Appendix A – Glossary and LOS Definitions

Signal Optimization Study
Onondaga County, New York

Glossary

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

> Presence: Generally 60 to 70 foot long loops placed in the pavement. These detect when a vehicle is present at any point above them.
>
> Point: Point detection uses a similar loop as presence, but is usually only 6 feet long, and is place in advance of the intersection and/or placed immediately before the stop bar.

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

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

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

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

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

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

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

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

> Permitted: Permitted phases allow drivers to turn after yielding to on-coming traffic. For example, a left turn movement must first yield to on-coming traffic before proceeding under a permitted left turn phase, displayed as a green ball.
>
> Protected: Protected phases, indicated with green arrows, allow drivers to proceed by holding all other conflicting traffic movements with red lights.

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

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

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

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

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

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

LOS Definitions

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

Level of Service for Signalized Intersections

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

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

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

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

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

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

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

Appendix B – Intersection Details

Signal Optimization Study
Onondaga County, New York

LOCATION MAP
KIRKVILLE RD/KINNE ST

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 4/10	FIGURE: B.1

ddoran
F:\Projects\2009\109-094 SMTC OCDOT\cadd\dgn\traf_loc Kirk Kinne.dgn

INTERSECTION DIAGRAM

Location: Kirkville Road at Kinne Street

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

Drawn By: KK

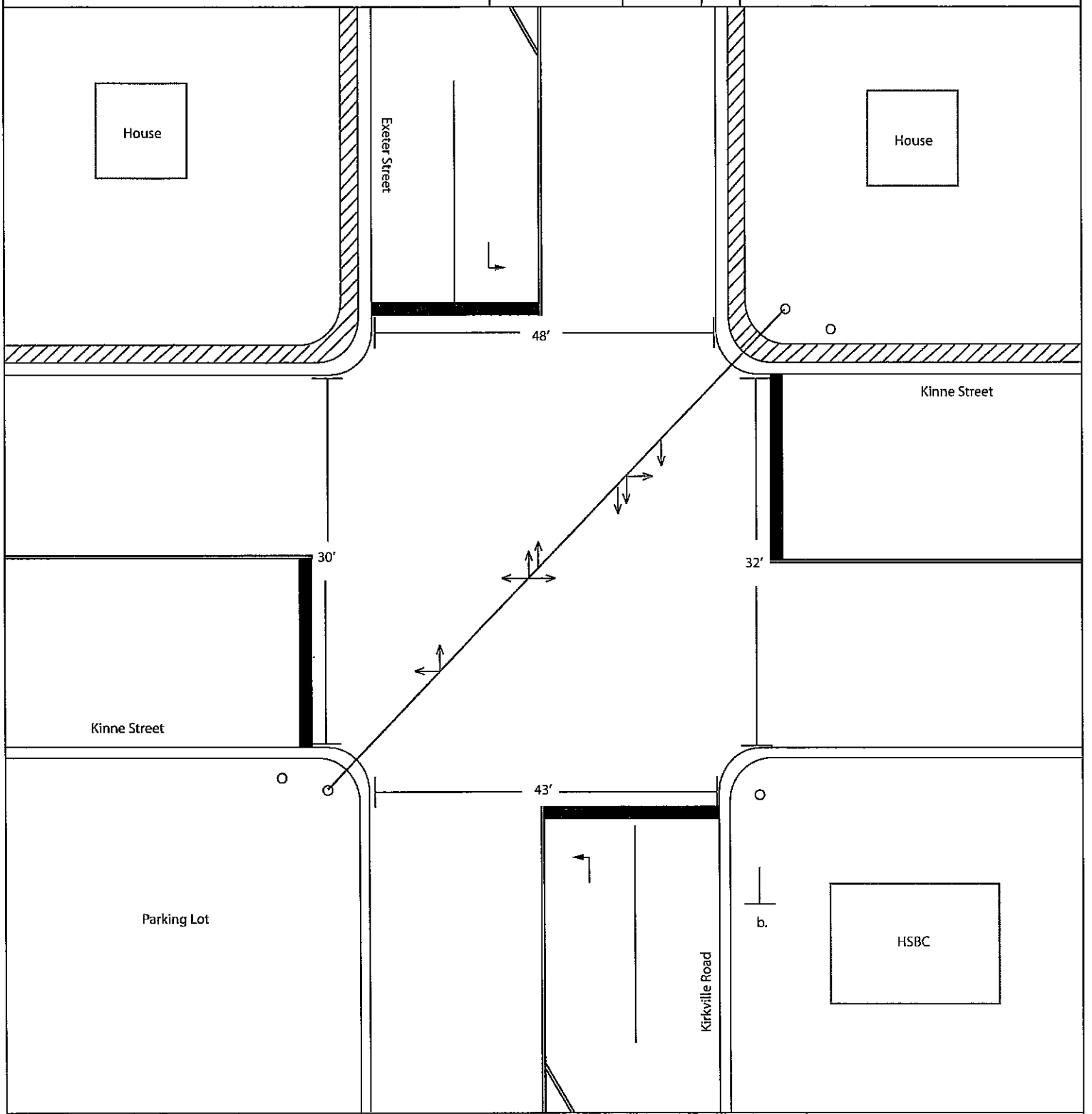
Date: May 2010

Prepared By: SMTC

N

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

For sign definitions see Intersection Diagram Sign Index.

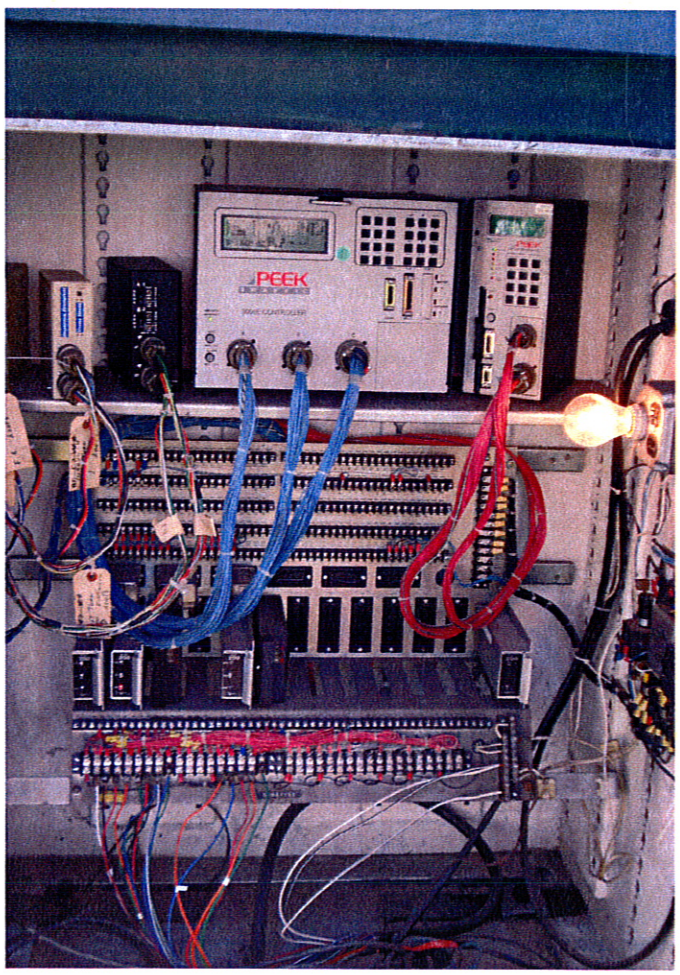


Task: OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

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

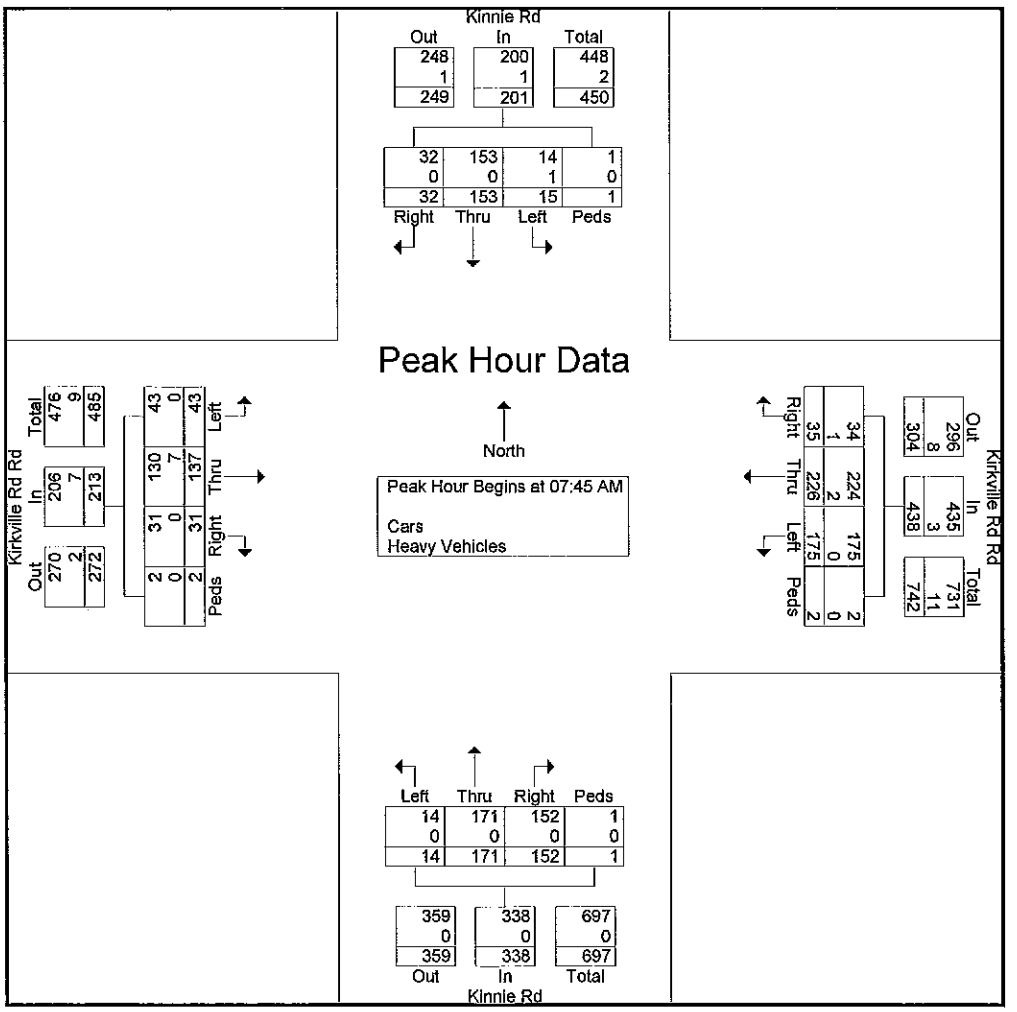
Diagram is not to scale.


PEEK

Location: East Syracuse, New York
Intersection: Kirkville Rd @ Kinnie Rd
Date: Tuesday, June 9th, 2009
Counter: TW

File Name : Kirkville at Kinnie Rd Manual
Site Code : 00000000
Start Date : 6/9/2009
Page No : 2

	Kinnie Rd Southbound					Kirkville Rd Rd Westbound					Kinnie Rd Northbound					Kirkville Rd Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	**16**	**46**	4	0	**66**	7	**83**	**61**	0	**151**	**49**	42	**6**	0	**97**	4	**44**	11	**1**	**60**	**374**
08:00 AM	5	39	**6**	0	50	**14**	56	41	**1**	112	42	40	4	0	86	7	32	10	0	49	297
08:15 AM	5	36	1	0	42	9	42	33	1	85	24	43	1	1	69	**13**	25	7	1	46	242
08:30 AM	6	32	4	**1**	43	5	45	40	0	90	37	**46**	3	0	86	7	36	**15**	0	58	277
Total Volume	32	153	15	1	201	35	226	175	2	438	152	171	14	1	338	31	137	43	2	213	1190
% App. Total	15.9	76.1	7.5	0.5		8	51.6	40	0.5		45	50.6	4.1	0.3		14.6	64.3	20.2	0.9		
PHF	.500	.832	.625	.250	.761	.625	.681	.717	.500	.725	.776	.929	.583	.250	.871	.596	.778	.717	.500	.888	.795
Cars	32	153	14	1	200	34	224	175	2	435	152	171	14	1	338	31	130	43	2	206	1179
% Cars	100	100	93.3	100	99.5	97.1	99.1	100	100	99.3	100	100	100	100	100	100	94.9	100	100	96.7	99.1
Heavy Vehicles	0	0	1	0	1	1	2	0	0	3	0	0	0	0	0	0	7	0	0	7	11
% Heavy Vehicles	0	0	6.7	0	0.5	2.9	0.9	0	0	0.7	0	0	0	0	0	0	5.1	0	0	3.3	0.9



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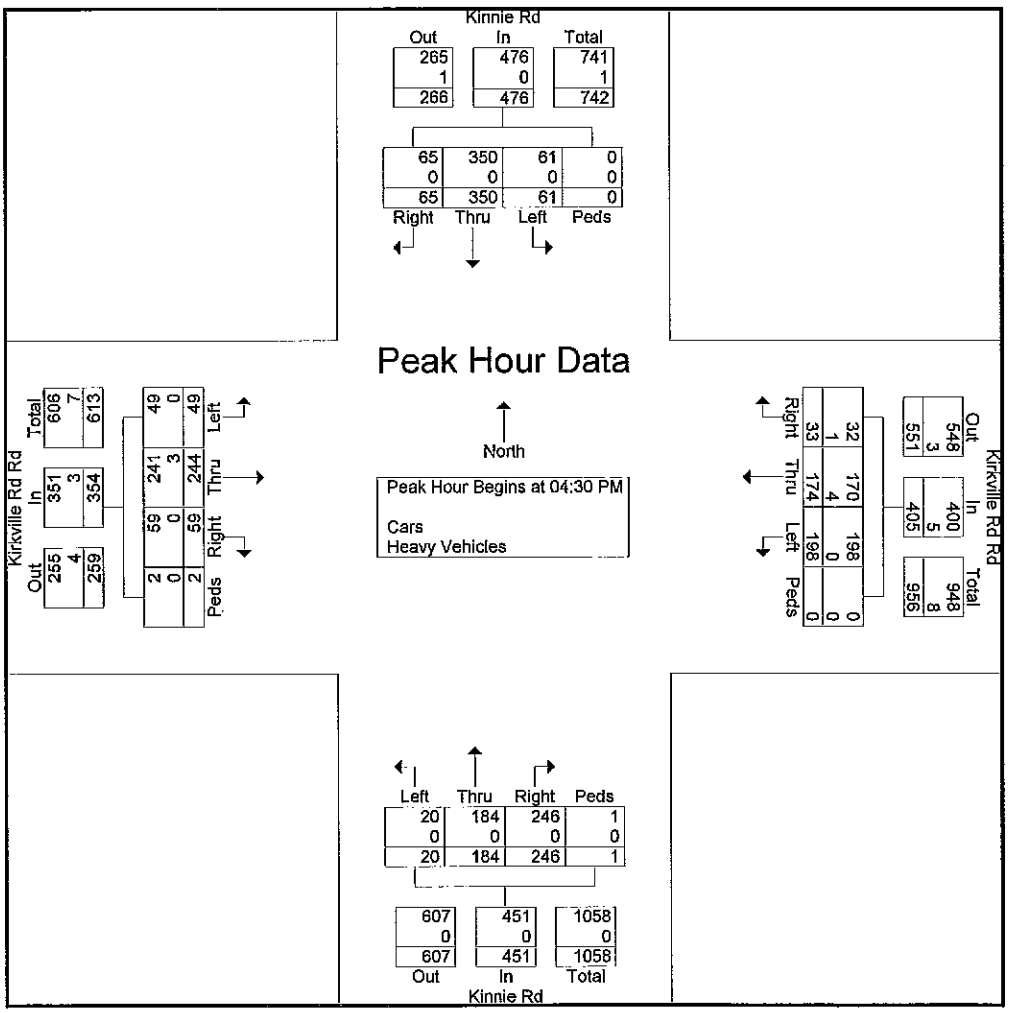
	Kinnie Rd Southbound					Kirkville Rd Rd Westbound					Kinnie Rd Northbound					Kirkville Rd Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	15	40	9	0	64	**12**	38	48	0	98	59	33	**9**	0	101	6	42	13	**1**	62	325
04:45 PM	16	82	18	0	116	3	**51**	**57**	0	**111**	70	55	3	0	**128**	**20**	58	9	0	87	442
05:00 PM	**19**	86	15	0	120	6	40	47	0	93	43	**62**	2	0	107	13	57	11	1	82	402
05:15 PM	15	**142**	**19**	0	**176**	12	45	46	0	103	**74**	34	6	**1**	115	20	**87**	**16**	0	**123**	**517**
Total Volume	65	350	61	0	476	33	174	198	0	405	246	184	20	1	451	59	244	49	2	354	1686
% App. Total	13.7	73.5	12.8	0		8.1	43	48.9	0		54.5	40.8	4.4	0.2		16.7	68.9	13.8	0.6		
PHF	.855	.616	.803	.000	.676	.688	.853	.868	.000	.912	.831	.742	.556	.250	.881	.738	.701	.766	.500	.720	.815
Cars	65	350	61	0	476	32	170	198	0	400	246	184	20	1	451	59	241	49	2	351	1678
% Cars	100	100	100	0	100	97.0	97.7	100	0	98.8	100	100	100	100	100	100	98.8	100	100	99.2	99.5
Heavy Vehicles	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	3	0	0	3	8
% Heavy Vehicles	0	0	0	0	0	3.0	2.3	0	0	1.2	0	0	0	0	0	0	1.2	0	0	0.8	0.5



D95043

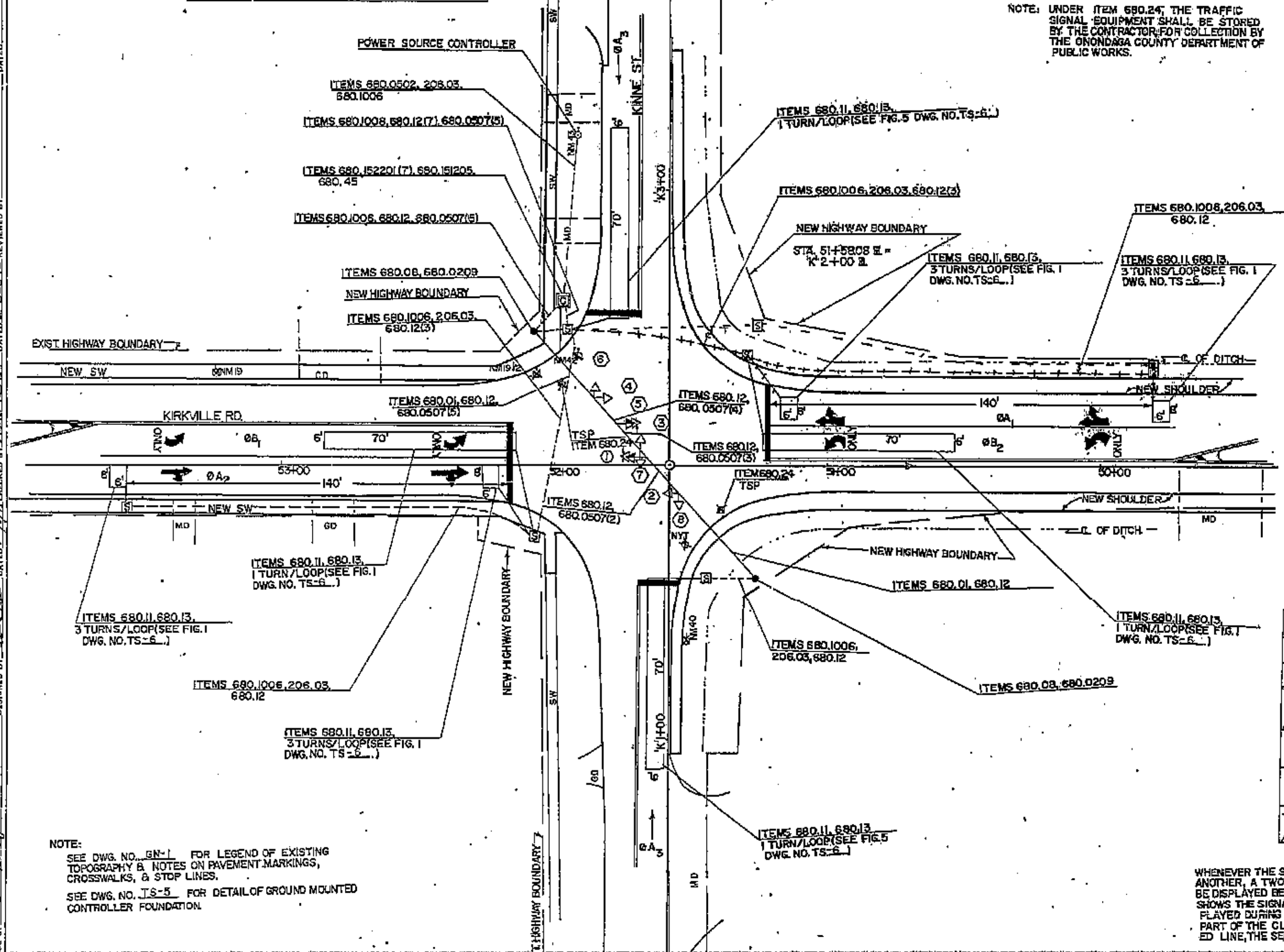
FED. ROAD REGION NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
	N.Y.	M 4000 (36)	27	46

KIRKVILLE RD.
THOMPSON RD. TO FLY RD.
ONONDAGA COUNTY
AS BUILT

LEGEND	
[C]	CONTROLLER GROUND MOUNTED
[S]	ITEM 680.09
↦	ITEM 680.3035
↦	ITEM 680.3061
●	ITEM 680.02__

ITEM 680.24 TRAFFIC SIGNAL POLES	QUANTITY
SIGNAL HEADS	3
CONTROLLER AND CABINET	1
SPAN WIRE ASSEMBLY	1
PUSH BUTTON	—
MISCELLANEOUS	—

NOTE: UNDER ITEM 680.24, THE TRAFFIC SIGNAL EQUIPMENT SHALL BE STORED BY THE CONTRACTOR FOR COLLECTION BY THE ONONDAGA COUNTY DEPARTMENT OF PUBLIC WORKS.



NOTE:
SEE DWG. NO. GN-1 FOR LEGEND OF EXISTING TOPOGRAPHY & NOTES ON PAVEMENT MARKINGS, CROSSWALKS, & STOP LINES.
SEE DWG. NO. TS-5 FOR DETAIL OF GROUND MOUNTED CONTROLLER FOUNDATION.

ESTIMATE OF QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
206.03	CONDUIT EXCAVATION AND BACKFILL	LF	~~581~~ 513.7
680.0209	STEEL TRAFFIC SIGNAL POLE EMBEDDED (36 FT)	EA	2
			—
680.0507	SIGNAL CONTROL CABLE (7 CONDUCTOR)	LF	~~630~~ 1827
680.08	POLE EXCAVATION AND CONCRETE FOUNDATION	CY	6.20
680.09	PULLBOXES (TRAFFIC SIGNALS)	EA	6
680.1006	CONDUIT—2 IN. DIAM.	LF	~~516~~ 892.57
680.1008	CONDUIT—3 IN. DIAM.	LF	~~10~~ 10.10
680.11	INDUCTANCE LOOP—WIRE	LF	~~1254~~ 1367.0
680.12	SHIELDED LEAD— IN CABLE	LF	~~1075~~ 1122.6
680.13	INDUCTANCE LOOP INSTALLATION	LF	~~794~~ 822.0
† 680.151205	SOLID STATE MODULAR CONTROLLER ASSY., FIVE PHASE FTA	EA	1
680.21	MAINTAIN TRAFFIC SIGNAL EQUIPMENT	LS	NEC
* 680.24	REMOVE TRAFFIC SIGNAL EQUIPMENT	LS	NEC
† 680.152201	SOLID STATE DUAL INDUCTANCE LOOP DETECTOR ASSEMBLY	EA	~~7~~ 5
680.3035	TRAFFIC SIGNAL HEADS, TWO WAY, 3 SECTION, 12 IN. LENS	EA	3
680.3061	TRAFFIC SIGNAL HEADS, ONE WAY, 5 SECTION, 12 IN. LENS	EA	2
680.45	CONCRETE BASE FOR CONTROLLER CABINET	EA	1
† 680.0502	SIGNAL CONTROL CABLE (TWO CONDUCTOR)	LF	~~100~~ 90.5
† 680.01	SPAN WIRE ASSEMBLY	EA	1
			—

* SEE TABLE AT LEFT
† ITEM OUT OF SEQUENCE
ITEM 680.151205—THE CONTRACTOR MUST SUPPLY A CONTROLLER IN CONFORMANCE WITH SPECIFICATIONS THAT WILL PROVIDE THE OPERATIONS SHOWN ON THIS DWG.

TABLE OF OPERATION

HEADS 1,3: (R) (←Y) (Y) (←G) (G) — HEADS 2,4,5,6,7,8: (R) (Y) (G)

PHASE \ FACE	1	2	3	4	5	6	7	8
B_1	R/←G	R	R	R	R	R	R	R
B_2	R	R	R/←G	R	R	R	R	R
A_1	R	R	G	G	R	R	R	R
A_2	G	G	R	R	R	R	R	R
A_3	R	R	R	R	G	G	G	G
B_1 B_2	R/←G	R	R/←G	R	R	R	R	R
B_1 A_2	G/←G	G	R	R	R	R	R	R
B_2 A_1	R	R	G/←G	G	R	R	R	R
A_1 A_2	G	G	G	G	R	R	R	R
EMERGENCY	FY	FY	FY	FY	R	R	R	R

TYPE OF PHASE TIMING MODULE, $ØA_1$, $ØA_2$, $ØA_3$, $ØB_1$, $ØB_2$ — VEHICLE ACTUATED

CLEARANCE TABLE

TO \ FROM	R/←G	R	G	G/←G
R/←G	X	R / R	Y / R	Y/←G / R/←G
R	R/←Y / R	X	Y / R	Y/←Y / R
G	R/←Y / R	R / R	X	G/←Y / G
G/←G	R/←G / R/←G	R / R	G / G	X

WHENEVER THE SIGNAL CHANGES FROM ONE PHASE TO ANOTHER, A TWO—PART CLEARANCE INTERVAL SHALL BE DISPLAYED BETWEEN THE PHASES. THE TABLE ABOVE SHOWS THE SIGNAL INDICATIONS THAT SHALL BE DISPLAYED DURING THESE CLEARANCE INTERVALS. THE FIRST PART OF THE CLEARANCE IS SHOWN ABOVE THE DASHED LINE, THE SECOND PART IS SHOWN BELOW IT.

PULLBOX, TABLE OF QUANTITIES

SIGNAL PLAN

KIRKVILLE RD AT KINNE ST.

DESIGNED BY ... DATED ... CHECKED BY ... DATED 2 DEC '75 REVIEWED BY ... DATED ...

