRAFFIC SIGNAL NO. 9 PLAN**

SCALE: 1:200 DATE: MAY 2007 SHEET NUMBER: 40-1  
COUNTY OF ONONDAGA DEPARTMENT OF TRANSPORTATION  
TOTAL SHEETS: 54 AS-BUILT REVISIONS

**TABLE OF OPERATION**

**LOOP DATA TABLE** (6)@

DETECTOR NO.	DESCRIPTION	SIZE
1A,1B	1.8M X 9.2M	0.6 APART
1A,2B	1.8M X 9.2M	1.2 APART
3A,3B	1.8M X 9.2M	0.6 APART
4A,4B	1.8M X 9.2M	1.2 APART
5A,5B	1.8M X 9.2M	0.6 APART
6A,6B	1.8M X 9.2M	1.2 APART
7A,7B	1.8M X 9.2M	0.6 APART
8A,8B	1.8M X 9.2M	0.6 APART

**HEAD LAYOUT**

**LEGEND**

- EXISTING TRAFFIC SIGNAL POLE
- EXISTING POLE MOUNTED CONTROLLER
- NEW PULL BOX
- UTILITY POLE (POWER SOURCE)
- NEW SIGNAL HEAD
- NEW SIGN AND MOUNTING ASSEMBLY
- SIGNAL PHASE
- x KEY NUMBERS - SEE PAGE NO. 53

**RECORD DRAWINGS**

TO THE BEST OF OUR KNOWLEDGE,  
INFORMATION AND DETAILS RECORDED  
DRAWINGS ILLUSTRATE PROJECT AS REPRESENTED  
THE PROJECT AS CONSTRUCTED.

**CDM** Camp Dresser & McKee  
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1 Cheneau Avenue Drive  
Syosset, NY 11791

INTERSECTION NAME:  
INTERSECTION NUMBER:

Townline @ Molloy  
9

INSTALLATION DATE:  
PROGRAM DATE:

PHASE TIMINGS							
INTERVAL	1	2	3	4	5	6	7
MIN GREEN	8	10	(88)	8	8	10	8
PASSAGE	4	4	4	4	4	4	4
YELLOW	3	3	3	3	3	3	3
RED	2	2	2	2	2	2	2
MAX I	12	20	12	14	12	20	12
MAX II							
WALK							
PED CLEAR							
S/A							
TBR							
TTR							
MIN GAP							
MAX VI							
MAX EXT							
AUTO MAX							
AMR							

**INTERSECTION NAME:**  
**INTERSECTION NUMBER:**

Townline @ Molloy 9

INSTALLATION DATE:  
PROGRAM DATE:

SEMI COORDINATED  
OPTIMIZED TIMINGS

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

**INTERSECTION NAME:**  
**INTERSECTION NUMBER:**

**INSTALLATION DATE:** **PROGRAM DATE:**

FULLY COORDINATED  
OPTIMIZED TIMINGS

**INSTALLATION DATE:**  
**PROGRAM DATE:**

Timings  
SMTTC OCDOT Signal Optimization

3: Hosman Road & Town Line Road

2009 Existing - Hosman Corridor\_AM Peak



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↑	→	↑	←	←	↑	↑	↑	↓	↑	↑	↑	↑	↑	↑
Volume (vph)	5	310	125	40	95	25	140	245	170						
Turn Type	pm+pt	pm+pt	pm+ov	pm+pt	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt						
Protected Phases	1	6	5	2	7	3	8	7	4						
Permitted Phases	6		2		2	8		4							
Defector Phase	1	6	5	2	3	8	7	4							
Switch Phase															
Minimum Initial (s)	8.0	10.0	8.0	10.0	8.0	8.0	8.0	8.0	8.0						
Minimum Split (s)	13.0	15.0	13.0	15.0	13.0	13.0	13.0	13.0	13.0						
Total Split (s)	17.0	25.0	17.0	25.0	17.0	17.0	19.0	17.0	19.0						
Total Split (%)	21.8%	32.1%	21.8%	32.1%	21.8%	21.8%	24.4%	21.8%	24.4%						
Maximum Green (s)	12.0	20.0	12.0	20.0	12.0	12.0	14.0	12.0	14.0						
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0						
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0						
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes		Yes		Yes		Yes		Yes						
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	Min	None	Min	None	None	None	None	None						
Walk Time (s)															
Flash Dont Walk (s)															
Pedestrian Calls (#/hr)															

Intersection Summary

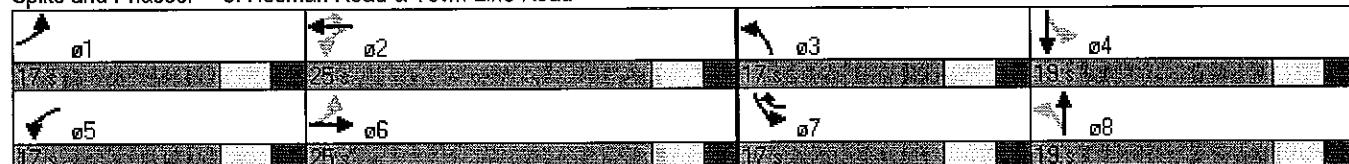
Cycle Length: 78

Actuated Cycle Length: 73.5

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Hosman Road & Town Line Road



Timings  
SMTTC OCDOT Signal Optimization

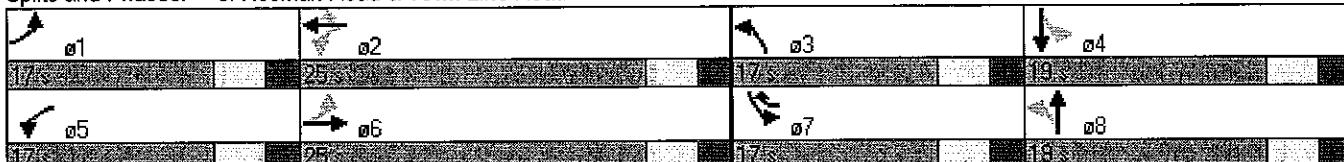
3: Hosman Road & Town Line Road

2009 Existing - Hosman Corridor\_PM Peak



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Other
Lane Configurations	↑	↓	↑	←	↑	↑	↑	↑	↓	↑
Volume (vph)	5	135	225	230	310	100	290	105	95	
Turn Type	pm+pt		pm+pt		pm+ov	pm+pt		pm+pt		
Protected Phases	1	6	5	2	7	3	8	7	4	
Permitted Phases	6		2		2	8		4		
Detector Phase	1	6	5	2		3	8	7	4	
Switch Phase										
Minimum Initial (s)	8.0	10.0	8.0	10.0	8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	13.0	15.0	13.0	15.0	13.0	13.0	13.0	13.0	13.0	
Total Split (s)	17.0	25.0	17.0	25.0	17.0	17.0	19.0	17.0	19.0	
Total Split (%)	21.8%	32.1%	21.8%	32.1%	21.8%	21.8%	24.4%	21.8%	24.4%	
Maximum Green (s)	12.0	20.0	12.0	20.0	12.0	12.0	14.0	12.0	14.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes									
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	Min	None	Min	None	None	None	None	None	
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										
Intersection Summary										
Cycle Length: 78										
Actuated Cycle Length: 66.1										
Natural Cycle: 60										
Control Type: Actuated-Uncoordinated										

Splits and Phases: 3: Hosman Road & Town Line Road

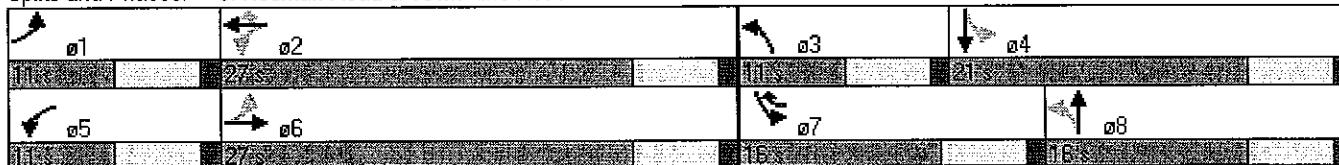


Timings  
SMTA OCDOT Signal Optimization

3: Hosman Road & Town Line Road  
2009 Proposed - Semi-Coordinated - Hosman Corridor\_AM Peak

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↑	→	↖	←	↗	↖	↙	↗	↓
Volume (vph)	5	310	125	40	95	25	140	245	170
Turn Type	pm+pt	pm+pt	pm+ov	pm+pt	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt
Protected Phases	1	6	5	2	7	3	8	7	4
Permitted Phases	6		2		2	8		4	
Detector Phase	1	6	5	2		3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	10.5	15.5	10.5	15.5	10.5	10.5	15.5	10.5	15.5
Total Split (s)	11.0	27.0	11.0	27.0	16.0	11.0	16.0	16.0	21.0
Total Split (%)	15.7%	38.6%	15.7%	38.6%	22.9%	15.7%	22.9%	22.9%	30.0%
Maximum Green (s)	5.5	21.5	5.5	21.5	10.5	5.5	10.5	10.5	15.5
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes		Yes		Yes		Yes
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Minimum Gap (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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	Min	None	Min	None	None	None	None	None
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									
Intersection Summary									
Cycle Length: 70									
Actuated Cycle Length: 65.7									
Natural Cycle: 60									
Control Type: Actuated-Uncoordinated									

Splits and Phases: 3: Hosman Road & Town Line Road



Timings  
SMTC OCDOT Signal Optimization

3: Hosman Road & Town Line Road  
2009 Proposed - Semi Coordinated - Hosman Corridor\_PM Peak

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	5	135	225	230	310	100	290	105	95
Turn Type	pm+pt	pm+pt	pm+ov	pm+pt	pm+pt			pm+pt	
Protected Phases	1	6	5	2	7	3	8	7	4
Permitted Phases	6		2		2	8		4	
Detector Phase	1	6	5	2		3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	10.5	15.5	10.5	15.5	10.5	10.5	15.5	10.5	15.5
Total Split (s)	11.0	29.0	20.0	38.0	16.0	11.0	25.0	16.0	30.0
Total Split (%)	12.2%	32.2%	22.2%	42.2%	17.8%	12.2%	27.8%	17.8%	33.3%
Maximum Green (s)	5.5	23.5	14.5	32.5	10.5	5.5	19.5	10.5	24.5
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes		Yes		Yes		Yes
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Minimum Gap (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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	Min	None	Min	None	None	None	None	None
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

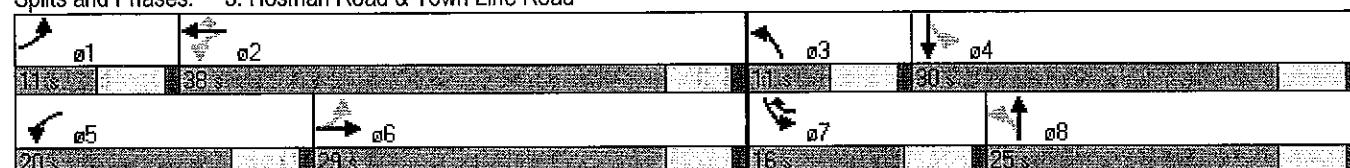
Cycle Length: 90

Actuated Cycle Length: 68.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Hosman Road & Town Line Road



Timings  
SMTTC OCDOT Signal Optimization

3: Hosman Road & Town Line Road  
2009 Proposed - Coordinated - Hosman Corridor\_AM Peak

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↑	→	↑	←	↑	↑	↑	↑	↓
Volume (vph)	5	310	125	40	95	25	140	245	170
Turn Type	pm+pt	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+pt
Protected Phases	1	6	5	2	7	3	8	7	4
Permitted Phases	6		2		2	8		4	
Detector Phase	1	6	5	2		3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	10.5	15.5	10.5	15.5	10.5	10.5	15.5	10.5	15.5
Total Split (s)	11.0	33.0	12.0	34.0	19.0	11.0	16.0	19.0	24.0
Total Split (%)	13.8%	41.3%	15.0%	42.5%	23.8%	13.8%	20.0%	23.8%	30.0%
Maximum Green (s)	5.5	27.5	6.5	28.5	13.5	5.5	10.5	13.5	18.5
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes		Yes		Yes		Yes
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Minimum Gap (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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	C-Min	None	C-Min	None	None	None	None	None
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 80

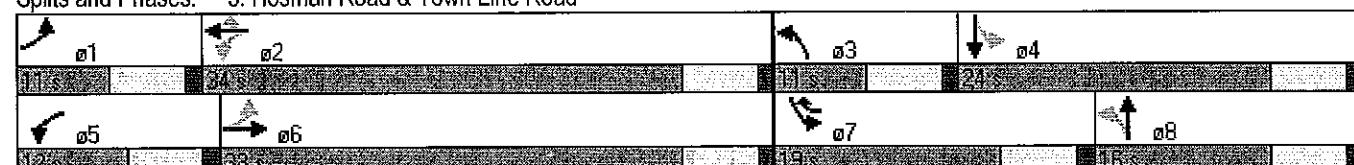
Actuated Cycle Length: 80

Offset: 48 (60%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 3: Hosman Road & Town Line Road

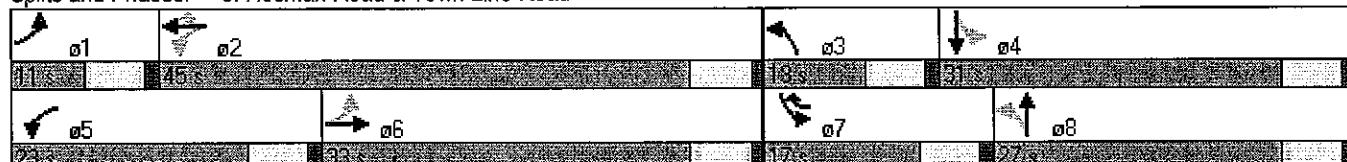


Timings  
SMTA OCDOT Signal Optimization

3: Hosman Road & Town Line Road  
2009 Proposed - Coordinated - Hosman Corridor\_PM Peak

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↑	→	↑	←	↑	↑	↑	↓	↓
Volume (vph)	5	135	225	230	310	100	290	105	95
Turn Type	pm+pt	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+pt
Protected Phases	1	6	5	2	7	3	8	7	4
Permitted Phases	6		2		2	8		4	
Detector Phase	1	6	5	2		3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	10.5	15.5	10.5	15.5	10.5	10.5	15.5	10.5	15.5
Total Split (s)	11.0	33.0	23.0	45.0	17.0	13.0	27.0	17.0	31.0
Total Split (%)	11.0%	33.0%	23.0%	45.0%	17.0%	13.0%	27.0%	17.0%	31.0%
Maximum Green (s)	5.5	27.5	17.5	39.5	11.5	7.5	21.5	11.5	25.5
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes		Yes		Yes		Yes
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Minimum Gap (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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	C-Min	None	C-Min	None	None	None	None	None
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									
Intersection Summary									
Cycle Length: 100									
Actuated Cycle Length: 100									
Offset: 63 (63%), Referenced to phase 2:WBL and 6:EBL, Start of Green									
Natural Cycle: 60									
Control Type: Actuated-Coordinated									

Splits and Phases: 3: Hosman Road & Town Line Road



HCM Signalized Intersection Capacity Analysis  
SMTA OCDOT Signal Optimization

3: Hosman Road & Town Line Road  
2009 Existing - Hosman Corridor\_AM Peak

Movement	EBL	EBT	EBC	WBL	WBT	WBC	NBL	NBT	NBC	SBL	SBT	SBC
Lane Configurations	5	310	70	125	40	95	25	140	255	245	170	5
Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	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	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frl	1.00	0.97		1.00	1.00	0.85	1.00	0.90		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	1782		1694	1837	1546	1745	3107		1745	1826	
Flt Permitted	0.70	1.00		0.19	1.00	1.00	0.60	1.00		0.21	1.00	
Satd. Flow (perm)	1295	1782		332	1837	1546	1106	3107		379	1826	
Peak-hour factor, PHF	0.50	0.88	0.80	0.70	0.50	0.84	0.69	0.82	0.73	0.86	0.70	0.50
Adj. Flow (vph)	10	352	88	179	80	113	36	171	349	285	243	10
RTOR Reduction (vph)	0	11	0	0	0	45	0	278	0	0	1	0
Lane Group Flow (vph)	10	429	0	179	80	68	36	242	0	285	252	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	0%	1%	1%	0%	0%	0%
Turn Type	pm+pt			pm+pt		pm+ov	pm+pt			pm+pt		
Protected Phases	1	6		5	2	7	3	8		7	4	
Permitted Phases	6			2		2	8			4		
Actuated Green, G (s)	24.8	23.3		39.4	32.9	44.8	17.6	14.4		31.3	23.1	
Effective Green, g (s)	28.8	25.3		41.4	34.9	48.8	21.6	16.4		33.3	25.1	
Actuated g/C Ratio	0.36	0.31		0.51	0.43	0.60	0.27	0.20		0.41	0.31	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	482	559		391	794	992	337	631		392	568	
v/s Ratio Prot	0.00	c0.24		c0.07	0.04	0.01	0.01	0.08		c0.13	0.14	
v/s Ratio Perm	0.01			0.16		0.03	0.02			c0.18		
v/c Ratio	0.02	0.77		0.46	0.10	0.07	0.11	0.38		0.73	0.44	
Uniform Delay, d1	16.8	25.0		13.2	13.6	6.6	22.1	27.8		17.8	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	0.0	6.6		1.2	0.1	0.0	0.2	0.5		7.0	0.8	
Delay (s)	16.8	31.7		14.3	13.7	6.6	22.3	28.3		24.9	23.0	
Level of Service	B	C		B	B	A	C	C		C	C	
Approach Delay (s)	31.3			11.9			27.9			24.0		
Approach LOS		C			B			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay	24.5											
HCM Volume to Capacity ratio	0.69											
Actuated Cycle Length (s)	80.7											
Intersection Capacity Utilization	66.5%											
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
SMTC OCDOT Signal Optimization

3: Hosman Road & Town Line Road

2009 Existing - Hosman Corridor\_PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	→	↓	↖	↙	↗	↖	↙	↗	↖	↙	↗
Volume (vph)	5	135	50	225	230	310	100	290	140	105	95	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		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	1.00	1.00	0.95		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1745	1757		1694	1837	1546	1745	3273		1745	1801	
Flt Permitted	0.50	1.00		0.44	1.00	1.00	0.54	1.00		0.27	1.00	
Satd. Flow (perm)	912	1757		786	1837	1546	998	3273		493	1801	
Peak-hour factor, PHF	0.50	0.88	0.80	0.70	0.50	0.84	0.69	0.82	0.73	0.86	0.70	0.50
Adj. Flow (vph)	10	153	62	321	460	369	145	354	192	122	136	20
RTOR Reduction (vph)	0	19	0	0	0	158	0	92	0	0	7	0
Lane Group Flow (vph)	10	196	0	321	460	211	145	454	0	122	149	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	0%	1%	1%	0%	0%	0%
Turn Type	pm+pt		pm+pt		pm+ov	pm+pt	pm+pt		pm+pt		pm+pt	
Protected Phases	1	6		5	2	7	3	8		7	4	
Permitted Phases	6			2		2	8			4		
Actuated Green, G (s)	19.9	18.5		35.6	29.2	36.7	21.0	13.2		20.4	12.9	
Effective Green, g (s)	23.9	20.5		37.6	31.2	40.7	25.0	15.2		24.4	14.9	
Actuated g/C Ratio	0.34	0.29		0.53	0.44	0.57	0.35	0.21		0.34	0.21	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	345	505		594	804	948	453	698		336	376	
v/s Ratio Prot	0.00	0.11		c0.11	c0.25	0.03	0.04	c0.14		c0.05	0.08	
v/s Ratio Perm	0.01			0.18		0.11	0.07			0.08		
v/c Ratio	0.03	0.39		0.54	0.57	0.22	0.32	0.65		0.36	0.40	
Uniform Delay, d1	15.8	20.4		10.3	15.0	7.5	16.5	25.6		17.0	24.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.7		1.3	1.2	0.2	0.6	2.4		0.9	0.9	
Delay (s)	15.9	21.1		11.6	16.2	7.7	17.0	28.0		17.9	25.3	
Level of Service	B	C		B	B	A	B	C		B	C	
Approach Delay (s)	20.8			12.2			25.7			22.0		
Approach LOS	C			B			C			C		
<b>Intersection Summary</b>												
HCM Average Control Delay		18.2				HCM Level of Service			B			
HCM Volume to Capacity ratio		0.52										
Actuated Cycle Length (s)		71.3				Sum of lost time (s)		6.0				
Intersection Capacity Utilization		55.1%				ICU Level of Service		B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
SMTC OCDOT Signal Optimization

3: Hosman Road & Town Line Road  
2009 Proposed - Semi-Coordinated - Hosman Corridor\_AM Peak

Movement	EBl	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑ ↗	↑ ↘	↗ ↙	↑ ↙	↑ ↘	↗ ↗	↑ ↘	↑ ↙	↑ ↗	↑ ↙	↑ ↘	↑ ↗
Volume (vph)	5	310	70	125	40	95	25	140	255	245	170	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.97	1.00	1.00	0.85	1.00	0.90	1.00	1.00	1.00	0.99	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1745	1782		1694	1837	1546	1745	3107		1745	1826	
Flt Permitted	0.70	1.00		0.22	1.00	1.00	0.60	1.00		0.21	1.00	
Satd. Flow (perm)	1295	1782		388	1837	1546	1106	3107		389	1826	
Peak-hour factor, PHF	0.50	0.88	0.80	0.70	0.50	0.84	0.69	0.82	0.73	0.86	0.70	0.50
Adj. Flow (vph)	10	352	88	179	80	113	36	171	349	285	243	10
RTOR Reduction (vph)	0	13	0	0	0	50	0	274	0	0	2	0
Lane Group Flow (vph)	10	427	0	179	80	63	36	246	0	285	251	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	0%	1%	1%	0%	0%	0%
Turn Type	pm+pt		pm+pt		pm+ov	pm+pt			pm+pt			
Protected Phases	1	6		5	2	7	3	8		7	4	
Permitted Phases	6			2		2	8			4		
Actuated Green, G (s)	23.2	22.3		32.4	26.9	36.8	15.7	13.7		29.1	21.6	
Effective Green, g (s)	27.2	24.3		35.3	28.9	40.8	19.7	15.7		31.1	23.6	
Actuated g/C Ratio	0.37	0.33		0.48	0.39	0.56	0.27	0.21		0.42	0.32	
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	
Vehicle Extension (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	498	590		320	723	933	332	665		385	587	
v/s Ratio Prot	0.00	c0.24		c0.06	0.04	0.01	0.01	0.08		c0.12	0.14	
v/s Ratio Perm	0.01			0.21		0.03	0.02			c0.19		
v/c Ratio	0.02	0.72		0.56	0.11	0.07	0.11	0.37		0.74	0.43	
Uniform Delay, d1	14.6	21.6		13.2	14.1	7.5	20.1	24.6		15.7	19.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	3.7		1.2	0.0	0.0	0.1	0.1		6.6	0.2	
Delay (s)	14.6	25.3		14.4	14.1	7.5	20.1	24.8		22.2	19.8	
Level of Service	B	C		B	B	A	C	C		C	B	
Approach Delay (s)	25.1			12.3			24.5			21.1		
Approach LOS		C			B			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		21.3			HCM Level of Service			C				
HCM Volume to Capacity ratio		0.71										
Actuated Cycle Length (s)		73.4			Sum of lost time (s)			10.5				
Intersection Capacity Utilization		66.5%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
SMTA OCDOT Signal Optimization

3: Hosman Road & Town Line Road  
2009 Proposed - Semi Coordinated - Hosman Corridor\_PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	5	135	50	225	230	310	100	290	140	105	95	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
FtL	1.00	0.96	1.00	1.00	0.85	1.00	0.95	1.00	1.00	1.00	0.98	1.00
Ft Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1745	1757	1694	1837	1546	1745	3273	3273	1745	1801	1745	1801
Ft Permitted	0.50	1.00	0.44	1.00	1.00	0.66	1.00	0.22	1.00	0.22	1.00	1.00
Satd. Flow (perm)	915	1757	779	1837	1546	1209	3273	3273	410	1801	410	1801
Peak-hour factor, PHF	0.50	0.88	0.80	0.70	0.50	0.84	0.69	0.82	0.73	0.86	0.70	0.50
Adj. Flow (vph)	10	153	62	321	460	369	145	354	192	122	136	20
RTOR Reduction (vph)	0	17	0	0	0	155	0	83	0	0	6	0
Lane Group Flow (vph)	10	198	0	321	460	214	145	463	0	122	150	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	0%	1%	1%	0%	0%	0%
Turn Type	pm+pt		pm+pl		pm+ov	pm+pt			pm+pt			
Protected Phases	1	6		5	2	7	3	8		7	4	
Permitted Phases				2		2	8				4	
Actuated Green, G (s)	19.4	18.6		37.3	31.0	37.1	18.0	13.9		22.0	15.9	
Effective Green, g (s)	23.4	20.6		39.3	33.0	41.1	22.0	15.9		26.0	17.9	
Actuated g/C Ratio	0.32	0.28		0.53	0.45	0.56	0.30	0.22		0.35	0.24	
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	
Vehicle Extension (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	322	490		603	821	934	405	705		291	437	
v/s Ratio Prot	0.00	0.11		c0.11	c0.25	0.03	0.03	c0.14		c0.05	0.08	
v/s Ratio Perm	0.01			0.17		0.11	0.08				0.10	
v/c Ratio	0.03	0.40		0.53	0.56	0.23	0.36	0.66		0.42	0.34	
Uniform Delay, d1	17.3	21.6		10.4	15.0	8.3	19.8	26.5		17.4	23.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.2		0.5	0.5	0.0	0.2	1.7		0.4	0.2	
Delay (s)	17.3	21.8		10.9	15.6	8.4	20.0	28.1		17.7	23.3	
Level of Service	B	C		B	B	A	C	C		B	C	
Approach Delay (s)		21.6			12.0			26.4			20.8	
Approach LOS		C			B			C			C	

Intersection Summary

HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
SMTA OCDOT Signal Optimization

3: Hosman Road & Town Line Road  
2009 Proposed - Coordinated - Hosman Corridor\_AM Peak

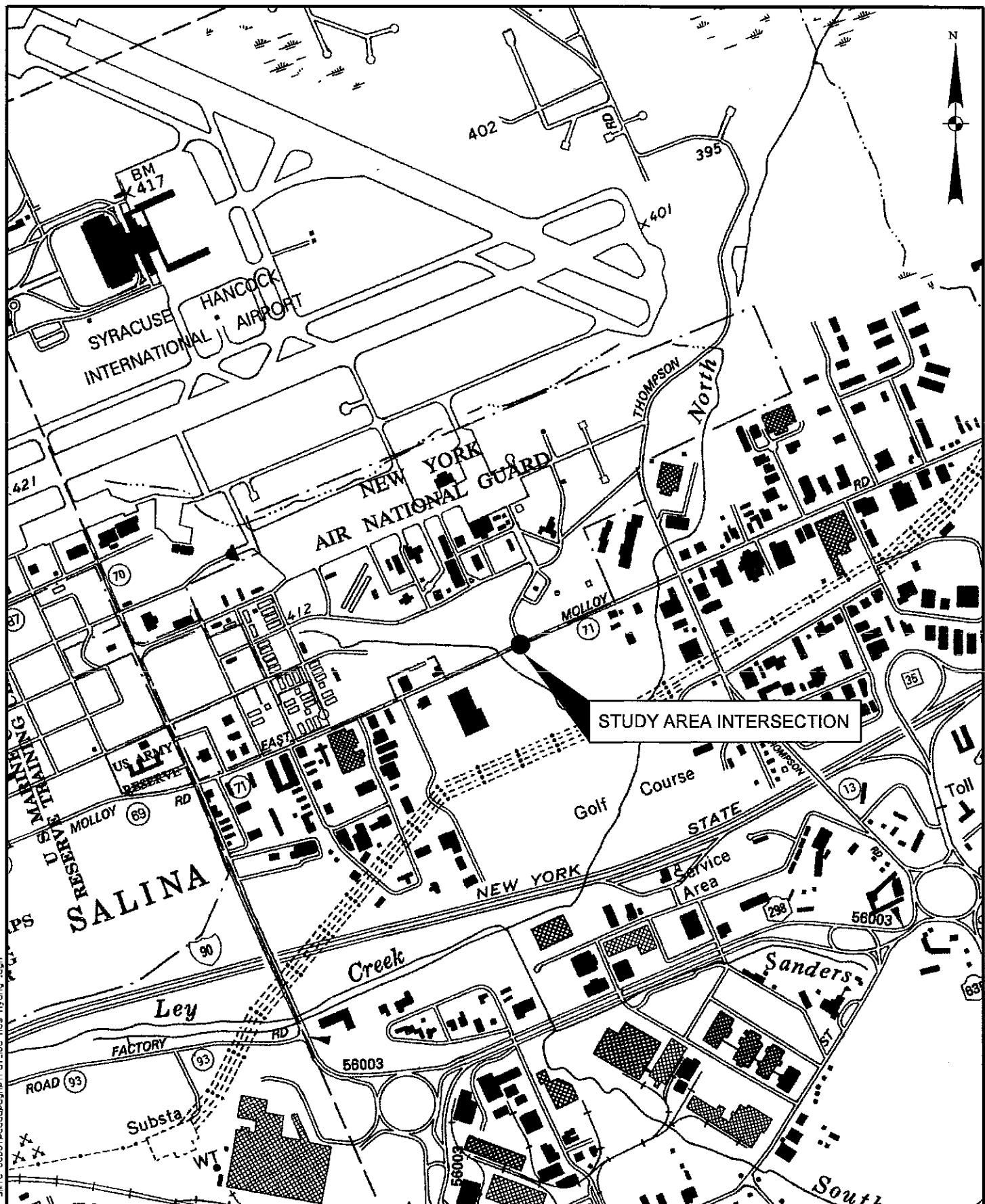
Movement	EBL	EBT	EBC	WBL	WBT	WBC	NBL	NBT	NBC	SBL	SBT	SBC
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	5	310	70	125	40	95	25	140	255	245	170	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.97	1.00	1.00	0.85	1.00	0.90	1.00	1.00	1.00	0.99	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1745	1782		1694	1837	1546	1745	3107		1745	1826	
Flt Permitted	0.70	1.00		0.23	1.00	1.00	0.60	1.00		0.22	1.00	
Satd. Flow (perm)	1295	1782		409	1837	1546	1106	3107		410	1826	
Peak-hour factor, PHF	0.50	0.88	0.80	0.70	0.50	0.84	0.69	0.82	0.73	0.86	0.70	0.50
Adj. Flow (vph)	10	352	88	179	80	113	36	171	349	285	243	10
RTOR Reduction (vph)	0	12	0	0	0	44	0	286	0	0	1	0
Lane Group Flow (vph)	10	428	0	179	80	69	36	234	0	285	252	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	0%	1%	1%	0%	0%	0%
Turn Type	pm+pt			pm+pt			pm+ov	pm+pt		pm+pt		
Protected Phases	1	6		5	2	7	3	8		7	4	
Permitted Phases	6			2		2	8			4		
Actuated Green, G (s)	26.5	25.5		37.8	31.3	44.6	15.6	12.4		31.2	22.5	
Effective Green, g (s)	30.5	27.5		39.8	33.3	48.6	19.6	14.4		33.2	24.5	
Actuated g/C Ratio	0.38	0.34		0.50	0.42	0.61	0.25	0.18		0.42	0.31	
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	5.5		5.5	5.5	
Vehicle Extension (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	511	613		345	765	1007	313	559		425	659	
v/s Ratio Prot	0.00	c0.24		c0.06	0.04	0.01	0.01	0.08		c0.13	0.14	
v/s Ratio Perm	0.01			0.20		0.03	0.02			c0.15		
v/c Ratio	0.02	0.70		0.52	0.10	0.07	0.12	0.42		0.67	0.45	
Uniform Delay, d1	15.4	22.7		13.5	14.3	6.4	23.3	29.1		17.5	22.3	
Progression Factor	1.00	1.00		0.49	0.48	2.95	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	6.5		0.5	0.3	0.0	0.1	0.2		3.3	0.2	
Delay (s)	15.4	29.2		7.2	7.1	19.0	23.3	29.3		20.8	22.5	
Level of Service	B	C		A	A	B	C	C		C	C	
Approach Delay (s)		28.9			10.7			28.9			21.6	
Approach LOS		C			B			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		23.3					HCM Level of Service			C		
HCM Volume to Capacity ratio		0.66										
Actuated Cycle Length (s)		80.0					Sum of lost time (s)			10.5		
Intersection Capacity Utilization		66.5%					ICU Level of Service			C		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
SMTC OCDOT Signal Optimization

3: Hosman Road & Town Line Road  
2009 Proposed - Coordinated - Hosman Corridor\_PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	5	135	50	225	230	310	100	290	140	105	95	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.96	1.00	1.00	0.85	1.00	0.95	1.00	1.00	1.00	0.98	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1745	1757	1694	1837	1546	1745	3273	1745	1801	1745	1801	1801
Flt Permitted	0.49	1.00	0.51	1.00	1.00	0.53	1.00	0.20	1.00	0.20	1.00	1.00
Satd. Flow (perm)	902	1757	901	1837	1546	964	3273	369	1801	369	1801	1801
Peak-hour factor, PHF	0.50	0.88	0.80	0.70	0.50	0.84	0.69	0.82	0.73	0.86	0.70	0.50
Adj. Flow (vph)	10	153	62	321	460	369	145	354	192	122	136	20
RTOR Reduction (vph)	0	13	0	0	0	121	0	76	0	0	6	0
Lane Group Flow (vph)	10	202	0	321	460	248	145	470	0	122	150	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	1%	0%	1%	1%	0%	0%	0%
Turn Type	pm+pt		pm+pt		pm+rov	pm+pt				pm+pt		
Protected Phases	1	6	5	2	7	3	8			7	4	
Permitted Phases	6		2		2	8				4		
Actuated Green, G (s)	38.6	37.6	56.5	50.0	59.2	26.9	17.8			27.1	17.9	
Effective Green, g (s)	42.6	39.6	58.5	52.0	63.2	30.9	19.8			31.1	19.9	
Actuated g/C Ratio	0.43	0.40	0.58	0.52	0.63	0.31	0.20			0.31	0.20	
Clearance Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5			5.5	5.5	
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5			1.5	1.5	
Lane Grp Cap (vph)	410	696	649	955	1031	385	648			269	358	
v/s Ratio Prot	0.00	0.12	c0.08	0.25	0.03	0.04	c0.14			c0.05	0.08	
v/s Ratio Perm	0.01		c0.21		0.13	0.07				0.09		
v/c Ratio	0.02	0.29	0.49	0.48	0.24	0.38	0.73			0.45	0.42	
Uniform Delay, d1	16.6	20.6	11.1	15.4	8.0	26.1	37.6			26.3	35.0	
Progression Factor	1.00	1.00	0.58	0.60	0.47	1.00	1.00			1.00	1.00	
Incremental Delay, d2	0.0	1.1	0.1	1.0	0.0	0.2	3.4			0.4	0.3	
Delay (s)	16.6	21.7	6.5	10.2	3.8	26.4	41.0			26.8	35.3	
Level of Service	B	C	A	B	A	C	D			C	D	
Approach Delay (s)	21.4			7.1			37.9			31.6		
Approach LOS		C		A			D			C		
<b>Intersection Summary</b>												
HCM Average Control Delay		20.5				HCM Level of Service				C		
HCM Volume to Capacity ratio		0.54										
Actuated Cycle Length (s)		100.0				Sum of lost time (s)				10.5		
Intersection Capacity Utilization		54.3%				ICU Level of Service				A		
Analysis Period (min)		15										

c Critical Lane Group



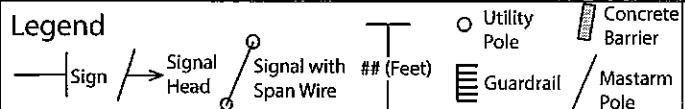
**CME**  
CREIGHTON MANNING ENGINEERING, LLP

# INTERSECTION DIAGRAM

Location

East Molloy Road at the Hancock Field Entrance

## Legend



Drawn By

KK

Prepared By

SMTC

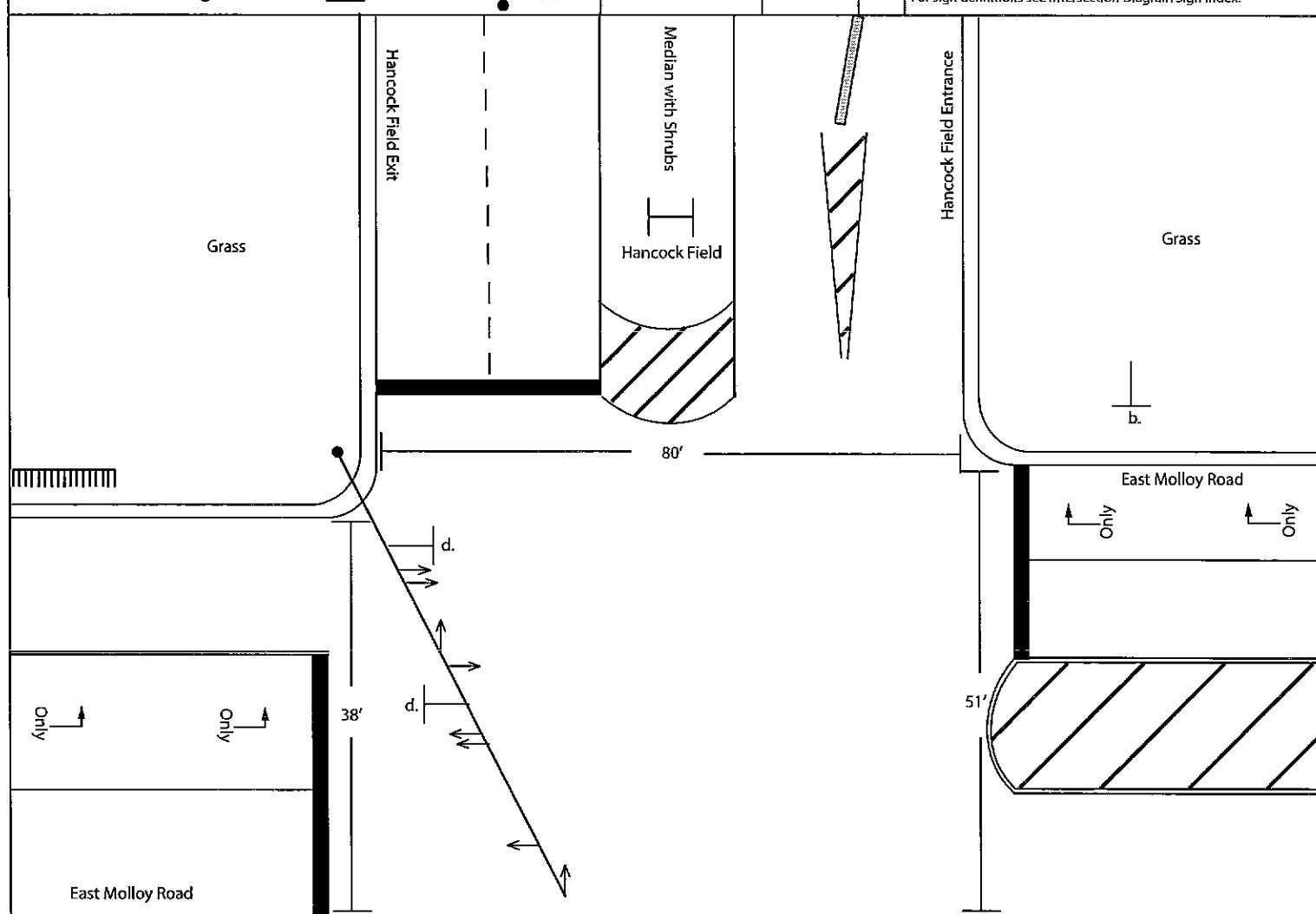


Note:  
Only actual pavement markings were drawn. An absence of  
arrows/striping indicates no pavement markings.

For sign definitions see Intersection Diagram Sign Index.

Date

May 2010



O



O

Trees

Trees

O

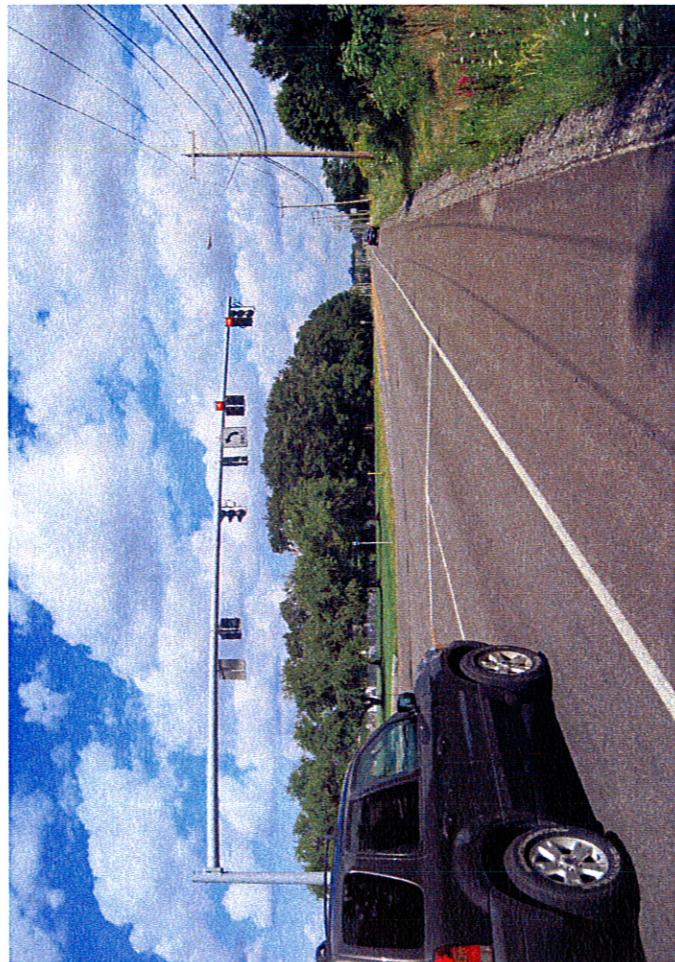
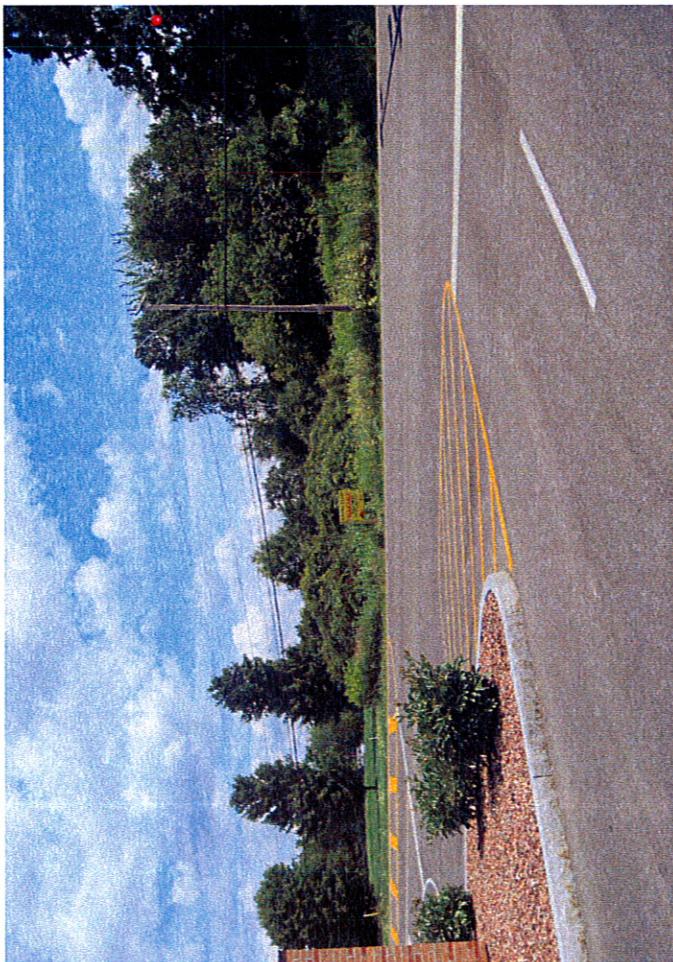
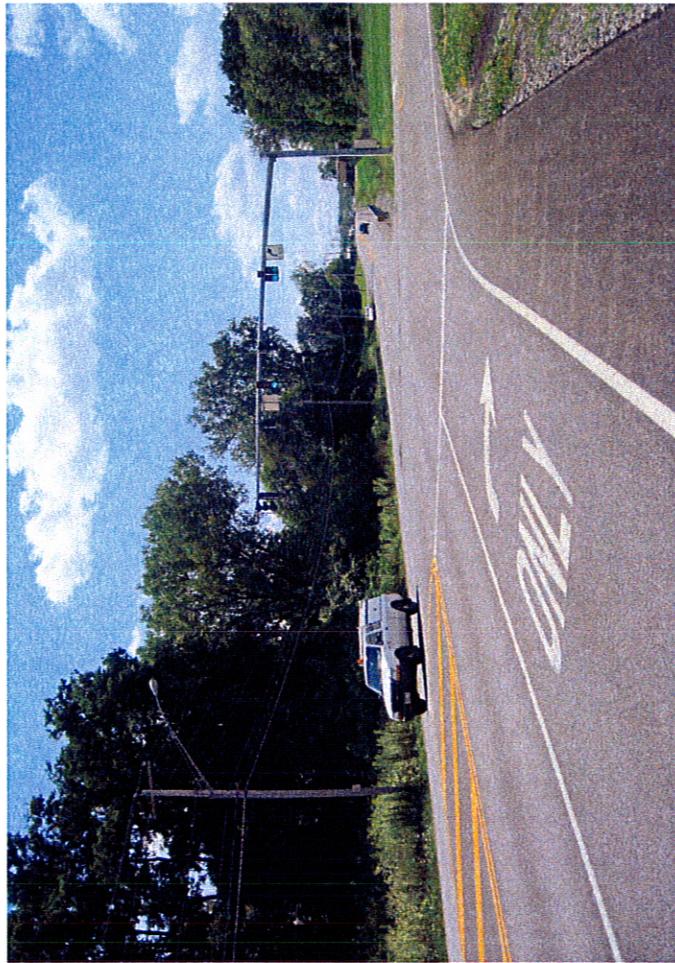
Golf Course