INTERSECTION NAME: Kirkville @ Kinne
INTERSECTION NUMBER: 16

INSTALLATION DATE:
PROGRAM DATE: 2/2007
CONTROLLER- 3000E

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

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

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

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

INTERSECTION NAME: Kirkville @ Kinne
INTERSECTION NUMBER: 16

INSTALLATION DATE:
PROGRAM DATE:
CONTROLLER- 3000E

OPTIMIZED TIMINGS

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

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	10	10		5	10		
PASSAGE	1	2.4	1		1	2.4		
YELLOW	3.5	4	3.5		3.5	3.5		
RED	2	2	2		2	2		
MAX I (AM)	6.5	16.5	20.5		10.5	12.5		
MAX II (PM)	5	31.0	47.5		9.5	26.5		
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

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

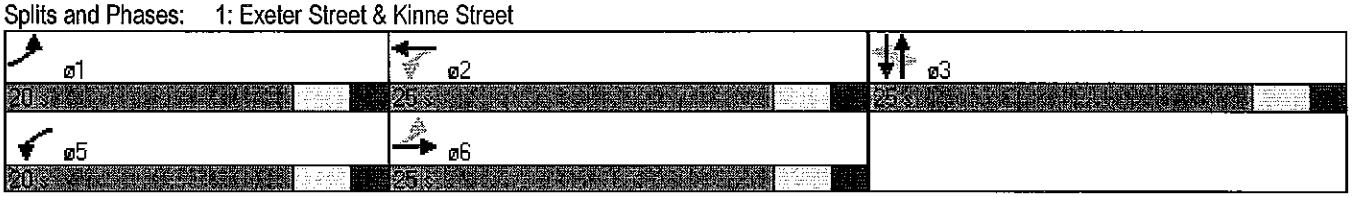
INHIBIT O/L	PED Overlaps							
	1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	43	137	175	226	14	171	15	153
Turn Type	pm+pt		pm+pt		Perm		Perm	
Protected Phases	1	6	5	2		3		3
Permitted Phases	6		2		3		3	
Detector Phase	1	6	5	2	3	3	3	3
Switch Phase								
Minimum Initial (s)	8.0	10.0	8.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	13.0	15.0	13.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	20.0	25.0	20.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	35.7%	28.6%	35.7%	35.7%	35.7%	35.7%	35.7%
Maximum Green (s)	15.0	20.0	15.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	None
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 50.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Exeter Street & Kinne Street

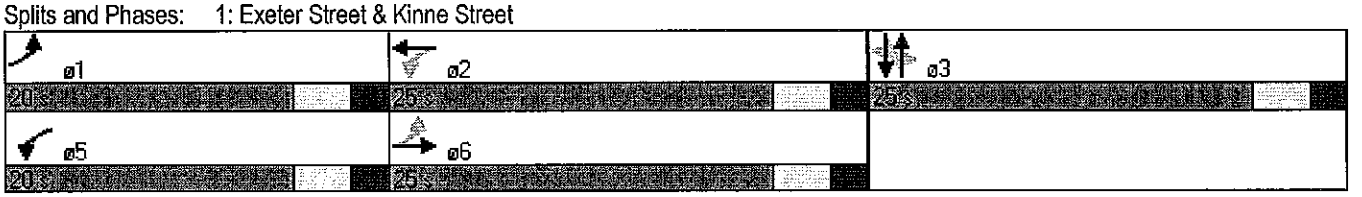


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	49	244	198	174	20	184	61	350
Turn Type	pm+pt		pm+pt		Perm		Perm	
Protected Phases	1	6	5	2		3		3
Permitted Phases	6		2		3		3	
Detector Phase	1	6	5	2	3	3	3	3
Switch Phase								
Minimum Initial (s)	8.0	10.0	8.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	13.0	15.0	13.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	20.0	25.0	20.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	35.7%	28.6%	35.7%	35.7%	35.7%	35.7%	35.7%
Maximum Green (s)	15.0	20.0	15.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	None
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 62.5
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Exeter Street & Kinne Street

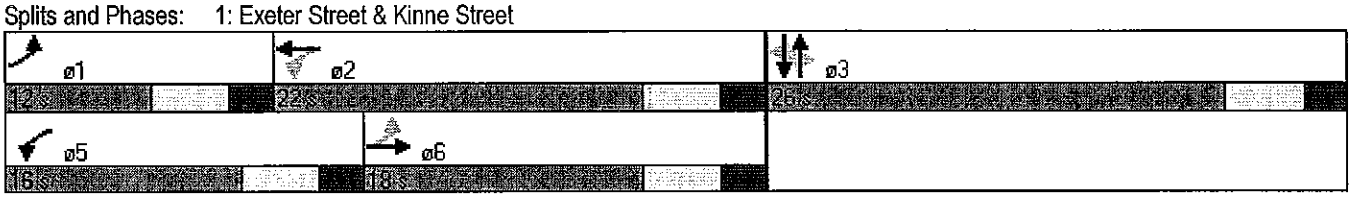


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	43	137	175	226	14	171	15	153
Turn Type	pm+pt		pm+pt		Perm		Perm	
Protected Phases	1	6	5	2		3		3
Permitted Phases	6		2		3		3	
Detector Phase	1	6	5	2	3	3	3	3
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	15.5	10.5	15.5	15.5	15.5	15.5	15.5
Total Split (s)	12.0	18.0	16.0	22.0	26.0	26.0	26.0	26.0
Total Split (%)	20.0%	30.0%	26.7%	36.7%	43.3%	43.3%	43.3%	43.3%
Maximum Green (s)	6.5	12.5	10.5	16.5	20.5	20.5	20.5	20.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Vehicle Extension (s)	1.0	3.5	1.0	3.5	1.0	1.0	1.0	1.0
Minimum Gap (s)	1.0	3.5	1.0	3.5	1.0	1.0	1.0	1.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	None
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 47.2
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Exeter Street & Kinne Street

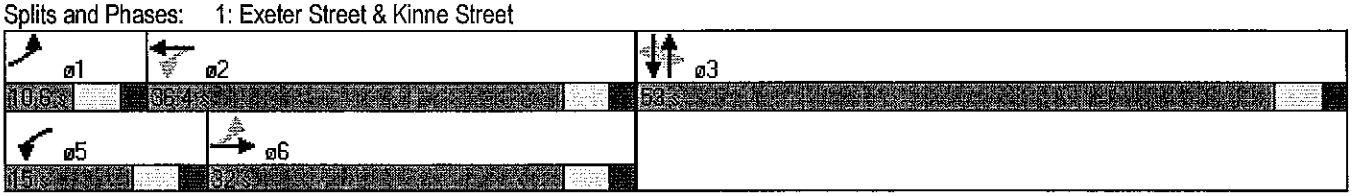


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	49	244	198	174	20	184	61	350
Turn Type	pm+pt		pm+pt		Perm		Perm	
Protected Phases	1	6	5	2		3		3
Permitted Phases	6		2		3		3	
Detector Phase	1	6	5	2	3	3	3	3
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	15.5	10.5	15.5	15.5	15.5	15.5	15.5
Total Split (s)	10.6	32.0	15.0	36.4	53.0	53.0	53.0	53.0
Total Split (%)	10.6%	32.0%	15.0%	36.4%	53.0%	53.0%	53.0%	53.0%
Maximum Green (s)	5.1	26.5	9.5	30.9	47.5	47.5	47.5	47.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?		Yes	Yes					
Vehicle Extension (s)	1.0	3.5	1.0	3.5	1.0	1.0	1.0	1.0
Minimum Gap (s)	1.0	3.5	1.0	3.5	1.0	1.0	1.0	1.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	None
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 92
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Exeter Street & Kinne Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	137	31	175	226	35	14	171	152	15	153	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.98			0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1804	1768		1805	1833			1762			1835	
Flt Permitted	0.54	1.00		0.43	1.00			0.98			0.96	
Satd. Flow (perm)	1034	1768		819	1833			1730			1770	
Peak-hour factor, PHF	0.89	0.89	0.89	0.72	0.72	0.72	0.87	0.87	0.87	0.76	0.76	0.76
Adj. Flow (vph)	48	154	35	243	314	49	16	197	175	20	201	42
RTOR Reduction (vph)	0	13	0	0	7	0	0	42	0	0	10	0
Lane Group Flow (vph)	48	176	0	243	356	0	0	346	0	0	253	0
Confl. Peds. (#/hr)	1		1	1		1	2		2	2		2
Heavy Vehicles (%)	0%	5%	0%	0%	1%	3%	0%	0%	0%	7%	0%	0%
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			3			3	
Permitted Phases	6			2			3			3		
Actuated Green, G (s)	13.2	10.5		27.6	19.9			15.8			15.8	
Effective Green, g (s)	13.2	10.5		27.6	19.9			15.8			15.8	
Actuated g/C Ratio	0.25	0.20		0.52	0.37			0.30			0.30	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	295	348		647	683			512			524	
v/s Ratio Prot	0.01	0.10		c0.09	c0.19							
v/s Ratio Perm	0.03			0.11				c0.20			0.14	
v/c Ratio	0.16	0.51		0.38	0.52			0.68			0.48	
Uniform Delay, d1	15.5	19.1		7.5	13.0			16.6			15.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.3	1.2		0.4	0.7			3.5			0.7	
Delay (s)	15.8	20.3		7.9	13.8			20.1			16.1	
Level of Service	B	C		A	B			C			B	
Approach Delay (s)		19.4			11.4			20.1			16.1	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	244	59	198	174	33	20	184	246	61	350	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.98			0.93			0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1805	1822		1805	1816			1756			1847	
Flt Permitted	0.62	1.00		0.20	1.00			0.93			0.74	
Satd. Flow (perm)	1172	1822		378	1816			1635			1384	
Peak-hour factor, PHF	0.72	0.72	0.72	0.91	0.91	0.91	0.88	0.88	0.88	0.68	0.68	0.68
Adj. Flow (vph)	68	339	82	218	191	36	23	209	280	90	515	96
RTOR Reduction (vph)	0	12	0	0	9	0	0	60	0	0	8	0
Lane Group Flow (vph)	68	409	0	218	218	0	0	452	0	0	693	0
Confl. Peds. (#/hr)			1	1			2					2
Heavy Vehicles (%)	0%	1%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			3			3	
Permitted Phases	6			2			3			3		
Actuated Green, G (s)	22.6	18.1		34.4	24.9			20.2			20.2	
Effective Green, g (s)	22.6	18.1		34.4	24.9			20.2			20.2	
Actuated g/C Ratio	0.35	0.28		0.53	0.39			0.31			0.31	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	454	510		451	700			511			433	
v/s Ratio Prot	0.01	c0.22		c0.08	0.12							
v/s Ratio Perm	0.04			0.17				0.28			c0.50	
v/c Ratio	0.15	0.80		0.48	0.31			0.88			1.60	
Uniform Delay, d1	14.2	21.6		10.0	13.9			21.1			22.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	8.8		0.8	0.3			16.6			281.3	
Delay (s)	14.3	30.4		10.9	14.1			37.7			303.5	
Level of Service	B	C		B	B			D			F	
Approach Delay (s)		28.2			12.5			37.7			303.5	
Approach LOS		C			B			D			F	

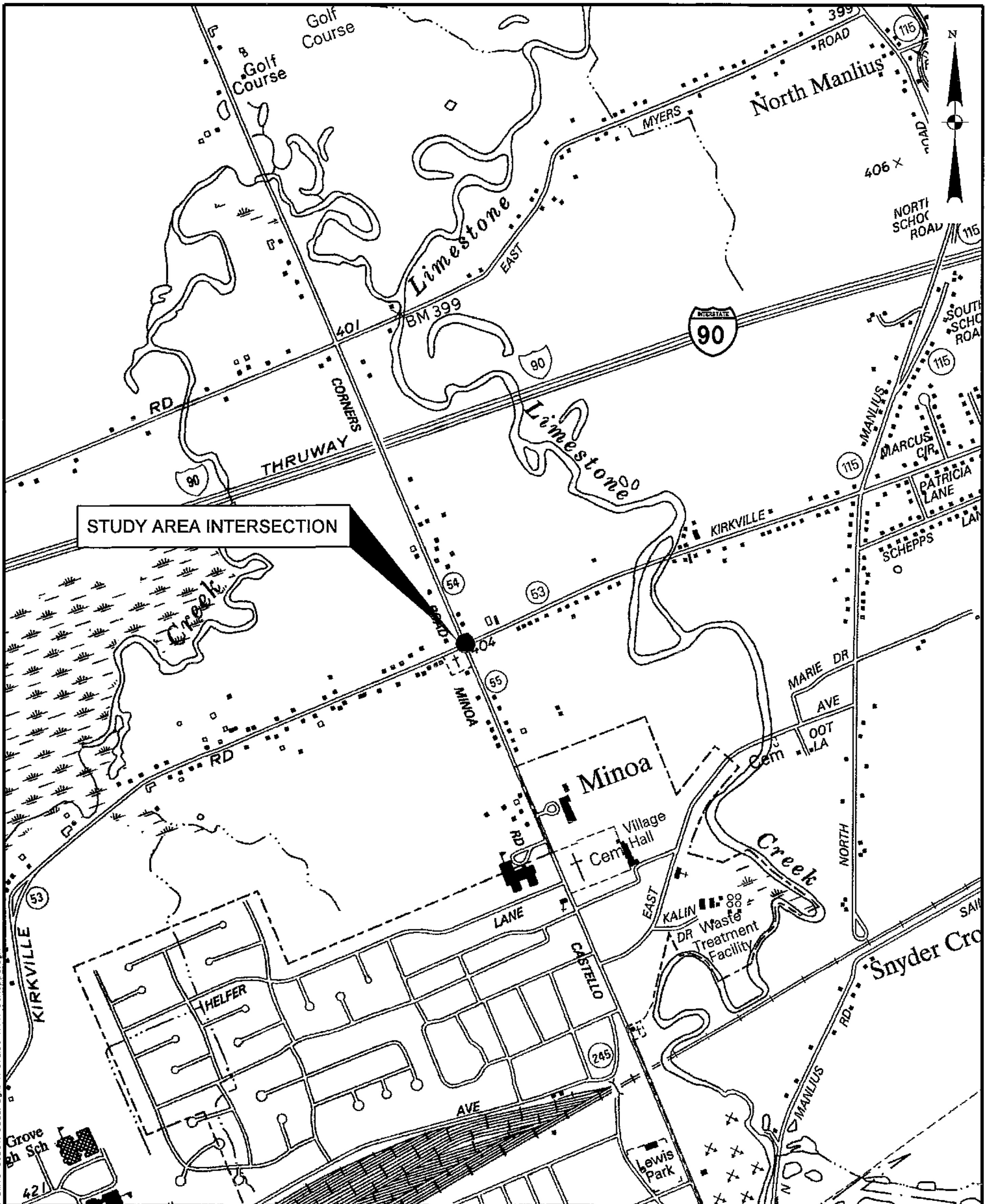
Intersection Summary			
HCM Average Control Delay	117.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	64.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	137	31	175	226	35	14	171	152	15	153	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5			5.5			5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.98			0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1804	1768		1805	1833			1762			1835	
Flt Permitted	0.54	1.00		0.42	1.00			0.98			0.95	
Satd. Flow (perm)	1034	1768		793	1833			1726			1754	
Peak-hour factor, PHF	0.89	0.89	0.89	0.72	0.72	0.72	0.87	0.87	0.87	0.76	0.76	0.76
Adj. Flow (vph)	48	154	35	243	314	49	16	197	175	20	201	42
RTOR Reduction (vph)	0	13	0	0	8	0	0	55	0	0	12	0
Lane Group Flow (vph)	48	176	0	243	355	0	0	333	0	0	251	0
Confl. Peds. (#/hr)	1		1	1		1	2		2	2		2
Heavy Vehicles (%)	0%	5%	0%	0%	1%	3%	0%	0%	0%	7%	0%	0%
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			3			3	
Permitted Phases	6			2			3			3		
Actuated Green, G (s)	12.2	10.4		25.6	18.3			13.7			13.7	
Effective Green, g (s)	12.2	10.4		25.6	18.3			13.7			13.7	
Actuated g/C Ratio	0.24	0.21		0.51	0.36			0.27			0.27	
Clearance Time (s)	5.5	5.5		5.5	5.5			5.5			5.5	
Vehicle Extension (s)	1.0	3.5		1.0	3.5			1.0			1.0	
Lane Grp Cap (vph)	278	366		599	667			470			478	
v/s Ratio Prot	0.01	0.10		c0.08	c0.19							
v/s Ratio Perm	0.04			0.13				c0.19			0.14	
v/c Ratio	0.17	0.48		0.41	0.53			0.71			0.52	
Uniform Delay, d1	14.8	17.6		7.4	12.6			16.5			15.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	1.2		0.2	0.9			4.0			0.5	
Delay (s)	14.9	18.7		7.5	13.5			20.5			16.0	
Level of Service	B	B		A	B			C			B	
Approach Delay (s)		18.0			11.1			20.5			16.0	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	50.3	Sum of lost time (s)	16.5
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	244	59	198	174	33	20	184	246	61	350	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5			5.5			5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.98			0.93			0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1805	1822		1805	1816			1756			1847	
Flt Permitted	0.62	1.00		0.15	1.00			0.96			0.84	
Satd. Flow (perm)	1172	1822		292	1816			1684			1568	
Peak-hour factor, PHF	0.72	0.72	0.72	0.91	0.91	0.91	0.88	0.88	0.88	0.68	0.68	0.68
Adj. Flow (vph)	68	339	82	218	191	36	23	209	280	90	515	96
RTOR Reduction (vph)	0	9	0	0	7	0	0	45	0	0	6	0
Lane Group Flow (vph)	68	412	0	218	220	0	0	467	0	0	695	0
Confl. Peds. (#/hr)			1	1			2					2
Heavy Vehicles (%)	0%	1%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	1	6		5	2			3			3	
Permitted Phases	6			2			3			3		
Actuated Green, G (s)	28.2	24.4		39.4	30.1			42.8			42.8	
Effective Green, g (s)	28.2	24.4		39.4	30.1			42.8			42.8	
Actuated g/C Ratio	0.30	0.26		0.42	0.32			0.46			0.46	
Clearance Time (s)	5.5	5.5		5.5	5.5			5.5			5.5	
Vehicle Extension (s)	1.0	3.5		1.0	3.5			1.0			1.0	
Lane Grp Cap (vph)	380	477		278	586			773			720	
v/s Ratio Prot	0.01	0.23		c0.08	0.12							
v/s Ratio Perm	0.05			c0.25				0.28			c0.44	
v/c Ratio	0.18	0.86		0.78	0.38			0.60			0.97	
Uniform Delay, d1	23.6	32.8		20.7	24.3			18.9			24.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	15.3		12.5	0.5			0.9			24.9	
Delay (s)	23.6	48.1		33.2	24.8			19.8			49.4	
Level of Service	C	D		C	C			B			D	
Approach Delay (s)		44.7			28.9			19.8			49.4	
Approach LOS		D			C			B			D	

Intersection Summary			
HCM Average Control Delay	37.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	93.2	Sum of lost time (s)	11.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



LOCATION MAP
KIRKVILLE RD/SCHEPPS CORNERS RD

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d | DATE: 4/10 | FIGURE: B.2

ddoran F:\Projects\2009\109-094 SMTC OCDOT\cadd\dgn\traf_loc kirk schepps.dgn

INTERSECTION DIAGRAM

Location

Kirkville Road at Schepps Corners/Minoa Bridgeport Road

Legend

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

Drawn By: KK

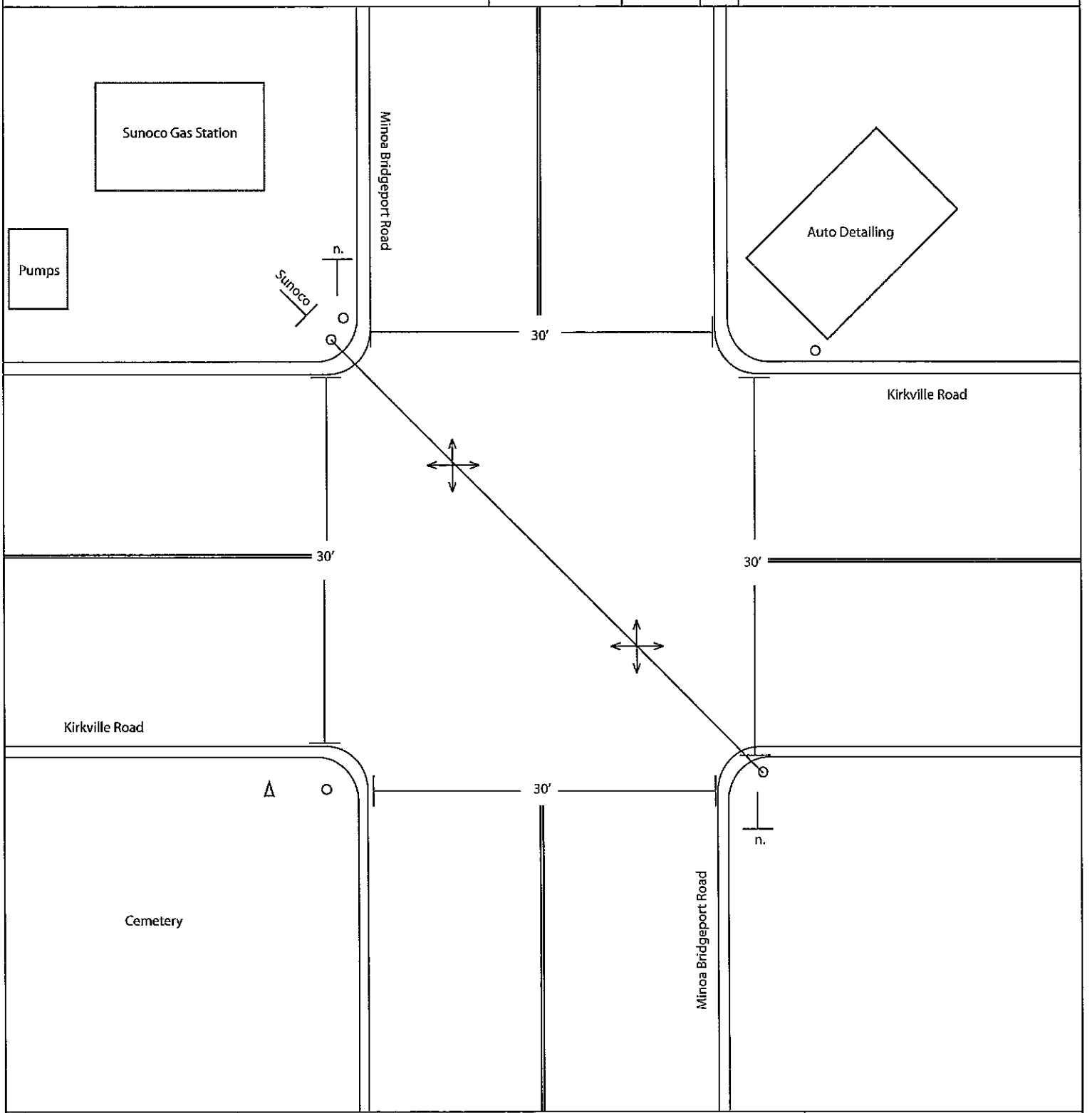
Date: May 2010

Prepared By: SMTC

N

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

For sign definitions see Intersection Diagram Sign Index.



Task

OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

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

Diagram is not to scale.