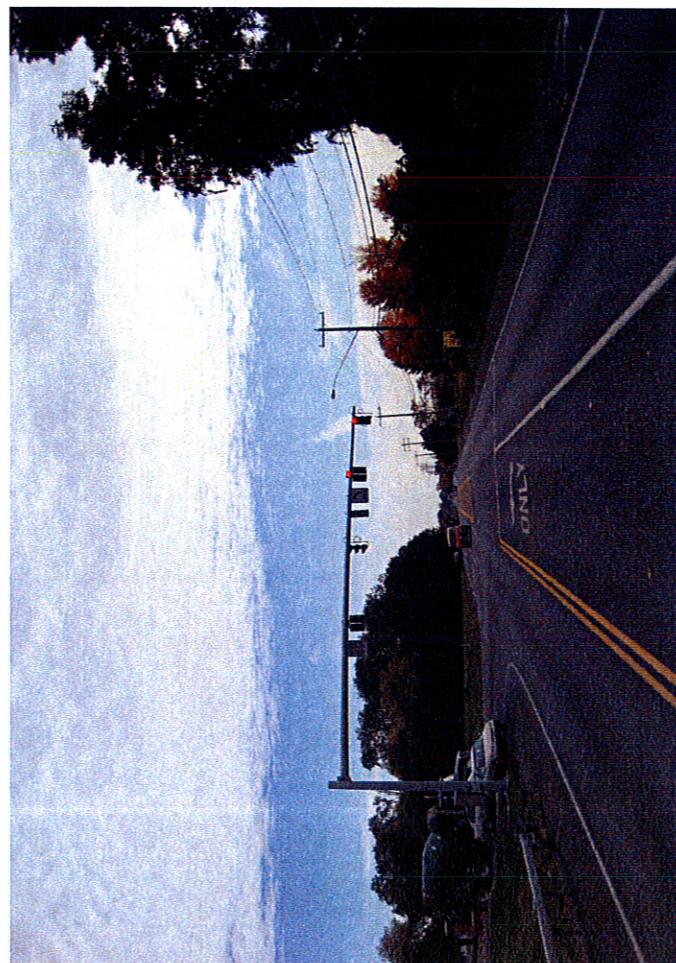
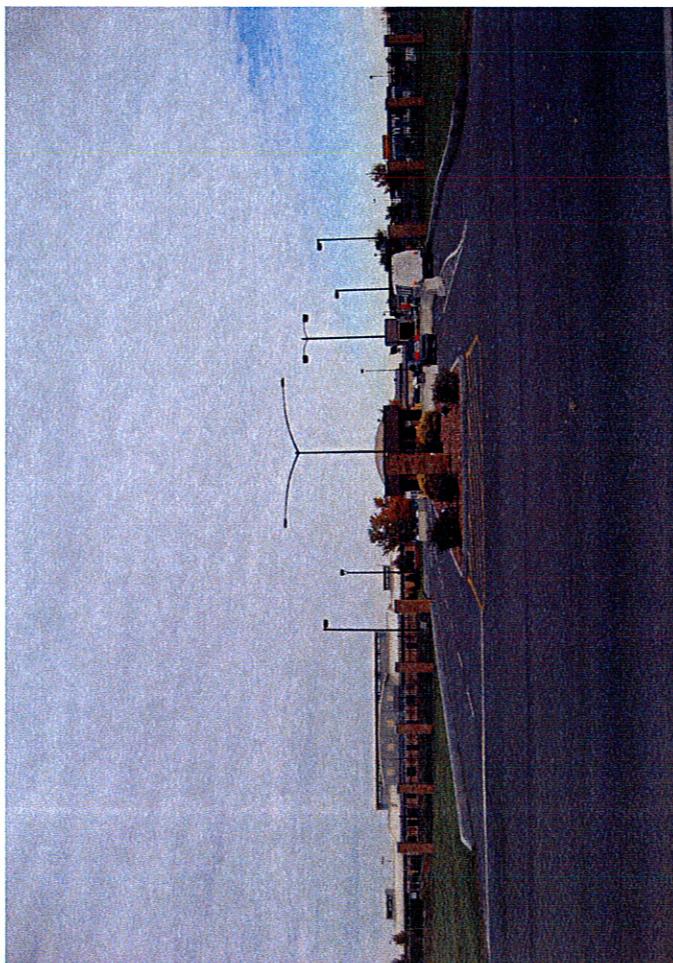
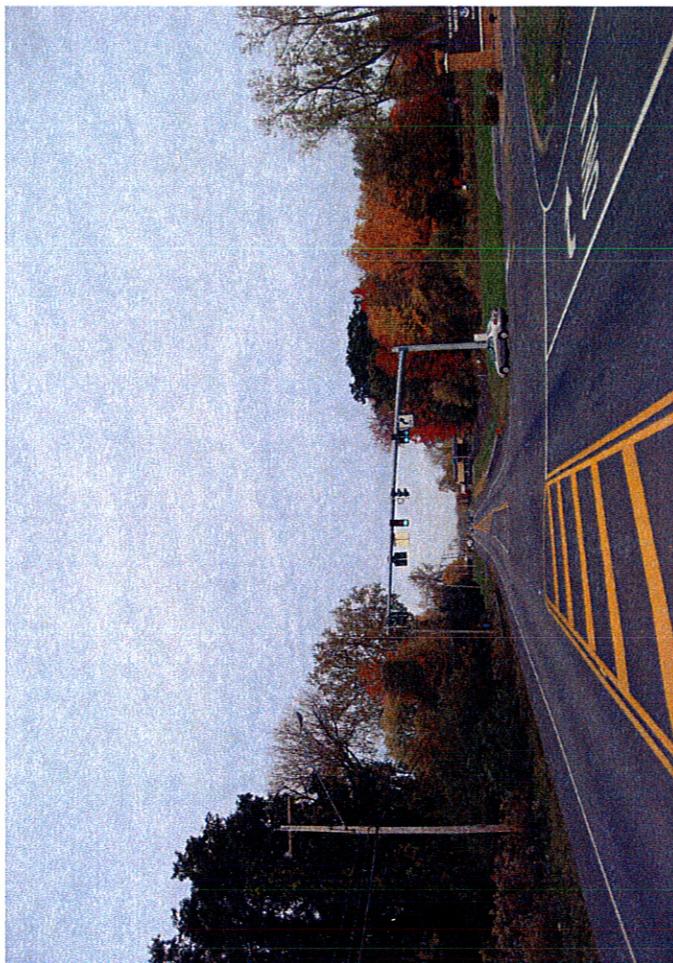
Task

OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

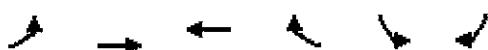
Diagram is for presentation purposes only.  
SMTC does not guarantee the accuracy or completeness  
of this diagram.  
Diagram is not to scale.





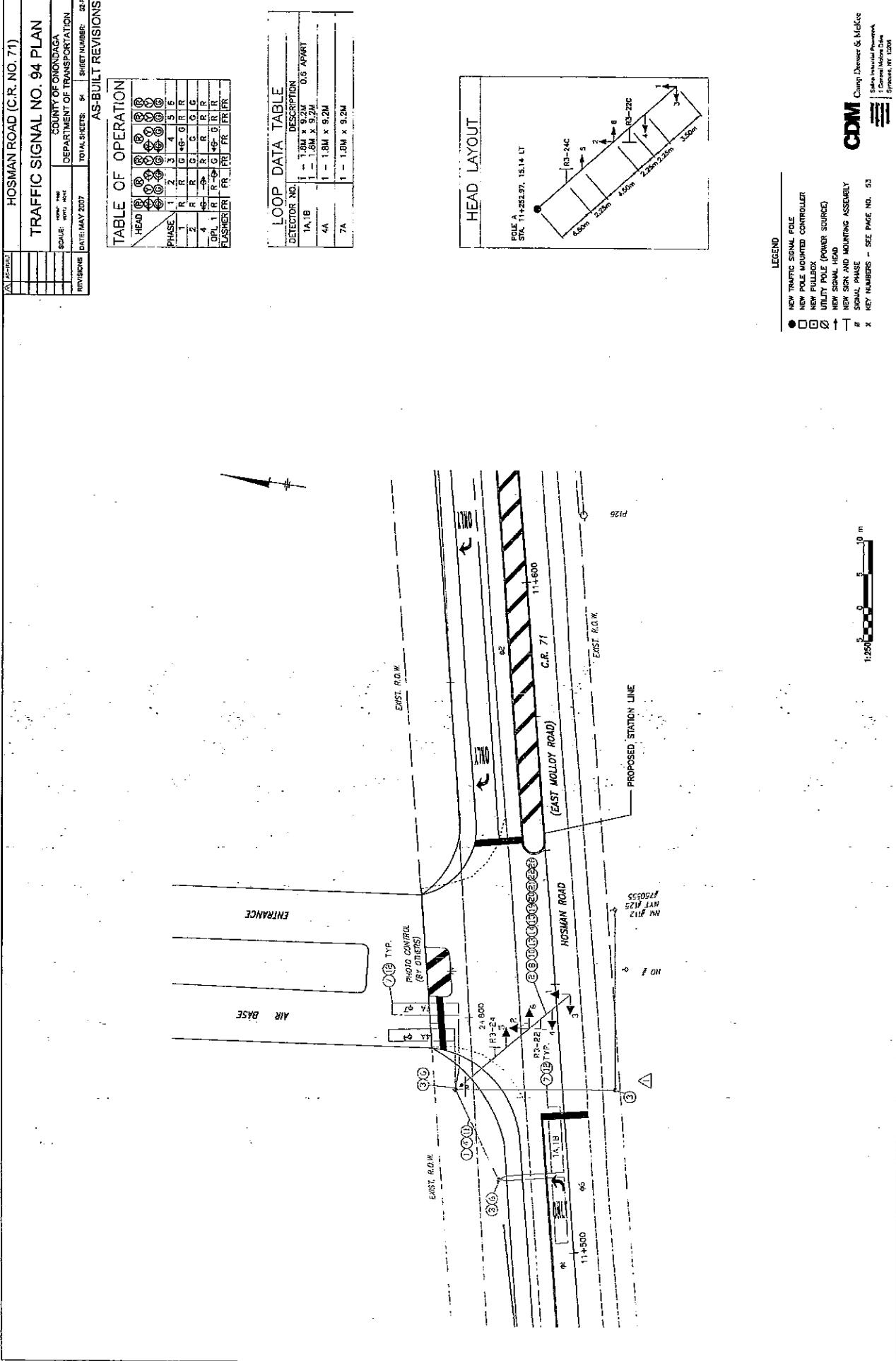


Lane Group	E BL	E BR	W BL	W BR	S BL	S BR
Volume (vph)	50	630	415	100	15	6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.62	0.84	0.80	0.75	0.50	0.50
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	3%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%	0%	0%	0%		
Shared Lane Traffic (%)						
Intersection Summary						



Lane Group	EB1	EB2	WB1	WB2	SB1	SB2
Volume (vph)	45	470	750	55	195	160
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.62	0.84	0.80	0.75	0.67	0.67
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	3%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%	0%	0%			
Shared Lane Traffic (%)						

Intersection Summary



**INTERSECTION NAME:**  
**INTERSECTION NUMBER:**

MOLLOY @ AIRBASE 94

INSTALLATION DATE: \_\_\_\_\_  
PROGRAM DATE: \_\_\_\_\_

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



**INTERSECTION NAME:**  
**INTERSECTION NUMBER:**

MOLLOY @ AIRBASE  
94

INSTALLATION DATE:  
PROGRAM DATE:

FULL COORDINATION  
OPTIMIZATION

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

Lane Group	EBL	EAT	WBL	WBR	SBL	SPR
Lane Configurations	1	↑	↑	↑	1	1
Volume (vph)	50	630	415	100	15	6
Turn Type	pm+pt			pm+ov		pm+ov
Protected Phases	1	6	2	7	7	1
Permitted Phases	6			2		7
Detector Phase	1				7	1
Switch Phase						
Minimum Initial (s)	8.0	10.0	10.0	12.0	12.0	8.0
Minimum Split (s)	13.0	15.0	15.0	17.0	17.0	13.0
Total Split (s)	17.0	42.0	25.0	17.0	17.0	17.0
Total Split (%)	28.8%	71.2%	42.4%	28.8%	28.8%	28.8%
Maximum Green (s)	12.0	37.0	20.0	12.0	12.0	12.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-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
Lead/Lag	Lead		Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	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
Time Before Reduce (s)	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
Recall Mode	None	Max	Max	None	None	None
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						

#### Intersection Summary

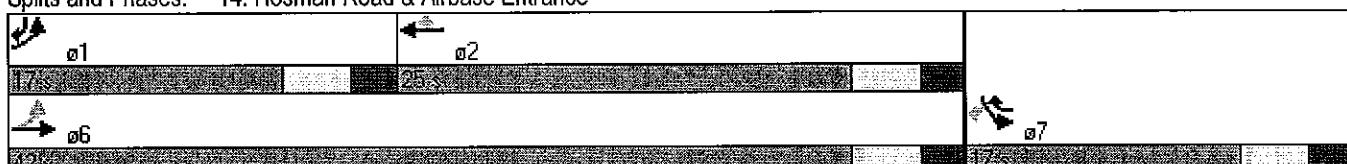
Cycle Length: 59

Actuated Cycle Length: 50.4

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Splits and Phases: 14: Hosman Road & Airbase Entrance



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	WBL	WBT	SBL	SBR
Lane Configurations	↑	→	←	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	45	470	750	55	195	160				
Turn Type	pm+pt			pm+ov		pm+ov				
Protected Phases	1	6	2	7	7	1				
Permitted Phases	6			2		7				
Detector Phase		1			7	1				
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	12.0	12.0	8.0				
Minimum Split (s)	13.0	15.0	15.0	17.0	17.0	13.0				
Total Split (s)	17.0	42.0	25.0	17.0	17.0	17.0				
Total Split (%)	28.8%	71.2%	42.4%	28.8%	28.8%	28.8%				
Maximum Green (s)	12.0	37.0	20.0	12.0	12.0	12.0				
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0				
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0				
Lost Time Adjust (s)	-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				
Lead/Lag	Lead		Lag		Lead					
Lead-Lag Optimize?										
Vehicle Extension (s)	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				
Time Before Reduce (s)	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				
Recall Mode	None	Max	Max	None	None	None				
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

#### Intersection Summary

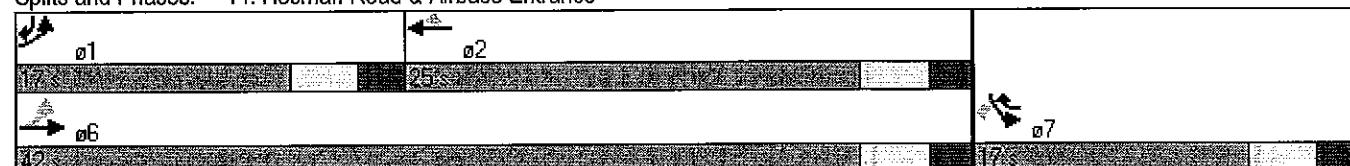
Cycle Length: 59

Actuated Cycle Length: 59

Natural Cycle: 80

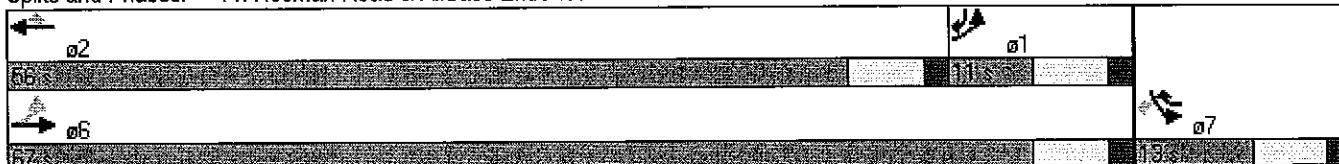
Control Type: Semi Act-Uncoord

Splits and Phases: 14: Hosman Road & Airbase Entrance



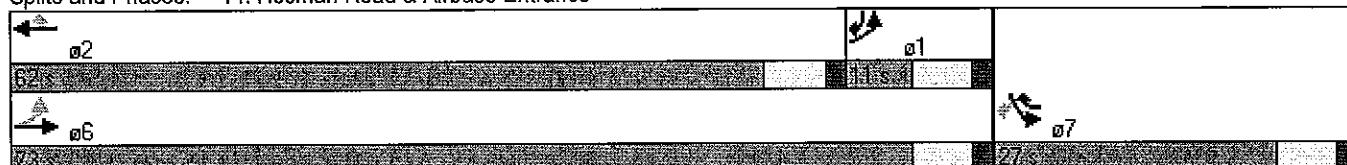
Lane Group	E BL	E BT	W BT	W BR	S BL	S BR
Lane Configurations	↓	↑	←	↑	↓	↑
Volume (vph)	50	630	415	100	15	6
Turn Type	pm+pt		pm+ov		pm+ov	
Protected Phases	1	6	2	7	7	1
Permitted Phases	6			2		7
Detector Phase	1	6	2	7	7	1
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	11.0	16.0	16.0	11.0	11.0	11.0
Total Split (s)	11.0	67.0	56.0	13.0	13.0	11.0
Total Split (%)	13.8%	83.8%	70.0%	16.3%	16.3%	13.8%
Maximum Green (s)	5.0	61.0	50.0	7.0	7.0	5.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	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
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5	3.1	3.1	3.5	3.5	1.5
Minimum Gap (s)	1.5	3.1	3.1	3.5	3.5	1.5
Time Before Reduce (s)	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
Recall Mode	None	C-Min	C-Min	None	None	None
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
Intersection Summary						
Cycle Length: 80						
Actuated Cycle Length: 80						
Offset: 66 (83%), Referenced to phase 2:WBT and 6:EBLT, Start of Green						
Natural Cycle: 45						
Control Type: Actuated-Coordinated						

Splits and Phases: 14: Hosman Road & Airbase Entrance



	EBL	EFT	WBT	WBR	SBL	SBR	WBT	WBR	SBL	SBR
Lane Group										
Lane Configurations	↑	→	←	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	45	470	750	55	195	160				
Turn Type	pm+pt			pm+ov			pm+ov			
Protected Phases	1	6	2	7	7	1				
Permitted Phases	6			2			7			
Detector Phase	1	6	2	7	7	1				
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0				
Minimum Split (s)	11.0	16.0	16.0	11.0	11.0	11.0				
Total Split (s)	11.0	73.0	62.0	27.0	27.0	11.0				
Total Split (%)	11.0%	73.0%	62.0%	27.0%	27.0%	11.0%				
Maximum Green (s)	5.0	67.0	56.0	21.0	21.0	5.0				
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5				
All-Red Time (s)	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				
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0				
Lead/Lag	Lag		Lead			Lag				
Lead-Lag Optimize?										
Vehicle Extension (s)	1.5	3.1	3.1	3.5	3.5	1.5				
Minimum Gap (s)	1.5	3.1	3.1	3.5	3.5	1.5				
Time Before Reduce (s)	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				
Recall Mode	None	C-Min	C-Min	None	None	None				
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										
Intersection Summary										
Cycle Length: 100										
Actuated Cycle Length: 100										
Offset: 79 (79%), Referenced to phase 2:WBT and 6:EBTL, Start of Green										
Natural Cycle: 80										
Control Type: Actuated-Coordinated										

Splits and Phases: 14: Hosman Road & Airbase Entrance



Lane Group	NEBL	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑	↑	→	←	↑	↑	↑
Volume (vph)	50	630	415	100	15	6	6
Turn Type	pm+pt			pm+ov		pm+ov	
Protected Phases	1	6	2	7	7	1	1
Permitted Phases	6			2		7	
Detector Phase	1	6	2	7	7	1	1
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	16.0	16.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	67.0	56.0	13.0	13.0	11.0	11.0
Total Split (%)	13.8%	83.8%	70.0%	16.3%	16.3%	13.8%	13.8%
Maximum Green (s)	5.0	61.0	50.0	7.0	7.0	5.0	5.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	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
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lead			Lag	
Lead-Lag Optimize?							
Vehicle Extension (s)	1.5	3.1	3.1	3.5	3.5	1.5	1.5
Minimum Gap (s)	1.5	3.1	3.1	3.5	3.5	1.5	1.5
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	C-Min	C-Min	None	None	None	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							

#### Intersection Summary

Cycle Length: 80

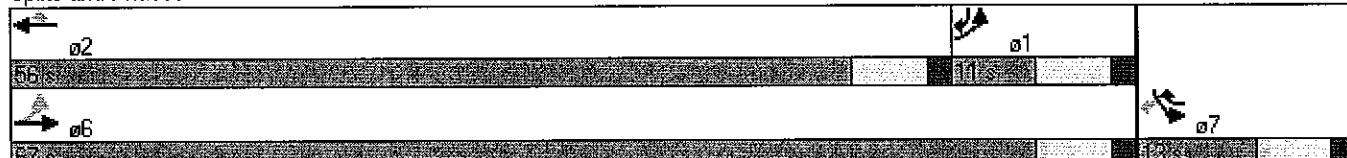
Actuated Cycle Length: 80

Offset: 2 (3%), Referenced to phase 2:WBT and 6:EBTL, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Splits and Phases: 14: Hosman Road & Airbase Entrance



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	WBT	WBR	SBL	SBR
Lane Configurations	1	↑	↑	↑	↑	↑	1	↑	↑	↑
Volume (vph)	45	470	750	55	195	160				
Turn Type	pm+pt			pm+ov		pm+ov				
Protected Phases	1	6	2	7	7	1				
Permitted Phases	6			2		7				
Detector Phase	1	6	2	7	7	1				
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0				
Minimum Split (s)	11.0	16.0	16.0	11.0	11.0	11.0				
Total Split (s)	11.0	73.0	62.0	27.0	27.0	11.0				
Total Split (%)	11.0%	73.0%	62.0%	27.0%	27.0%	11.0%				
Maximum Green (s)	5.0	67.0	56.0	21.0	21.0	5.0				
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5				
All-Red Time (s)	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				
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0				
Lead/Lag	Lag		Lead			Lag				
Lead-Lag Optimize?										
Vehicle Extension (s)	1.5	3.1	3.1	3.5	3.5	1.5				
Minimum Gap (s)	1.5	3.1	3.1	3.5	3.5	1.5				
Time Before Reduce (s)	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				
Recall Mode	None	C-Min	C-Min	None	None	None				
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

#### Intersection Summary

Cycle Length: 100

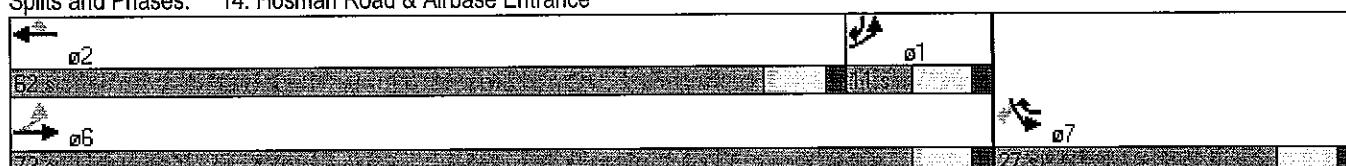
Actuated Cycle Length: 100

Offset: 80 (80%), Referenced to phase 2:WBT and 6:EBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

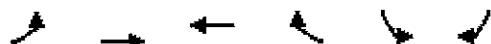
Splits and Phases: 14: Hosman Road & Airbase Entrance





Movement	EBL	EBT	WBT	WBR	SBL	SBR
<b>Lane Configurations</b>						
Volume (vph)	50	630	415	100	15	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1745	1801	1783	1561	1745	1561
Flt Permitted	0.37	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	683	1801	1783	1561	1745	1561
Peak-hour factor, PHF	0.62	0.84	0.80	0.75	0.50	0.50
Adj. Flow (vph)	81	750	519	133	30	12
RTOR Reduction (vph)	0	0	0	39	0	10
Lane Group Flow (vph)	81	750	519	94	30	2
Heavy Vehicles (%)	0%	2%	3%	0%	0%	0%
Turn Type	pm+pt		pm+ov		pm+ov	
Protected Phases	1	6	2	7	7	1
Permitted Phases	6			2		7
Actuated Green, G (s)	44.1	44.1	33.8	35.8	2.0	7.3
Effective Green, g (s)	46.1	46.1	35.8	39.8	4.0	11.3
Actuated g/C Ratio	0.82	0.82	0.64	0.71	0.07	0.20
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	699	1480	1138	1191	124	398
v/s Ratio Prot	0.02	c0.42	0.29	0.01	c0.02	0.00
v/s Ratio Perm	0.08			0.05		0.00
v/c Ratio	0.12	0.51	0.46	0.08	0.24	0.01
Uniform Delay, d1	1.6	1.5	5.2	2.5	24.6	17.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.2	1.3	0.0	1.4	0.0
Delay (s)	1.7	2.8	6.5	2.5	26.0	17.9
Level of Service	A	A	A	A	C	B
Approach Delay (s)		2.7	5.7		23.7	
Approach LOS		A	A		C	
<b>Intersection Summary</b>						
HCM Average Control Delay		4.5		HCM Level of Service		A
HCM Volume to Capacity ratio		0.49				
Actuated Cycle Length (s)		56.1		Sum of lost time (s)		6.0
Intersection Capacity Utilization		49.8%		ICU Level of Service		A
Analysis Period (min)		15				

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
<b>Lane Configurations</b>						
Volume (vph)	45	470	750	55	195	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt Protected	1.00	1.00	1.00	0.85	1.00	0.85
Frt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1745	1801	1783	1561	1745	1561
Frt Permitted	0.14	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	256	1801	1783	1561	1745	1561
Peak-hour factor, PHF	0.62	0.84	0.80	0.75	0.67	0.67
Adj. Flow (vph)	73	560	938	73	291	239
RTOR Reduction (vph)	0	0	0	24	0	22
Lane Group Flow (vph)	73	560	938	49	291	217
Heavy Vehicles (%)	0%	2%	3%	0%	0%	0%
<b>Turn Type</b>						
	pm+pt		pm+ov		pm+ov	
Protected Phases	1	6	2	7	7	1
Permitted Phases	6			2		7
Actuated Green, G (s)	37.0	37.0	23.7	35.7	12.0	20.3
Effective Green, g (s)	39.0	39.0	25.7	39.7	14.0	24.3
Actuated g/C Ratio	0.66	0.66	0.44	0.67	0.24	0.41
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	429	1190	777	1130	414	722
v/s Ratio Prot	0.03	c0.31	c0.53	0.01	c0.17	0.05
v/s Ratio Perm	0.08			0.02		0.09
v/c Ratio	0.17	0.47	1.21	0.04	0.70	0.30
Uniform Delay, d1	8.9	4.9	16.7	3.3	20.6	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.3	105.2	0.0	5.7	0.3
Delay (s)	9.2	6.3	121.9	3.3	26.3	12.0
Level of Service	A	A	F	A	C	B
Approach Delay (s)		6.6	113.3		19.8	
Approach LOS		A	F		B	

#### Intersection Summary

HCM Average Control Delay	59.4	HCM Level of Service	E
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Volume (vph)	50	630	415	100	15	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt Protected	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1745	1801	1783	1561	1745	1561
Flt Permitted	0.42	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	771	1801	1783	1561	1745	1561
Peak-hour factor, PHF	0.62	0.84	0.80	0.75	0.50	0.50
Adj. Flow (vph)	81	750	519	133	30	12
RTOR Reduction (vph)	0	0	0	30	0	10
Lane Group Flow (vph)	81	750	519	103	30	2
Heavy Vehicles (%)	0%	2%	3%	0%	0%	0%
Turn Type	pm+pt		pm+ov		pm+ov	
Protected Phases	1	6	2	7	7	1
Permitted Phases	6			2		7
Actuated Green, G (s)	62.3	62.3	52.3	58.0	5.7	9.7
Effective Green, g (s)	64.3	64.3	54.3	62.0	7.7	13.7
Actuated g/C Ratio	0.80	0.80	0.68	0.78	0.10	0.17
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	1.5	3.1	3.1	3.5	3.5	1.5
Lane Grp Cap (vph)	693	1448	1210	1288	168	345
v/s Ratio Prot	0.01	c0.42	0.29	0.01	c0.02	0.00
v/s Ratio Perm	0.09			0.06		0.00
v/c Ratio	0.12	0.52	0.43	0.08	0.18	0.01
Uniform Delay, d1	3.4	2.6	5.8	2.2	33.2	27.5
Progression Factor	1.00	1.00	0.55	0.20	1.00	1.00
Incremental Delay, d2	0.0	1.3	0.7	0.0	0.6	0.0
Delay (s)	3.4	4.0	3.9	0.5	33.8	27.5
Level of Service	A	A	A	A	C	C
Approach Delay (s)		3.9	3.2		32.0	
Approach LOS		A	A		C	
<b>Intersection Summary</b>						
HCM Average Control Delay		4.4		HCM Level of Service		A
HCM Volume to Capacity ratio		0.48				
Actuated Cycle Length (s)		80.0		Sum of lost time (s)		8.0
Intersection Capacity Utilization		44.0%		ICU Level of Service		A
Analysis Period (min)		15				

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑ ↗	↑ ↗	↑ ↗	↑ ↗	↑ ↗	↑ ↗
Volume (vph)	45	470	750	55	195	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1745	1801	1783	1561	1745	1561
Flt Permitted	0.12	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	223	1801	1783	1561	1745	1561
Peak-hour factor, PHF	0.62	0.84	0.80	0.75	0.67	0.67
Adj. Flow (vph)	73	560	938	73	291	239
RTOR Reduction (vph)	0	0	0	14	0	93
Lane Group Flow (vph)	73	560	938	59	291	146
Heavy Vehicles (%)	0%	2%	3%	0%	0%	0%
Turn Type	pm+pt		pm+tov		pm+tov	
Protected Phases	1	6	2	7	7	1
Permitted Phases	6			2		7
Actuated Green, G (s)	69.3	69.3	57.9	76.6	18.7	24.1
Effective Green, g (s)	71.3	71.3	59.9	80.6	20.7	28.1
Actuated g/C Ratio	0.71	0.71	0.60	0.81	0.21	0.28
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	1.5	3.1	3.1	3.5	3.5	1.5
Lane Grp Cap (vph)	272	1284	1068	1321	361	501
v/s Ratio Prot	0.02	c0.31	c0.53	0.01	c0.17	0.02
v/s Ratio Perm	0.17			0.03		0.07
v/c Ratio	0.27	0.44	0.88	0.04	0.81	0.29
Uniform Delay, d1	26.7	6.0	17.0	2.0	37.7	28.2
Progression Factor	1.00	1.00	0.83	1.39	1.00	1.00
Incremental Delay, d2	0.2	1.1	8.2	0.0	12.7	0.1
Delay (s)	26.9	7.1	22.2	2.7	50.4	28.3
Level of Service	C	A	C	A	D	C
Approach Delay (s)		9.3	20.8		40.4	
Approach LOS		A	C		D	
<b>Intersection Summary</b>						
HCM Average Control Delay		22.2		HCM Level of Service		C
HCM Volume to Capacity ratio		0.80				
Actuated Cycle Length (s)		100.0		Sum of lost time (s)		8.0
Intersection Capacity Utilization		56.9%		ICU Level of Service		B
Analysis Period (min)		15				

c Critical Lane Group



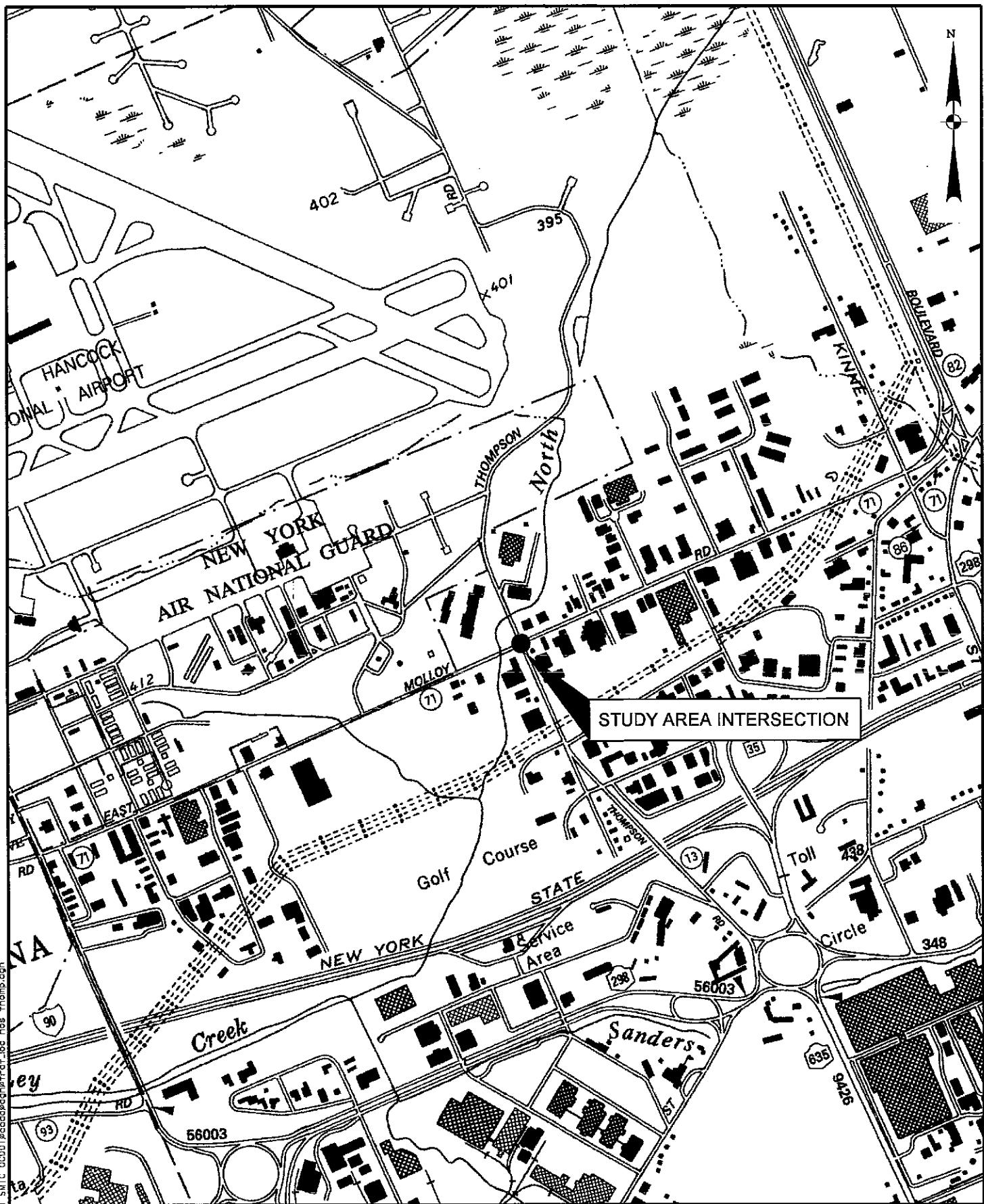
Movement	EBL	EBT	WBT	WBR	SBL	SBR
<b>Lane Configurations</b>						
Volume (vph)	50	630	415	100	15	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1745	1801	1783	1561	1745	1561
Flt Permitted	0.42	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	771	1801	1783	1561	1745	1561
Peak-hour factor, PHF	0.62	0.84	0.80	0.75	0.50	0.50
Adj. Flow (vph)	81	750	519	133	30	12
RTOR Reduction (vph)	0	0	0	30	0	10
Lane Group Flow (vph)	81	750	519	103	30	2
Heavy Vehicles (%)	0%	2%	3%	0%	0%	0%
<b>Turn Type</b>						
Protected Phases	1	6	2	7	7	1
Permitted Phases	6			2		7
Actuated Green, G (s)	62.3	62.3	52.3	58.0	5.7	9.7
Effective Green, g (s)	64.3	64.3	54.3	62.0	7.7	13.7
Actuated g/C Ratio	0.80	0.80	0.68	0.78	0.10	0.17
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	1.5	3.1	3.1	3.5	3.5	1.5
Lane Grp Cap (vph)	693	1448	1210	1288	168	345
v/s Ratio Prot	0.01	c0.42	0.29	0.01	c0.02	0.00
v/s Ratio Perm	0.09			0.06		0.00
v/c Ratio	0.12	0.52	0.43	0.08	0.18	0.01
Uniform Delay, d1	3.4	2.6	5.8	2.2	33.2	27.5
Progression Factor	0.95	1.04	1.19	1.68	1.00	1.00
Incremental Delay, d2	0.0	1.0	0.7	0.0	0.6	0.0
Delay (s)	3.2	3.7	7.7	3.6	33.8	27.5
Level of Service	A	A	A	A	C	C
Approach Delay (s)		3.7	6.8		32.0	
Approach LOS		A	A		C	
<b>Intersection Summary</b>						
HCM Average Control Delay			5.8	HCM Level of Service		A
HCM Volume to Capacity ratio			0.48			
Actuated Cycle Length (s)			80.0	Sum of lost time (s)		8.0
Intersection Capacity Utilization			44.0%	ICU Level of Service		A
Analysis Period (min)			15			

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Volume (vph)	45	470	750	55	195	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1745	1801	1783	1561	1745	1561
Flt Permitted	0.12	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	223	1801	1783	1561	1745	1561
Peak-hour factor, PHF	0.62	0.84	0.80	0.75	0.67	0.67
Adj. Flow (vph)	73	560	938	73	291	239
RTOR Reduction (vph)	0	0	0	14	0	93
Lane Group Flow (vph)	73	560	938	59	291	146
Heavy Vehicles (%)	0%	2%	3%	0%	0%	0%
Turn Type	pm+pt		pm+ov		pm+ov	
Protected Phases	1	6	2	7	7	1
Permitted Phases	6			2		7
Actuated Green, G (s)	69.3	69.3	57.9	76.6	18.7	24.1
Effective Green, g (s)	71.3	71.3	59.9	80.6	20.7	28.1
Actuated g/C Ratio	0.71	0.71	0.60	0.81	0.21	0.28
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	1.5	3.1	3.1	3.5	3.5	1.5
Lane Grp Cap (vph)	272	1284	1068	1321	361	501
v/s Ratio Prot	0.02	c0.31	c0.53	0.01	c0.17	0.02
v/s Ratio Perm	0.17			0.03		0.07
v/c Ratio	0.27	0.44	0.88	0.04	0.81	0.29
Uniform Delay, d1	26.7	6.0	17.0	2.0	37.7	28.2
Progression Factor	1.40	1.56	0.88	1.74	1.00	1.00
Incremental Delay, d2	0.2	1.0	8.2	0.0	12.7	0.1
Delay (s)	37.6	10.3	23.1	3.4	50.4	28.3
Level of Service	D	B	C	A	D	C
Approach Delay (s)		13.5	21.7		40.4	
Approach LOS		B	C		D	
<b>Intersection Summary</b>						
HCM Average Control Delay		23.9		HCM Level of Service		C
HCM Volume to Capacity ratio		0.80				
Actuated Cycle Length (s)		100.0		Sum of lost time (s)		8.0
Intersection Capacity Utilization		56.9%		ICU Level of Service		B
Analysis Period (min)		15				

c Critical Lane Group



LOCATION MAP  
HOSMAN RD/THOMPSON RD

TRAFFIC SIGNAL OPTIMIZATION  
ONONDAGA COUNTY  
SYRACUSE, NEW YORK

**CME**  
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d

DATE: 6/10

FIGURE: B.3

# INTERSECTION DIAGRAM

Location

East Molloy Road at Thompson Road

## Legend



Drawn By KK

Prepared By SMTC

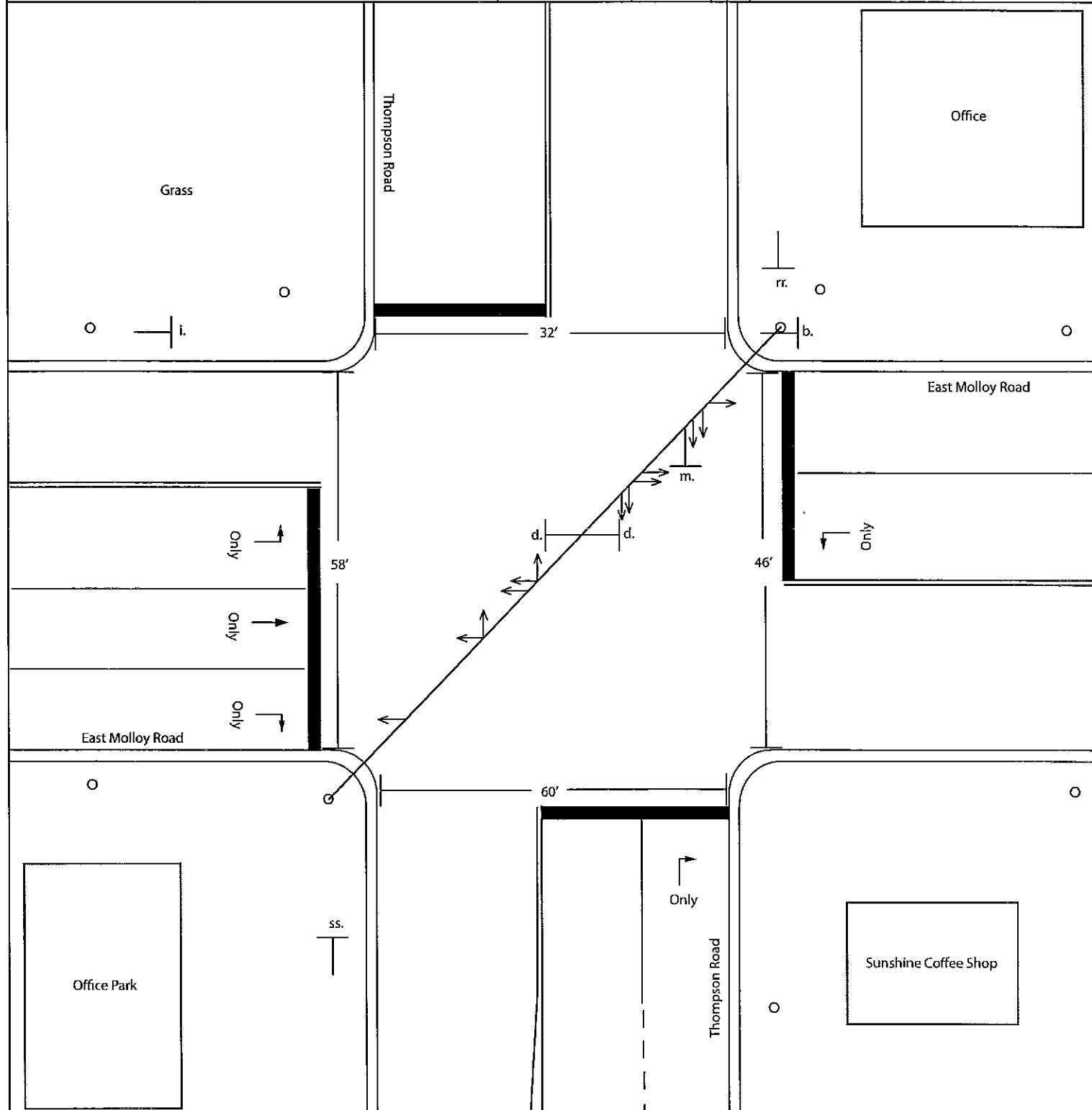


Note:  
Only actual pavement markings were drawn. An absence of arrows/striping indicates no pavement markings.

Date May 2010



For sign definitions see Intersection Diagram Sign Index.

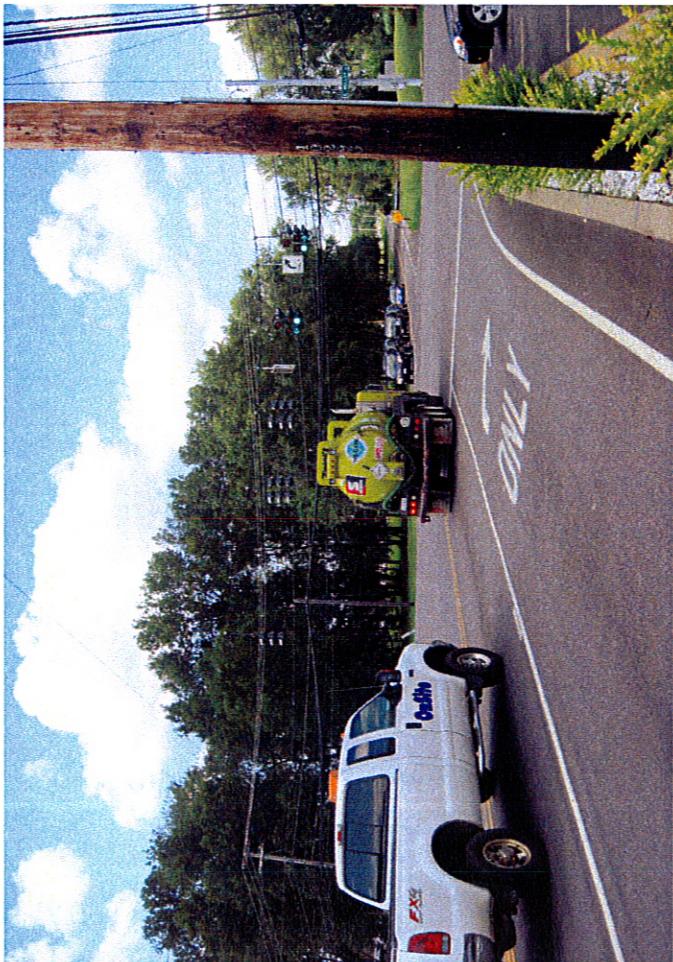
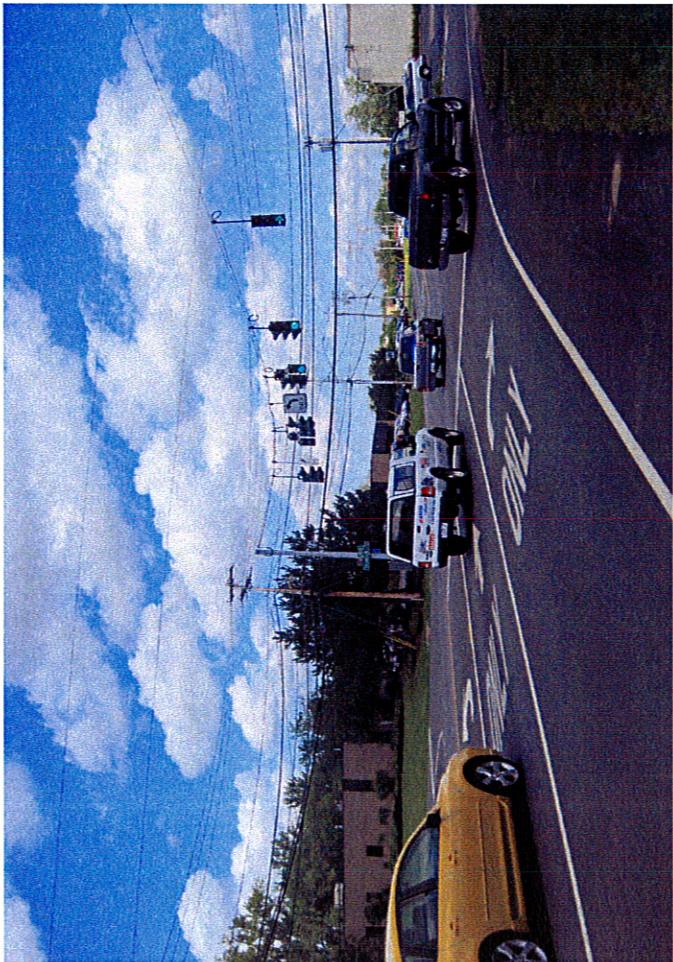