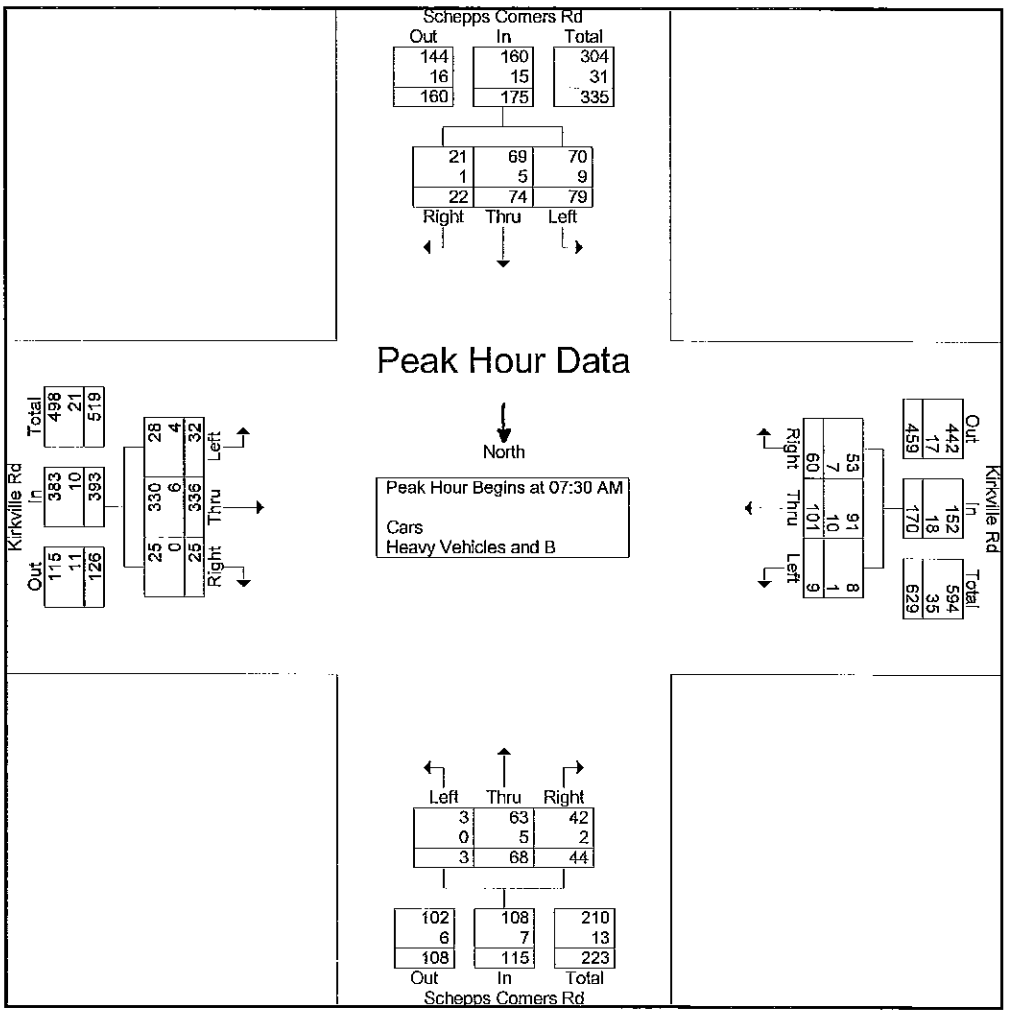
Knoxville Rd

NO
TURN
ON

Town of Clay, Onondaga Co.
Sc s Cors Rd @ Kirkville Rd
6/4/
KB and JR

File Name : 6_4_09~1
Site Code : 00000001
Start Date : 6/4/2009
Page No : 2

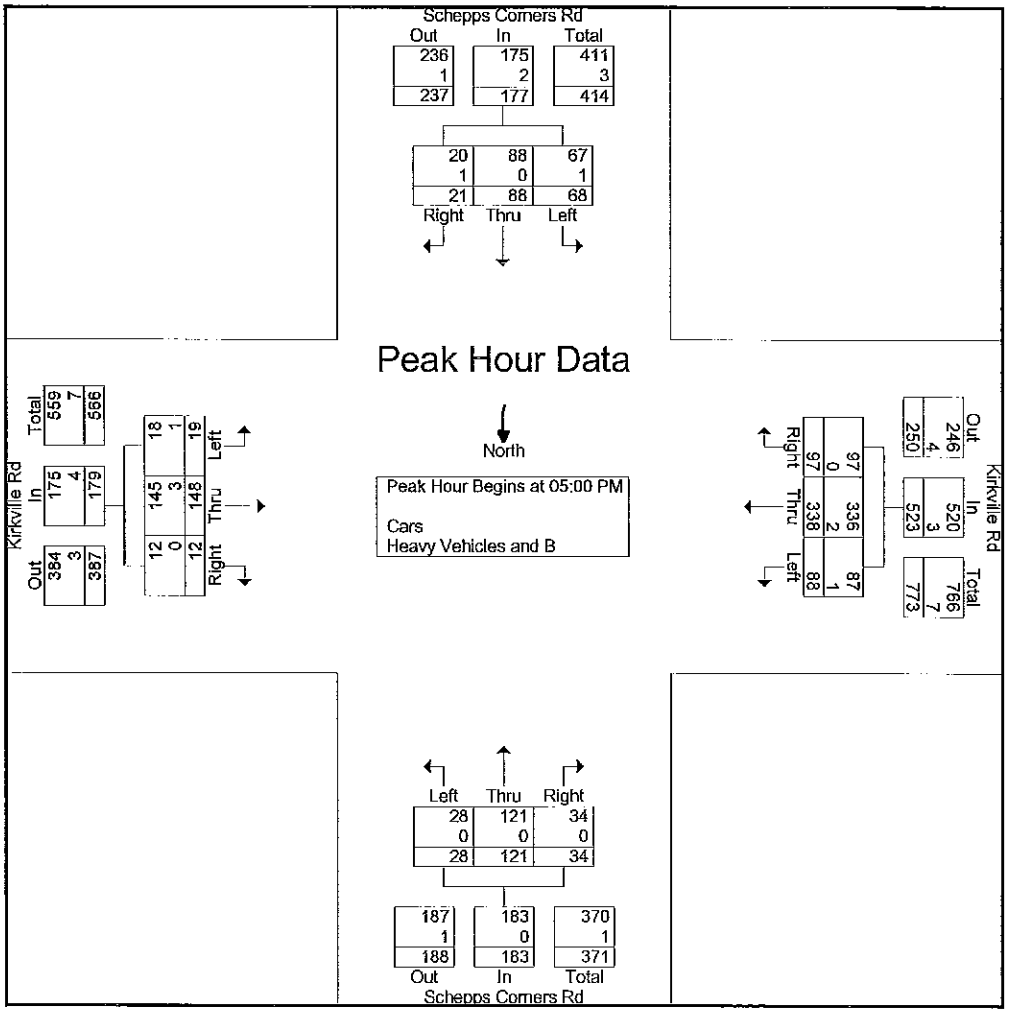
	Schepps Corners Rd Southbound				Kirkville Rd Westbound				Schepps Corners Rd Northbound				Kirkville Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**24**	17	3	44	**4**	16	16	36	0	**24**	**13**	**37**	10	**112**	7	**129**	**246**
07:45 AM	17	**19**	6	42	3	26	16	45	1	13	11	25	**13**	99	3	115	227
08:00 AM	21	19	**8**	**48**	2	27	10	39	**2**	15	9	26	7	77	5	89	202
08:15 AM	17	19	5	41	0	**32**	**18**	**50**	0	16	11	27	2	48	**10**	60	178
Total Volume	79	74	22	175	9	101	60	170	3	68	44	115	32	336	25	393	853
% App. Total	45.1	42.3	12.6		5.3	59.4	35.3		2.6	59.1	38.3		8.1	85.5	6.4		
PHF	.823	.974	.688	.911	.563	.789	.833	.850	.375	.708	.846	.777	.615	.750	.625	.762	.867
Cars	70	69	21	160	8	91	53	152	3	63	42	108	28	330	25	383	803
% Cars	88.6	93.2	95.5	91.4	88.9	90.1	88.3	89.4	100	92.6	95.5	93.9	87.5	98.2	100	97.5	94.1
Heavy Vehicles and B	9	5	1	15	1	10	7	18	0	5	2	7	4	6	0	10	50
% Heavy Vehicles and B	11.4	6.8	4.5	8.6	11.1	9.9	11.7	10.6	0	7.4	4.5	6.1	12.5	1.8	0	2.5	5.9



Town of Clay, Onondaga Co.
S(ıs Cors Rd @ Kirkville Rd
6/4/09
KB and JR

File Name : 6_4_09~1
Site Code : 00000001
Start Date : 6/4/2009
Page No : 3

	Schepps Corners Rd Southbound				Kirkville Rd Westbound				Schepps Corners Rd Northbound				Kirkville Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	12	23	5	40	**28**	77	22	127	5	30	7	42	5	**45**	**4**	**54**	263
05:15 PM	**13**	22	2	37	21	**96**	23	**140**	**11**	26	6	43	4	30	2	36	256
05:30 PM	21	19	**10**	**50**	22	88	**26**	136	5	31	11	47	**6**	35	2	43	**276**
05:45 PM	**22**	**24**	4	50	17	77	26	120	7	**34**	10	**51**	4	38	4	46	267
Total Volume	68	88	21	177	88	338	97	523	28	121	34	183	19	148	12	179	1062
% App. Total	38.4	49.7	11.9		16.8	64.6	18.5		15.3	66.1	18.6		10.6	82.7	6.7		
PHF	.773	.917	.525	.885	.786	.880	.933	.934	.636	.890	.773	.897	.792	.822	.750	.829	.962
Cars	67	88	20	175	87	336	97	520	28	121	34	183	18	145	12	175	1053
% Cars	98.5	100	95.2	98.9	98.9	99.4	100	99.4	100	100	100	100	94.7	98.0	100	97.8	99.2
Heavy Vehicles and B	1	0	1	2	1	2	0	3	0	0	0	0	1	3	0	4	9
% Heavy Vehicles and B	1.5	0	4.8	1.1	1.1	0.6	0	0.6	0	0	0	0	5.3	2.0	0	2.2	0.8



INTERSECTION NAME: KIRKVILLE @ MINOA SCHEPPS INSTALLATION DATE:
INTERSECTION NUMBER: 13 PROGRAM DATE:

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

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

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

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

INTERSECTION NAME: KIRKVILLE @ MINOA SCHEPPS
INTERSECTION NUMBER: 13

INSTALLATION DATE:
PROGRAM DATE:

OPTIMIZED TIMINGS

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

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	10	10						
PASSAGE	1.5	1.5						
YELLOW	4	4						
RED	1	1						
MAX I (AM)	30	20						
MAX II (PM)	30	20						
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

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

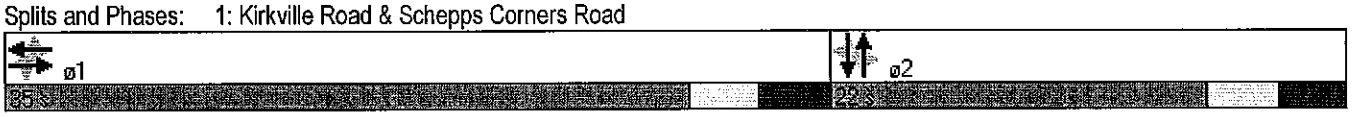
INHIBIT O/L	PED Overlaps							
	1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Volume (vph)	9	101	25	336	79	74	3	68
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		1		1		2		2
Permitted Phases	1		1		2		2	
Detector Phase					2	2	2	2
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.0	26.0	26.0	26.0	16.0	16.0	16.0	16.0
Total Split (s)	35.0	35.0	35.0	35.0	22.0	22.0	22.0	22.0
Total Split (%)	61.4%	61.4%	61.4%	61.4%	38.6%	38.6%	38.6%	38.6%
Maximum Green (s)	29.0	29.0	29.0	29.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	Max	Max	Max	Max	None	None	None	None
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 57
Actuated Cycle Length: 55.2
Natural Cycle: 45
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Kirkville Road & Schepps Corners Road

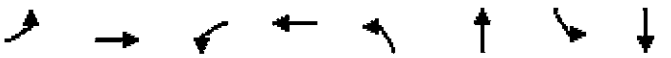


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕		↕		↕
Volume (vph)	88	338	19	148	68	88	28	121
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		1		1		2		2
Permitted Phases	1		1		2		2	
Detector Phase					2	2	2	2
Switch Phase								
Minimum Initial (s)	20.0	20.0	20.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.0	26.0	26.0	26.0	16.0	16.0	16.0	16.0
Total Split (s)	31.0	31.0	31.0	31.0	26.0	26.0	26.0	26.0
Total Split (%)	54.4%	54.4%	54.4%	54.4%	45.6%	45.6%	45.6%	45.6%
Maximum Green (s)	25.0	25.0	25.0	25.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	Max	Max	Max	Max	None	None	None	None
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 57
Actuated Cycle Length: 52.4
Natural Cycle: 45
Control Type: Semi Act-Uncoord

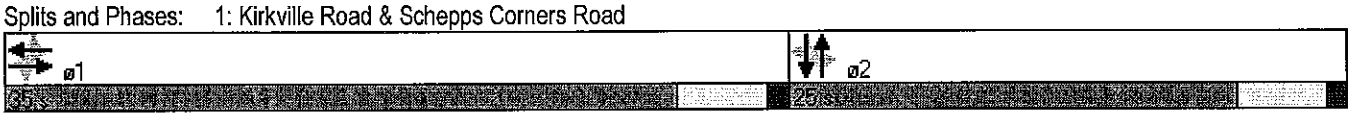
Splits and Phases: 1: Kirkville Road & Schepps Corners Road

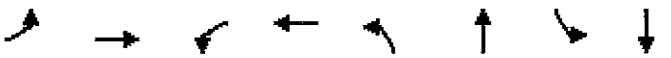


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕		↕		↕
Volume (vph)	9	101	25	336	79	74	3	68
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		1		1		2		2
Permitted Phases	1		1		2		2	
Detector Phase	1	1	1	1	2	2	2	2
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	35.0	35.0	35.0	35.0	25.0	25.0	25.0	25.0
Total Split (%)	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%	41.7%	41.7%
Maximum Green (s)	30.0	30.0	30.0	30.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
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	Min	Min	Min	Min	None	None	None	None
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 39.7
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Kirkville Road & Schepps Corners Road

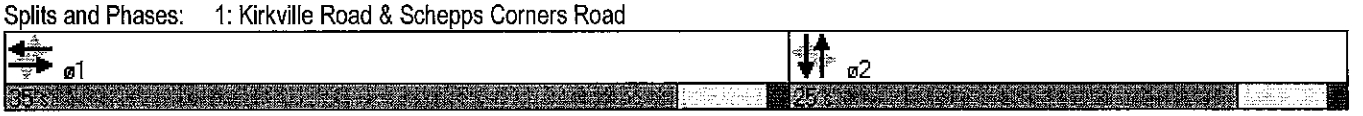




Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Volume (vph)	88	338	19	148	68	88	28	121
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		1		1		2		2
Permitted Phases	1		1		2		2	
Detector Phase	1	1	1	1	2	2	2	2
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	35.0	35.0	35.0	35.0	25.0	25.0	25.0	25.0
Total Split (%)	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%	41.7%	41.7%
Maximum Green (s)	30.0	30.0	30.0	30.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
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	Min	Min	Min	Min	None	None	None	None
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 39.5
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Kirkville Road & Schepps Corners Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	9	101	60	25	336	32	79	74	22	3	68	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.95			0.99			0.98			0.95	
Flt Protected		1.00			1.00			0.98			1.00	
Satd. Flow (prot)		1629			1824			1682			1697	
Flt Permitted		0.97			0.97			0.83			0.99	
Satd. Flow (perm)		1587			1783			1429			1684	
Peak-hour factor, PHF	0.85	0.85	0.85	0.76	0.76	0.76	0.91	0.91	0.91	0.78	0.78	0.78
Adj. Flow (vph)	11	119	71	33	442	42	87	81	24	4	87	56
RTOR Reduction (vph)	0	31	0	0	5	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	170	0	0	512	0	0	192	0	0	147	0
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	11%	10%	12%	13%	2%	0%	11%	7%	5%	0%	7%	5%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		29.1			29.1			14.1			14.1	
Effective Green, g (s)		31.1			31.1			16.1			16.1	
Actuated g/C Ratio		0.56			0.56			0.29			0.29	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		894			1005			417			491	
v/s Ratio Prot												
v/s Ratio Perm		0.11			c0.29			c0.13			0.09	
v/c Ratio		0.19			0.51			0.46			0.30	
Uniform Delay, d1		5.9			7.4			16.0			15.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.5			1.8			2.3			1.0	
Delay (s)		6.4			9.2			18.3			16.1	
Level of Service		A			A			B			B	
Approach Delay (s)		6.4			9.2			18.3			16.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	88	338	97	19	148	12	68	88	21	28	121	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.99			0.98			0.97	
Flt Protected		0.99			0.99			0.98			0.99	
Satd. Flow (prot)		1815			1833			1805			1838	
Flt Permitted		0.91			0.93			0.84			0.93	
Satd. Flow (perm)		1665			1710			1544			1725	
Peak-hour factor, PHF	0.94	0.94	0.94	0.82	0.82	0.82	0.87	0.87	0.87	0.90	0.90	0.90
Adj. Flow (vph)	94	360	103	23	180	15	78	101	24	31	134	38
RTOR Reduction (vph)	0	13	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	544	0	0	214	0	0	203	0	0	203	0
Confl. Bikes (#/hr)			1						3			
Heavy Vehicles (%)	1%	1%	0%	5%	2%	0%	2%	0%	5%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		25.1			25.1			15.2			15.2	
Effective Green, g (s)		27.1			27.1			17.2			17.2	
Actuated g/C Ratio		0.52			0.52			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		863			886			508			567	
v/s Ratio Prot												
v/s Ratio Perm		c0.33			0.12			c0.13			0.12	
v/c Ratio		0.63			0.24			0.40			0.36	
Uniform Delay, d1		9.0			6.9			13.6			13.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.5			0.6			1.5			1.1	
Delay (s)		12.5			7.6			15.0			14.4	
Level of Service		B			A			B			B	
Approach Delay (s)		12.5			7.6			15.0			14.4	
Approach LOS		B			A			B			B	

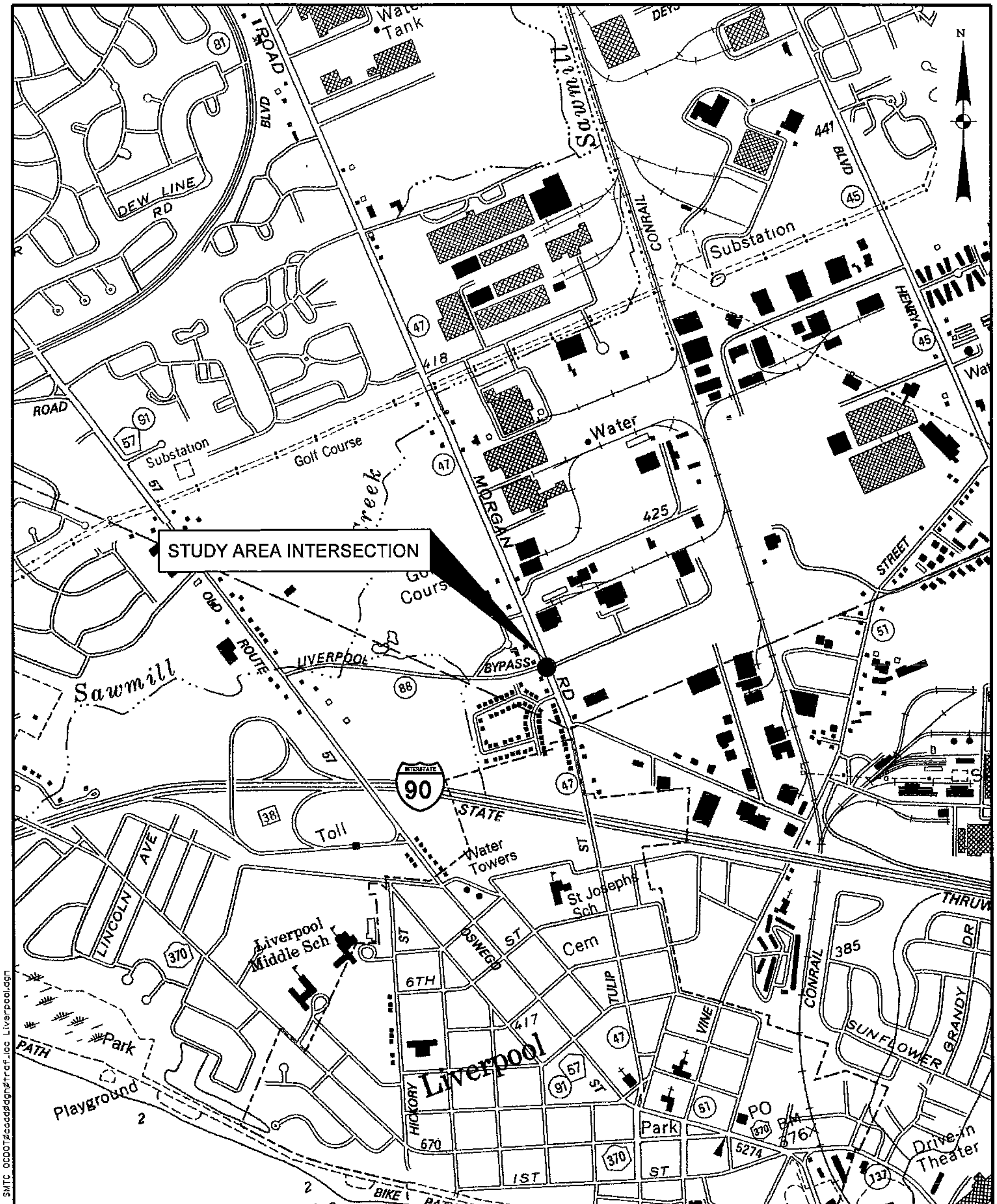
Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	52.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	9	101	60	25	336	32	79	74	22	3	68	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.95			0.99			0.98			0.95	
Flt Protected		1.00			1.00			0.98			1.00	
Satd. Flow (prot)		1629			1824			1682			1697	
Flt Permitted		0.97			0.97			0.80			0.99	
Satd. Flow (perm)		1582			1782			1380			1684	
Peak-hour factor, PHF	0.85	0.85	0.85	0.76	0.76	0.76	0.91	0.91	0.91	0.78	0.78	0.78
Adj. Flow (vph)	11	119	71	33	442	42	87	81	24	4	87	56
RTOR Reduction (vph)	0	36	0	0	6	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	165	0	0	511	0	0	192	0	0	147	0
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	11%	10%	12%	13%	2%	0%	11%	7%	5%	0%	7%	5%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		17.7			17.7			11.6			11.6	
Effective Green, g (s)		18.7			18.7			12.6			12.6	
Actuated g/C Ratio		0.48			0.48			0.32			0.32	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		1.5			1.5			1.5			1.5	
Lane Grp Cap (vph)		753			848			442			540	
v/s Ratio Prot												
v/s Ratio Perm		0.10			c0.29			c0.14			0.09	
v/c Ratio		0.22			0.60			0.43			0.27	
Uniform Delay, d1		6.0			7.6			10.5			9.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			0.8			0.2			0.1	
Delay (s)		6.1			8.4			10.8			10.0	
Level of Service		A			A			B			B	
Approach Delay (s)		6.1			8.4			10.8			10.0	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	39.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	88	338	97	19	148	12	68	88	21	28	121	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.99			0.98			0.97	
Flt Protected		0.99			0.99			0.98			0.99	
Satd. Flow (prot)		1815			1833			1805			1838	
Flt Permitted		0.91			0.93			0.84			0.93	
Satd. Flow (perm)		1666			1708			1541			1722	
Peak-hour factor, PHF	0.94	0.94	0.94	0.82	0.82	0.82	0.87	0.87	0.87	0.90	0.90	0.90
Adj. Flow (vph)	94	360	103	23	180	15	78	101	24	31	134	38
RTOR Reduction (vph)	0	15	0	0	5	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	542	0	0	213	0	0	203	0	0	203	0
Confl. Bikes (#/hr)			1						3			
Heavy Vehicles (%)	1%	1%	0%	5%	2%	0%	2%	0%	5%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		17.5			17.5			11.6			11.6	
Effective Green, g (s)		18.5			18.5			12.6			12.6	
Actuated g/C Ratio		0.47			0.47			0.32			0.32	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		1.5			1.5			1.5			1.5	
Lane Grp Cap (vph)		788			808			497			555	
v/s Ratio Prot												
v/s Ratio Perm		c0.33			0.12			c0.13			0.12	
v/c Ratio		0.69			0.26			0.41			0.37	
Uniform Delay, d1		8.0			6.2			10.3			10.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.0			0.1			0.2			0.1	
Delay (s)		10.1			6.3			10.5			10.3	
Level of Service		B			A			B			B	
Approach Delay (s)		10.1			6.3			10.5			10.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	39.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



LOCATION MAP LIVERPOOL BYPASS/MORGAN RD	**CME** CREIGHTON MANNING ENGINEERING, LLP
TRAFFIC SIGNAL OPTIMIZATION ONONDAGA COUNTY SYRACUSE, NEW YORK	PROJECT: 09-094d / DATE: 4/10 / FIGURE: B.3

INTERSECTION DIAGRAM

Location

Liverpool Bypass at Morgan Road

Legend

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

Drawn By: KK

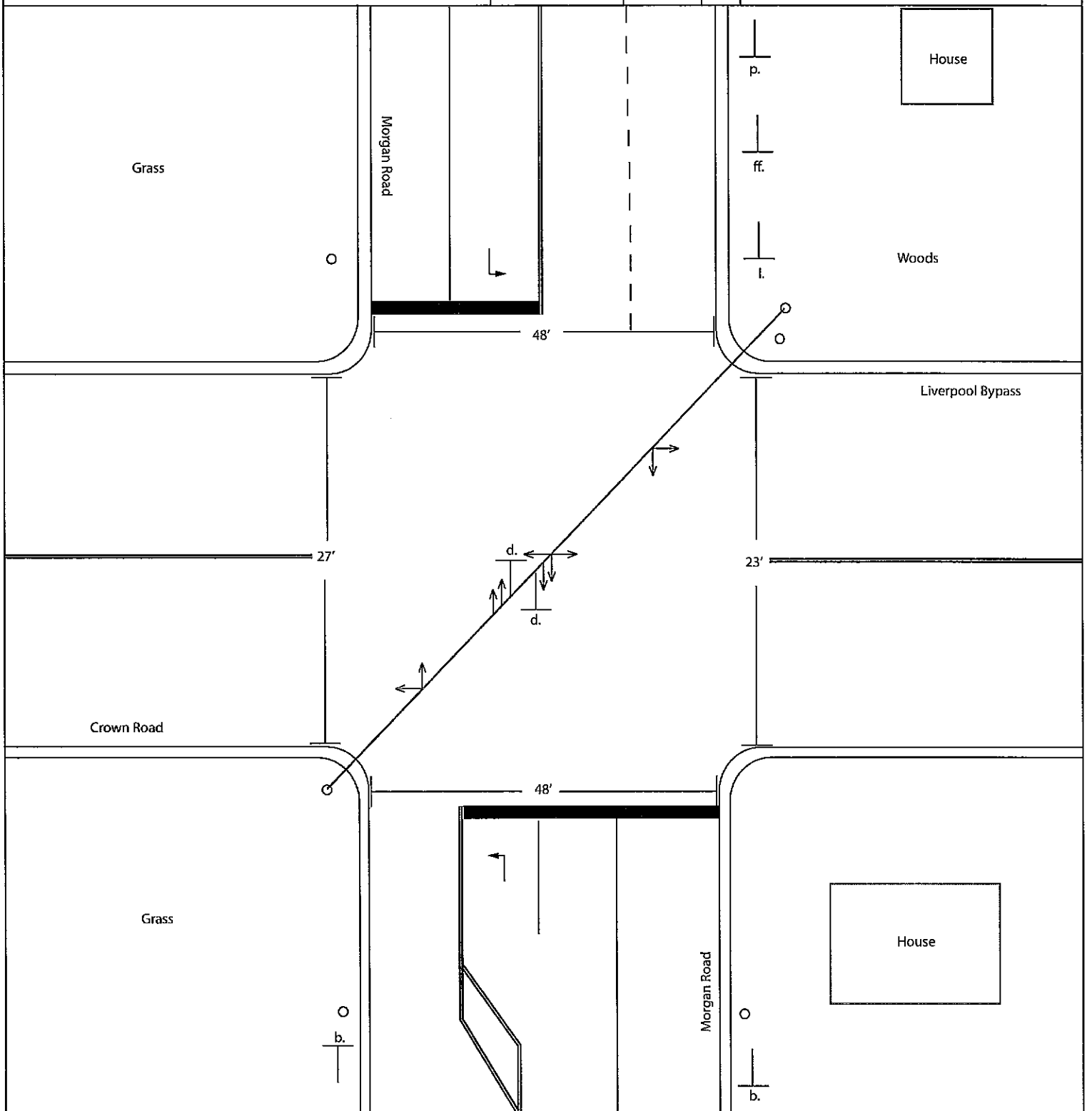
Date: May 2010

Prepared By: SMTC

N

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

For sign definitions see Intersection Diagram Sign Index.



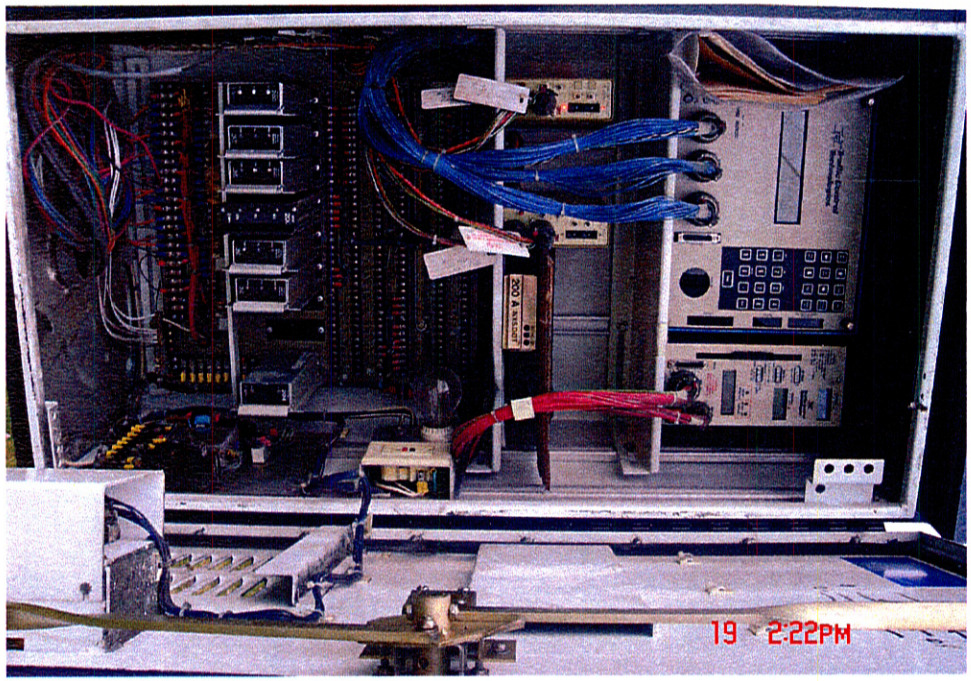
Task

OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

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

Diagram is not to scale.