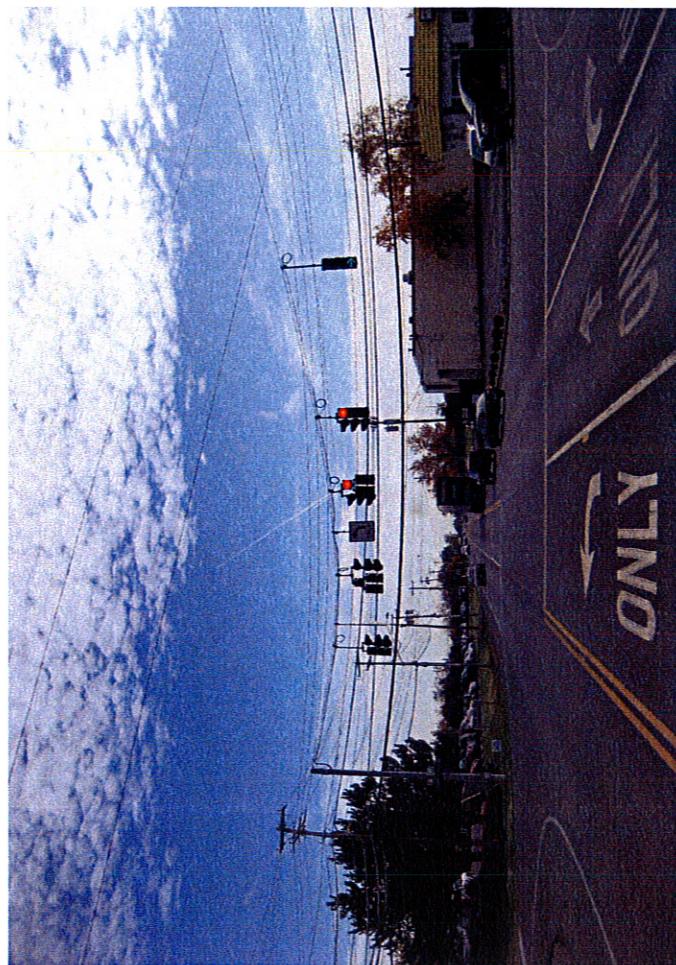
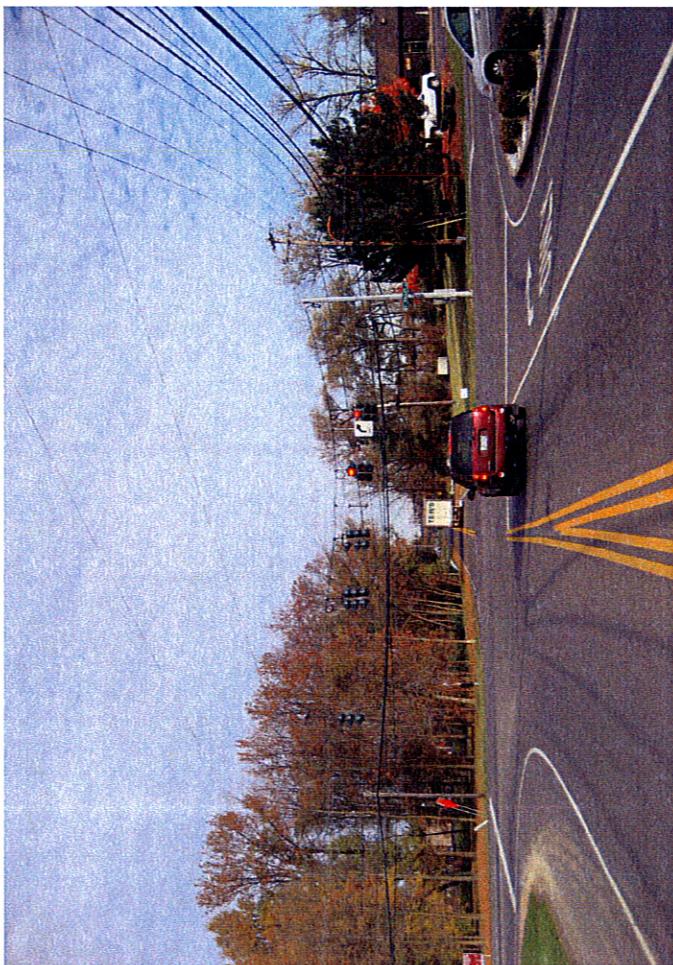
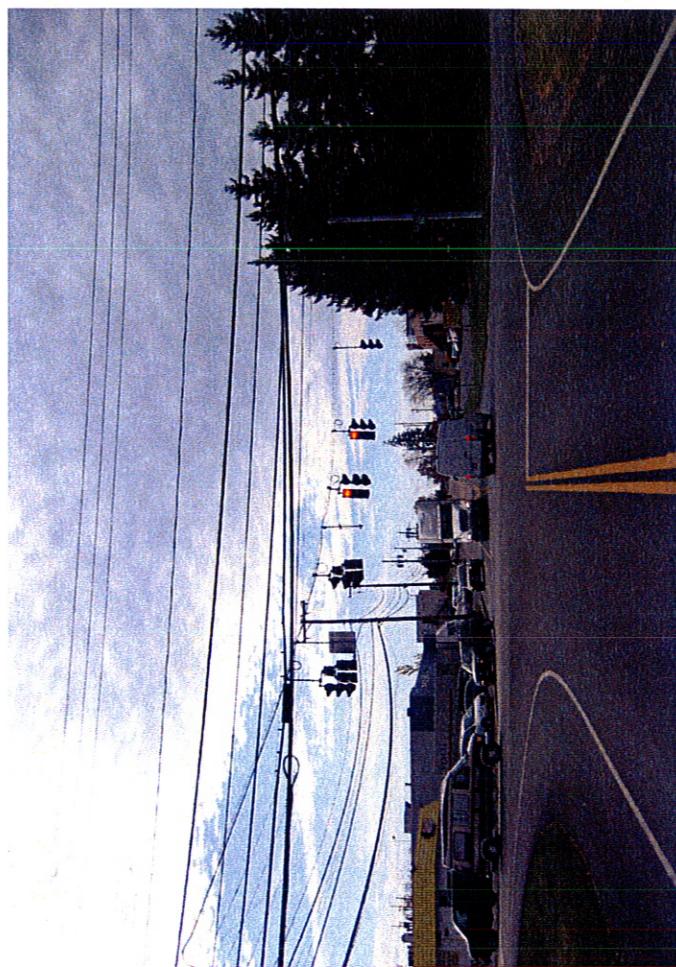
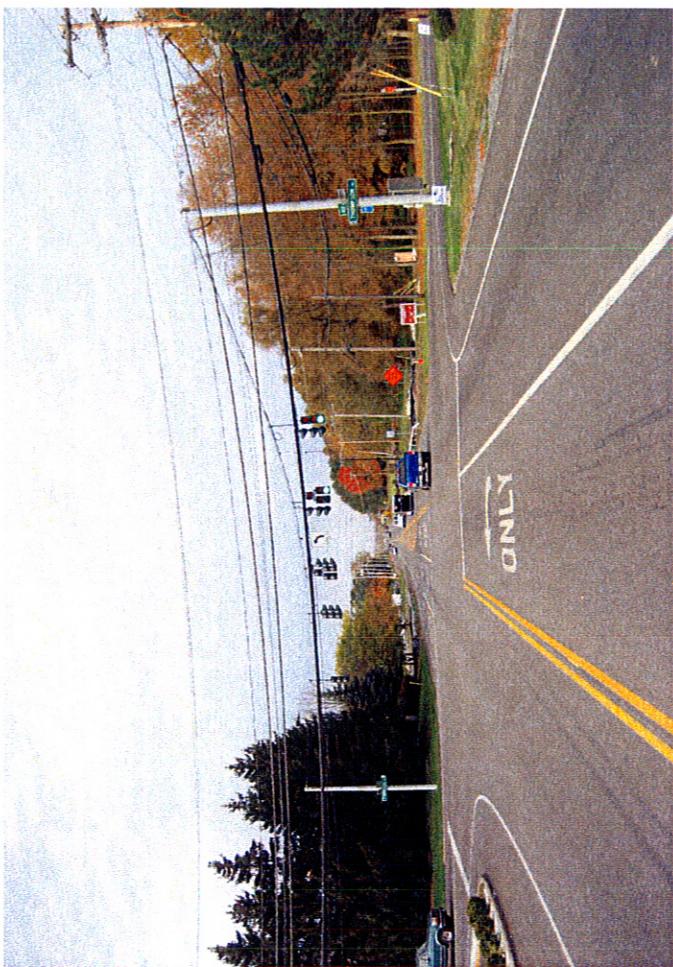
Task

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.

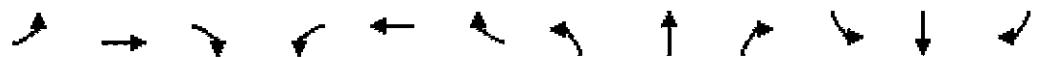




Volume  
SMTC OCDOT Signal Optimization

11: Hosman Road & Thompson Road

2009 Existing - Hosman Corridor\_AM Peak



Lane Group	E31	F31	E3R	W3E	W3T	W3R	N3L	N3T	N3R	S3L	S3T	S3R
Volume (vph)	65	340	240	335	235	175	230	160	390	15	40	10
Conf. Peds. (#/hr)												
Conf. Bikes (#/hr)												
Peak Hour Factor	0.76	0.97	0.92	0.96	0.73	0.49	0.91	0.90	0.91	0.50	0.65	0.44
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	5%	2%	2%	1%	4%	1%	4%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)	0%				0%				0%			
Shared Lane Traffic (%)												

Intersection Summary

Volume  
SMTC OCDOT Signal Optimization

11: Hosman Road & Thompson Road  
2009 Existing - Hosman Corridor\_PM Peak

Lane Group	EBI	EBT	EBC	WBI	WBT	WBR	NBI	NBT	NBR	SBI	GOT	GBF
Volume (vph)	10	360	270	250	315	5	340	15	335	70	95	40
Confl. Peds (#/hr)												
Confl. Bikes (#/hr)												
Peak-hour Factor	0.76	0.97	0.92	0.96	0.73	0.49	0.91	0.90	0.91	0.50	0.65	0.44
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	5%	2%	2%	1%	4%	1%	4%	0%	0%	0%
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:  
INTERSECTION NUMBER:

Thompson @ Molloy  
35

INSTALLATION DATE:  
PROGRAM DATE:

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

INTERVAL	PHASES USED						
	ON/OFF	X	X	X	X	X	X
INHIBIT O/L	1	2	3	4	5	6	7
OLA							
OVERLAP B							
OVERLAP C							
OVERLAP D							

INTERVAL	PHASE TIMINGS						
	1	2	3	4	5	6	7
MIN GREEN	8	12	10	10	8	12	10
PASSAGE	4	4	4	4	4	4	4
YELLOW	4	4	4	4	4	4	4
RED	2	2	2	2	2	2	2
MAX I	10	30	14	25	15	30	20
MAX II							
WALK							
PED CLEAR							
S/A							
TBR							
TTR							
MIN GAP							
MAX VI							
MAX EXT							
AUTO MAX							
AMR							

INTERSECTION NAME:  
INTERSECTION NUMBER:

Thompson @ Molloy  
35

INSTALLATION DATE:  
PROGRAM DATE:

SEMI COORDINATION  
OPTIMIZATION

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

**INTERSECTION NAME:**  
**INTERSECTION NUMBER:**

Thompson @ Molloy  
35

**INSTALLATION DATE:**  
**PROGRAM DATE:**

FULL COORDINATION  
OPTIMIZATION

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

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	WBR	WBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	65	340	240	335	235	230	160	390	15	40	15	40
Turn Type	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+ov	pm+ov	perm				
Protected Phases	1	6	3	5	2	3	8	5		4		
Permitted Phases	6	6	2	5	2	3	8	5	4	4		
Detector Phase	1	6		5	2	3	8	5	4	4		
Switch Phase												
Minimum Initial (s)	8.0	12.0	10.0	10.0	12.0	10.0	10.0	10.0	10.0	10.0		
Minimum Split (s)	14.0	18.0	16.0	16.0	18.0	16.0	16.0	16.0	16.0	16.0		
Total Split (s)	16.0	36.0	20.0	21.0	41.0	20.0	51.0	21.0	31.0	31.0		
Total Split (%)	14.8%	33.3%	18.5%	19.4%	38.0%	18.5%	47.2%	19.4%	28.7%	28.7%		
Maximum Green (s)	10.0	30.0	14.0	15.0	35.0	14.0	45.0	15.0	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	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)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0		
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	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	4.0		
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	Min	None	None	Min	None	None	None	None	None		
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												

#### Intersection Summary

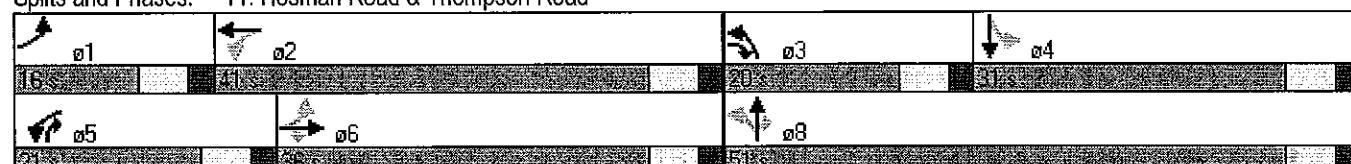
Cycle Length: 108

Actuated Cycle Length: 97.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 11: Hosman Road & Thompson Road



Timings  
SMTA OCDOT Signal Optimization

11: Hosman Road & Thompson Road  
2009 Existing - Hosman Corridor\_PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	1	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	10	360	270	250	315	340	15	335	70	95
Turn Type	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+pt	pm+ov	pm+ov	Perm	4
Protected Phases	1	6	3	5	2	3	8	5	2	4
Permitted Phases	6	6	2	5	2	3	8	5	4	4
Detector Phase	1	6								
Switch Phase										
Minimum Initial (s)	8.0	12.0	10.0	10.0	12.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	14.0	18.0	16.0	16.0	18.0	16.0	16.0	16.0	16.0	16.0
Total Split (s)	16.0	36.0	20.0	21.0	41.0	20.0	51.0	21.0	31.0	31.0
Total Split (%)	14.8%	33.3%	18.5%	19.4%	38.0%	18.5%	47.2%	19.4%	28.7%	28.7%
Maximum Green (s)	10.0	30.0	14.0	15.0	35.0	14.0	45.0	15.0	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	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)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	4.0	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	4.0
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	Min	None	None	Min	None	None	None	None	None
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

Intersection Summary

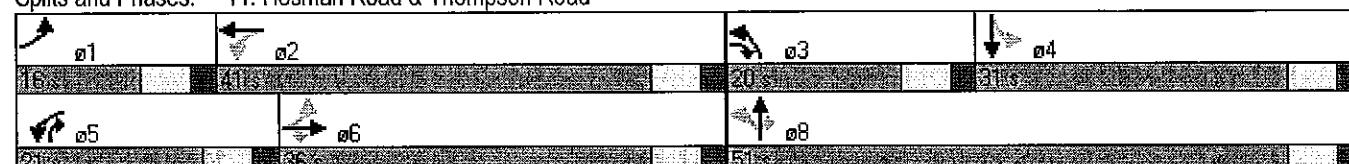
Cycle Length: 108

Actuated Cycle Length: 101

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 11: Hosman Road & Thompson Road



Timings  
SMTC OCDOT Signal Optimization

11: Hosman Road & Thompson Road  
2009 Proposed - Semi-Coordinated - Hosman Corridor\_AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↑	→	↓	↖	↙	↗	↘	↑	↗	↘
Volume (vph)	65	340	240	335	235	230	160	390	15	40
Turn Type	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+pt	pm+ov	perm		
Protected Phases	1	6	3	5	2	3	8	5	4	4
Permitted Phases	6	6	2		8		8	4		
Detector Phase	1	6	1	5	2	3	8	5	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.5	15.5	10.5	10.5	15.5	10.5	15.5	10.5	15.5	15.5
Total Split (s)	11.0	33.0	11.0	16.0	38.0	11.0	31.0	16.0	20.0	20.0
Total Split (%)	13.8%	41.3%	13.8%	20.0%	47.5%	13.8%	38.8%	20.0%	25.0%	25.0%
Maximum Green (s)	5.5	27.5	5.5	10.5	32.5	5.5	25.5	10.5	14.5	14.5
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)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Minimum Gap (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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	C-Min	None	None	C-Min	None	None	None	None	None
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

Intersection Summary

Cycle Length: 80

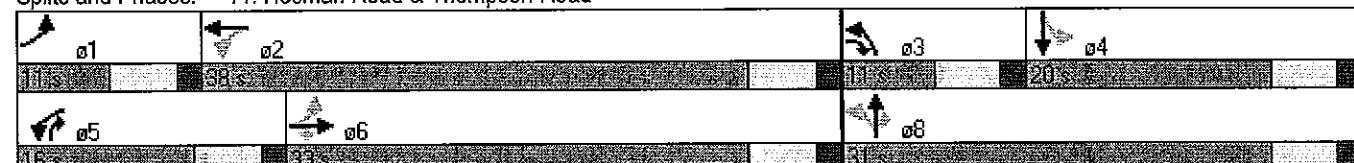
Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:WBL and 6:EBTL, Start of Green, Master Intersection

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 11: Hosman Road & Thompson Road



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	Perm
Lane Configurations											
Volume (vph)	10	360	270	250	315	340	15	335	70	95	
Turn Type	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+pt	pm+ov	pm+ov	Perm		
Protected Phases	1	6	3	5	2	3	8	5	4	4	
Permitted Phases	6		6	2		8		8	4		
Detector Phase	1	6		5	2	3	8	5	4	4	
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0	
Minimum Split (s)	10.5	15.5	10.5	10.5	15.5	10.5	15.5	10.5	15.5	15.5	
Total Split (s)	11.0	29.0	12.0	17.0	35.0	12.0	54.0	17.0	42.0	42.0	
Total Split (%)	11.0%	29.0%	12.0%	17.0%	35.0%	12.0%	54.0%	17.0%	42.0%	42.0%	
Maximum Green (s)	5.5	23.5	6.5	11.5	29.5	6.5	48.5	11.5	36.5	36.5	
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)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	
Lead-Lag Optimize?											
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Minimum Gap (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Time Before Reduce (s)	0.1	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	C-Min	None	None	C-Min	None	None	None	None	None	
Walk Time (s)											
Flash Dont Walk (s)											
Pedestrian Calls (#/hr)											

#### Intersection Summary

Cycle Length: 100

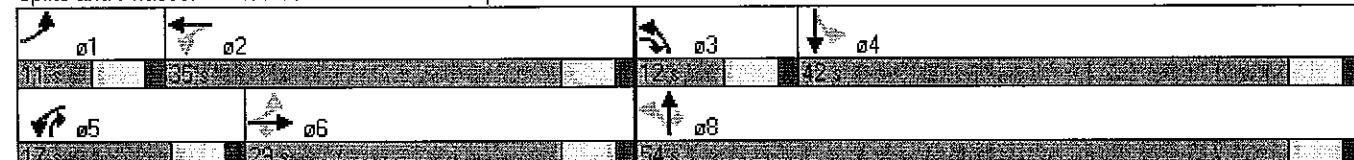
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green, Master Intersection

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 11: Hosman Road & Thompson Road



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↓	→	↓	↖	←	↑	↖	↑	↗	↓
Volume (vph)	65	340	240	335	235	230	160	390	15	40
Turn Type	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+pt	pm+ov	perm		
Protected Phases	1	6	3	5	2	3	8	5	4	
Permitted Phases	6	6	2		8		8	4		
Detector Phase	1	6		5	2	3	8	5	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	6.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.5	15.5	10.5	10.5	15.5	10.5	15.5	10.5	15.5	15.5
Total Split (s)	11.0	33.0	11.0	16.0	38.0	11.0	31.0	16.0	20.0	20.0
Total Split (%)	13.8%	41.3%	13.8%	20.0%	47.5%	13.8%	38.8%	20.0%	25.0%	25.0%
Maximum Green (s)	5.5	27.5	5.5	10.5	32.5	5.5	25.5	10.5	14.5	14.5
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)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Minimum Gap (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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	C-Min	None	None	C-Min	None	None	None	None	None
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

#### Intersection Summary

Cycle Length: 80

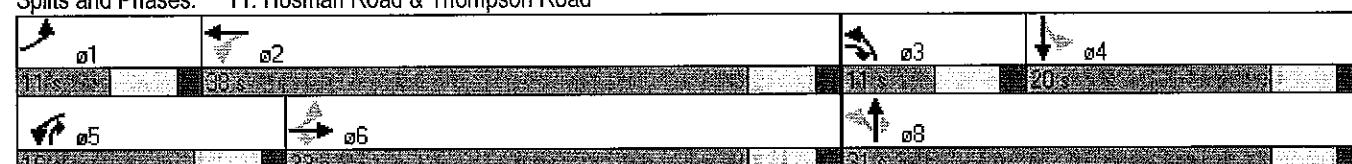
Actuated Cycle Length: 80

Offset: 0 (0%) Referenced to phase 2:WBT and 6:EBTL, Start of Green, Master Intersection

Natural Cycle: 70

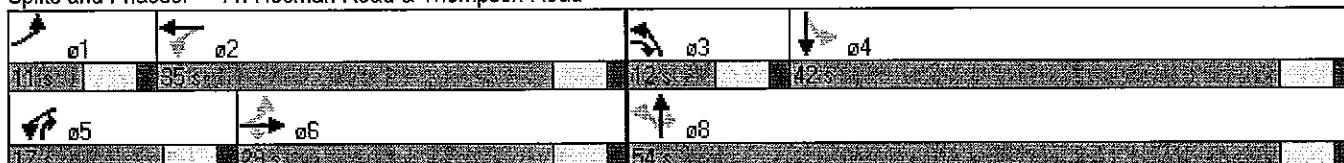
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hosman Road & Thompson Road



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	1	6	3	5	2	3	8	5	70	95
Volume (vph)	10	360	270	250	315	340	15	335	Perm	4
Turn Type	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+pt	pm+ov	pm+ov	Perm	4
Protected Phases	1	6	3	5	2	3	8	5	8	4
Permitted Phases	6	6	2	2	8	8	8	4	4	4
Detector Phase	1	6		5	2	3	8	5	4	4
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.5	15.5	10.5	10.5	15.5	10.5	15.5	10.5	15.5	15.5
Total Split (s)	11.0	29.0	12.0	17.0	35.0	12.0	54.0	17.0	42.0	42.0
Total Split (%)	11.0%	29.0%	12.0%	17.0%	35.0%	12.0%	54.0%	17.0%	42.0%	42.0%
Maximum Green (s)	5.5	23.5	6.5	11.5	29.5	6.5	48.5	11.5	36.5	36.5
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)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Minimum Gap (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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	C-Min	None	None	C-Min	None	None	None	None	None
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										
Intersection Summary										
Cycle Length: 100										
Actuated Cycle Length: 100										
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green, Master Intersection										
Natural Cycle: 75										
Control Type: Actuated-Coordinated										

Splits and Phases: 11: Hosman Road & Thompson Road



HCM Signalized Intersection Capacity Analysis  
SMTC OCDOT Signal Optimization

11: Hosman Road & Thompson Road  
2009 Existing - Hosman Corridor\_AM Peak

Movement	EBL	ERT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBI	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	65	340	240	335	235	175	230	160	390	15	40	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	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	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	0.92			1.00	0.85		0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.99	
Satd. Flow (prot)	1745	1818	1487	1711	1667			1736	1501		1764	
Flt Permitted	0.13	1.00	1.00	0.29	1.00			0.75	1.00		0.84	
Satd. Flow (perm)	235	1818	1487	520	1667			1343	1501		1499	
Peak-hour factor, PHF	0.76	0.97	0.92	0.96	0.73	0.49	0.91	0.90	0.91	0.50	0.65	0.44
Adj. Flow (vph)	86	351	261	349	322	357	253	178	429	30	62	23
RTOR Reduction (vph)	0	0	178	0	34	0	0	0	100	0	6	0
Lane Group Flow (vph)	86	351	83	349	645	0	0	431	329	0	109	0
Heavy Vehicles (%)	0%	1%	5%	2%	2%	1%	4%	1%	4%	0%	0%	0%
Turn Type	pm+pt		pm+ov	pm+pt			pm+pt		pm+ov	Perm		
Protected Phases	1	6	3	5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	35.1	28.2	28.2	48.9	36.0			37.4	52.1		37.4	
Effective Green, g (s)	41.1	31.2	31.2	51.9	39.0			40.4	58.1		40.4	
Actuated g/C Ratio	0.42	0.32	0.32	0.53	0.40			0.41	0.59		0.41	
Clearance Time (s)	6.0	6.0	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	4.0		4.0	
Lane Grp Cap (vph)	250	577	472	489	661			552	933		616	
v/s Ratio Prot	0.03	0.19	c0.13	c0.39					0.06			
v/s Ratio Perm	0.11		0.06	0.25				c0.32	0.16		0.07	
v/c Ratio	0.34	0.61	0.18	0.71	0.98			0.78	0.35		0.18	
Uniform Delay, d1	21.0	28.4	24.3	15.8	29.2			25.1	10.4		18.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	1.1	2.1	0.2	5.2	28.7			7.5	0.3		0.2	
Delay (s)	22.1	30.5	24.5	21.1	57.9			32.6	10.7		18.6	
Level of Service	C	C	C	C	E			C	B		B	
Approach Delay (s)	27.2				45.4			21.7			18.6	
Approach LOS	C			D				C			B	
<b>Intersection Summary</b>												
HCM Average Control Delay		32.0				HCM Level of Service			C			
HCM Volume to Capacity ratio		0.84										
Actuated Cycle Length (s)		98.3				Sum of lost time (s)			6.0			
Intersection Capacity Utilization		74.3%				ICU Level of Service			D			
Analysis Period (min)		15										

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
SMTA OCDOT Signal Optimization

11: Hosman Road & Thompson Road  
2009 Existing - Hosman Corridor\_PM Peak

Movement	EBl	EBr	EBR	WBl	WBr	NBl	NBr	SBl	SBT	SBr
Lane Configurations										
Volume (vph)	10	380	270	250	315	5	340	15	335	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	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	1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		0.97
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.98
Satl. Flow (prot)	1745	1818	1487	1711	1795		1688	1501		1744
Flt Permitted	0.46	1.00	1.00	0.26	1.00		0.47	1.00		0.56
Satl. Flow (perm)	839	1818	1487	467	1795		833	1501		986
Peak-hour factor, PHF	0.76	0.97	0.92	0.96	0.73	0.49	0.91	0.90	0.91	0.50
Adj. Flow (vph)	13	371	293	260	432	10	374	17	368	140
RTOR Reduction (vph)	0	0	201	0	1	0	0	0	89	0
Lane Group Flow (vph)	13	371	92	260	441	0	0	391	279	0
Heavy Vehicles (%)	0%	1%	5%	2%	2%	1%	4%	1%	4%	0%
Turn Type	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+pt	pm+ov	pm+ov	Perm	
Protected Phases	1	6	3	5	2	3	8	5		4
Permitted Phases	6	1	6	2		8		8		4
Actuated Green, G (s)	31.7	30.2	30.2	50.8	43.3		43.0	57.6		43.0
Effective Green, g (s)	37.7	33.2	33.2	53.8	46.3		46.0	63.6		46.0
Actuated g/C Ratio	0.36	0.31	0.31	0.51	0.44		0.43	0.60		0.43
Clearance Time (s)	6.0	6.0	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	4.0		4.0
Lane Grp Cap (vph)	337	570	467	444	786		362	945		429
v/s Ratio Prot	0.00	c0.20		c0.10	0.25			0.05		
v/s Ratio Perm	0.01		0.06	0.20			c0.47	0.14		0.37
v/c Ratio	0.04	0.65	0.20	0.59	0.56		1.08	0.29		0.86
Uniform Delay, d1	22.1	31.3	26.5	17.4	22.2		29.9	10.2		27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1	2.9	0.3	2.3	1.1		70.4	0.2		16.5
Delay (s)	22.2	34.2	26.8	19.7	23.3		100.3	10.5		43.5
Level of Service	C	C	C	B	C		F	B		D
Approach Delay (s)		30.8			22.0		56.7			43.5
Approach LOS		C			C		E			D
<b>Intersection Summary</b>										
HCM Average Control Delay		38.1				HCM Level of Service				D
HCM Volume to Capacity ratio		0.84								
Actuated Cycle Length (s)		105.8				Sum of lost time (s)		9.0		
Intersection Capacity Utilization		77.1%				ICU Level of Service				D
Analysis Period (min)		15								
c Critical Lane Group										

HCM Signalized Intersection Capacity Analysis  
SMTA OCDOT Signal Optimization

11: Hosman Road & Thompson Road  
2009 Proposed - Semi-Coordinated - Hosman Corridor\_AM Peak

Movement	EBl	EBT	EBR	WBl	WBT	WBR	NBl	NBT	NBR	SBL	SBT	SBR
												
Lane Configurations												
Volume (vph)	65	340	240	335	235	175	230	160	390	15	40	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	2.5	2.5	2.5			2.5	2.5		2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	0.92			1.00	0.85		0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		0.99	
Satd. Flow (prot)	1745	1818	1487	1711	1667			1736	1501		1764	
Flt Permitted	0.17	1.00	1.00	0.35	1.00			0.75	1.00		0.78	
Satd. Flow (perm)	307	1818	1487	637	1667			1339	1501		1387	
Peak-hour factor, PHF	0.76	0.97	0.92	0.96	0.73	0.49	0.91	0.90	0.91	0.50	0.65	0.44
Adj. Flow (vph)	86	357	261	349	322	357	253	178	429	30	62	23
RTOR Reduction (vph)	0	0	161	0	49	0	0	0	158	0	9	0
Lane Group Flow (vph)	86	351	100	349	630	0	0	431	271	0	106	0
Heavy Vehicles (%)	0%	1%	5%	2%	2%	1%	4%	1%	4%	0%	0%	0%
Turn Type	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+ov	pm+ov	pm+ov	pm+ov	Perm		
Protected Phases	1	6	3	5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8		4	
Actuated Green, G (s)	32.1	27.8	27.8	43.3	33.5			25.7	35.7		25.7	
Effective Green, g (s)	38.1	30.8	30.8	46.3	36.5			28.7	41.7		28.7	
Actuated g/C Ratio	0.48	0.38	0.38	0.58	0.46			0.36	0.52		0.36	
Clearance Time (s)	5.5	5.5	5.5	5.5	5.5			5.5	5.5		5.5	
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5			1.5	1.5		1.5	
Lane Grp Cap (vph)	277	700	572	543	761			480	829		498	
v/s Ratio Prot	0.03	0.19	c0.10	c0.38					0.05			
v/s Ratio Perm	0.12		0.07	0.27				c0.32	0.13		0.08	
v/c Ratio	0.31	0.50	0.18	0.64	0.83			0.90	0.33		0.21	
Uniform Delay, d1	13.9	18.7	16.2	10.3	19.0			24.3	11.0		17.8	
Progression Factor	0.88	0.89	1.21	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.2	2.2	0.0	2.0	10.1			18.8	0.1		0.1	
Delay (s)	12.5	18.9	19.7	12.2	29.1			43.0	11.1		17.9	
Level of Service	B	B	B	B	C			D	B		B	
Approach Delay (s)		18.4			23.4			27.1			17.9	
Approach LOS		B			C			C			B	
Intersection Summary												
HCM Average Control Delay		23.0				HCM Level of Service			C			
HCM Volume to Capacity ratio		0.82										
Actuated Cycle Length (s)		80.0				Sum of lost time (s)			5.0			
Intersection Capacity Utilization		74.3%				ICU Level of Service			D			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
SMTA OCDOT Signal Optimization

11: Hosman Road & Thompson Road  
2009 Proposed - Semi Coordinated - Hosman Corridor\_PM Peak

Movement	EBL	EBT	EBC	WBL	WBT	WBC	NBL	NBT	NBC	SBI	SBT	SBC
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	10	360	270	250	315	5	340	15	335	70	95	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	2.5	2.5	2.5				2.5	2.5		2.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00				1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00				1.00	0.85		0.97
Frt Protected	0.95	1.00	1.00	0.95	1.00				0.95	1.00		0.98
Satd. Flow (prot)	1745	1818	1487	1711	1795				1688	1501		1744
Frt Permitted	0.38	1.00	1.00	0.24	1.00				0.48	1.00		0.62
Satd. Flow (perm)	702	1818	1487	427	1795				847	1501		1098
Peak-hour factor, PHF	0.76	0.97	0.92	0.96	0.73	0.49	0.91	0.90	0.91	0.50	0.65	0.44
Adj. Flow (vph)	13	371	293	260	432	10	374	17	368	140	146	91
RTOR Reduction (vph)	0	0	205	0	1	0	0	0	65	0	10	0
Lane Group Flow (vph)	13	371	88	260	441	0	0	391	303	0	367	0
Heavy Vehicles (%)	0%	1%	5%	2%	2%	1%	4%	1%	4%	0%	0%	0%
Turn Type	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+ov	pm+pt	pm+ov	pm+ov	Perm		
Protected Phases	1	6	3	5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	27.9	26.9	26.9	43.2	36.7			45.8	56.6		45.8	
Effective Green, g (s)	33.9	29.9	29.9	46.2	39.7			48.8	62.6		48.8	
Actuated g/C Ratio	0.34	0.30	0.30	0.46	0.40			0.49	0.63		0.49	
Clearance Time (s)	5.5	5.5	5.5	5.5	5.5			5.5	5.5		5.5	
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5			1.5	1.5		1.5	
Lane Grp Cap (vph)	280	544	445	374	713			413	977		536	
v/s Ratio Prot	0.00	0.20	c0.10	0.25					0.04			
v/s Ratio Perm	0.01		0.06	c0.23				c0.46	0.16		0.33	
v/c Ratio	0.05	0.68	0.20	0.70	0.62			0.95	0.31		0.69	
Uniform Delay, d1	22.3	30.9	26.1	19.3	24.1			24.4	8.7		19.7	
Progression Factor	0.68	0.77	0.61	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.0	5.8	0.1	4.5	4.0			30.4	0.1		2.9	
Delay (s)	15.1	29.6	15.9	23.8	28.1			54.8	8.7		22.6	
Level of Service	B	C	B	C	C			D	A		C	
Approach Delay (s)		23.4			26.5			32.5			22.6	
Approach LOS		C			C			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		26.9				HCM Level of Service			C			
HCM Volume to Capacity ratio		0.82										
Actuated Cycle Length (s)		100.0				Sum of lost time (s)			5.0			
Intersection Capacity Utilization		77.1%				ICU Level of Service			D			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
SMTA OCDOT Signal Optimization

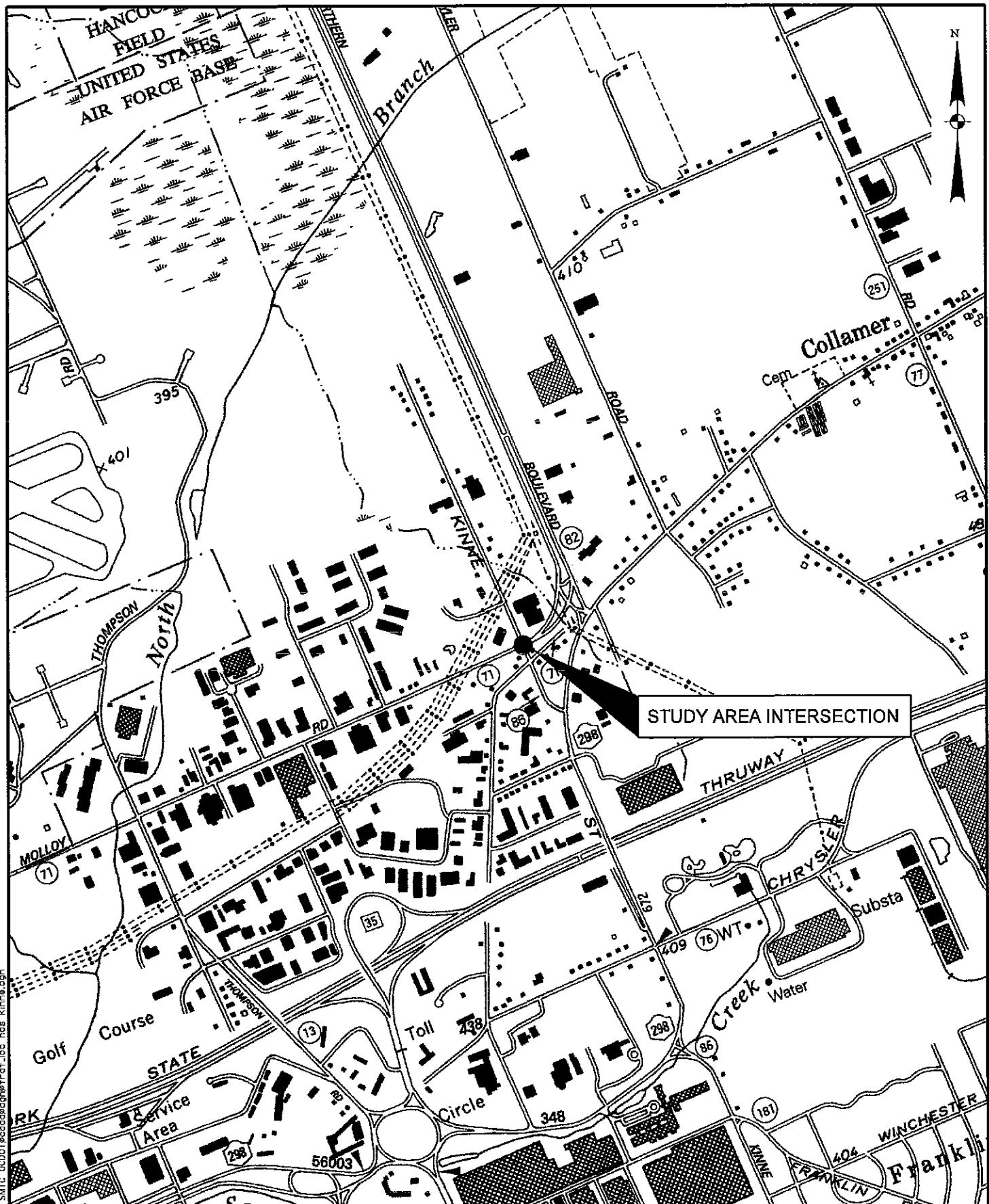
11: Hosman Road & Thompson Road  
2009 Proposed - Coordinated - Hosman Corridor\_AM Peak

Movement	EBL	EBT	EBC	WBL	WBT	WBC	NBL	NBT	NBC	SBL	SBT	SBC
Lane Configurations	1	↑	↑	1	↑	↑	1	↑	↑	1	↑	1
Volume (vph)	65	340	240	335	235	175	230	160	390	15	40	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.92	1.00	1.00	0.85	1.00	0.97	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00
Satd. Flow (prot)	1745	1818	1487	1711	1667	1736	1501	1764	1736	1501	1764	1736
Flt Permitted	0.17	1.00	1.00	0.35	1.00	1.00	0.75	1.00	1.00	0.78	1.00	1.00
Satd. Flow (perm)	307	1818	1487	637	1667	1339	1501	1339	1501	1387	1501	1387
Peak-hour factor, PHF	0.76	0.97	0.92	0.96	0.73	0.49	0.91	0.90	0.91	0.50	0.65	0.44
Adj. Flow (vph)	86	351	261	349	322	357	253	178	429	30	62	23
RTOR Reduction (vph)	0	0	161	0	49	0	0	0	158	0	9	0
Lane Group Flow (vph)	86	351	100	349	630	0	0	431	271	0	106	0
Heavy Vehicles (%)	0%	1%	5%	2%	2%	1%	4%	1%	4%	0%	0%	0%
Turn Type	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+ov	pm+ov	Perm	Perm	Perm
Protected Phases	1	6	3	5	2	3	8	5	8	4	4	4
Permitted Phases	6	6	2	8	8	8	8	4	8	4	4	4
Actuated Green, G (s)	32.1	27.8	27.8	43.3	33.5	25.7	35.7	25.7	35.7	25.7	25.7	25.7
Effective Green, g (s)	38.1	30.8	30.8	46.3	36.5	28.7	41.7	28.7	41.7	28.7	28.7	28.7
Actuated g/C Ratio	0.48	0.38	0.38	0.58	0.46	0.36	0.52	0.36	0.52	0.36	0.36	0.36
Clearance Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lane Grp Cap (vph)	277	700	572	543	761	480	829	480	829	498	498	498
v/s Ratio Prot	0.03	0.19	c0.10	c0.38	c0.38	c0.32	c0.32	c0.32	c0.32	0.05	0.05	0.05
v/s Ratio Perm	0.12	0.07	0.27	0.27	0.27	0.32	0.32	0.32	0.32	0.13	0.13	0.13
v/c Ratio	0.31	0.50	0.18	0.64	0.83	0.90	0.90	0.90	0.90	0.33	0.33	0.21
Uniform Delay, d1	13.9	18.7	16.2	10.3	19.0	24.3	11.0	24.3	11.0	17.8	17.8	17.8
Progression Factor	0.74	0.76	0.80	0.75	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	2.2	0.0	1.0	5.2	18.8	0.1	18.8	0.1	0.1	0.1	0.1
Delay (s)	10.5	16.5	13.0	8.6	21.9	43.0	11.1	43.0	11.1	17.9	17.9	17.9
Level of Service	B	B	B	A	C	D	B	D	B	B	B	B
Approach Delay (s)	14.5			17.4		27.1		27.1		17.9		17.9
Approach LOS	B			B		C		C		B		B
<b>Intersection Summary</b>												
HCM Average Control Delay			19.8			HCM Level of Service			B			
HCM Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			80.0			Sum of lost time (s)			5.0			
Intersection Capacity Utilization			74.3%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
SMTC OCDOT Signal Optimization

11: Hosman Road & Thompson Road  
2009 Proposed - Coordinated - Hosman Corridor\_PM Peak

Movement	EBl	EBT	EBR	WBl	WBT	WBR	NBl	NBT	NBR	SBl	SBT	SBR
Lane Configurations												
Volume (vph)	10	360	270	250	315	5	340	15	335	70	95	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5	2.5	2.5	2.5			2.5	2.5		2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1745	1818	1487	1711	1795			1688	1501		1744	
Flt Permitted	0.38	1.00	1.00	0.23	1.00			0.48	1.00		0.62	
Satd. Flow (perm)	704	1818	1487	417	1795			847	1501		1100	
Peak-hour factor, PHF	0.76	0.97	0.92	0.96	0.73	0.49	0.91	0.90	0.91	0.50	0.65	0.44
Adj. Flow (vph)	13	371	293	260	432	10	374	17	368	140	146	91
RTOR Reduction (vph)	0	0	207	0	1	0	0	0	64	0	10	0
Lane Group Flow (vph)	13	371	86	260	441	0	0	391	304	0	367	0
Heavy Vehicles (%)	0%	1%	5%	2%	2%	1%	4%	1%	4%	0%	0%	0%
Turn Type	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+ov	pm+pt	pm+ov	pm+ov	Perm		
Protected Phases	1	6	3	5	2		3	8	5		4	
Permitted Phases	6		6	2		8			8	4		
Actuated Green, G (s)	27.6	26.5	26.5	43.1	36.5			45.9	57.0		45.9	
Effective Green, g (s)	33.6	29.5	29.5	46.1	39.5			48.9	63.0		48.9	
Actuated g/C Ratio	0.34	0.30	0.30	0.46	0.40			0.49	0.63		0.49	
Clearance Time (s)	5.5	5.5	5.5	5.5	5.5			5.5	5.5		5.5	
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5			1.5	1.5		1.5	
Lane Grp Cap (vph)	279	536	439	375	709			414	983		538	
v/s Ratio Prot	0.00	0.20	c0.10	0.25					0.04			
v/s Ratio Perm	0.01		0.06	c0.22				c0.46	0.16		0.33	
v/c Ratio	0.05	0.69	0.20	0.69	0.62			0.94	0.31		0.68	
Uniform Delay, d1	22.5	31.2	26.4	19.4	24.3			24.3	8.5		19.6	
Progression Factor	0.70	0.72	0.75	1.00	0.76			1.00	1.00		1.00	
Incremental Delay, d2	0.0	6.2	0.1	4.3	3.9			30.0	0.1		2.9	
Delay (s)	15.8	28.7	19.8	23.6	22.4			54.2	8.6		22.5	
Level of Service	B	C	B	C	C			D	A		C	
Approach Delay (s)		24.6			22.9			32.1			22.5	
Approach LOS		C			C			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		26.1			HCM Level of Service			C				
HCM Volume to Capacity ratio		0.82										
Actuated Cycle Length (s)		100.0			Sum of lost time (s)			5.0				
Intersection Capacity Utilization		77.1%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												



LOCATION MAP  
HOSMAN RD/KINNE ST

TRAFFIC SIGNAL OPTIMIZATION  
ONONDAGA COUNTY  
SYRACUSE, NEW YORK

**CME**  
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d

DATE: 6/10

FIGURE: B.4

# INTERSECTION DIAGRAM

Location

East Molloy Road at Kinne Street

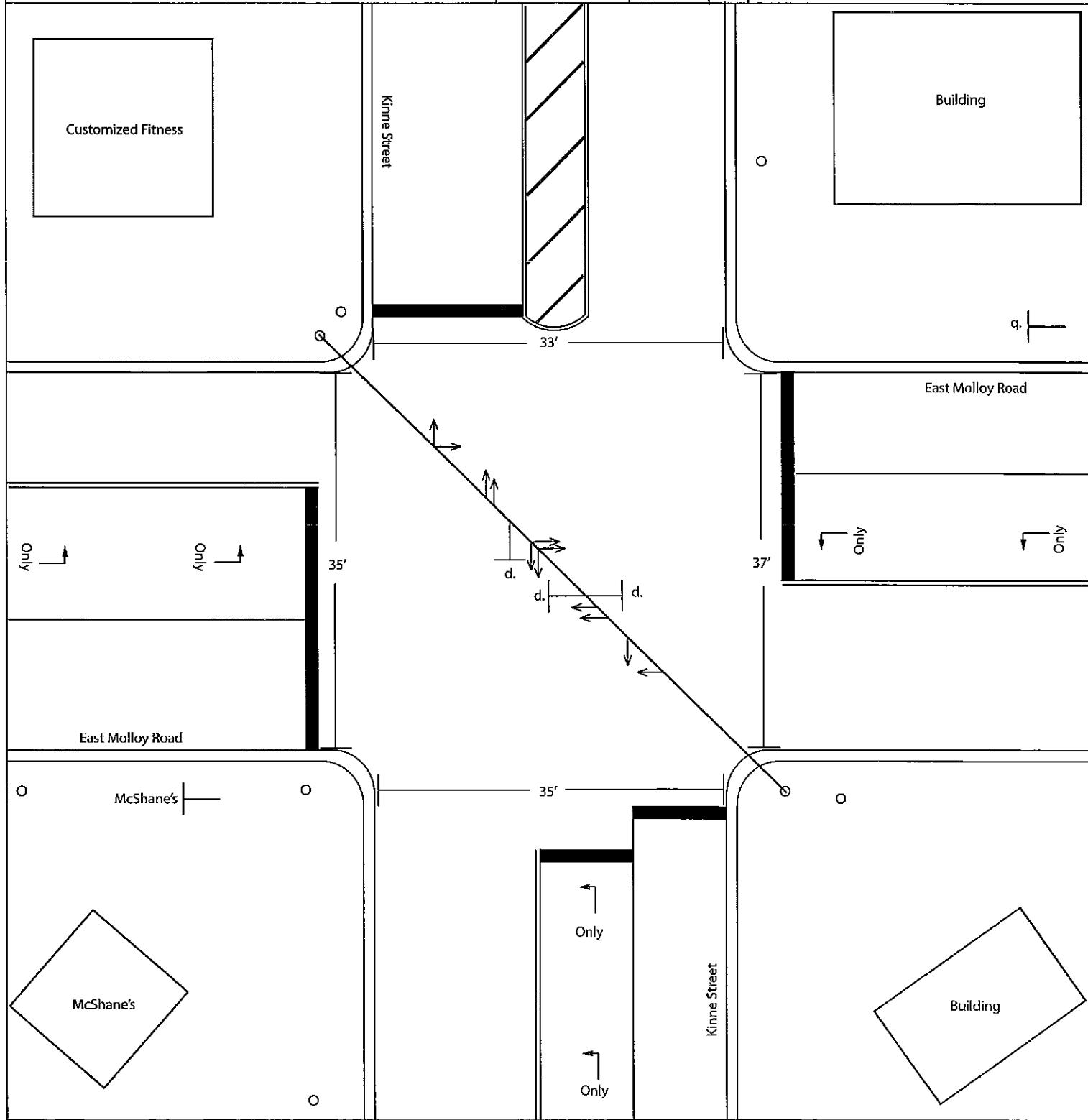
## Legend



Drawn By KK  
Date May 2010

Prepared By SMTA  
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.