19 2:22PM


19 2:31PM


Liverpool Bypass
Crown Rd
Sheridan Rd
Tulip St


19 2:30PM


19 2:35PM

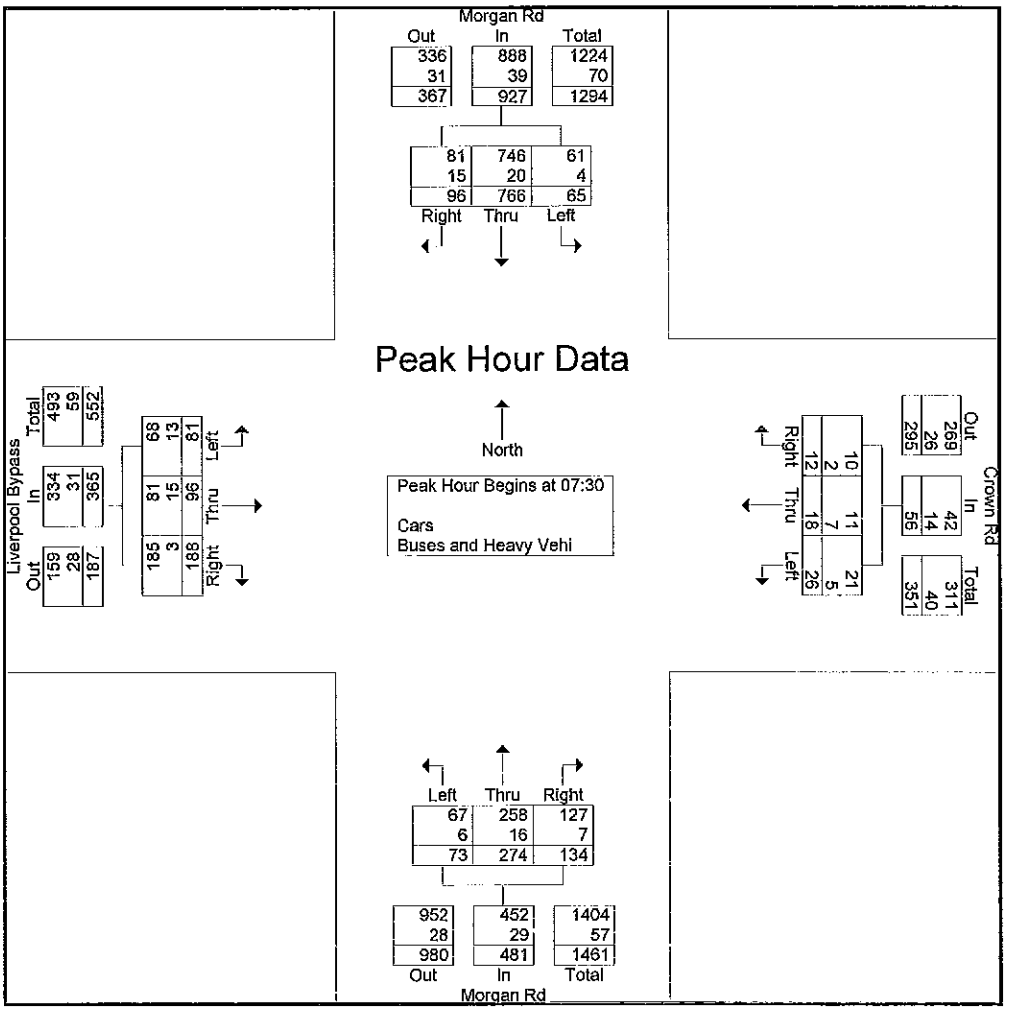

19 2:33PM


19 2:35PM

Town of Clay
Liverpool Bypass @ Morgan Rd
6/16/09
JR, KB

File Name : 6_16_09_LivByp_Morg_AM
Site Code : 00002222
Start Date : 6/16/2009
Page No : 2

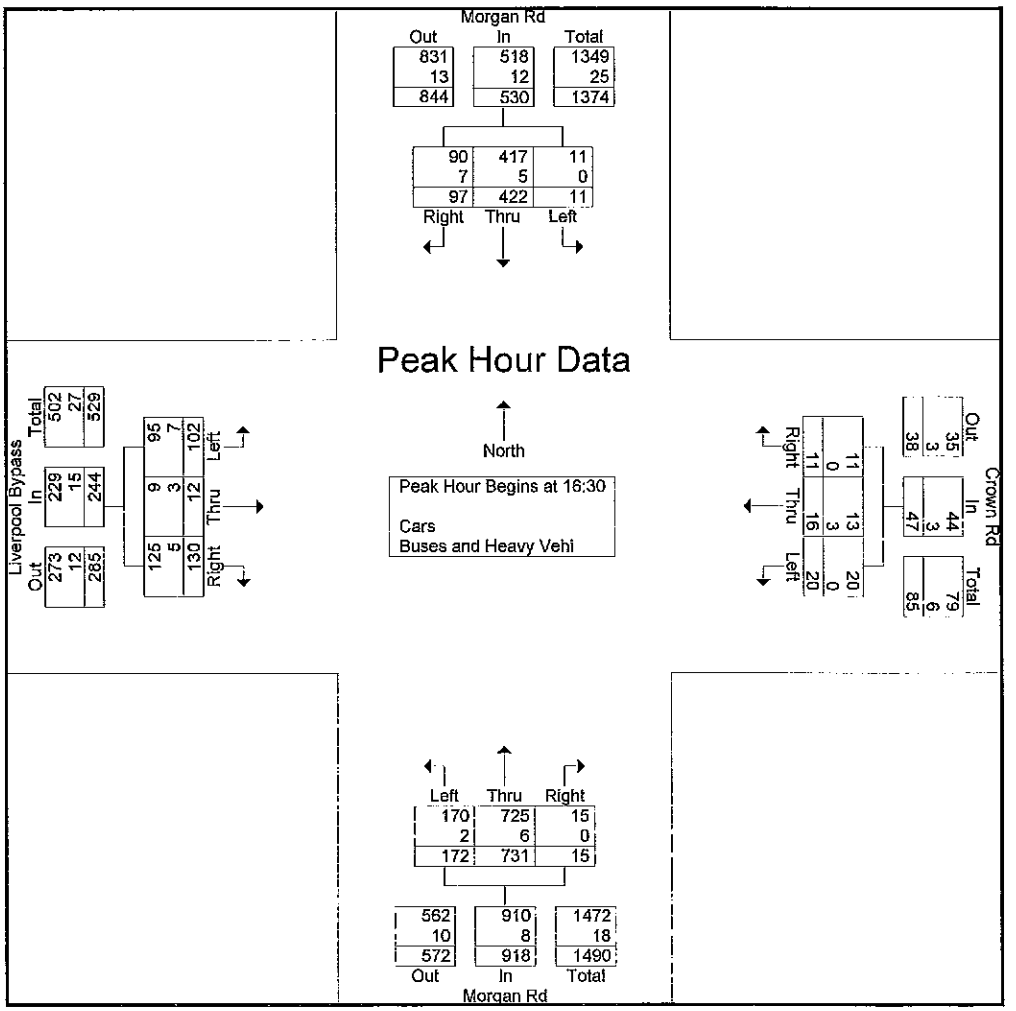
	Morgan Rd Southbound				Crown Rd Westbound				Morgan Rd Northbound				Liverpool Bypass Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	7	200	**33**	240	2	3	**1**	6	**18**	66	17	101	16	16	39	71	418
07:45	**31**	198	32	**261**	6	2	2	10	15	**75**	**50**	**140**	13	24	**64**	101	**512**
08:00	8	**207**	19	234	6	2	2	10	17	75	36	128	**28**	**30**	49	**107**	479
08:15	19	161	12	192	**12**	**11**	**7**	**30**	**23**	58	31	112	24	26	36	86	420
Total Volume	65	766	96	927	26	18	12	56	73	274	134	481	81	96	188	365	1829
% App. Total	7	82.6	10.4		46.4	32.1	21.4		15.2	57	27.9		22.2	26.3	51.5		
PHF	.524	.925	.727	.888	.542	.409	.429	.467	.793	.913	.670	.859	.723	.800	.734	.853	.893
Cars	61	746	81	888	21	11	10	42	67	258	127	452	68	81	185	334	1716
% Cars	93.8	97.4	84.4	95.8	80.8	61.1	83.3	75.0	91.8	94.2	94.8	94.0	84.0	84.4	98.4	91.5	93.8
Buses and Heavy Vehi	4	20	15	39	5	7	2	14	6	16	7	29	13	15	3	31	113
% Buses and Heavy Vehi	6.2	2.6	15.6	4.2	19.2	38.9	16.7	25.0	8.2	5.8	5.2	6.0	16.0	15.6	1.6	8.5	6.2



Town of Clay
Liverpool Bypass @ Morgan Rd
6/16/09
JR, KB

File Name : 6_16_09_LivByp_Morg_PM
Site Code : 00002222
Start Date : 6/16/2009
Page No : 2

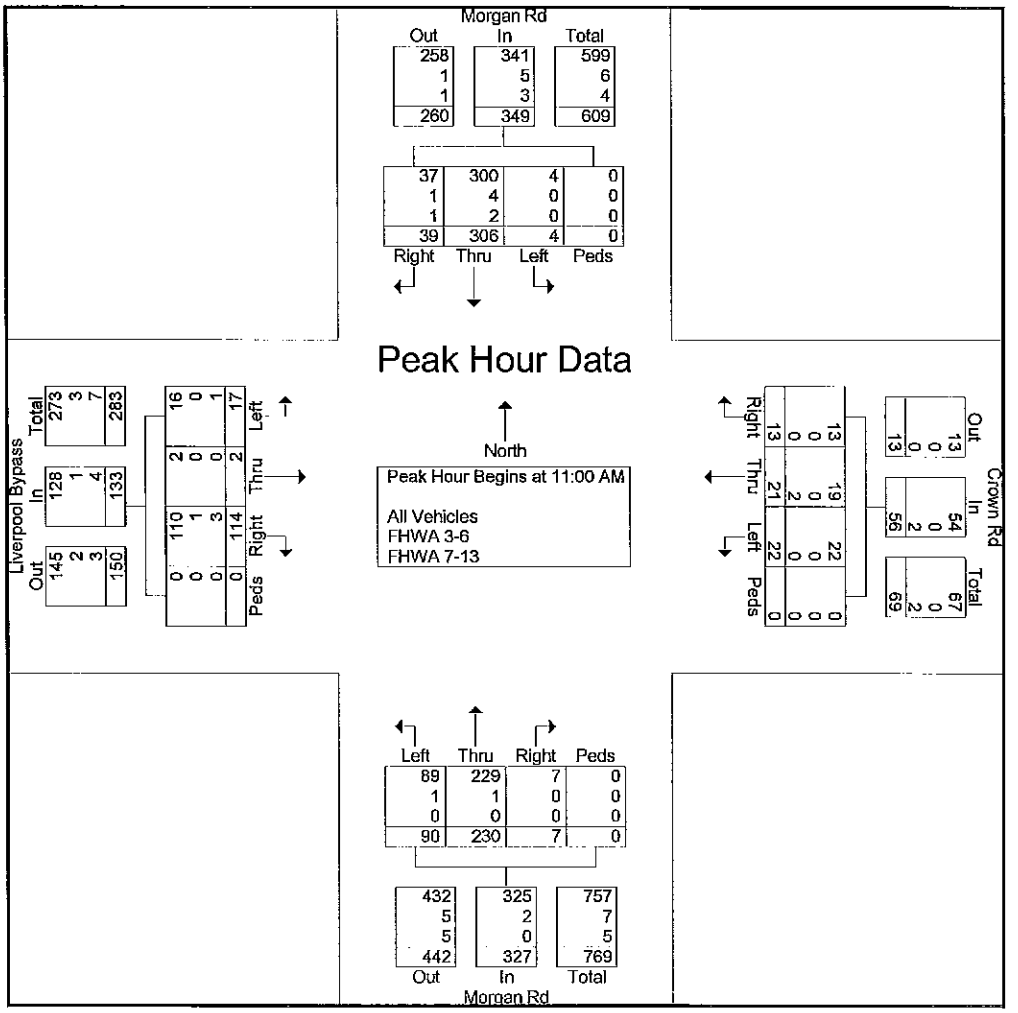
	Morgan Rd Southbound				Crown Rd Westbound				Morgan Rd Northbound				Liverpool Bypass Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	3	104	23	130	**6**	**6**	**8**	**20**	**50**	162	4	216	25	1	25	51	417
16:45	**1**	95	17	113	6	1	0	7	40	171	2	213	24	3	33	60	393
17:00	**1**	**116**	**31**	**148**	5	3	2	10	50	195	2	**247**	26	**4**	32	62	**467**
17:15	**6**	107	26	139	3	6	**1**	10	32	**203**	**7**	242	**27**	4	**40**	**71**	462
Total Volume	11	422	97	530	20	16	11	47	172	731	15	918	102	12	130	244	1739
% App. Total	2.1	79.6	18.3		42.6	34	23.4		18.7	79.6	1.6		41.8	4.9	53.3		
PHF	.458	.909	.782	.895	.833	.667	.344	.588	.860	.900	.536	.929	.944	.750	.813	.859	.931
Cars	11	417	90	518	20	13	11	44	170	725	15	910	95	9	125	229	1701
% Cars	100	98.8	92.8	97.7	100	81.3	100	93.6	98.8	99.2	100	99.1	93.1	75.0	96.2	93.9	97.8
Buses and Heavy Vehi	0	5	7	12	0	3	0	3	2	6	0	8	7	3	5	15	38
% Buses and Heavy Vehi	0	1.2	7.2	2.3	0	18.8	0	6.4	1.2	0.8	0	0.9	6.9	25.0	3.8	6.1	2.2



Lochner Engineering
181 Genesee St. Suite 300
Utica, NY. 13501
Phone: (315)-793-9500

File Name : LIVERP~1
Site Code : 78200011
Start Date : 1/16/2010
Page No : 2

	Morgan Rd Southbound					Crown Rd Westbound					Morgan Rd Northbound					Liverpool Bypass Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	2	71	6	0	79	10	8	4	0	22	18	52	2	0	72	7	1	26	0	34	207
11:15 AM	0	64	12	0	76	2	2	1	0	5	20	48	1	0	69	2	1	30	0	33	183
11:30 AM	0	79	14	0	93	4	5	4	0	13	29	59	3	0	91	2	0	26	0	28	225
11:45 AM	2	92	7	0	101	6	6	4	0	16	23	71	1	0	95	6	0	32	0	38	250
Total Volume	4	306	39	0	349	22	21	13	0	56	90	230	7	0	327	17	2	114	0	133	865
% App. Total	1.1	87.7	11.2	0		39.3	37.5	23.2	0		27.5	70.3	2.1	0		12.8	1.5	85.7	0		
PHF	.500	.832	.696	.000	.864	.550	.656	.813	.000	.636	.776	.810	.583	.000	.861	.607	.500	.891	.000	.875	.865
All Vehicles	4	300	37	0	341	22	19	13	0	54	89	229	7	0	325	16	2	110	0	128	848
% All Vehicles	100	98.0	94.9	0	97.7	100	90.5	100	0	96.4	98.9	99.6	100	0	99.4	94.1	100	96.5	0	96.2	98.0
FHWA 3-6	0	4	1	0	5	0	0	0	0	0	1	1	0	0	2	0	0	1	0	1	8
% FHWA 3-6	0	1.3	2.6	0	1.4	0	0	0	0	0	1.1	0.4	0	0	0.6	0	0	0.9	0	0.8	0.9
FHWA 7-13	0	2	1	0	3	0	2	0	0	2	0	0	0	0	0	1	0	3	0	4	9
% FHWA 7-13	0	0.7	2.6	0	0.9	0	9.5	0	0	3.6	0	0	0	0	0	5.9	0	2.6	0	3.0	1.0



INTERSECTION NAME: Morgan @ Liverpool Bypass
INTERSECTION NUMBER: 77

INSTALLATION DATE:
PROGRAM DATE:

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

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	6	20	6	6	6	20		
PASSAGE	4	3	6	4	4	3		
YELLOW	3	3	3	3	3	3		
RED	2	2	2	2	2	2		
MAX I	15	28	35	22	10	28		
MAX II	30	30	30	30	30	30		
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

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

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

INTERSECTION NAME: Morgan @ Liverpool Bypass
INTERSECTION NUMBER: 77

INSTALLATION DATE:
PROGRAM DATE:

OPTIMIZED TIMINGS

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

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	10	10		5	10	7	
PASSAGE	1	2.4	2.4		1	2.4	2.4	
YELLOW	3	3	3		3	3	3	
RED	2	2	2		2	2	2	
MAX I (AM)	10	30	35		10	30	35	
MAX II (PM)	10	43	22		10	43	22	
MAX III (Sat)	6	17	17		5	18	17	
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

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

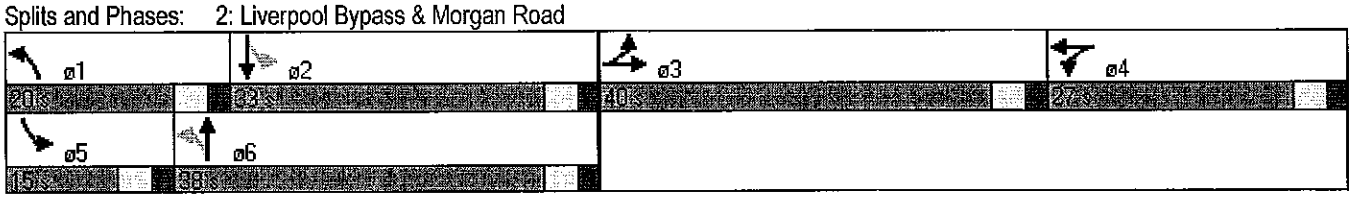
INHIBIT O/L	Overlaps							
	1	2	3	4	5	6	7	8
OLA	X				X			
OVERLAP B								
OVERLAP C								
OVERLAP D								

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations						
Volume (vph)	96	18	73	274	65	766
Turn Type			pm+pt		pm+pt	
Protected Phases	3	4	1	6	5	2
Permitted Phases			6		2	
Detector Phase	3	4	1		5	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	20.0	6.0	20.0
Minimum Split (s)	11.0	11.0	11.0	25.0	11.0	25.0
Total Split (s)	40.0	27.0	20.0	38.0	15.0	33.0
Total Split (%)	33.3%	22.5%	16.7%	31.7%	12.5%	27.5%
Maximum Green (s)	35.0	22.0	15.0	33.0	10.0	28.0
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)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	6.0	4.0	4.0	3.0	4.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	Max	None	Max
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 100.2
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Liverpool Bypass & Morgan Road

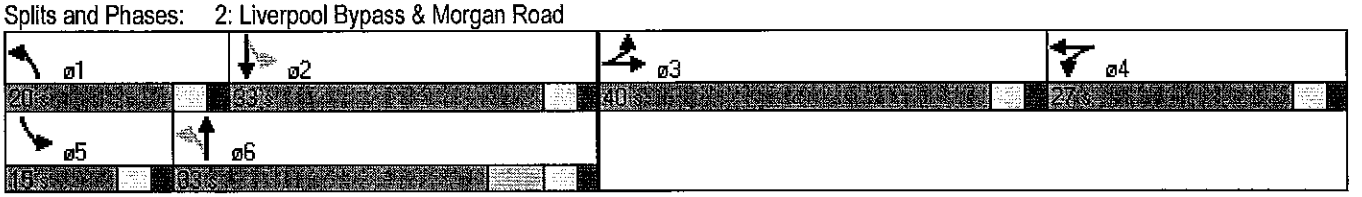


Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations						
Volume (vph)	12	13	172	731	11	422
Turn Type			pm+pt		pm+pt	
Protected Phases	3	4	1	6	5	2
Permitted Phases			6		2	
Detector Phase	3	4	1		5	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	20.0	6.0	20.0
Minimum Split (s)	11.0	11.0	11.0	25.0	11.0	25.0
Total Split (s)	40.0	27.0	20.0	33.0	15.0	33.0
Total Split (%)	33.3%	22.5%	16.7%	27.5%	12.5%	27.5%
Maximum Green (s)	35.0	22.0	15.0	28.0	10.0	28.0
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)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	6.0	4.0	4.0	3.0	4.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	Max	None	Max
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 82.9
Natural Cycle: 80
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Liverpool Bypass & Morgan Road

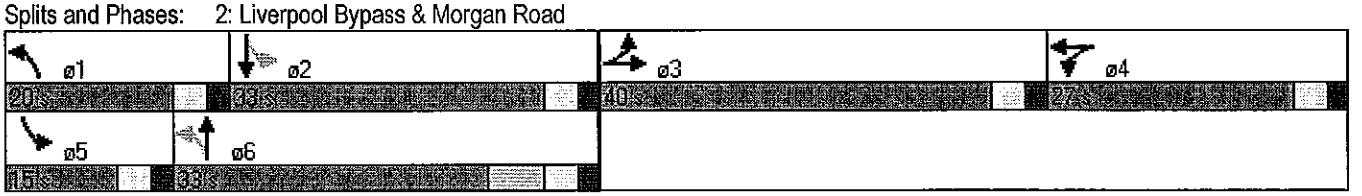


Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations						
Volume (vph)	2	21	90	230	4	306
Turn Type			pm+pt		pm+pt	
Protected Phases	3	4	1	6	5	2
Permitted Phases			6		2	
Detector Phase	3	4	1		5	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	20.0	6.0	20.0
Minimum Split (s)	11.0	11.0	11.0	25.0	11.0	25.0
Total Split (s)	40.0	27.0	20.0	33.0	15.0	33.0
Total Split (%)	33.3%	22.5%	16.7%	27.5%	12.5%	27.5%
Maximum Green (s)	35.0	22.0	15.0	28.0	10.0	28.0
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)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	6.0	4.0	4.0	3.0	4.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	Max	None	Max
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 66.7
Natural Cycle: 60
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Liverpool Bypass & Morgan Road

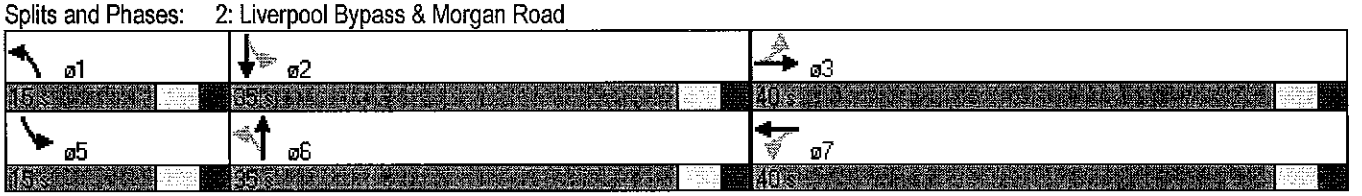


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	81	96	26	18	73	274	65	766
Turn Type	Perm		Perm		pm+pt		pm+pt	
Protected Phases		3		7	1	6	5	2
Permitted Phases	3		7		6		2	
Detector Phase	3	3	7	7	1	6	5	2
Switch Phase								
Minimum Initial (s)	10.0	10.0	7.0	7.0	5.0	10.0	5.0	10.0
Minimum Split (s)	15.0	15.0	12.0	12.0	10.0	15.0	10.0	15.0
Total Split (s)	40.0	40.0	40.0	40.0	15.0	35.0	15.0	35.0
Total Split (%)	44.4%	44.4%	44.4%	44.4%	16.7%	38.9%	16.7%	38.9%
Maximum Green (s)	35.0	35.0	35.0	35.0	10.0	30.0	10.0	30.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.5	3.5	3.5	3.5	1.0	3.5	1.0	3.5
Minimum Gap (s)	3.5	3.5	3.5	3.5	1.0	3.5	1.0	3.5
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	None	None	None	None	Min	None	Min
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 62.5
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

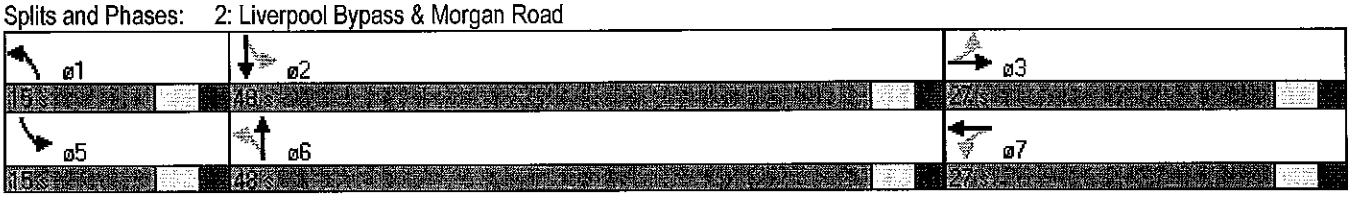
Splits and Phases: 2: Liverpool Bypass & Morgan Road



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	102	12	20	13	172	731	11	422
Turn Type	Perm		Perm		pm+pt		pm+pt	
Protected Phases		3		7	1	6	5	2
Permitted Phases	3		7		6		2	
Detector Phase	3	3	7	7	1	6	5	2
Switch Phase								
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	20.0	6.0	20.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	25.0	11.0	25.0
Total Split (s)	27.0	27.0	27.0	27.0	15.0	48.0	15.0	48.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	16.7%	53.3%	16.7%	53.3%
Maximum Green (s)	22.0	22.0	22.0	22.0	10.0	43.0	10.0	43.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.5	3.5	3.5	3.5	1.0	3.5	1.0	3.5
Minimum Gap (s)	3.5	3.5	3.5	3.5	1.0	3.5	1.0	3.5
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	None	None	None	None	Min	None	Min
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 61
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

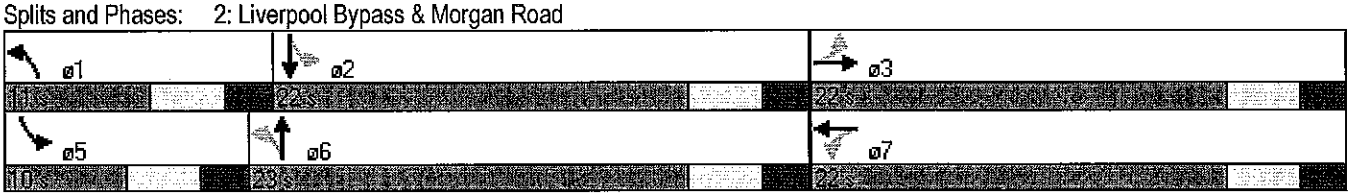
Splits and Phases: 2: Liverpool Bypass & Morgan Road