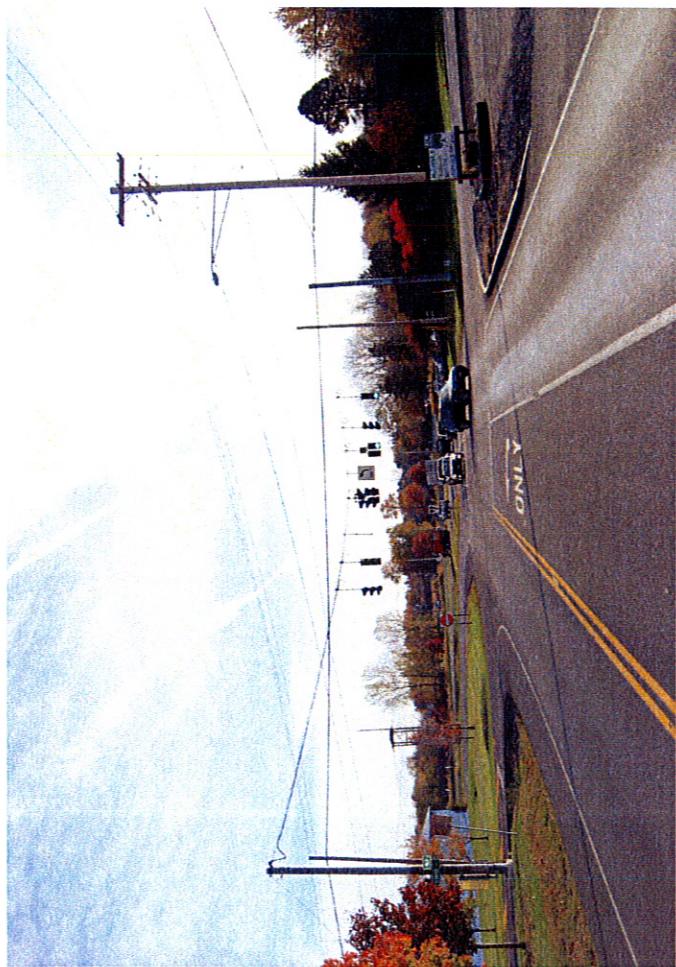
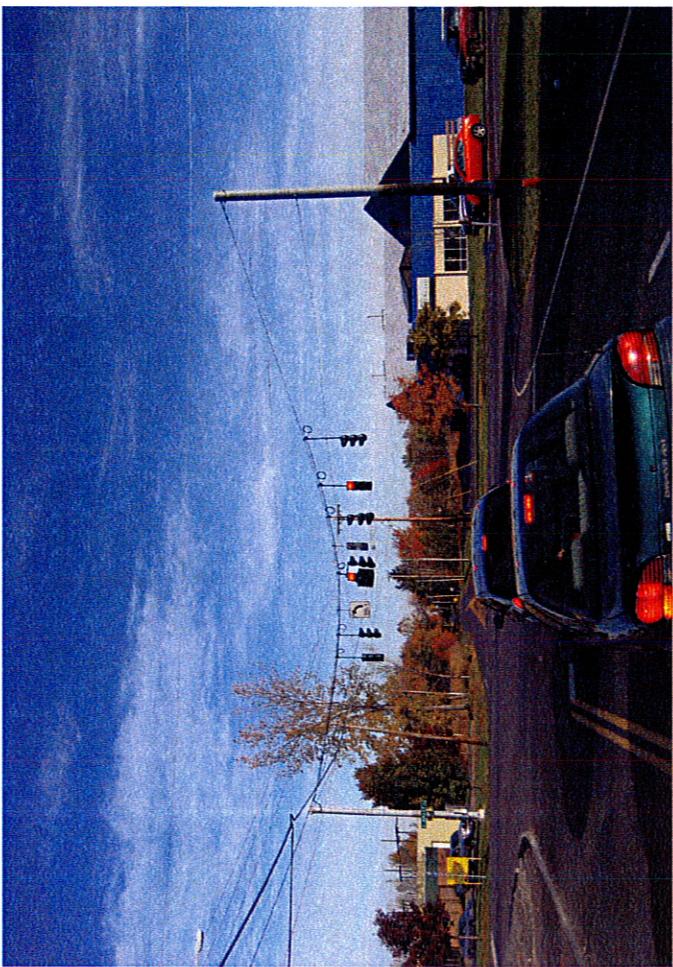
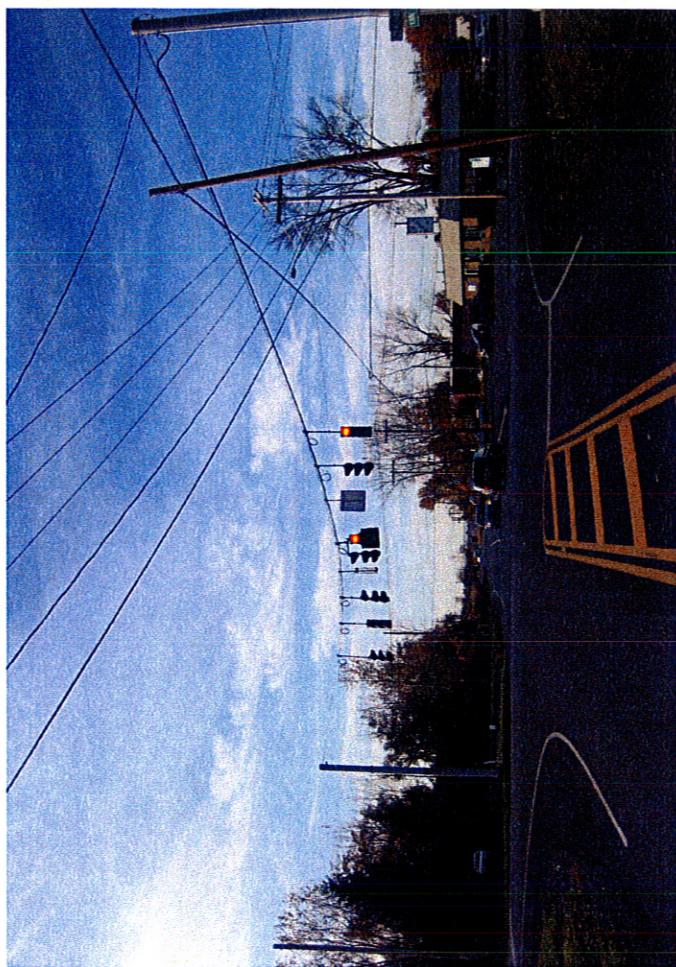
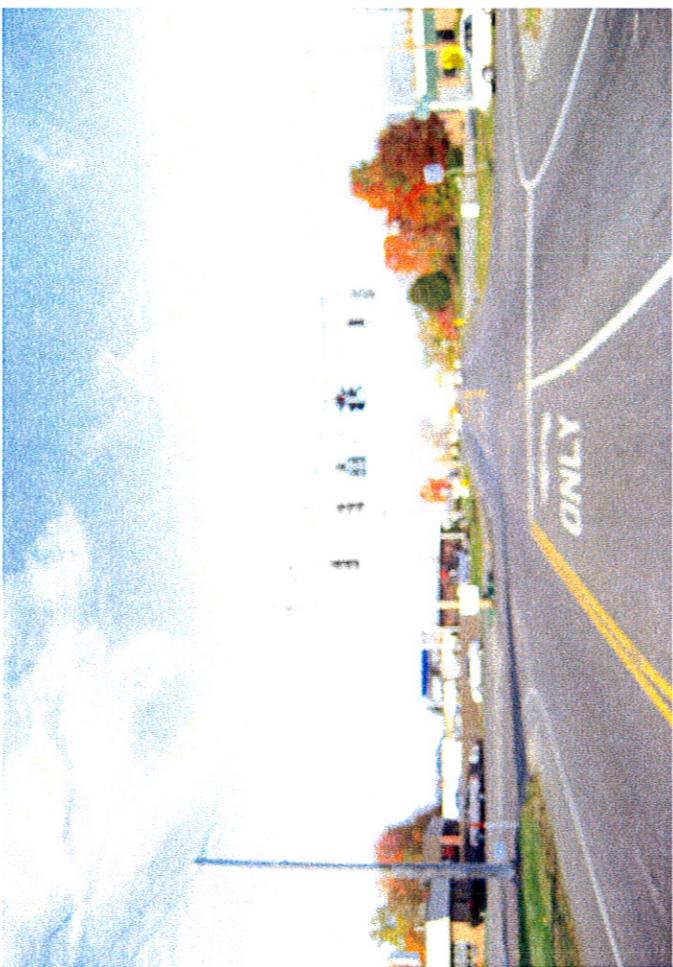


Task

OCDOT Signal Optimization

Data Source: SMTA, OCDOT, 2009.

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



Volume  
SMTC OCDOT Signal Optimization

7: Hosman Road & Kinne Street  
2009 Existing - Hosman Corridor\_AM Peak

From Group	EPI	EPT	EER	WBL	WET	WER	NBL	NEL	NER	SET	SBT	GBR
Volume (vph)	20	330	80	70	730	20	235	20	20	10	10	5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.64	0.83	0.81	0.88	0.75	0.71	0.77	0.45	0.53	0.50	0.88	0.38
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	4%	3%	0%	1%	0%	4%	0%	11%	13%	29%	0%
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

Volume  
SMTC OCDOT Signal Optimization

7: Hosman Road & Kinne Street  
2009 Existing - Hosman Corridor\_PM Peak

Lane Group	EBI	EBT	EBR	WEI	WBT	WEB	NEL	NBT	NBR	SBI	SET	SBR
Volume (vph)	15	820	95	15	240	10	145	5	85	20	15	15
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.64	0.83	0.81	0.88	0.75	0.71	0.77	0.45	0.53	0.50	0.88	0.38
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	4%	3%	0%	1%	0%	4%	0%	11%	13%	29%	0%
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

NO AS-BUILT REVISIONS

HOSMAN ROAD (C.R. NO. 71)

## TRAFFIC SIGNAL NO. 70 PLAN

COUNTY OF ONONDAGA  
DEPARTMENT OF TRANSPORTATION  
TOTAL SHEETS: 64 SHEET NUMBER: 51  
SCALE: 1" = 100' DATE: MAY 2007

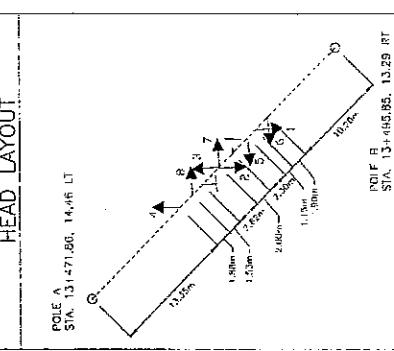
## TABLE OF OPERATION

HEAD	1	2	3	4	5	6	7	8
PHASE	R	R	R	R	R	R	R	R
1	R	R	R	R	G	G	G	G
2	R	R	R	R	G	G	G	G
3	R	R	R	R	G	G	G	G
4	R	R	R	R	G	G	G	G
5	G	G	G	G	R	R	R	R
6	G	G	G	G	R	R	R	R
7	G	G	G	G	R	R	R	R
8 & 9	G	G	G	G	R	R	R	R
10 & 11	G	G	G	G	R	R	R	R
12 & 13	G	G	G	G	R	R	R	R
14 & 15	R	R	R	R	G	G	G	G
FLASHER	FR							

## LOOP DATA TABLE

DETECTOR NO.	DESCRIPTION
1A,1B	1 - 1.8m x 9.2m 0.6 APART
3A,3B	1 - 1.8m x 9.2m 0.6 APART
4A,4B	1 - 1.8m x 9.2m 0.6 APART
5A,5B	1 - 1.8m x 9.2m 0.6 APART
6A,6B	1 - 1.8m x 9.2m 1.2 APART
7A,7B	1 - 1.8m x 9.2m 1.2 APART

## HEAD LAYOUT

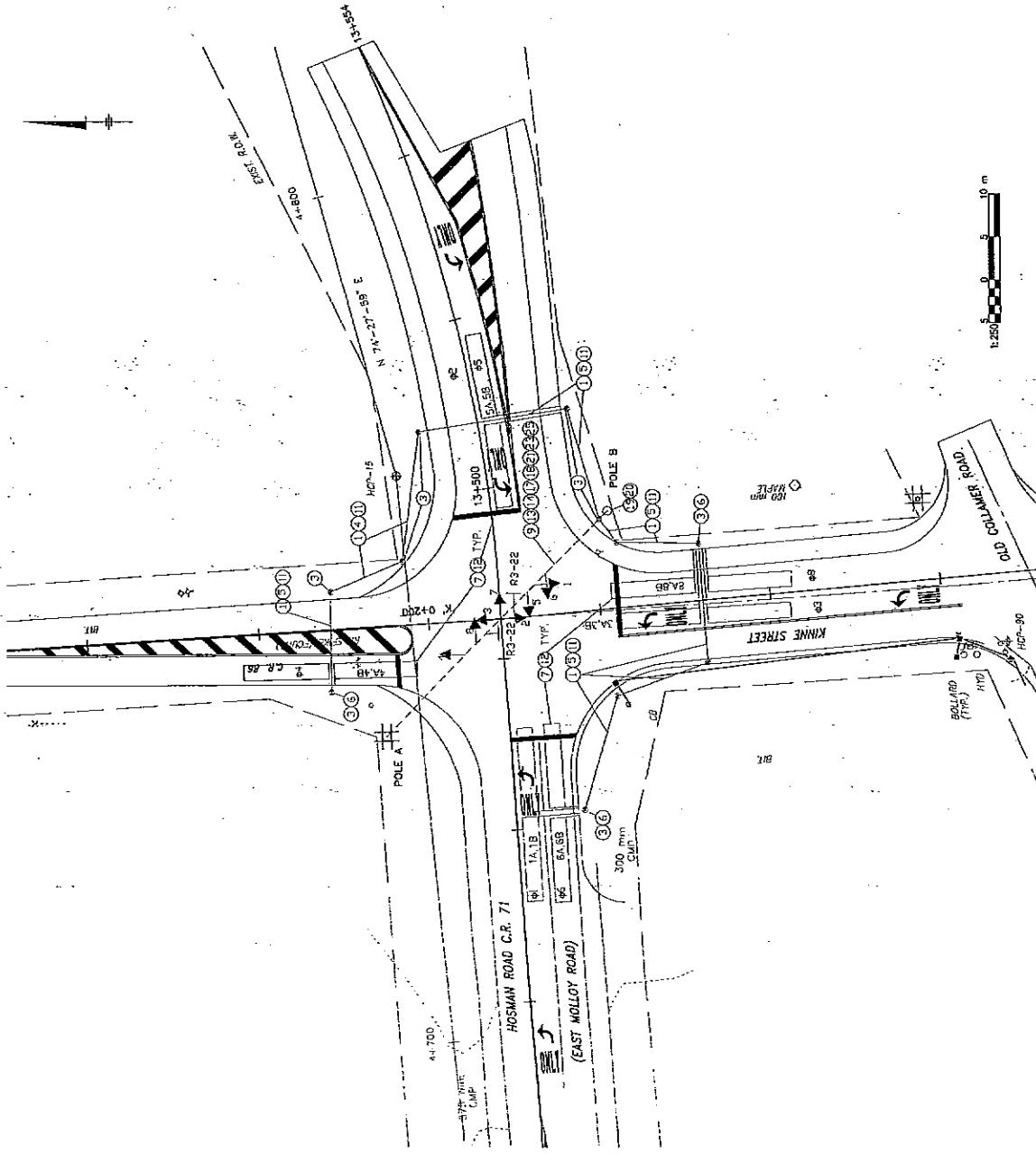


## RECORD DRAWINGS

TO THE BEST OF OUR KNOWLEDGE,  
INFORMATION AND BELIEF THESE RECORD  
DRAWINGS SUBSTANTIALLY REPRESENT  
THE PROJECT AS CONSTRUCTED.  
Camp, Dresser & McKee  
Refugee Relocation Program  
Dwelling Alterations  
Sykesville, MD 21784

CDMM Camp, Dresser &amp; McKee

Refugee Relocation Program  
Dwelling Alterations  
Sykesville, MD 21784



## LEGEND

- EXISTING TRAFFIC SIGNAL POLE
- NEW POLE MOUNTED CONTROLLER
- EXISTING PULLEY
- UTILITY POLE (POWER SOURCE)
- ↑ NEW SIGNAL HEAD
- X SIGNAL PHASE
- KEY NUMBERS - SEE PAGE NO. 53



INTERSECTION NAME:  
INTERSECTION NUMBER:

**Kinne @ Molloy**  
70  
**INSTALLATION DATE:**  
**PROGRAM DATE:**



INTERSECTION NAME:  
INTERSECTION NUMBER:

Kinne @ Molloy  
70

INSTALLATION DATE:  
PROGRAM DATE:

FULL COORDINATION  
OPTIMIZATION

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

INTERVAL	PHASES USED						
	1	2	3	4	5	6	7
ON/OFF	X	X	X	X	X	X	X
INHIBIT O/L							
OLA							
OVERLAP B							
OVERLAP C							
OVERLAP D							

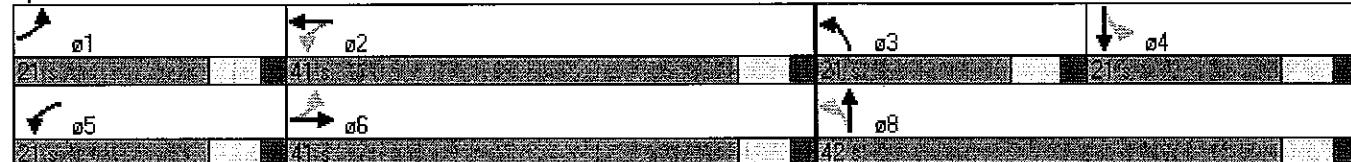
INTERVAL	PHASE TIMINGS						
	1	2	3	4	5	6	7
MIN GREEN	5	10	5	10	5	10	10
PASSAGE	1.5	1.5	1.5	1.5	1.5	1.5	1.5
YELLOW	4	4	4	4	4	4	4
RED	1.5	1.5	1.5	1.5	1.5	1.5	1.5
MAX I (AM)	5.5	36.5	5.5	10.5	5.5	36.5	21.5
MAX II (PM)	5.5	56.5	5.5	10.5	5.5	56.5	21.5
WALK							
PED CLEAR							
S/A							
TBR							
TTR							
MIN GAP							
MAX VI							
MAX EXT							
AUTO MAX							
AMR							

Lane Group	E BL	E BT	W BL	W BT	N BL	N BT	S BL	S BT
Lane Configurations	↑ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖	↑ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖	↑ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖	↑ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖	↑ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖	↑ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖	↑ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖	↑ ↗ ↘ ↙ ↖ ↗ ↘ ↙ ↖
Volume (vph)	20	330	70	730	235	20	10	10
Turn Type	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	Perm		
Protected Phases	1	6	5	2	3	8	4	4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	5		3	8	4	4
Switch Phase								
Minimum Initial (s)	8.0	35.0	8.0	35.0	8.0	10.0	10.0	10.0
Minimum Split (s)	14.0	41.0	14.0	41.0	14.0	16.0	16.0	16.0
Total Split (s)	21.0	41.0	21.0	41.0	21.0	42.0	21.0	21.0
Total Split (%)	20.2%	39.4%	20.2%	39.4%	20.2%	40.4%	20.2%	20.2%
Maximum Green (s)	15.0	35.0	15.0	35.0	15.0	36.0	15.0	15.0
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)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	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	Min	None	Max	None	None	None	None
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

#### Intersection Summary

Cycle Length: 104  
 Actuated Cycle Length: 83.3  
 Natural Cycle: 95  
 Control Type: Semi Act-Uncoord

Splits and Phases: 7: Hosman Road & Kinne Street



Lane Group	EBL	EBT	WB1	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↑ ↗	↗	↖ ↗	↖ ↗	↑ ↗	↗	↖ ↗	↖ ↗
Volume (vph)	15	820	15	240	145	5	20	15
Turn Type	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	Perm		
Protected Phases	1	6	5	2	3	8		
Permitted Phases	6		2		8		4	
Deflector Phase	1	6	5		3	8	4	4
Switch Phase								
Minimum Initial (s)	8.0	35.0	8.0	35.0	8.0	10.0	10.0	10.0
Minimum Split (s)	14.0	41.0	14.0	41.0	14.0	16.0	16.0	16.0
Total Split (s)	21.0	41.0	21.0	41.0	21.0	42.0	21.0	21.0
Total Split (%)	20.2%	39.4%	20.2%	39.4%	20.2%	40.4%	20.2%	20.2%
Maximum Green (s)	15.0	35.0	15.0	35.0	15.0	36.0	15.0	15.0
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)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead		Lag	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	Min	None	Max	None	None	None	None
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

#### Intersection Summary

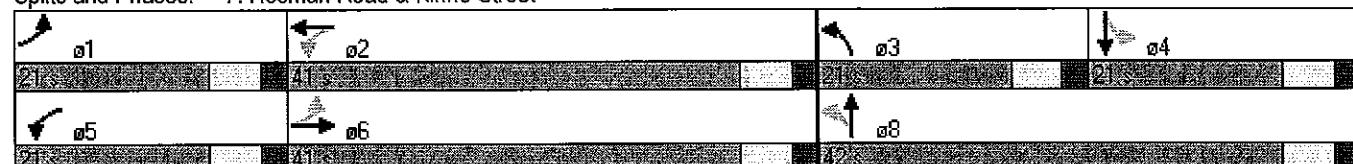
Cycle Length: 104

Actuated Cycle Length: 79.7

Natural Cycle: 115

Control Type: Semi Act-Uncoord

Splits and Phases: 7: Hosman Road & Kinne Street



Lane Group	E BL	E BT	W BL	W BT	N BL	N BT	S BL	S BT
Lane Configurations	↑ ↗	↗ ↘	↑ ↙	↖ ↘	↑ ↗	↗ ↘	↑ ↙	↖ ↘
Volume (vph)	20	330	70	730	235	20	10	10
Turn Type	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	Perm		
Protected Phases	1	6	5	2	3	8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	5	2	3	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	10.5	15.5	10.5	15.5	10.5	15.5	15.5	15.5
Total Split (s)	11.0	52.0	11.0	52.0	11.0	27.0	16.0	16.0
Total Split (%)	12.2%	57.8%	12.2%	57.8%	12.2%	30.0%	17.8%	17.8%
Maximum Green (s)	5.5	46.5	5.5	46.5	5.5	21.5	10.5	10.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Minimum Gap (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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	Min	None	Min	None	None	None	None
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