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	17	2	22	21	90	230	4	306
Turn Type	Perm		Perm		pm+pt		pm+pt	
Protected Phases		3		7	1	6	5	2
Permitted Phases	3		7		6		2	
Detector Phase	3	3	7	7	1	6	5	2
Switch Phase								
Minimum Initial (s)	10.0	10.0	7.0	7.0	5.0	10.0	5.0	10.0
Minimum Split (s)	15.0	15.0	12.0	12.0	10.0	15.0	10.0	15.0
Total Split (s)	22.0	22.0	22.0	22.0	11.0	23.0	10.0	22.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	20.0%	41.8%	18.2%	40.0%
Maximum Green (s)	17.0	17.0	17.0	17.0	6.0	18.0	5.0	17.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.5	3.5	3.5	3.5	1.0	3.5	1.0	3.5
Minimum Gap (s)	3.5	3.5	3.5	3.5	1.0	3.5	1.0	3.5
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	None	None	None	None	Min	None	Min
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 36.6
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Liverpool Bypass & Morgan Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	96	188	26	18	12	73	274	134	65	766	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	0.95	
Frpb, ped/bikes		1.00			1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.97		1.00	0.95		1.00	0.98	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1607			1442		1671	1698		1703	3398	
Flt Permitted		0.99			0.98		0.11	1.00		0.22	1.00	
Satd. Flow (perm)		1607			1442		200	1698		397	3398	
Peak-hour factor, PHF	0.85	0.85	0.85	0.47	0.47	0.47	0.86	0.86	0.86	0.89	0.89	0.89
Adj. Flow (vph)	95	113	221	55	38	26	85	319	156	73	861	108
RTOR Reduction (vph)	0	33	0	0	9	0	0	13	0	0	7	0
Lane Group Flow (vph)	0	396	0	0	110	0	85	462	0	73	962	0
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	16%	16%	2%	19%	39%	17%	8%	6%	5%	6%	3%	16%
Turn Type	Split			Split			pm+pt			pm+pt		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases							6			2		
Actuated Green, G (s)		28.6			11.3		41.9	34.1		40.3	33.3	
Effective Green, g (s)		29.6			12.3		43.9	35.1		42.3	34.3	
Actuated g/C Ratio		0.29			0.12		0.43	0.35		0.42	0.34	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		6.0			4.0		4.0	3.0		4.0	3.0	
Lane Grp Cap (vph)		471			176		215	590		270	1154	
v/s Ratio Prot		c0.25			c0.08		c0.03	0.27		0.02	c0.28	
v/s Ratio Perm							0.14			0.09		
v/c Ratio		0.84			0.63		0.40	0.78		0.27	0.83	
Uniform Delay, d1		33.5			42.2		20.1	29.5		19.7	30.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		14.6			7.7		1.6	10.0		0.7	7.1	
Delay (s)		48.1			49.8		21.7	39.5		20.5	37.8	
Level of Service		D			D		C	D		C	D	
Approach Delay (s)		48.1			49.8			36.8			36.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	39.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	12	130	20	13	11	172	731	15	11	422	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	0.95	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.97		1.00	1.00		1.00	0.97	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1625			1700		1787	1875		1805	3420	
Flt Permitted		0.98			0.98		0.31	1.00		0.14	1.00	
Satd. Flow (perm)		1625			1700		584	1875		264	3420	
Peak-hour factor, PHF	0.86	0.86	0.86	0.59	0.59	0.59	0.93	0.93	0.93	0.90	0.90	0.90
Adj. Flow (vph)	119	14	151	34	22	19	185	786	16	12	469	108
RTOR Reduction (vph)	0	39	0	0	12	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	245	0	0	63	0	185	802	0	12	564	0
Confl. Peds. (#/hr)							3					3
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	7%	25%	4%	0%	19%	0%	1%	1%	0%	0%	1%	7%
Turn Type	Split			Split			pm+pt			pm+pt		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases							6			2		
Actuated Green, G (s)		17.7			5.8		49.4	43.2		34.4	33.2	
Effective Green, g (s)		18.7			6.8		50.4	44.2		36.4	34.2	
Actuated g/C Ratio		0.21			0.08		0.57	0.50		0.41	0.39	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		6.0			4.0		4.0	3.0		4.0	3.0	
Lane Grp Cap (vph)		346			132		502	943		148	1331	
v/s Ratio Prot		c0.15			c0.04		c0.05	c0.43		0.00	0.16	
v/s Ratio Perm							0.16			0.03		
v/c Ratio		0.71			0.48		0.37	0.85		0.08	0.42	
Uniform Delay, d1		32.1			38.8		9.8	19.0		17.8	19.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		9.5			3.7		0.6	9.5		0.3	1.0	
Delay (s)		41.6			42.5		10.4	28.5		18.1	20.6	
Level of Service		D			D		B	C		B	C	
Approach Delay (s)		41.6			42.5			25.1			20.6	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	87.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	2	114	22	21	13	90	230	7	4	306	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	0.95	
Frt		0.88			0.97		1.00	1.00		1.00	0.98	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1615			1740		1787	1892		1805	3468	
Flt Permitted		0.99			0.98		0.44	1.00		0.59	1.00	
Satd. Flow (perm)		1615			1740		837	1892		1122	3468	
Peak-hour factor, PHF	0.88	0.88	0.88	0.64	0.64	0.64	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	19	2	130	34	33	20	105	267	8	5	356	45
RTOR Reduction (vph)	0	114	0	0	10	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	37	0	0	77	0	105	275	0	5	395	0
Heavy Vehicles (%)	6%	0%	3%	0%	10%	0%	1%	0%	0%	0%	2%	5%
Turn Type	Split			Split			pm+pt			pm+pt		
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases							6			2		
Actuated Green, G (s)		7.6			5.5		43.7	37.5		33.4	32.2	
Effective Green, g (s)		8.6			6.5		44.7	38.5		35.4	33.2	
Actuated g/C Ratio		0.12			0.09		0.62	0.54		0.49	0.46	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		6.0			4.0		4.0	3.0		4.0	3.0	
Lane Grp Cap (vph)		193			158		620	1015		574	1604	
v/s Ratio Prot		c0.02			c0.04		c0.02	c0.15		0.00	0.11	
v/s Ratio Perm							0.09			0.00		
v/c Ratio		0.19			0.49		0.17	0.27		0.01	0.25	
Uniform Delay, d1		28.5			31.1		5.6	9.0		9.3	11.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.3			3.2		0.2	0.7		0.0	0.4	
Delay (s)		29.8			34.3		5.8	9.7		9.3	12.1	
Level of Service		C			C		A	A		A	B	
Approach Delay (s)		29.8			34.3			8.6			12.0	
Approach LOS		C			C			A			B	

Intersection Summary				
HCM Average Control Delay	15.3	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.27			
Actuated Cycle Length (s)	71.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	40.2%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	96	188	26	18	12	73	274	134	65	766	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	0.95	
Frpb, ped/bikes		1.00			1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.97		1.00	0.95		1.00	0.98	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1607			1442		1671	1698		1703	3398	
Flt Permitted		0.90			0.74		0.17	1.00		0.28	1.00	
Satd. Flow (perm)		1466			1085		306	1698		497	3398	
Peak-hour factor, PHF	0.85	0.85	0.85	0.47	0.47	0.47	0.86	0.86	0.86	0.89	0.89	0.89
Adj. Flow (vph)	95	113	221	55	38	26	85	319	156	73	861	108
RTOR Reduction (vph)	0	46	0	0	12	0	0	19	0	0	10	0
Lane Group Flow (vph)	0	383	0	0	107	0	85	456	0	73	959	0
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	16%	16%	2%	19%	39%	17%	8%	6%	5%	6%	3%	16%
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		3			7		1	6		5	2	
Permitted Phases	3			7			6			2		
Actuated Green, G (s)		21.1			21.1		26.3	22.0		26.1	21.9	
Effective Green, g (s)		22.1			22.1		28.3	23.0		28.1	22.9	
Actuated g/C Ratio		0.35			0.35		0.45	0.37		0.45	0.37	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.5			3.5		1.0	3.5		1.0	3.5	
Lane Grp Cap (vph)		520			385		255	627		325	1249	
v/s Ratio Prot							c0.03	0.27		0.02	c0.28	
v/s Ratio Perm		c0.26			0.10		0.12			0.08		
v/c Ratio		0.74			0.28		0.33	0.73		0.22	0.77	
Uniform Delay, d1		17.6			14.4		11.0	16.9		10.7	17.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.6			0.5		0.3	4.3		0.1	3.0	
Delay (s)		23.1			14.9		11.3	21.3		10.8	20.3	
Level of Service		C			B		B	C		B	C	
Approach Delay (s)		23.1			14.9			19.8			19.7	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	12	130	20	13	11	172	731	15	11	422	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	0.95	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.97		1.00	1.00		1.00	0.97	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1625			1700		1787	1875		1805	3420	
Flt Permitted		0.85			0.78		0.34	1.00		0.21	1.00	
Satd. Flow (perm)		1417			1350		648	1875		405	3420	
Peak-hour factor, PHF	0.86	0.86	0.86	0.59	0.59	0.59	0.93	0.93	0.93	0.90	0.90	0.90
Adj. Flow (vph)	119	14	151	34	22	19	185	786	16	12	469	108
RTOR Reduction (vph)	0	47	0	0	14	0	0	1	0	0	23	0
Lane Group Flow (vph)	0	237	0	0	61	0	185	801	0	12	554	0
Confl. Peds. (#/hr)							3					3
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	7%	25%	4%	0%	19%	0%	1%	1%	0%	0%	1%	7%
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		3			7		1	6		5	2	
Permitted Phases	3			7			6			2		
Actuated Green, G (s)		13.5			13.5		41.4	35.5		30.0	29.1	
Effective Green, g (s)		14.5			14.5		42.4	36.5		32.0	30.1	
Actuated g/C Ratio		0.22			0.22		0.65	0.56		0.49	0.46	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.5			3.5		1.0	3.5		1.0	3.5	
Lane Grp Cap (vph)		317			302		569	1055		241	1586	
v/s Ratio Prot							c0.04	c0.43		0.00	0.16	
v/s Ratio Perm		c0.17			0.05		0.17			0.02		
v/c Ratio		0.75			0.20		0.33	0.76		0.05	0.35	
Uniform Delay, d1		23.5			20.5		4.8	10.8		9.6	11.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		9.5			0.4		0.1	3.3		0.0	0.2	
Delay (s)		33.0			20.9		5.0	14.1		9.6	11.3	
Level of Service		C			C		A	B		A	B	
Approach Delay (s)		33.0			20.9			12.4			11.3	
Approach LOS		C			C			B			B	

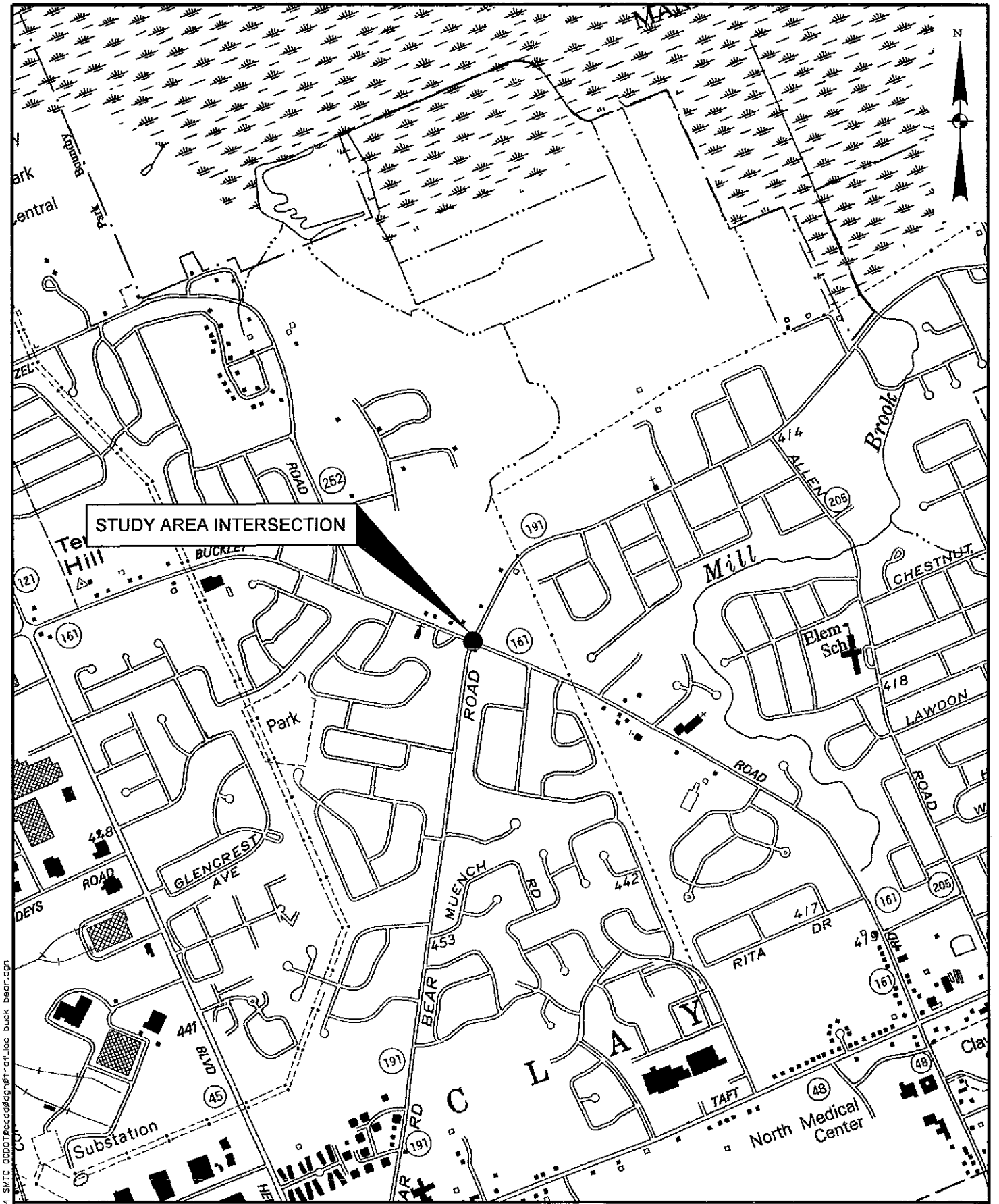
Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	2	114	22	21	13	90	230	7	4	306	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	0.95	
Frt		0.88			0.97		1.00	1.00		1.00	0.98	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1615			1740		1787	1892		1805	3468	
Flt Permitted		0.95			0.87		0.46	1.00		0.59	1.00	
Satd. Flow (perm)		1545			1550		868	1892		1122	3468	
Peak-hour factor, PHF	0.88	0.88	0.88	0.64	0.64	0.64	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	19	2	130	34	33	20	105	267	8	5	356	45
RTOR Reduction (vph)	0	103	0	0	16	0	0	2	0	0	15	0
Lane Group Flow (vph)	0	48	0	0	71	0	105	273	0	5	386	0
Heavy Vehicles (%)	6%	0%	3%	0%	10%	0%	1%	0%	0%	0%	2%	5%
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		3			7		1	6		5	2	
Permitted Phases	3			7			6			2		
Actuated Green, G (s)		7.8			7.8		20.9	18.0		16.9	16.0	
Effective Green, g (s)		8.8			8.8		22.9	19.0		18.9	17.0	
Actuated g/C Ratio		0.21			0.21		0.55	0.46		0.45	0.41	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.5			3.5		1.0	3.5		1.0	3.5	
Lane Grp Cap (vph)		326			327		563	862		540	1414	
v/s Ratio Prot							c0.02	c0.14		0.00	0.11	
v/s Ratio Perm		0.03			c0.05		0.09			0.00		
v/c Ratio		0.15			0.22		0.19	0.32		0.01	0.27	
Uniform Delay, d1		13.4			13.6		4.6	7.2		6.3	8.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			0.4		0.1	0.3		0.0	0.1	
Delay (s)		13.6			14.0		4.6	7.5		6.3	8.4	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		13.6			14.0			6.7			8.3	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM Average Control Delay	9.0	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.29			
Actuated Cycle Length (s)	41.7	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	35.2%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group



LOCATION MAP
BUCKLEY RD/BEAR RD

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

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

daoran
F:\Projects\2009\09-094 SMTC OCDOT\acad\dgn\traf_loc buck bear.dgn

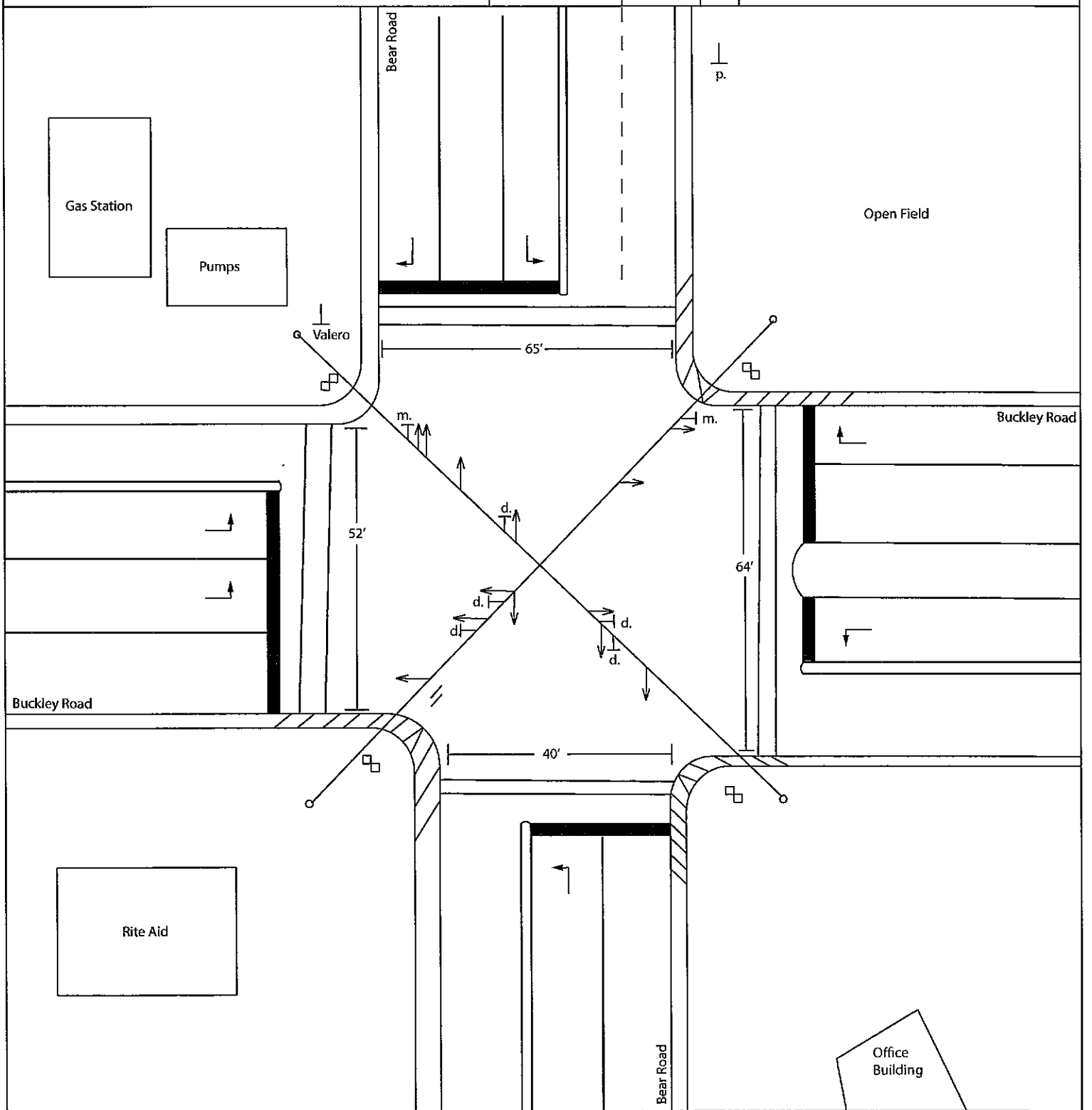
INTERSECTION DIAGRAM

Location: Buckley Road at Bear Road

Drawn By: AI | 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.

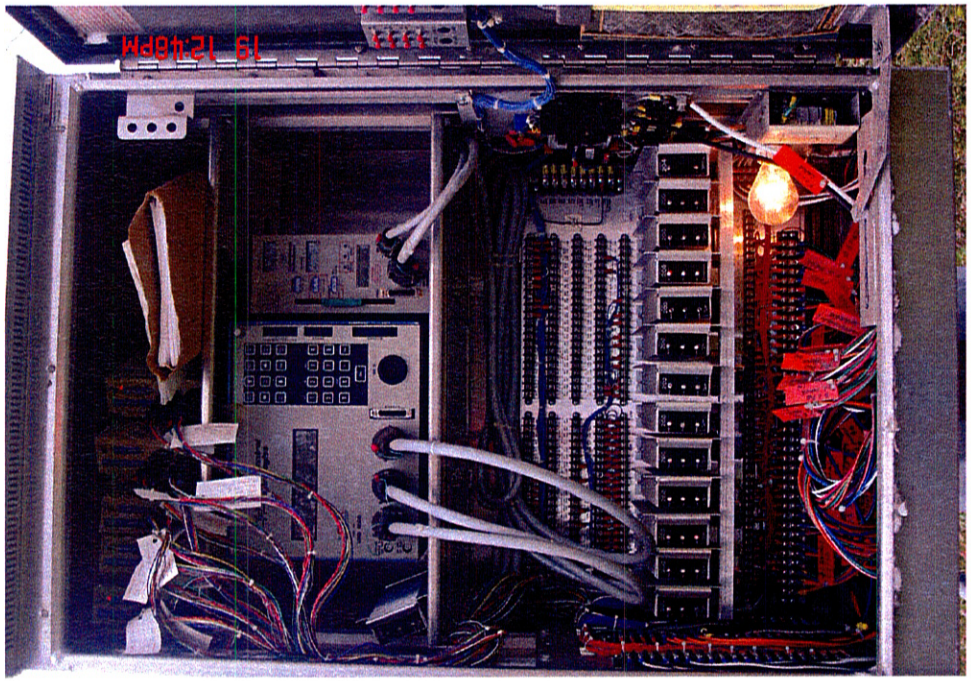


Task

OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

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




RITE AID
19 12:52PM


VALERO
ONLY
19 12:49PM

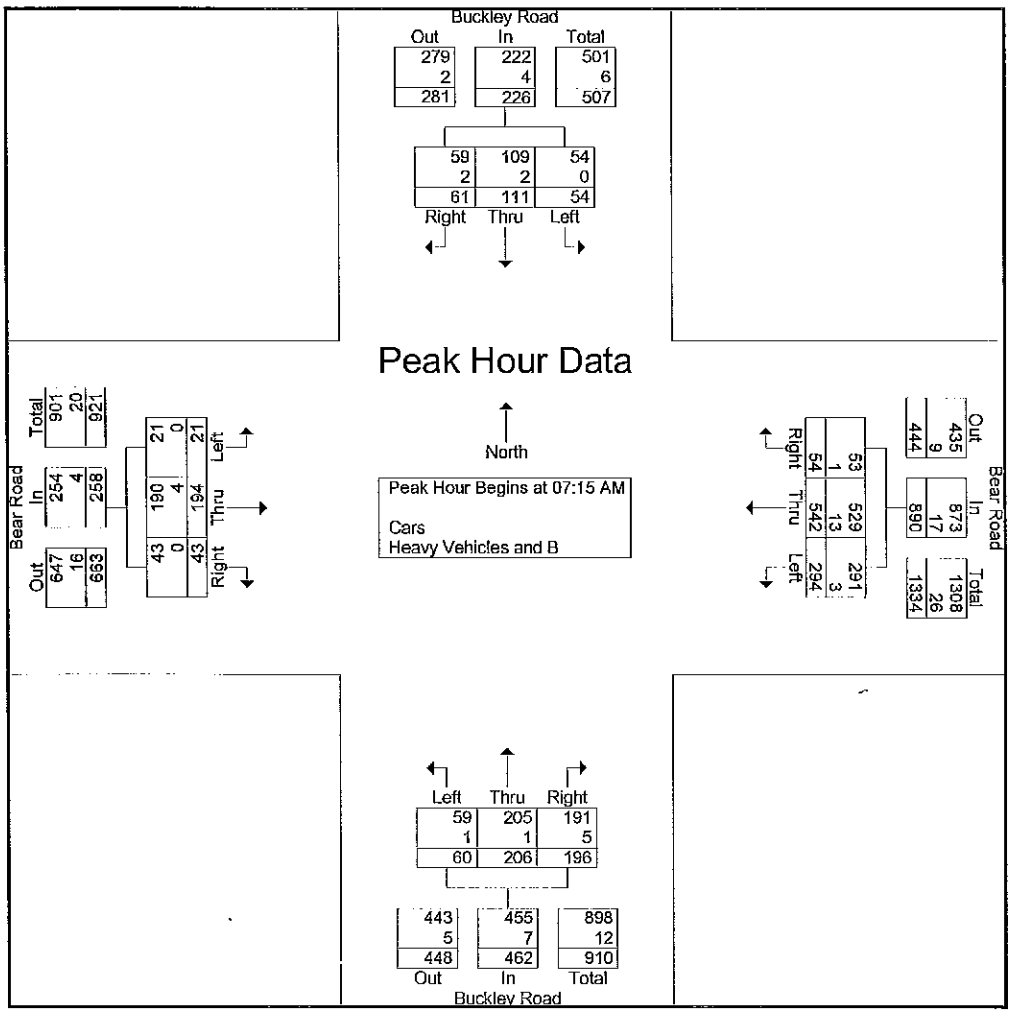

VALERO
ONLY
19 12:50PM

19 12:53PM
VALERO

Town of Clay, Onondaga Co.
Buckley Rd @ Bear Rd
6_9_09
JR and KB

File Name : 6_9_09_Buckley_Bear_AM
Site Code : 00043215
Start Date : 6/9/2009
Page No : 2

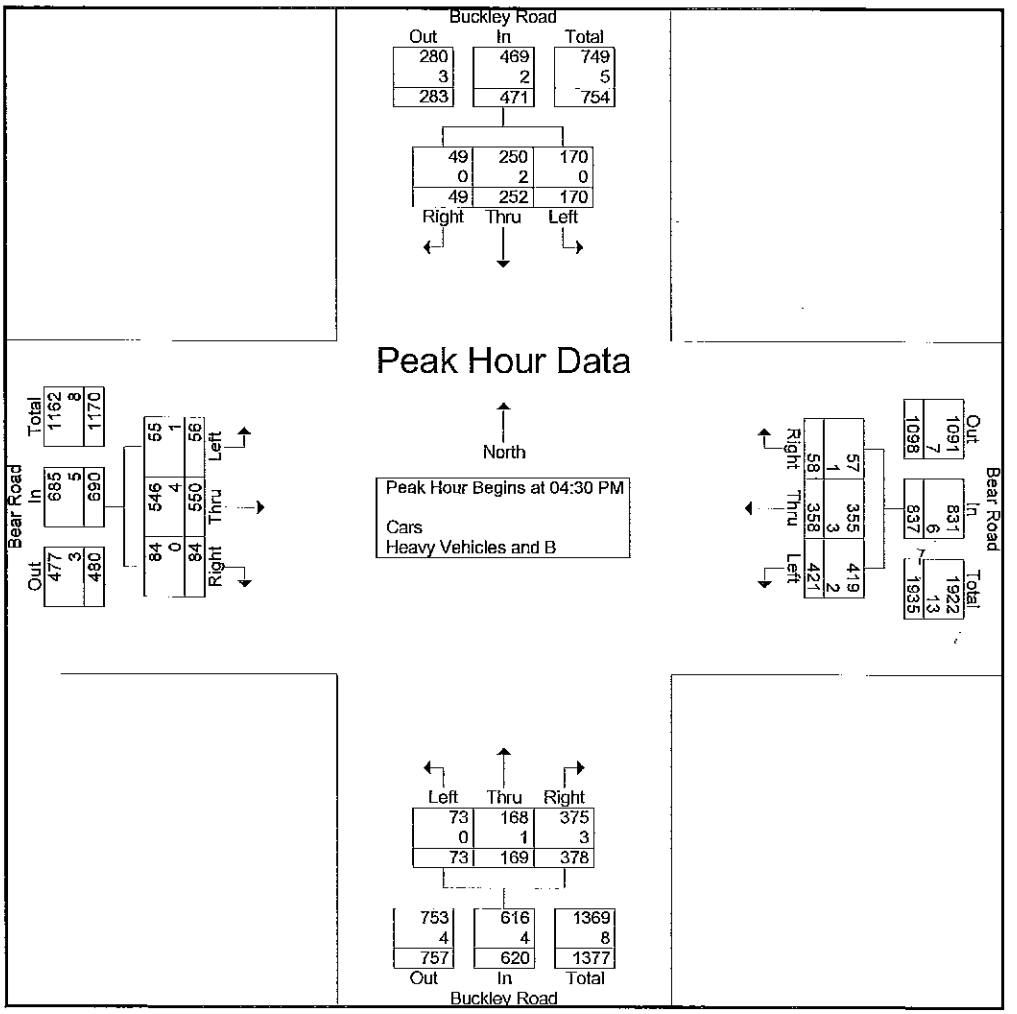
	Buckley Road Southbound				Bear Road Westbound				Buckley Road Northbound				Bear Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**20**	**39**	**11**	70	70	107	10	187	10	59	39	108	**8**	49	**15**	**72**	437
07:30 AM	12	28	21	61	69	**159**	14	**242**	15	46	60	121	3	46	6	55	479
07:45 AM	15	29	**23**	67	74	148	**20**	242	**25**	**71**	**71**	**167**	5	46	9	60	**536**
08:00 AM	7	15	6	28	**81**	128	10	219	10	30	26	66	5	**53**	13	71	384
Total Volume	54	111	61	226	294	542	54	890	60	206	196	462	21	194	43	258	1836
% App. Total	23.9	49.1	27		33	60.9	6.1		13	44.6	42.4		8.1	75.2	16.7		
PHF	.675	.712	.663	.807	.907	.852	.675	.919	.600	.725	.690	.692	.656	.915	.717	.896	.856
Cars	54	109	59	222	291	529	53	873	59	205	191	455	21	190	43	254	1804
% Cars	100	98.2	96.7	98.2	99.0	97.6	98.1	98.1	98.3	99.5	97.4	98.5	100	97.9	100	98.4	98.3
Heavy Vehicles and B	0	2	2	4	3	13	1	17	1	1	5	7	0	4	0	4	32
% Heavy Vehicles and B	0	1.8	3.3	1.8	1.0	2.4	1.9	1.9	1.7	0.5	2.6	1.5	0	2.1	0	1.6	1.7



Town of Clay, Onondaga Co.
Bu Rd @ Bear Rd
6_9_09
JR and KB

File Name : 6_9_09_Buckley_Bear_PM
Site Code : 00043215
Start Date : 6/9/2009
Page No : 2

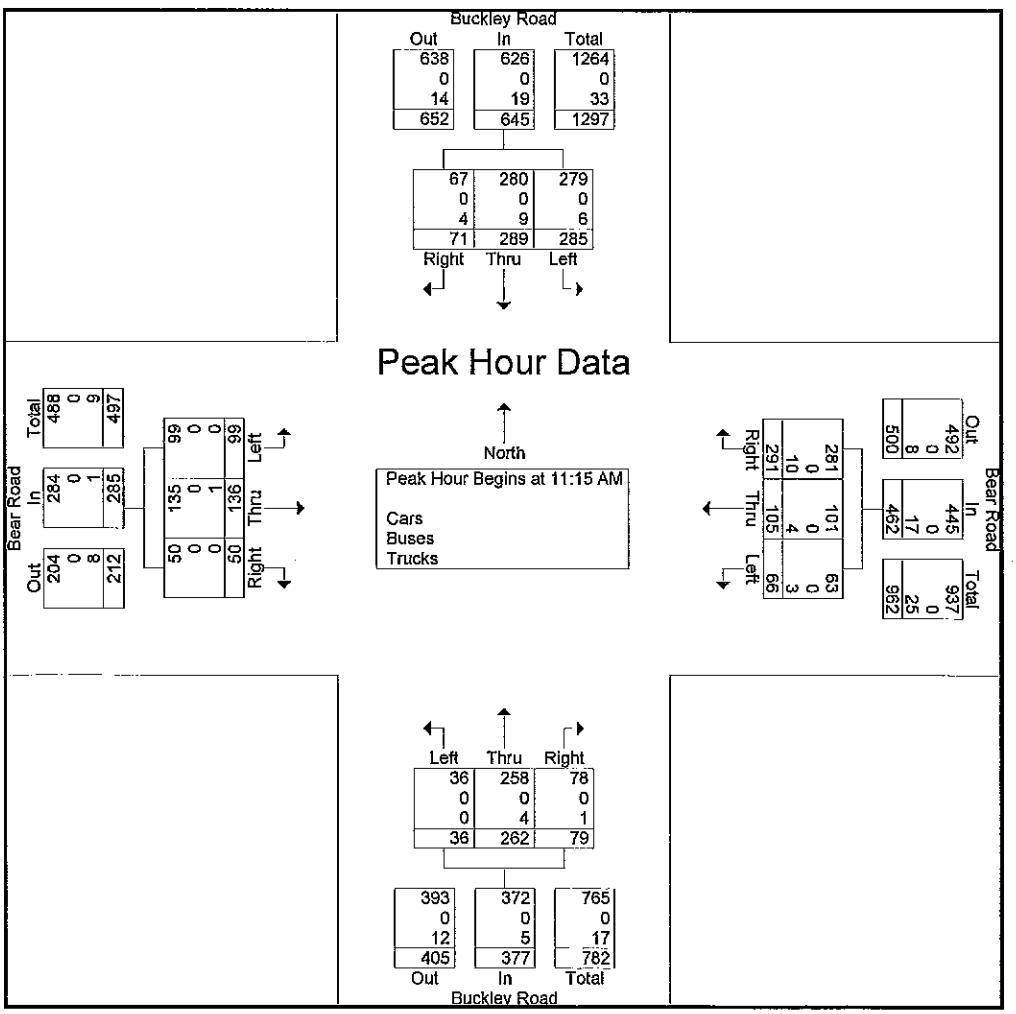
	Buckley Road Southbound				Bear Road Westbound				Buckley Road Northbound				Bear Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	43	56	9	108	109	90	15	214	16	48	104	168	19	122	14	155	645
04:45 PM	47	71	12	130	82	90	11	183	22	39	80	141	11	147	17	175	629
05:00 PM	44	78	20	142	130	85	15	230	28	35	92	155	14	145	18	177	704
05:15 PM	36	47	8	91	100	93	17	210	7	47	102	156	12	136	35	183	640
Total Volume	170	252	49	471	421	358	58	837	73	169	378	620	56	550	84	690	2618
% App. Total	36.1	53.5	10.4		50.3	42.8	6.9		11.8	27.3	61		8.1	79.7	12.2		
PHF	.904	.808	.613	.829	.810	.962	.853	.910	.652	.880	.909	.923	.737	.935	.600	.943	.930
Cars	170	250	49	469	419	355	57	831	73	168	375	616	55	546	84	685	2601
% Cars	100	99.2	100	99.6	99.5	99.2	98.3	99.3	100	99.4	99.2	99.4	98.2	99.3	100	99.3	99.4
Heavy Vehicles and B	0	2	0	2	2	3	1	6	0	1	3	4	1	4	0	5	17
% Heavy Vehicles and B	0	0.8	0	0.4	0.5	0.8	1.7	0.7	0	0.6	0.8	0.6	1.8	0.7	0	0.7	0.6



Fisher Associates P.E., L.S., P.C.
135 Calkins Road
Rochester, NY 14623
Phone: (585) 334-1310

File Name : Buckley & Bear - Sat
Site Code : 00022222
Start Date : 11/21/2009
Page No : 2

	Buckley Road Southbound				Bear Road Westbound				Buckley Road Northbound				Bear Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:15 AM to 12:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:15 AM																	
11:15 AM	16	71	63	150	73	27	15	115	**24**	62	5	91	12	38	30	80	436
11:30 AM	19	73	73	165	**81**	22	**20**	**123**	19	**72**	8	99	11	21	20	52	439
11:45 AM	**20**	**75**	73	**168**	77	27	16	120	16	70	**15**	**101**	12	31	18	61	**450**
12:00 PM	16	70	**76**	162	60	**29**	15	104	20	58	8	86	**15**	**46**	**31**	**92**	444
Total Volume	71	289	285	645	291	105	66	462	79	262	36	377	50	136	99	285	1769
% App. Total	11	44.8	44.2		63	22.7	14.3		21	69.5	9.5		17.5	47.7	34.7		
PHF	.888	.963	.938	.960	.898	.905	.825	.939	.823	.910	.600	.933	.833	.739	.798	.774	.983
Cars	67	280	279	626	281	101	63	445	78	258	36	372	50	135	99	284	1727
% Cars	94.4	96.9	97.9	97.1	96.6	96.2	95.5	96.3	98.7	98.5	100	98.7	100	99.3	100	99.6	97.6
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	4	9	6	19	10	4	3	17	1	4	0	5	0	1	0	1	42
% Trucks	5.6	3.1	2.1	2.9	3.4	3.8	4.5	3.7	1.3	1.5	0	1.3	0	0.7	0	0.4	2.4



D256880

FED. ROAD REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
	N.Y.		93	70

BUCKLEY ROAD AT BEAR ROAD
INTERSECTION IMPROVEMENTS
ONONDAGA COUNTY

PHASING DIAGRAM

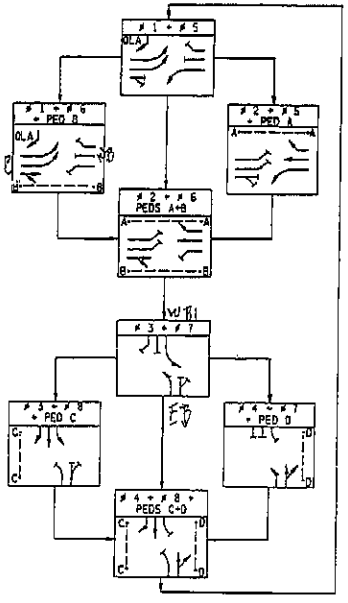


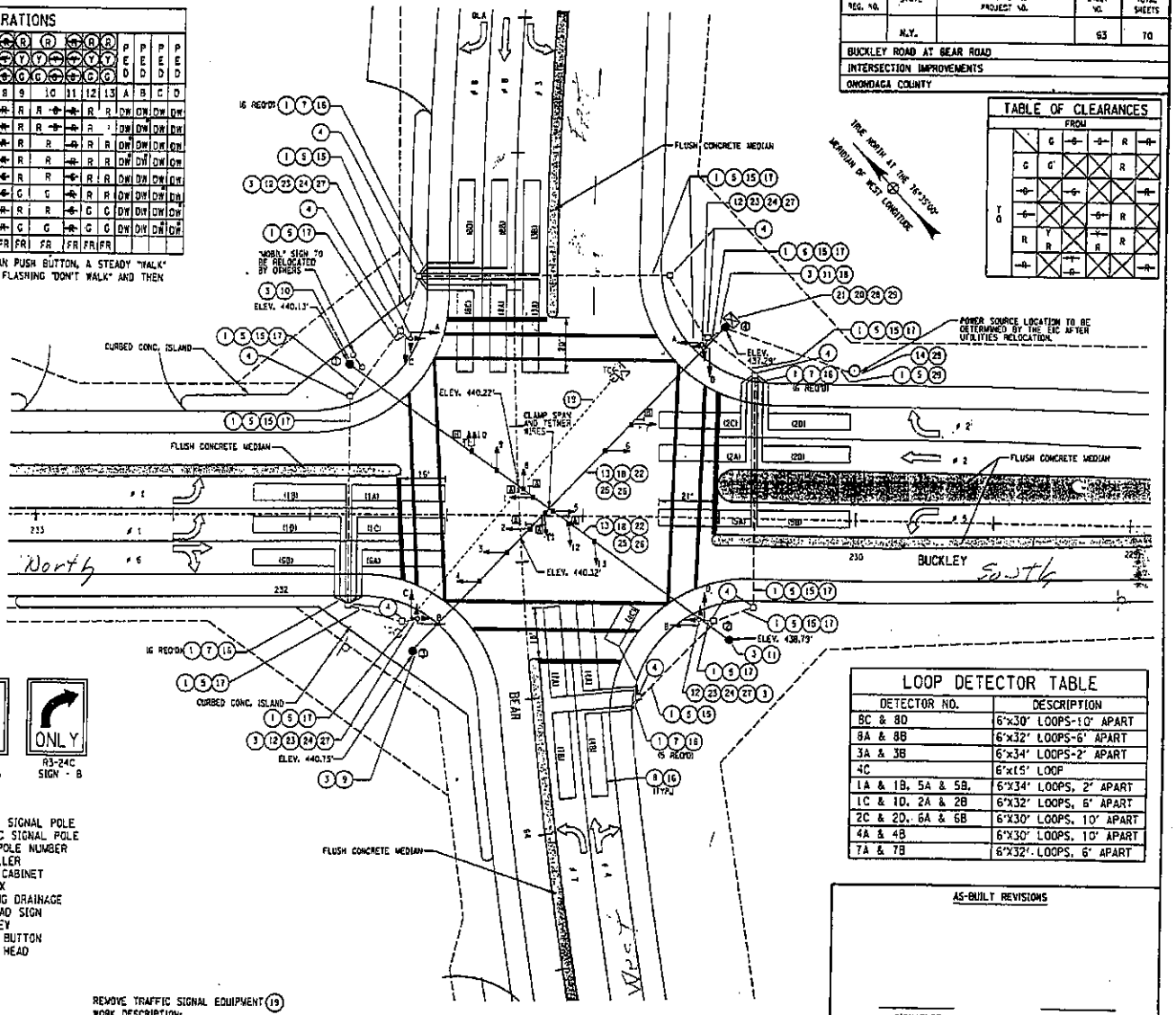
TABLE OF OPERATIONS

FACE / PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	A	B	C	D
ø1 & ø5	←	←	R	R	←	R	R	←	R	R	←	R	R	DW	DW	DW	DW
ø1 & ø6	←	←	G	G	←	R	R	←	R	R	←	A	*	DW	DW	DW	DW
ø2 & ø5	←	←	R	R	←	G	G	←	R	R	←	R	R	DW	DW	DW	DW
ø2 & ø6	←	←	G	G	←	G	G	←	R	R	←	R	R	DW	DW	DW	DW
ø3 & ø7	←	←	R	R	←	R	R	←	R	R	←	R	R	DW	DW	DW	DW
ø3 & ø8	←	←	R	R	←	R	R	←	G	G	←	R	R	DW	DW	DW	DW
ø4 & ø7	←	←	R	R	←	R	R	←	R	R	←	C	C	DW	DW	DW	DW
ø4 & ø8	←	←	R	R	←	R	R	←	G	G	←	C	C	DW	DW	DW	DW
FLASHER	X	X	FR	FR	X	FR	FR	FR	FR	FR	FR	FR	FR				

* UPON ACTUATION OF A PEDESTRIAN PUSH BUTTON, A STEADY "WALK" WILL BE DISPLAYED FOLLOWED BY A FLASHING "DON'T WALK" AND THEN A STEADY "DON'T WALK".

TABLE OF CLEARANCES

FROM / TO	G	Y	R
G	G		R
Y		Y	R
R			R

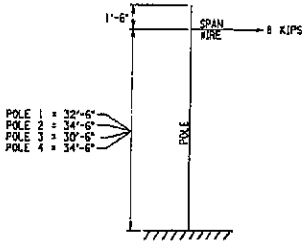


R3-22C SIGN - A

R3-24C SIGN - B

LOOP DETECTOR TABLE

DETECTOR NO.	DESCRIPTION
8C & 8D	6'x30' LOOPS-10' APART
8A & 8B	6'x32' LOOPS-6' APART
3A & 3B	6'x34' LOOPS-2' APART
4C	6'x15' LOOP
1A & 1B, 5A & 5B,	6'X34' LOOPS, 2' APART
1C & 1D, 2A & 2B	6'X32' LOOPS, 6' APART
2C & 2D, 6A & 6B	6'X30' LOOPS, 10' APART
4A & 4B	6'X30' LOOPS, 10' APART
7A & 7B	6'X32'. LOOPS, 6' APART



FOOTING MOMENT

N.T.S.

POLE 1 = 260 FT-KIPS
POLE 2 = 276 FT-KIPS
POLE 3 = 244 FT-KIPS
POLE 4 = 276 FT-KIPS

LEGEND

C	EXISTING TRAFFIC SIGNAL POLE
●	PROPOSED TRAFFIC SIGNAL POLE
⑧	TRAFFIC SIGNAL POLE NUMBER
	EXISTING CONTROLLER
	NEW CONTROLLER CABINET
	PROPOSED PULLBOX
	PULLBOX REQUIRING DRAINAGE
	PROPOSED OVERHEAD SIGN
	OVERHEAD SIGN KEY
	PEDESTRIAN PUSH BUTTON
	PROPOSED SIGNAL HEAD
⑧	ITEM KEY NUMBER
ø	SIGNAL PHASE
R	RED SIGNAL
Y	YELLOW SIGNAL
G	GREEN SIGNAL
FR	FLASHING RED SIGNAL
DW	DON'T WALK SIGNAL
◇	PROPOSED POWER SOURCE

NOTE: * SEE STRIPING PLAN DRAWINGS FOR LOCATION OF STOP LINES AND PEDESTRIAN CROSSWALK LINES.

REMOVE TRAFFIC SIGNAL EQUIPMENT (19)
WORK DESCRIPTION:
THE CONTRACTOR SHALL REMOVE ALL TRAFFIC SIGNAL EQUIPMENT. EQUIPMENT TO BE STORED ON-SITE FOR PICKUP BY THE ONONDAGA COUNTY DEPARTMENT OF TRANSPORTATION TRAFFIC SIGNAL CREW.

0 20 40 60 FT
SCALE

AS-BUILT REVISIONS

SIGNATURE DATE

TRAFFIC SIGNAL PLAN

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

CLARK PATTERSON ASSOCIATES
100 North Tryon Street
Syracuse, New York 13204

DRAWING NO.	SCALE	DATE	REGION
SP-01	1"=20'	12/22/95	3 SYRACUSE

INTERSECTION NAME: Buckley @ Bear
INTERSECTION NUMBER: 31

INSTALLATION DATE:
PROGRAM DATE:

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

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	4.5	15	4.5	7	4.5	15	4.5	7
PASSAGE	3	3	3	3	3	3	3	3
YELLOW	4	4	4	4	4	4	4	4
RED	2	2	2	2	2	2	2	2
MAX I	17	40	15	30	17	30	15	30
MAX II								
WALK								
PED CLEAR		15		15		15		15
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

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

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

INTERSECTION NAME: Buckley @ Bear
INTERSECTION NUMBER: 31

INSTALLATION DATE:
PROGRAM DATE:

OPTIMIZED TIMINGS

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

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	10	5	10	5	10	5	10
PASSAGE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
YELLOW	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
RED	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
MAX I (AM)	9	20	17	20	9	20	9	28
MAX II (PM)	9	20	29	38	5	24	13	54
MAX III (Sat)	11	22	9	24	9	24	13	20
WALK								
PED CLEAR		15		15		15		15
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

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

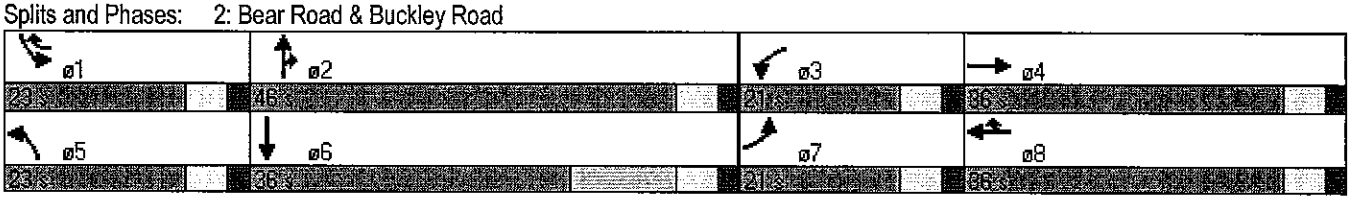
INHIBIT O/L	PED Overlaps							
	1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	21	194	294	542	54	60	206	196	54	111
Turn Type	Prot		Prot		pt+ov	Prot		Prot	Prot	
Protected Phases	7	4	3	8	8 1	5	2	2	1	6
Permitted Phases										
Detector Phase	7	4	3	8	8 1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	4.5	7.0	4.5	7.0		4.5	15.0	15.0	4.5	15.0
Minimum Split (s)	10.5	26.0	10.5	26.0		10.5	26.0	26.0	10.5	26.0
Total Split (s)	21.0	36.0	21.0	36.0	59.0	23.0	46.0	46.0	23.0	36.0
Total Split (%)	16.7%	28.6%	16.7%	28.6%	46.8%	18.3%	36.5%	36.5%	18.3%	28.6%
Maximum Green (s)	15.0	30.0	15.0	30.0		17.0	40.0	40.0	17.0	30.0
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None		None	Max	Max	None	Max
Walk Time (s)		5.0		5.0			5.0	5.0		5.0
Flash Dont Walk (s)		15.0		15.0			15.0	15.0		15.0
Pedestrian Calls (#/hr)		0		0			0	0		0

Intersection Summary

Cycle Length: 126
Actuated Cycle Length: 104.5
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Bear Road & Buckley Road

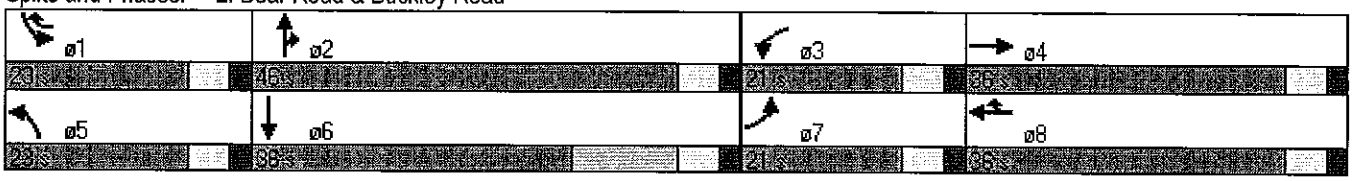


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	56	550	421	358	58	73	169	378	170	252
Turn Type	Prot		Prot		pt+ov	Prot		Prot	Prot	
Protected Phases	7	4	3	8	8 1	5	2	2	1	6
Permitted Phases										
Detector Phase	7	4	3	8	8 1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	4.5	7.0	4.5	7.0		4.5	15.0	15.0	4.5	15.0
Minimum Split (s)	10.5	26.0	10.5	26.0		10.5	26.0	26.0	10.5	26.0
Total Split (s)	21.0	36.0	21.0	36.0	59.0	23.0	46.0	46.0	23.0	36.0
Total Split (%)	16.7%	28.6%	16.7%	28.6%	46.8%	18.3%	36.5%	36.5%	18.3%	28.6%
Maximum Green (s)	15.0	30.0	15.0	30.0		17.0	40.0	40.0	17.0	30.0
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None		None	Max	Max	None	Max
Walk Time (s)		5.0		5.0			5.0	5.0		5.0
Flash Dont Walk (s)		15.0		15.0			15.0	15.0		15.0
Pedestrian Calls (#/hr)		0		0			0	0		0

Intersection Summary

Cycle Length: 126
Actuated Cycle Length: 121.4
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Bear Road & Buckley Road

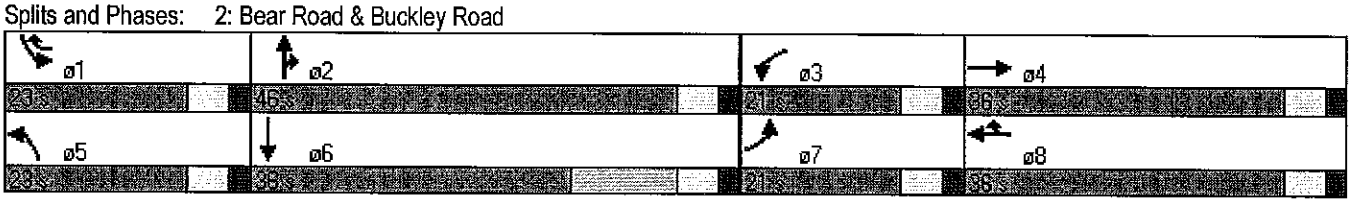


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	99	136	66	105	291	36	262	79	285	289
Turn Type	Prot		Prot		pt+ov	Prot		Prot	Prot	
Protected Phases	7	4	3	8	8 1	5	2	2	1	6
Permitted Phases										
Detector Phase	7	4	3	8	8 1	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	4.5	7.0	4.5	7.0		4.5	15.0	15.0	4.5	15.0
Minimum Split (s)	10.5	26.0	10.5	26.0		10.5	26.0	26.0	10.5	26.0
Total Split (s)	21.0	36.0	21.0	36.0	59.0	23.0	46.0	46.0	23.0	36.0
Total Split (%)	16.7%	28.6%	16.7%	28.6%	46.8%	18.3%	36.5%	36.5%	18.3%	28.6%
Maximum Green (s)	15.0	30.0	15.0	30.0		17.0	40.0	40.0	17.0	30.0
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None		None	Max	Max	None	Max
Walk Time (s)		5.0		5.0			5.0	5.0		5.0
Flash Dont Walk (s)		15.0		15.0			15.0	15.0		15.0
Pedestrian Calls (#/hr)		0		0			0	0		0

Intersection Summary

Cycle Length: 126
Actuated Cycle Length: 107.3
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Bear Road & Buckley Road

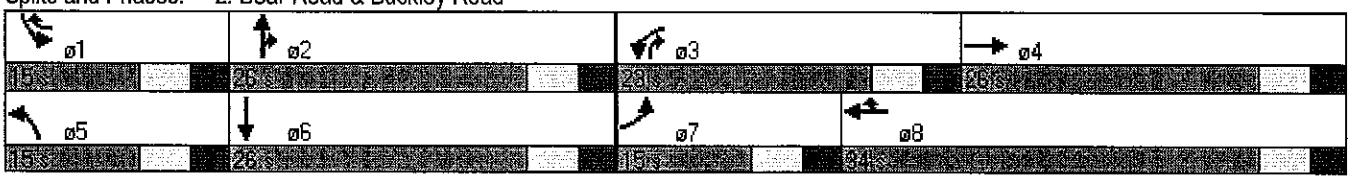


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	21	194	294	542	54	60	206	196	54	111
Turn Type	Prot		Prot		pt+ov	Prot		pt+ov	Prot	
Protected Phases	7	4	3	8	8 1	5	2	2 3	1	6
Permitted Phases										
Detector Phase	7	4	3	8	8 1	5	2	2 3	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0		5.0	10.0		5.0	10.0
Minimum Split (s)	11.0	26.0	11.0	26.0		11.0	26.0		11.0	26.0
Total Split (s)	15.0	26.0	23.0	34.0	49.0	15.0	26.0	49.0	15.0	26.0
Total Split (%)	16.7%	28.9%	25.6%	37.8%	54.4%	16.7%	28.9%	54.4%	16.7%	28.9%
Maximum Green (s)	9.0	20.0	17.0	28.0		9.0	20.0		9.0	20.0
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes
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)		5.0		5.0			5.0			5.0
Flash Dont Walk (s)		15.0		15.0			15.0			15.0
Pedestrian Calls (#/hr)		0		0			0			0