#### Intersection Summary

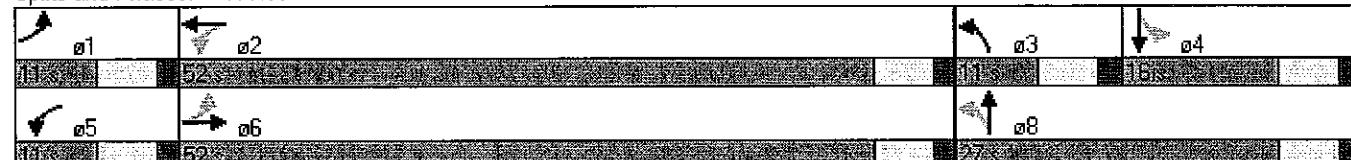
Cycle Length: 90

Actuated Cycle Length: 79.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Hosman Road & Kinne Street



Lane Group	EBL	E BT	WBL	WBT	NBL	NBT	SBL	SBT	Perm
Lane Configurations	1	1	1	1	1	1	1	1	1
Volume (vph)	15	820	15	240	145	5	20	15	
Turn Type	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	Perm			
Protected Phases	1	6	5	2	3	8		4	
Permitted Phases	6		2		8		4		
Detector Phase	1	6	5	2	3	8	4	4	
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0	
Minimum Split (s)	10.5	15.5	10.5	15.5	10.5	15.5	15.5	15.5	
Total Split (s)	11.0	62.0	11.0	62.0	11.0	27.0	16.0	16.0	
Total Split (%)	11.0%	62.0%	11.0%	62.0%	11.0%	27.0%	16.0%	16.0%	
Maximum Green (s)	5.5	56.5	5.5	56.5	5.5	21.5	10.5	10.5	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	
Total Lost Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Lead/Lag	Lead	Lag	Lead	Lag	Lead		Lag	Lag	
Lead-Lag Optimize?									
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Minimum Gap (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
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	Min	None	Min	None	None	None	None	
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

#### Intersection Summary

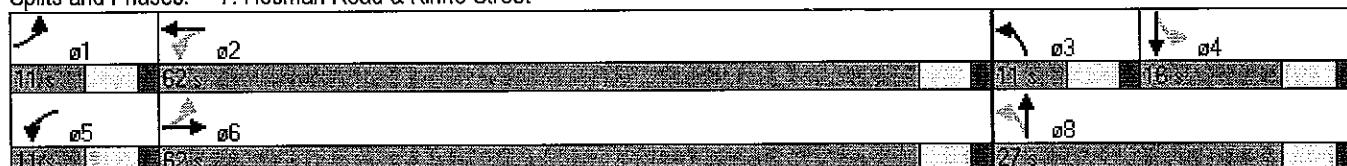
Cycle Length: 100

Actuated Cycle Length: 90.8

Natural Cycle: 100

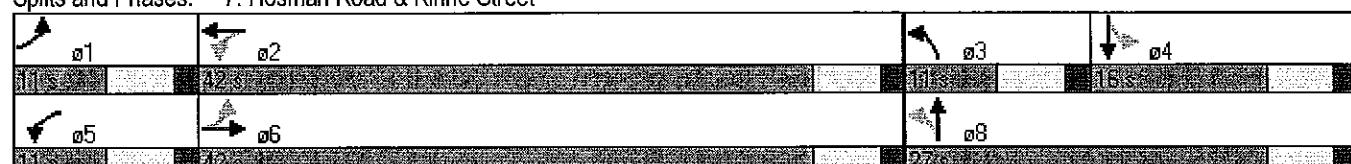
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Hosman Road & Kinne Street



Lane Group	E BL	E BT	W BL	W BT	N BL	N BT	S BL	S BT
Lane Configurations	↑ ↗	→ ↘	↑ ↗	→ ↘	↑ ↗	→ ↘	↑ ↗	→ ↘
Volume (vph)	20	330	70	730	235	20	10	10
Turn Type	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	Perm		
Protected Phases	1	6	5	2	3	8	4	4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	5	2	3	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	10.5	15.5	10.5	15.5	10.5	15.5	15.5	15.5
Total Split (s)	11.0	42.0	11.0	42.0	11.0	27.0	16.0	16.0
Total Split (%)	13.8%	52.5%	13.8%	52.5%	13.8%	33.8%	20.0%	20.0%
Maximum Green (s)	5.5	36.5	5.5	36.5	5.5	21.5	10.5	10.5
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lag
Lead-Lag Optimize?								
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Minimum Gap (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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	C-Min	None	C-Min	None	None	None	None
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								
<b>Intersection Summary</b>								
Cycle Length: 80								
Actuated Cycle Length: 80								
Offset: 72 (90%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green								
Natural Cycle: 90								
Control Type: Actuated-Coordinated								

Splits and Phases: 7: Hosman Road & Kinne Street

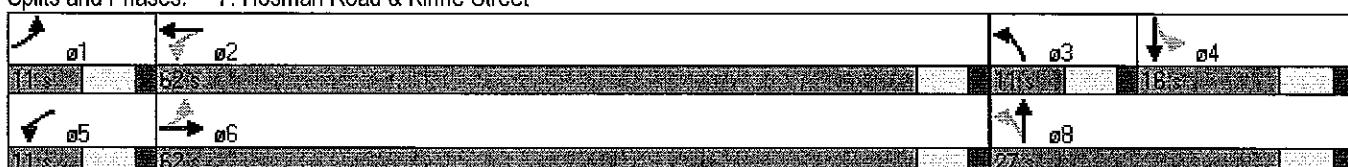


Timings  
SMTC OCDOT Signal Optimization

7: Hosman Road & Kinne Street  
2009 Proposed - Coordinated - Hosman Corridor\_PM Peak

Lane Group	EBL	E BT	WBL	W BT	NBL	N BT	SBL	S BT	WBL	W BT	NBL	N BT	SBL	S BT
Lane Configurations	↑ ↗	↑ ↘	↑ ↗	↑ ↘	↑ ↗	↑ ↘	↑ ↗	↑ ↘	↑ ↗	↑ ↘	↑ ↗	↑ ↘	↑ ↗	↑ ↘
Volume (vph)	15	820	15	240	145	5	20	15						
Turn Type	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	Perm								
Protected Phases	1	6	5	2	3	8								
Permitted Phases	6		2		8		4							
Detector Phase	1	6	5	2	3	8	4	4						
Switch Phase														
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0						
Minimum Split (s)	10.5	15.5	10.5	15.5	10.5	15.5	15.5	15.5						
Total Split (s)	11.0	62.0	11.0	62.0	11.0	27.0	16.0	16.0						
Total Split (%)	11.0%	62.0%	11.0%	62.0%	11.0%	27.0%	16.0%	16.0%						
Maximum Green (s)	5.5	56.5	5.5	56.5	5.5	21.5	10.5	10.5						
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0						
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5						
Lost Time Adjust (s)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0						
Total Lost Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5						
Lead/Lag	Lead	Lag	Lead	Lag	Lead		Lag	Lag						
Lead-Lag Optimize?														
Vehicle Extension (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5						
Minimum Gap (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5						
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	C-Min	None	C-Min	None	None	None	None						
Walk Time (s)														
Flash Dont Walk (s)														
Pedestrian Calls (#/hr)														
Intersection Summary														
Cycle Length: 100														
Actuated Cycle Length: 100														
Offset: 50 (50%), Referenced to phase 2-WBTL and 6-EBTL, Start of Green														
Natural Cycle: 100														
Control Type: Actuated-Coordinated														

Splits and Phases: 7: Hosman Road & Kinne Street



HCM Signalized Intersection Capacity Analysis  
SMTA OCDOT Signal Optimization

7: Hosman Road & Kinne Street  
2009 Existing - Hosman Corridor\_AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑	↑	↓	↓	↓
Volume (vph)	20	330	80	70	730	20	235	20	20	10	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	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		1.00	1.00		1.00		1.00
Frt	1.00	0.97		1.00	1.00		1.00	0.93		0.96		
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.98		
Satd. Flow (prot)	1646	1717		1745	1811		1678	1626		1524		
Flt Permitted	0.10	1.00		0.28	1.00		0.68	1.00		0.82		
Satd. Flow (perm)	171	1717		521	1811		1194	1626		1279		
Peak-hour factor, PHF	0.64	0.83	0.81	0.88	0.75	0.71	0.77	0.45	0.53	0.50	0.88	0.38
Adj. Flow (vph)	31	398	99	80	973	28	305	44	38	20	11	13
RTOR Reduction (vph)	0	8	0	0	1	0	0	25	0	0	12	0
Lane Group Flow (vph)	31	489	0	80	1000	0	305	57	0	0	32	0
Heavy Vehicles (%)	6%	4%	3%	0%	1%	0%	4%	0%	11%	13%	29%	0%
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	1	6		5	2		3	8				4
Permitted Phases	6			2			8					4
Actuated Green, G (s)	41.9	37.6		46.7	40.0		26.2	26.2				5.7
Effective Green, g (s)	47.9	40.6		52.7	43.0		29.2	29.2				8.7
Actuated g/C Ratio	0.54	0.46		0.60	0.49		0.33	0.33				0.10
Clearance Time (s)	6.0	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				4.0
Lane Grp Cap (vph)	214	788		444	880		490	536				126
v/s Ratio Prot	0.01	0.29		c0.02	c0.55		c0.12	0.03				
v/s Ratio Perm	0.07			0.09			c0.08					0.03
v/c Ratio	0.14	0.62		0.18	1.14		0.62	0.11				0.26
Uniform Delay, d1	17.2	18.1		9.5	22.8		24.4	20.6				36.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00				1.00
Incremental Delay, d2	0.4	1.7		0.3	75.2		2.8	0.1				1.5
Delay (s)	17.6	19.9		9.8	98.0		27.2	20.7				38.4
Level of Service	B	B		A	F		C	C				D
Approach Delay (s)		19.7			91.5			25.8				38.4
Approach LOS		B			F			C				D
<b>Intersection Summary</b>												
HCM Average Control Delay		59.3					HCM Level of Service			E		
HCM Volume to Capacity ratio		0.86										
Actuated Cycle Length (s)		88.5					Sum of lost time (s)			9.0		
Intersection Capacity Utilization		76.0%					ICU Level of Service			D		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
SMTC OCDOT Signal Optimization

7: Hosman Road & Kinne Street  
2009 Existing - Hosman Corridor\_PM Peak

Movement	EBL	EBT	EBC	WBL	WBT	WBC	NBL	NBT	NBC	SBL	SBT	SBC
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	15	820	95	15	240	10	145	5	85	20	15	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	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		1.00	1.00		1.00		1.00
Frt	1.00	0.98		1.00	0.99		1.00	0.86		0.95		
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.98		
Satd. Flow (prot)	1646	1740		1745	1808		1678	1432		1538		
Flt Permitted	0.45	1.00		0.10	1.00		0.58	1.00		0.80		
Satd. Flow (perm)	787	1740		186	1808		1024	1432		1262		
Peak-hour factor, PHF	0.64	0.83	0.81	0.88	0.75	0.71	0.77	0.45	0.53	0.50	0.88	0.38
Adj. Flow (vph)	23	988	117	17	320	14	188	11	160	40	17	39
RTOR Reduction (vph)	0	3	0	0	1	0	0	102	0	0	25	0
Lane Group Flow (vph)	23	1102	0	17	333	0	188	69	0	0	71	0
Heavy Vehicles (%)	6%	4%	3%	0%	1%	0%	4%	0%	11%	13%	29%	0%
Turn Type	pm+pt			pm+pt			pm+pt			Perm		
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases	6			2			8				4	
Actuated Green, G (s)	39.2	36.5		39.0	36.4		27.6	27.6			9.0	
Effective Green, g (s)	45.2	39.5		45.0	39.4		30.6	30.6			12.0	
Actuated g/C Ratio	0.53	0.47		0.53	0.47		0.36	0.36			0.14	
Clearance Time (s)	6.0	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			4.0	
Lane Grp Cap (vph)	478	811		202	841		490	517			179	
v/s Ratio Prot	0.00	c0.63		c0.01	0.18		c0.07	0.05				
v/s Ratio Perm	0.02			0.04			c0.07				0.08	
v/c Ratio	0.05	1.36		0.08	0.40		0.38	0.13			0.40	
Uniform Delay, d1	9.7	22.6		16.9	14.8		19.9	18.2			33.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	169.4		0.2	1.4		0.7	0.2			2.0	
Delay (s)	9.7	192.0		17.1	16.2		20.5	18.3			35.0	
Level of Service	A	F		B	B		C	B			D	
Approach Delay (s)		188.3			16.3			19.5			35.0	
Approach LOS		F			B			B			D	
<b>Intersection Summary</b>												
HCM Average Control Delay		118.1									F	
HCM Volume to Capacity ratio		0.84										
Actuated Cycle Length (s)		84.7									6.0	
Intersection Capacity Utilization		70.3%									C	
Analysis Period (min)		15										

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
SMTC OCDOT Signal Optimization

7: Hosman Road & Kinne Street  
2009 Proposed - Semi-Coordinated - Hosman Corridor\_AM Peak

Movement	E BL	E BL	E BR	W BL	W BL	W BR	N BL	N BL	N BR	S BL	S BL	S BR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	20	330	80	70	730	20	235	20	20	10	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5		2.5	2.5		2.5	2.5				2.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00				1.00
Frl	1.00	0.97		1.00	1.00		1.00	0.93				0.96
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00				0.98
Satd. Flow (prot)	1646	1717		1745	1811		1678	1626				1524
Flt Permitted	0.08	1.00		0.36	1.00		0.68	1.00				0.83
Satd. Flow (perm)	144	1717		656	1811		1199	1626				1292
Peak-hour factor, PHF	0.64	0.83	0.81	0.88	0.75	0.71	0.77	0.45	0.53	0.50	0.88	0.38
Adj. Flow (vph)	31	398	99	80	973	28	305	44	38	20	11	13
RTOR Reduction (vph)	0	9	0	0	1	0	0	28	0	0	12	0
Lane Group Flow (vph)	31	488	0	80	1000	0	305	54	0	0	32	0
Heavy Vehicles (%)	6%	4%	3%	0%	1%	0%	4%	0%	11%	13%	29%	0%
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt		pm+pt		Perm	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases	6			2			8				4	
Actuated Green, G (s)	47.7	45.0		50.5	46.4		18.7	18.7			5.4	
Effective Green, g (s)	53.7	48.0		56.5	49.4		21.7	21.7			8.4	
Actuated g/C Ratio	0.64	0.57		0.67	0.59		0.26	0.26			0.10	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5			5.5	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	1.5			1.5	
Lane Grp Cap (vph)	193	978		531	1061		370	419			129	
v/s Ratio Prot	c0.01	0.28		c0.01	c0.55		c0.11	0.03				
v/s Ratio Perm	0.09			0.09			c0.11				0.02	
v/c Ratio	0.16	0.50		0.15	0.94		0.82	0.13			0.25	
Uniform Delay, d1	15.4	10.9		5.9	16.1		29.4	24.0			35.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	0.1		0.0	15.5		13.2	0.1			0.4	
Delay (s)	15.6	11.1		5.9	31.6		42.6	24.1			35.4	
Level of Service	B	B		A	C		D	C			D	
Approach Delay (s)		11.3			29.7			38.7			35.4	
Approach LOS		B			C			D			D	
<b>Intersection Summary</b>												
HCM Average Control Delay		26.8				HCM Level of Service			C			
HCM Volume to Capacity ratio		0.85										
Actuated Cycle Length (s)		84.3				Sum of lost time (s)			7.5			
Intersection Capacity Utilization		73.5%				ICU Level of Service			D			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
SMTC OCDOT Signal Optimization

7: Hosman Road & Kinne Street  
2009 Proposed - Semi Coordinated - Hosman Corridor\_PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	15	820	95	15	240	10	145	5	85	20	15	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5		2.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00
Frt	1.00	0.98		1.00	0.99		1.00	0.86		1.00		0.95
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.98		
Satd. Flow (prot)	1646	1740		1745	1808		1678	1432		1538		
Flt Permitted	0.51	1.00		0.07	1.00		0.54	1.00		0.80		
Satd. Flow (perm)	881	1740		122	1808		952	1432		1259		
Peak-hour factor, PHF	0.64	0.83	0.81	0.88	0.75	0.71	0.77	0.45	0.53	0.50	0.88	0.38
Adj. Flow (vph)	23	988	117	17	320	14	188	11	160	40	17	39
RTOR Reduction (vph)	0	4	0	0	1	0	0	121	0	0	25	0
Lane Group Flow (vph)	23	1101	0	17	333	0	188	50	0	0	71	0
Heavy Vehicles (%)	6%	4%	3%	0%	1%	0%	4%	0%	11%	13%	29%	0%
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt		pm+pt		Perm	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases	6			2			8				4	
Actuated Green, G (s)	58.8	57.0		59.0	57.1		20.0	20.0			7.9	
Effective Green, g (s)	64.8	60.0		65.0	60.1		23.0	23.0			10.9	
Actuated g/C Ratio	0.68	0.63		0.68	0.63		0.24	0.24			0.11	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5			5.5	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	1.5			1.5	
Lane Grp Cap (vph)	637	1094		166	1139		303	345			144	
v/s Ratio Prot	0.00	c0.63		c0.01	0.18		c0.06	0.03				
v/s Ratio Perm	0.02			0.06			c0.09				0.06	
v/c Ratio	0.04	1.01		0.10	0.29		0.62	0.14			0.49	
Uniform Delay, d1	5.1	17.7		20.3	8.0		31.4	28.5			39.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	28.8		0.1	0.1		2.8	0.1			1.0	
Delay (s)	5.1	46.5		20.4	8.1		34.2	28.5			40.6	
Level of Service	A	D		C	A		C	C			D	
Approach Delay (s)	45.6			8.7			31.5				40.6	
Approach LOS		D			A			C			D	
<b>Intersection Summary</b>												
HCM Average Control Delay		36.0									D	
HCM Volume to Capacity ratio		0.88										
Actuated Cycle Length (s)		95.4									10.0	
Intersection Capacity Utilization		70.3%									C	
Analysis Period (min)		15										

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
SMTC OCDOT Signal Optimization

7: Hosman Road & Kinne Street  
2009 Proposed - Coordinated - Hosman Corridor\_AM Peak

Movement	FBI	EFT	EBR	WBI	WBT	WBR	NBI	NBT	NBR	SBI	SBT	SBR
Lane Configurations												
Volume (vph)	20	330	80	70	730	20	235	20	20	10	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5		2.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00
Fr.	1.00	0.97		1.00	1.00		1.00	0.93		0.96		
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.98		
Satd. Flow (prot)	1646	1717		1745	1811		1678	1626		1524		
Flt Permitted	0.09	1.00		0.34	1.00		0.69	1.00		0.84		
Satd. Flow (perm)	160	1717		617	1811		1219	1626		1304		
Peak-hour factor, PHF	0.64	0.83	0.81	0.88	0.75	0.71	0.77	0.45	0.53	0.50	0.88	0.38
Adj. Flow (vph)	31	398	99	80	973	28	305	44	38	20	11	13
RTOR Reduction (vph)	0	10	0	0	1	0	0	28	0	0	12	0
Lane Group Flow (vph)	31	487	0	80	1000	0	305	54	0	0	32	0
Heavy Vehicles (%)	6%	4%	3%	0%	1%	0%	4%	0%	11%	13%	29%	0%
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt		pm+pt		Perm	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases	6			2			8				4	
Actuated Green, G (s)	42.4	40.3		47.0	42.6		18.8	18.8			6.0	
Effective Green, g (s)	48.4	43.3		53.0	45.6		21.8	21.8			9.0	
Actuated g/C Ratio	0.60	0.54		0.66	0.57		0.27	0.27			0.11	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5			5.5	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	1.5			1.5	
Lane Grp Cap (vph)	192	929		513	1032		391	443			147	
v/s Ratio Prot	c0.01	0.28		c0.01	c0.55		c0.10	0.03				
v/s Ratio Perm	0.09			0.09			c0.11				0.02	
v/c Ratio	0.16	0.52		0.16	0.97		0.78	0.12			0.22	
Uniform Delay, d1	15.7	11.8		6.1	16.5		26.7	21.9			32.3	
Progression Factor	0.62	0.75		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	1.9		0.1	21.4		9.0	0.0			0.3	
Delay (s)	9.9	10.7		6.1	37.9		35.7	21.9			32.6	
Level of Service	A	B		A	D		D	C			C	
Approach Delay (s)		10.7			35.6			32.8			32.6	
Approach LOS		B			D			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		28.5				HCM Level of Service				C		
HCM Volume to Capacity ratio		0.86										
Actuated Cycle Length (s)		80.0				Sum of lost time (s)				7.5		
Intersection Capacity Utilization		73.5%				ICU Level of Service				D		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
SMTC OCDOT Signal Optimization

7: Hosman Road & Kinne Street  
2009 Proposed - Coordinated - Hosman Corridor\_PM Peak

Movement	EBI	EBI	EBR	WBL	WBI	WBR	NBI	NBT	NBR	SBI	SBT	SBR
<b>Lane Configurations</b>												
Volume (vph)	15	820	95	15	240	10	145	5	85	20	15	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.5	2.5		2.5	2.5		2.5	2.5				2.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00				1.00
Frt	1.00	0.98		1.00	0.99		1.00	0.86				0.95
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00				0.98
Satd. Flow (prot)	1646	1740		1745	1808		1678	1432				1538
Flt Permitted	0.51	1.00		0.06	1.00		0.53	1.00				0.80
Satd. Flow (perm)	885	1740		114	1808		942	1432				1259
Peak-hour factor, PHF	0.64	0.83	0.81	0.88	0.75	0.71	0.77	0.45	0.53	0.50	0.88	0.38
Adj. Flow (vph)	23	988	117	17	320	14	188	11	160	40	17	39
RTOR Reduction (vph)	0	4	0	0	1	0	0	123	0	0	25	0
Lane Group Flow (vph)	23	1101	0	17	333	0	188	48	0	0	71	0
Heavy Vehicles (%)	6%	4%	3%	0%	1%	0%	4%	0%	11%	13%	29%	0%
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt		pm+pt		Perm	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases	6			2			8				4	
Actuated Green, G (s)	63.4	61.4		63.4	61.4		20.1	20.1			8.2	
Effective Green, g (s)	69.4	64.4		69.4	64.4		23.1	23.1			11.2	
Actuated g/C Ratio	0.69	0.64		0.69	0.64		0.23	0.23			0.11	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	5.5			5.5	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	1.5			1.5	
Lane Grp Cap (vph)	652	1121		161	1164		287	331			141	
v/s Ratio Prot	0.00	c0.63		c0.01	0.18		c0.06	0.03				
v/s Ratio Perm	0.02			0.07			c0.09				0.06	
v/c Ratio	0.04	0.98		0.11	0.29		0.66	0.14			0.50	
Uniform Delay, d1	4.9	17.2		19.7	7.8		34.0	30.6			41.8	
Progression Factor	0.79	0.66		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	21.9		0.1	0.6		4.1	0.1			1.0	
Delay (s)	3.9	33.3		19.8	8.4		38.1	30.7			42.8	
Level of Service	A	C		B	A		D	C			D	
Approach Delay (s)		32.7			8.9			34.5			42.8	
Approach LOS		C			A			C			D	
<b>Intersection Summary</b>												
HCM Average Control Delay		29.2			HCM Level of Service			C				
HCM Volume to Capacity ratio		0.85										
Actuated Cycle Length (s)		100.0			Sum of lost time (s)			7.5				
Intersection Capacity Utilization		70.3%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												