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 74
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Bear Road & Buckley Road

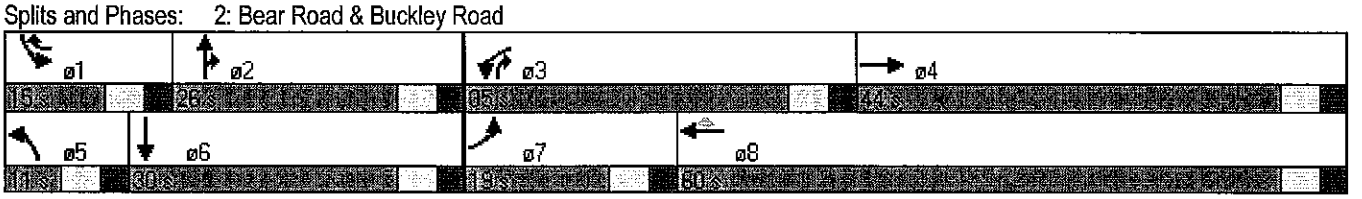


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	56	550	421	358	58	73	169	378	170	252
Turn Type	Prot		Prot		pm+ov	Prot		pt+ov	Prot	
Protected Phases	7	4	3	8	1	5	2	2 3	1	6
Permitted Phases					8					
Detector Phase	7	4	3	8	1	5	2	2 3	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.0	26.0	11.0	26.0	11.0	11.0	26.0		11.0	26.0
Total Split (s)	19.0	44.0	35.0	60.0	15.0	11.0	26.0	61.0	15.0	30.0
Total Split (%)	15.8%	36.7%	29.2%	50.0%	12.5%	9.2%	21.7%	50.8%	12.5%	25.0%
Maximum Green (s)	13.0	38.0	29.0	54.0	9.0	5.0	20.0		9.0	24.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5		2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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)		5.0		5.0			5.0			5.0
Flash Dont Walk (s)		15.0		15.0			15.0			15.0
Pedestrian Calls (#/hr)		0		0			0			0

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 119.2
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Bear Road & Buckley Road

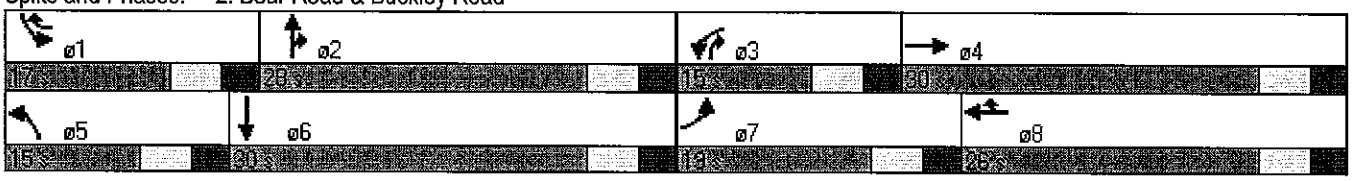


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	99	136	66	105	291	36	262	79	285	289
Turn Type	Prot		Prot		pt+ov	Prot		pt+ov	Prot	
Protected Phases	7	4	3	8	8 1	5	2	2 3	1	6
Permitted Phases										
Detector Phase	7	4	3	8	8 1	5	2	2 3	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0		5.0	10.0		5.0	10.0
Minimum Split (s)	11.0	26.0	11.0	26.0		11.0	26.0		11.0	26.0
Total Split (s)	19.0	30.0	15.0	26.0	43.0	15.0	28.0	43.0	17.0	30.0
Total Split (%)	21.1%	33.3%	16.7%	28.9%	47.8%	16.7%	31.1%	47.8%	18.9%	33.3%
Maximum Green (s)	13.0	24.0	9.0	20.0		9.0	22.0		11.0	24.0
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes
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)		5.0		5.0			5.0			5.0
Flash Dont Walk (s)		15.0		15.0			15.0			15.0
Pedestrian Calls (#/hr)		0		0			0			0

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 67.4
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Bear Road & Buckley Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	194	43	294	542	54	60	206	196	54	111	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1811		1787	1863	1583	1770	1881	1568	3502	1745	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1811		1787	1863	1583	1770	1881	1568	3502	1745	
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.69	0.69	0.69	0.81	0.81	0.81
Adj. Flow (vph)	23	216	48	320	589	59	87	299	284	67	137	75
RTOR Reduction (vph)	0	7	0	0	0	32	0	0	174	0	15	0
Lane Group Flow (vph)	23	257	0	320	589	27	87	299	110	67	197	0
Confl. Bikes (#/hr)			1									1
Heavy Vehicles (%)	0%	2%	0%	1%	2%	2%	2%	1%	3%	0%	2%	3%
Turn Type	Prot			Prot		pt+ov	Prot		Prot	Prot		
Protected Phases	7	4		3	8	8 1	5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	3.0	23.8		15.2	36.0	48.1	9.0	40.5	40.5	6.1	37.6	
Effective Green, g (s)	5.0	25.8		17.2	38.0	50.1	11.0	42.5	42.5	8.1	39.6	
Actuated g/C Ratio	0.05	0.24		0.16	0.35	0.46	0.10	0.39	0.39	0.07	0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	82	426		280	646	724	178	729	608	259	630	
v/s Ratio Prot	0.01	0.14		c0.18	c0.32	0.02	c0.05	c0.16	0.07	0.02	0.11	
v/s Ratio Perm												
v/c Ratio	0.28	0.60		1.14	0.91	0.04	0.49	0.41	0.18	0.26	0.31	
Uniform Delay, d1	50.6	37.3		46.2	34.2	16.4	46.6	24.4	22.1	47.9	25.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	2.4		98.0	17.2	0.0	2.1	1.7	0.7	0.5	1.3	
Delay (s)	52.4	39.8		144.2	51.4	16.5	48.7	26.1	22.7	48.4	26.5	
Level of Service	D	D		F	D	B	D	C	C	D	C	
Approach Delay (s)		40.8			80.0			27.6			31.8	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	52.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	109.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	550	84	421	358	58	73	169	378	170	252	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1846		1787	1881	1583	1805	1881	1599	3502	1838	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1846		1787	1881	1583	1805	1881	1599	3502	1838	
Peak-hour factor, PHF	0.94	0.94	0.94	0.91	0.91	0.91	0.92	0.92	0.92	0.83	0.83	0.83
Adj. Flow (vph)	60	585	89	463	393	64	79	184	411	205	304	59
RTOR Reduction (vph)	0	4	0	0	0	34	0	0	220	0	5	0
Lane Group Flow (vph)	60	670	0	463	393	30	79	184	191	205	358	0
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	1%	0%	1%	1%	2%	0%	1%	1%	0%	1%	0%
Turn Type	Prot			Prot		pt+ov	Prot		Prot	Prot		
Protected Phases	7	4		3	8	8 1	5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	8.3	31.3		15.0	38.0	56.4	9.3	41.3	41.3	12.4	44.4	
Effective Green, g (s)	10.3	33.3		17.0	40.0	58.4	11.3	43.3	43.3	14.4	46.4	
Actuated g/C Ratio	0.08	0.27		0.14	0.32	0.47	0.09	0.35	0.35	0.12	0.37	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	147	496		245	607	746	164	657	558	407	688	
v/s Ratio Prot	0.03	c0.36		c0.26	0.21	0.02	0.04	0.10	0.12	c0.06	c0.19	
v/s Ratio Perm												
v/c Ratio	0.41	1.35		1.89	0.65	0.04	0.48	0.28	0.34	0.50	0.52	
Uniform Delay, d1	54.0	45.4		53.5	36.0	17.7	53.6	29.1	29.8	51.4	30.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.8	170.4		415.4	2.4	0.0	2.2	1.1	1.7	1.0	2.8	
Delay (s)	55.8	215.8		468.9	38.3	17.7	55.8	30.2	31.5	52.4	33.0	
Level of Service	E	F		F	D	B	E	C	C	D	C	
Approach Delay (s)		202.7			253.6			34.0			40.0	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM Average Control Delay	147.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	124.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	136	50	66	105	291	36	262	79	285	289	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1810		1719	1827	1568	1805	1863	1599	3433	1780	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1810		1719	1827	1568	1805	1863	1599	3433	1780	
Peak-hour factor, PHF	0.77	0.77	0.77	0.94	0.94	0.94	0.93	0.93	0.93	0.96	0.96	0.96
Adj. Flow (vph)	129	177	65	70	112	310	39	282	85	297	301	74
RTOR Reduction (vph)	0	11	0	0	0	199	0	0	50	0	6	0
Lane Group Flow (vph)	129	231	0	70	112	111	39	282	35	297	369	0
Heavy Vehicles (%)	0%	1%	0%	5%	4%	3%	0%	2%	1%	2%	3%	6%
Turn Type	Prot			Prot		pt+ov	Prot		Prot	Prot		
Protected Phases	7	4		3	8	8 1	5	2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	12.2	21.3		8.3	17.4	37.7	5.1	43.2	43.2	14.3	52.4	
Effective Green, g (s)	14.2	23.3		10.3	19.4	39.7	7.1	45.2	45.2	16.3	54.4	
Actuated g/C Ratio	0.13	0.21		0.09	0.17	0.36	0.06	0.41	0.41	0.15	0.49	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	231	380		159	319	560	115	758	651	504	872	
v/s Ratio Prot	c0.07	c0.13		0.04	0.06	0.07	0.02	0.15	0.02	c0.09	c0.21	
v/s Ratio Perm												
v/c Ratio	0.56	0.61		0.44	0.35	0.20	0.34	0.37	0.05	0.59	0.42	
Uniform Delay, d1	45.5	39.8		47.7	40.3	24.7	49.8	23.0	20.0	44.3	18.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.9	2.7		1.9	0.7	0.2	1.8	1.4	0.2	1.8	1.5	
Delay (s)	48.4	42.5		49.6	41.0	24.9	51.5	24.4	20.1	46.0	19.8	
Level of Service	D	D		D	D	C	D	C	C	D	B	
Approach Delay (s)		44.6			32.1			26.1			31.4	
Approach LOS		D			C			C			C	

Intersection Summary				
HCM Average Control Delay	33.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.51			
Actuated Cycle Length (s)	111.1	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	50.6%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	194	43	294	542	54	60	206	196	54	111	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1811		1787	1863	1583	1770	1881	1568	3502	1744	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1811		1787	1863	1583	1770	1881	1568	3502	1744	
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.69	0.69	0.69	0.81	0.81	0.81
Adj. Flow (vph)	23	216	48	320	589	59	87	299	284	67	137	75
RTOR Reduction (vph)	0	9	0	0	0	25	0	0	142	0	23	0
Lane Group Flow (vph)	23	255	0	320	589	34	87	299	142	67	189	0
Confl. Bikes (#/hr)			1									1
Heavy Vehicles (%)	0%	2%	0%	1%	2%	2%	2%	1%	3%	0%	2%	3%
Turn Type	Prot			Prot		pt+ov	Prot		pt+ov	Prot		
Protected Phases	7	4		3	8	8 1	5	2	2 3	1	6	
Permitted Phases												
Actuated Green, G (s)	2.2	19.2		15.5	32.5	42.9	5.9	15.9	37.4	4.4	14.4	
Effective Green, g (s)	4.2	21.2		17.5	34.5	44.9	7.9	17.9	39.4	6.4	16.4	
Actuated g/C Ratio	0.05	0.27		0.22	0.44	0.57	0.10	0.23	0.50	0.08	0.21	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	96	486		396	814	900	177	426	782	284	362	
v/s Ratio Prot	0.01	0.14		c0.18	c0.32	0.02	c0.05	c0.16	0.09	0.02	0.11	
v/s Ratio Perm												
v/c Ratio	0.24	0.53		0.81	0.72	0.04	0.49	0.70	0.18	0.24	0.52	
Uniform Delay, d1	35.9	24.6		29.2	18.3	7.5	33.6	28.1	10.9	34.0	27.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.5		10.9	2.7	0.0	0.8	4.2	0.0	0.2	0.6	
Delay (s)	36.3	25.1		40.0	21.0	7.5	34.4	32.3	11.0	34.2	28.4	
Level of Service	D	C		D	C	A	C	C	B	C	C	
Approach Delay (s)		26.0			26.5			23.5			29.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	79.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

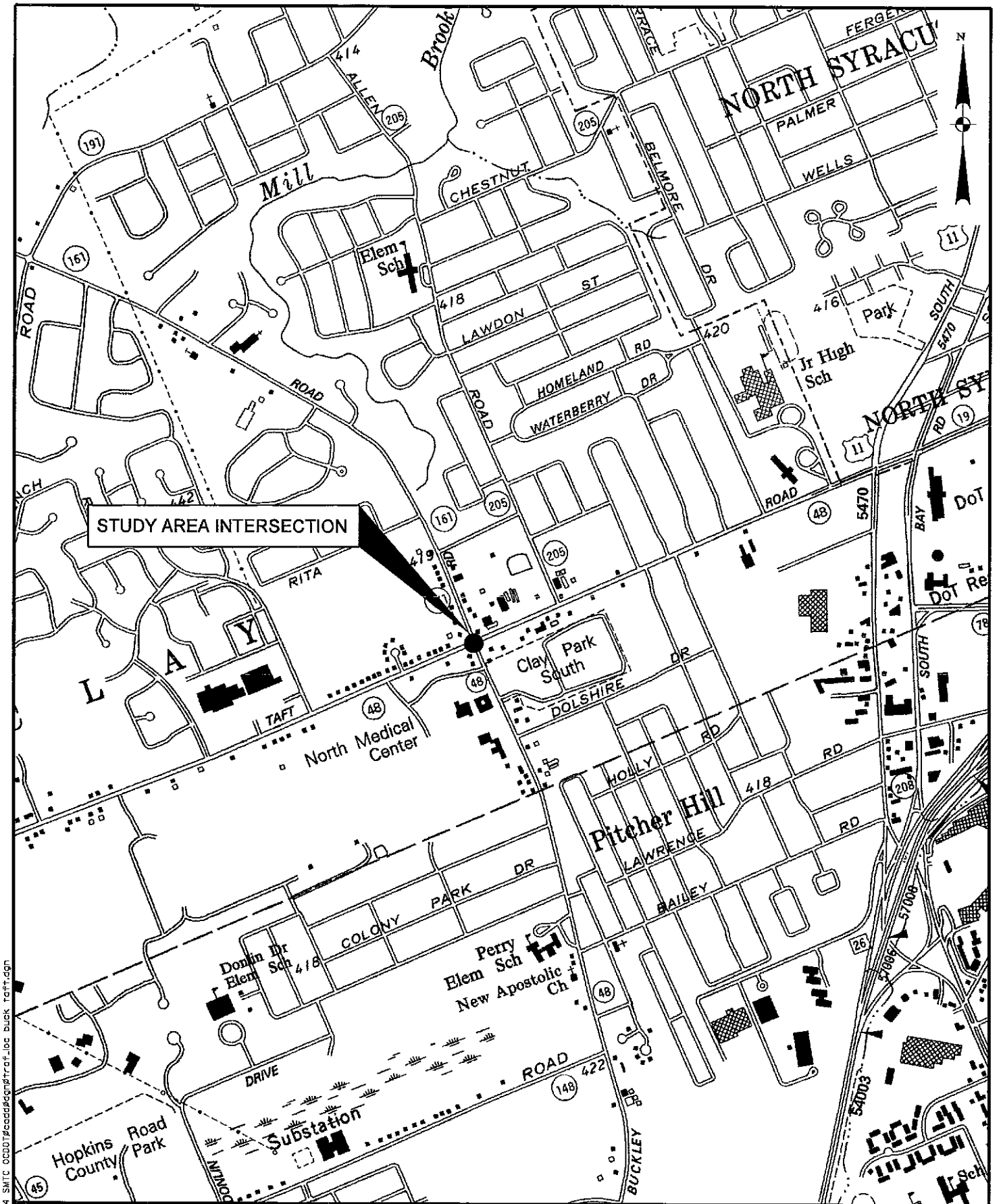
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	550	84	421	358	58	73	169	378	170	252	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1846		1787	1881	1554	1805	1881	1599	3502	1838	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1846		1787	1881	1554	1805	1881	1599	3502	1838	
Peak-hour factor, PHF	0.94	0.94	0.94	0.91	0.91	0.91	0.92	0.92	0.92	0.83	0.83	0.83
Adj. Flow (vph)	60	585	89	463	393	64	79	184	411	205	304	59
RTOR Reduction (vph)	0	5	0	0	0	25	0	0	54	0	6	0
Lane Group Flow (vph)	60	669	0	463	393	39	79	184	357	205	357	0
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	1%	0%	1%	1%	2%	0%	1%	1%	0%	1%	0%
Turn Type	Prot			Prot		pm+ov	Prot		pt+ov	Prot		
Protected Phases	7	4		3	8	1	5	2	2 3	1	6	
Permitted Phases						8						
Actuated Green, G (s)	7.1	39.3		29.0	61.2	69.9	5.0	19.6	54.6	8.7	23.3	
Effective Green, g (s)	9.1	41.3		31.0	63.2	73.9	7.0	21.6	56.6	10.7	25.3	
Actuated g/C Ratio	0.08	0.34		0.26	0.52	0.61	0.06	0.18	0.47	0.09	0.21	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
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)	134	632		459	986	1004	105	337	750	311	386	
v/s Ratio Prot	0.03	c0.36		c0.26	0.21	0.00	0.04	0.10	0.22	c0.06	c0.19	
v/s Ratio Perm						0.02						
v/c Ratio	0.45	1.06		1.01	0.40	0.04	0.75	0.55	0.48	0.66	0.93	
Uniform Delay, d1	53.3	39.6		44.8	17.3	9.3	55.9	45.0	21.9	53.2	46.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	52.5		44.2	0.1	0.0	23.3	1.0	0.2	3.8	27.4	
Delay (s)	54.2	92.1		89.0	17.4	9.3	79.2	46.0	22.0	57.0	74.1	
Level of Service	D	F		F	B	A	E	D	C	E	E	
Approach Delay (s)		89.0			52.9			35.3			68.0	
Approach LOS		F			D			D			E	

Intersection Summary			
HCM Average Control Delay	60.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	136	50	66	105	291	36	262	79	285	289	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1810		1719	1827	1568	1805	1863	1599	3433	1780	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1810		1719	1827	1568	1805	1863	1599	3433	1780	
Peak-hour factor, PHF	0.77	0.77	0.77	0.94	0.94	0.94	0.93	0.93	0.93	0.96	0.96	0.96
Adj. Flow (vph)	129	177	65	70	112	310	39	282	85	297	301	74
RTOR Reduction (vph)	0	16	0	0	0	181	0	0	47	0	9	0
Lane Group Flow (vph)	129	226	0	70	112	129	39	282	38	297	366	0
Heavy Vehicles (%)	0%	1%	0%	5%	4%	3%	0%	2%	1%	2%	3%	6%
Turn Type	Prot			Prot		pt+ov	Prot		pt+ov	Prot		
Protected Phases	7	4		3	8	8 1	5	2	2 3	1	6	
Permitted Phases												
Actuated Green, G (s)	7.3	14.1		5.4	12.2	27.6	3.5	18.2	29.6	9.4	24.1	
Effective Green, g (s)	9.3	16.1		7.4	14.2	29.6	5.5	20.2	31.6	11.4	26.1	
Actuated g/C Ratio	0.13	0.23		0.10	0.20	0.42	0.08	0.28	0.44	0.16	0.37	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	236	410		179	365	653	140	529	711	550	653	
v/s Ratio Prot	c0.07	c0.12		0.04	0.06	0.08	0.02	0.15	0.02	c0.09	c0.21	
v/s Ratio Perm												
v/c Ratio	0.55	0.55		0.39	0.31	0.20	0.28	0.53	0.05	0.54	0.56	
Uniform Delay, d1	28.9	24.3		29.7	24.3	13.2	30.9	21.5	11.2	27.4	17.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	0.9		0.5	0.2	0.1	0.4	0.5	0.0	0.6	0.7	
Delay (s)	30.3	25.2		30.3	24.4	13.3	31.3	22.0	11.2	28.0	18.6	
Level of Service	C	C		C	C	B	C	C	B	C	B	
Approach Delay (s)		27.0			18.2			20.6			22.8	
Approach LOS		C			B			C			C	

Intersection Summary				
HCM Average Control Delay	22.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.52			
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	51.4%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group



LOCATION MAP
BUCKLEY RD/WEST TAFT RD

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 4/10	FIGURE: B.5

dgaron
F:\Projects\2009\109-094 SMTC OCDOT\cadd\dgn\traf_loc buck taft.dgn

INTERSECTION DIAGRAM

Location: Buckley Road at Taft Road

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

Drawn By: KK

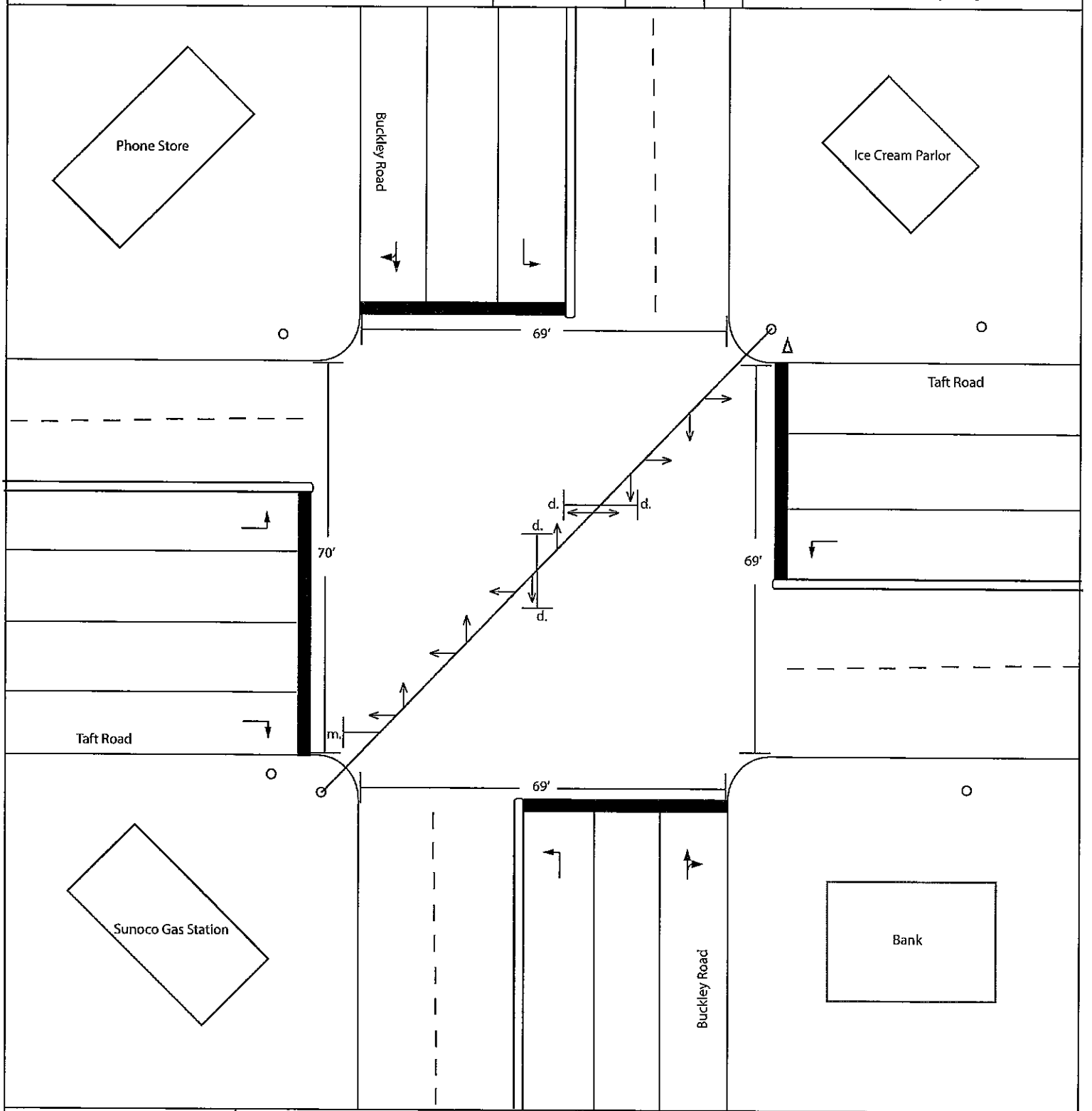
Date: May 2010

Prepared By: SMTC

N

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

For sign definitions see Intersection Diagram Sign Index.



Task

OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

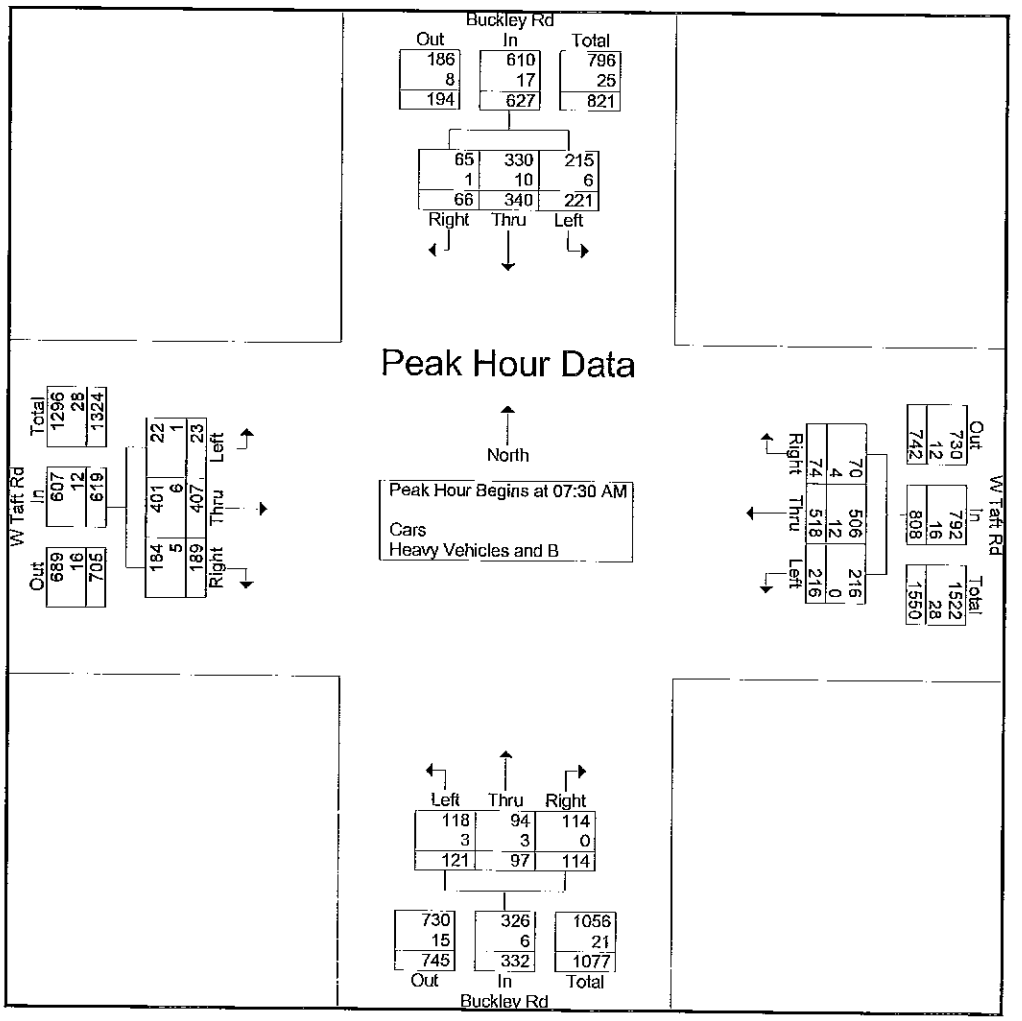
Diagram is for presentation purposes only.
SMTC does not guarantee the accuracy or completeness of this diagram.

Diagram is not to scale.

Town of Clay, Onondaga Co.
Buckley Rd @ W Taft Rd
6/9/09
AI

File Name : 6_9_09_Buckley_TAFT_AM
Site Code : 00747474
Start Date : 6/9/2009
Page No : 2

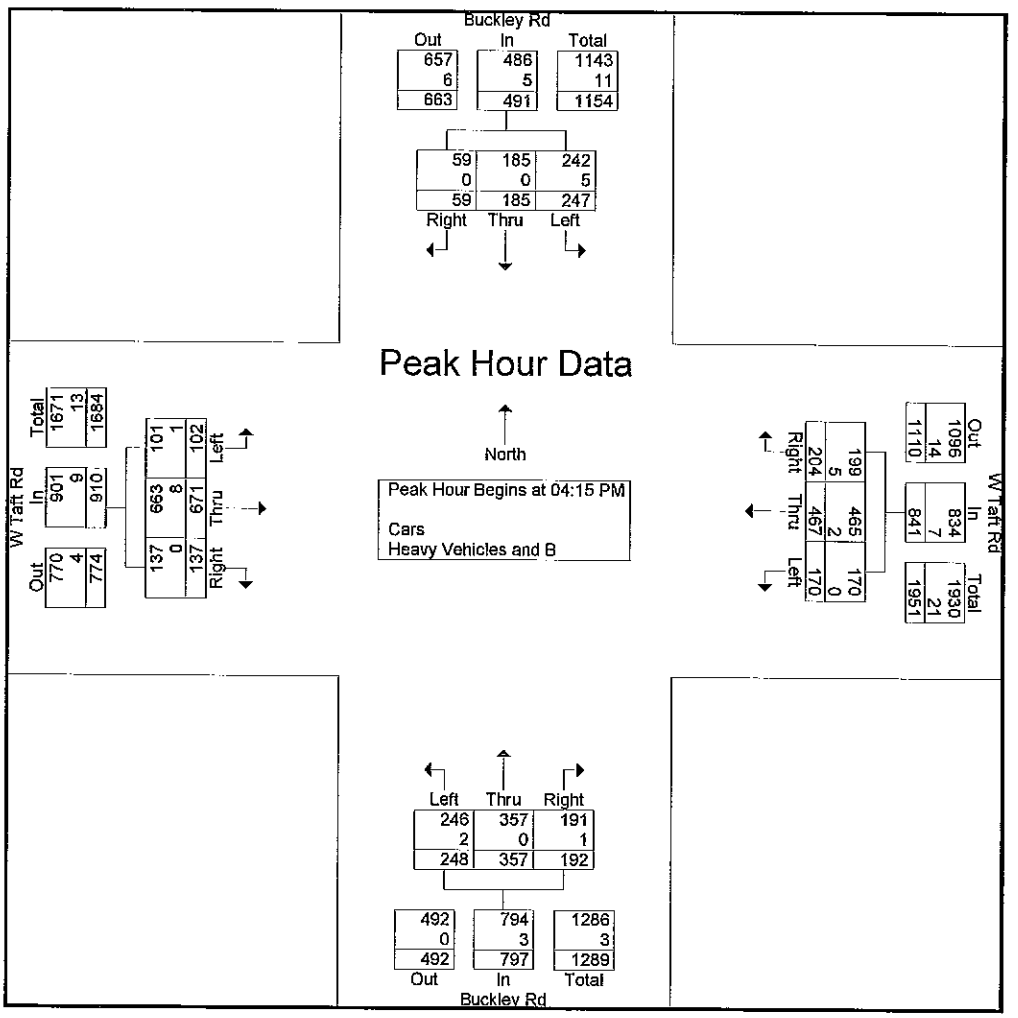
	Buckley Rd Southbound				W Taft Rd Westbound				Buckley Rd Northbound				W Taft Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**69**	101	16	**186**	46	103	10	159	26	23	28	77	**8**	84	**55**	147	569
07:45 AM	62	**103**	15	180	**66**	**167**	19	**252**	**40**	22	25	87	6	**136**	51	**193**	**712**
08:00 AM	47	72	16	135	53	106	18	177	22	25	30	77	6	86	41	133	522
08:15 AM	43	64	**19**	126	51	142	**27**	220	33	**27**	**31**	**91**	3	101	42	146	583
Total Volume	221	340	66	627	216	518	74	808	121	97	114	332	23	407	189	619	2386
% App. Total	35.2	54.2	10.5		26.7	64.1	9.2		36.4	29.2	34.3		3.7	65.8	30.5		
PHF	.801	.825	.868	.843	.818	.775	.685	.802	.756	.898	.919	.912	.719	.748	.859	.802	.838
Cars	215	330	65	610	216	506	70	792	118	94	114	326	22	401	184	607	2335
% Cars	97.3	97.1	98.5	97.3	100	97.7	94.6	98.0	97.5	96.9	100	98.2	95.7	98.5	97.4	98.1	97.9
Heavy Vehicles and B	6	10	1	17	0	12	4	16	3	3	0	6	1	6	5	12	51
% Heavy Vehicles and B	2.7	2.9	1.5	2.7	0	2.3	5.4	2.0	2.5	3.1	0	1.8	4.3	1.5	2.6	1.9	2.1



Town of Clay, Onondaga Co.
Buckley Rd @ W Taft Rd
6/9/09
AI

File Name : 6_9_09_Buckley_PM
Site Code : 00747474
Start Date : 6/9/2009
Page No : 2

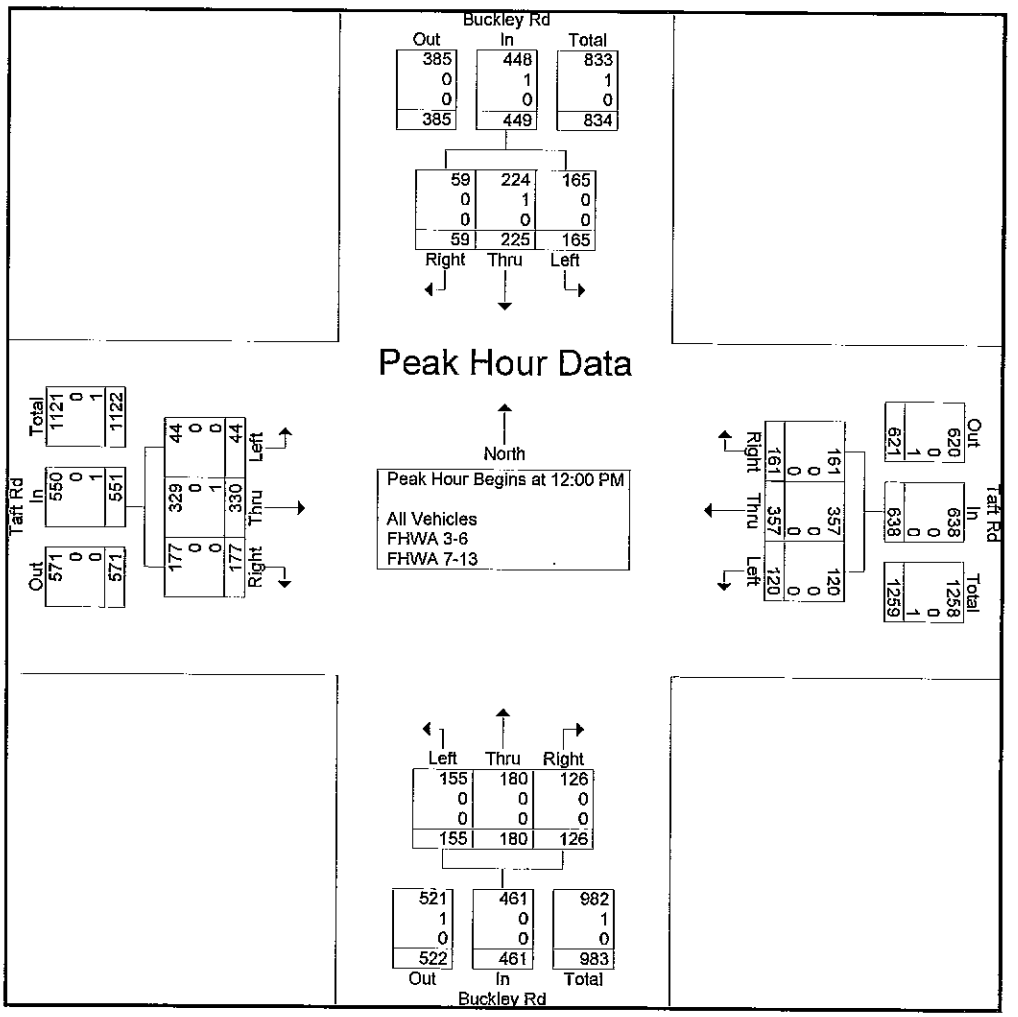
	Buckley Rd Southbound				W Taft Rd Westbound				Buckley Rd Northbound				W Taft Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	**18**	50	65	133	47	111	**55**	213	43	94	53	190	28	159	21	208	744
04:30 PM	16	**51**	**72**	**139**	43	116	47	206	**61**	86	**78**	**225**	24	**182**	**30**	**236**	**806**
04:45 PM	10	34	64	108	55	107	41	203	49	76	70	195	38	167	29	234	740
05:00 PM	15	50	46	111	**59**	**133**	27	**219**	39	**101**	47	187	**47**	163	22	232	749
Total Volume	59	185	247	491	204	467	170	841	192	357	248	797	137	671	102	910	3039
% App. Total	12	37.7	50.3		24.3	55.5	20.2		24.1	44.8	31.1		15.1	73.7	11.2		
PHF	.819	.907	.858	.883	.864	.878	.773	.960	.787	.884	.795	.886	.729	.922	.850	.964	.943
Cars	59	185	242	486	199	465	170	834	191	357	246	794	137	663	101	901	3015
% Cars	100	100	98.0	99.0	97.5	99.6	100	99.2	99.5	100	99.2	99.6	100	98.8	99.0	99.0	99.2
Heavy Vehicles and B	0	0	5	5	5	2	0	7	1	0	2	3	0	8	1	9	24
% Heavy Vehicles and B	0	0	2.0	1.0	2.5	0.4	0	0.8	0.5	0	0.8	0.4	0	1.2	1.0	1.0	0.8

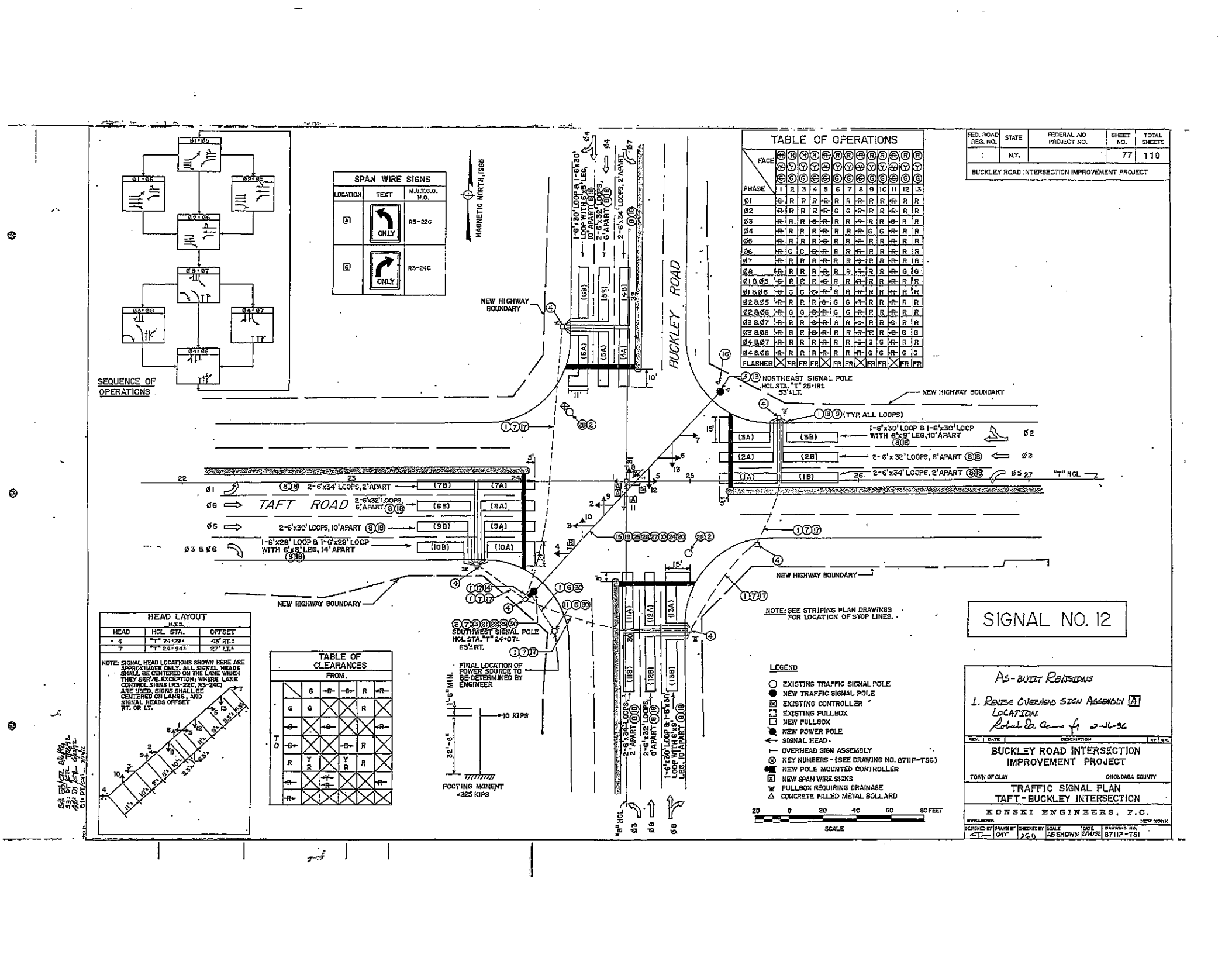


Lochner Engineering
181 Genesee St. Suite 300
Utica, NY. 13501
Phone: (315)-793-9500

File Name : Buckley & Taft 78200031 - Combined SAT
Site Code : 78200031
Start Date : 11/21/2009

	Buckley Rd Southbound				Taft Rd Westbound				Buckley Rd Northbound				Taft Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	**18**	61	42	**121**	37	**94**	**32**	163	30	35	35	100	48	**90**	9	147	531
12:15 PM	14	52	38	104	36	84	25	145	31	35	**53**	119	40	74	9	123	491
12:30 PM	13	**64**	41	118	**44**	87	31	162	24	43	33	100	**53**	84	**14**	**151**	531
12:45 PM	14	48	**44**	106	44	92	32	**168**	**41**	**67**	34	**142**	36	82	12	130	**546**
Total Volume	59	225	165	449	161	357	120	638	126	180	155	461	177	330	44	551	2099
% App. Total	13.1	50.1	36.7		25.2	56	18.8		27.3	39	33.6		32.1	59.9	8		
PHF	.819	.879	.938	.928	.915	.949	.938	.949	.768	.672	.731	.812	.835	.917	.786	.912	.961
All Vehicles	59	224	165	448	161	357	120	638	126	180	155	461	177	329	44	550	2097
% All Vehicles	100	99.6	100	99.8	100	100	100	100	100	100	100	100	100	99.7	100	99.8	99.9
FHWA 3-6	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% FHWA 3-6	0	0.4	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.0
FHWA 7-13	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% FHWA 7-13	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0.2	0.0





FED. ROAD REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
1	N.Y.		77	110

BUCKLEY ROAD INTERSECTION IMPROVEMENT PROJECT

AS-BUILT REVISIONS

1. REVISE OVERHEAD SIGN ASSEMBLY [A] LOCATION. Robert E. Conner 4 2-16-96

REV.	DATE	DESCRIPTION	BY	CK.

BUCKLEY ROAD INTERSECTION IMPROVEMENT PROJECT

TOWN OF CLAY ONONDAGA COUNTY

TRAFFIC SIGNAL PLAN
TAFT - BUCKLEY INTERSECTION

KONSKI ENGINEERS, P.C.

SYRACUSE NEW YORK

DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	DRAWING NO.
CT	DMT	MCD	AS SHOWN	2/14/92	8711F-TS1

INTERSECTION NAME: Buckley @ W. Taft
INTERSECTION NUMBER: 12

INSTALLATION DATE:
PROGRAM DATE:

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

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	10	5	8	5	10	5	8
PASSAGE	4	4	4	4	4	4	4	4
YELLOW	4	4	4	4	4	4	4	4
RED	2	2	2	2	2	2	2	2
MAX I	20	40	25	35	20	40	25	35
MAX II	30	30	30	30	30	30	30	30
WALK								
PED CLEAR								
S/A								
TBR	5	5	5	5	5	5	5	5
TTR	10	10	10	10	10	10	10	10
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

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

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

INTERSECTION NAME: Buckley @ W. Taft
INTERSECTION NUMBER: 12

INSTALLATION DATE:
PROGRAM DATE:

OPTIMIZED TIMINGS

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

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	10	5	10	5	10	5	10
PASSAGE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
YELLOW	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
RED	2	2	2	2	2	2	2	2
MAX I (AM)	5.5	32.5	11.5	18.5	19.5	18.5	19.5	10.5
MAX II (PM)	11.5	31.5	22.5	12.5	14.5	28.5	17.5	17.5
MAX III (Sat)	7.5	15.5	13.5	11.5	10.5	12.5	12.5	12.5
WALK								
PED CLEAR								
S/A								
TBR	5	5	5	5	5	5	5	5
TTR	10	10	10	10	10	10	10	10
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

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

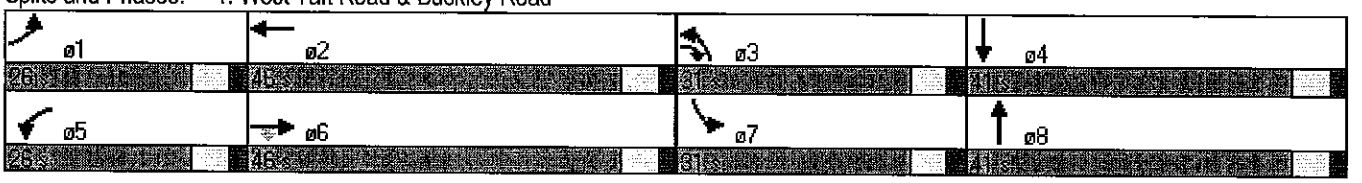
INHIBIT O/L	PED Overlaps							
	1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	23	407	189	216	518	121	97	221	340
Turn Type	Prot		pm+ov	Prot		Prot		Prot	
Protected Phases	1	6	3	5	2	3	8	7	4
Permitted Phases		6	6						
Detector Phase	1	6	3	5	2	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	8.0	5.0	8.0
Minimum Split (s)	11.0	16.0	11.0	11.0	16.0	11.0	14.0	11.0	14.0
Total Split (s)	26.0	46.0	31.0	26.0	46.0	31.0	41.0	31.0	41.0
Total Split (%)	18.1%	31.9%	21.5%	18.1%	31.9%	21.5%	28.5%	21.5%	28.5%
Maximum Green (s)	20.0	40.0	25.0	20.0	40.0	25.0	35.0	25.0	35.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Time To Reduce (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Recall Mode	None	Min	None	None	Min	None	None	None	None
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 144
Actuated Cycle Length: 101.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: West Taft Road & Buckley Road

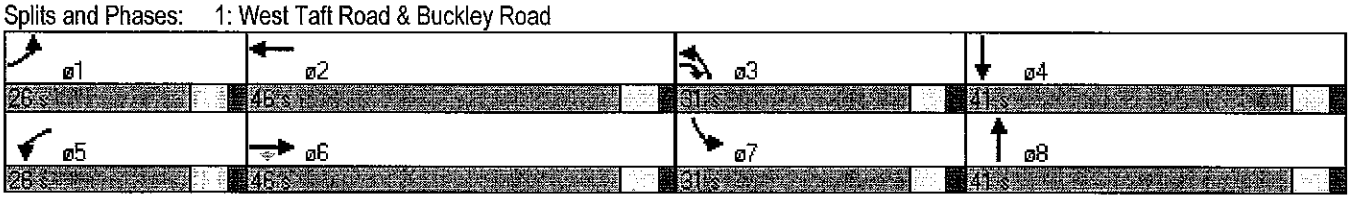


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	102	671	137	170	467	248	357	247	185
Turn Type	Prot		pm+ov	Prot		Prot		Prot	
Protected Phases	1	6	3	5	2	3	8	7	4
Permitted Phases		6	6						
Detector Phase	1	6	3	5	2	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	8.0	5.0	8.0
Minimum Split (s)	11.0	16.0	11.0	11.0	16.0	11.0	14.0	11.0	14.0
Total Split (s)	26.0	46.0	31.0	26.0	46.0	31.0	41.0	31.0	41.0
Total Split (%)	18.1%	31.9%	21.5%	18.1%	31.9%	21.5%	28.5%	21.5%	28.5%
Maximum Green (s)	20.0	40.0	25.0	20.0	40.0	25.0	35.0	25.0	35.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Time To Reduce (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Recall Mode	None	Min	None	None	Min	None	None	None	None
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 144
Actuated Cycle Length: 122.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: West Taft Road & Buckley Road

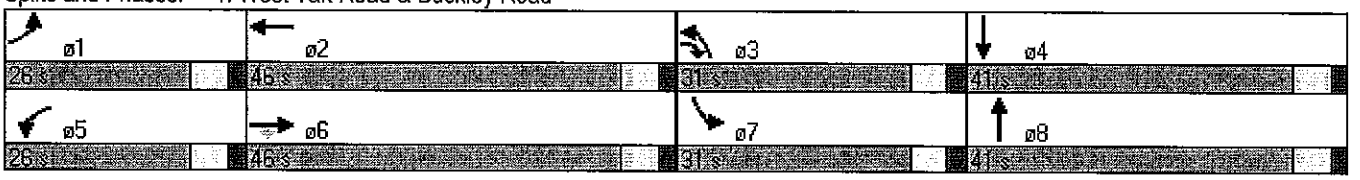


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	44	329	177	120	357	155	180	165	224
Turn Type	Prot		pm+ov	Prot		Prot		Prot	
Protected Phases	1	6	3	5	2	3	8	7	4
Permitted Phases		6	6						
Detector Phase	1	6	3	5	2	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	8.0	5.0	8.0
Minimum Split (s)	11.0	16.0	11.0	11.0	16.0	11.0	14.0	11.0	14.0
Total Split (s)	26.0	46.0	31.0	26.0	46.0	31.0	41.0	31.0	41.0
Total Split (%)	18.1%	31.9%	21.5%	18.1%	31.9%	21.5%	28.5%	21.5%	28.5%
Maximum Green (s)	20.0	40.0	25.0	20.0	40.0	25.0	35.0	25.0	35.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Time To Reduce (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Recall Mode	None	Min	None	None	Min	None	None	None	None
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 144
Actuated Cycle Length: 83.1
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: West Taft Road & Buckley Road

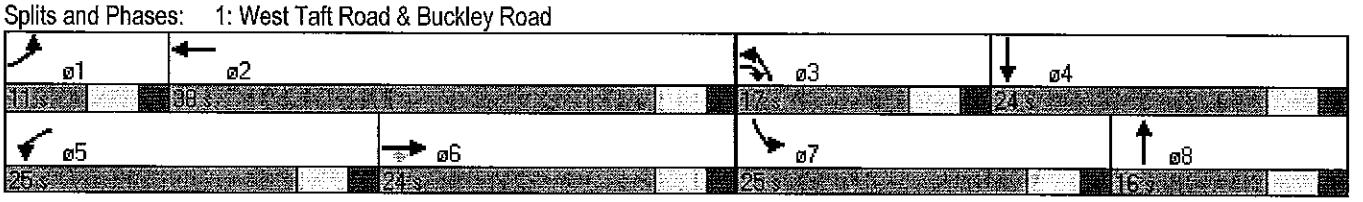


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	23	407	189	216	518	121	97	221	340
Turn Type	Prot		pm+ov	Prot		Prot		Prot	
Protected Phases	1	6	3	5	2	3	8	7	4
Permitted Phases		6	6						
Detector Phase	1	6	3	5	2	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	10.5	15.5	10.5	10.5	15.5	10.5	15.5	10.5	15.5
Total Split (s)	11.0	24.0	17.0	25.0	38.0	17.0	16.0	25.0	24.0
Total Split (%)	12.2%	26.7%	18.9%	27.8%	42.2%	18.9%	17.8%	27.8%	26.7%
Maximum Green (s)	5.5	18.5	11.5	19.5	32.5	11.5	10.5	19.5	18.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Time To Reduce (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Recall Mode	None	Min	None	None	Min	None	None	None	None
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 77.4
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: West Taft Road & Buckley Road

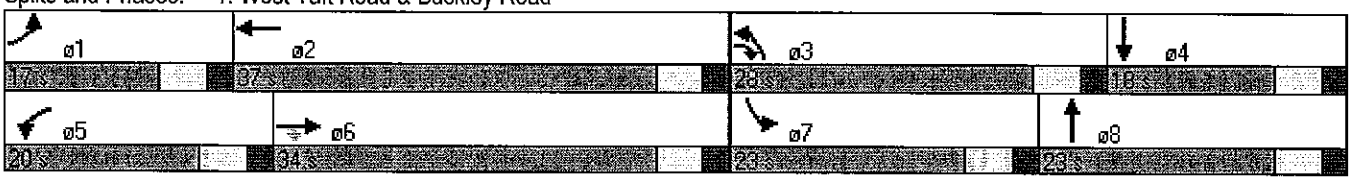


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	102	671	137	170	467	248	357	247	185
Turn Type	Prot		pm+ov	Prot		Prot		Prot	
Protected Phases	1	6	3	5	2	3	8	7	4
Permitted Phases		6	6						
Detector Phase	1	6	3	5	2	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	10.5	15.5	10.5	10.5	15.5	10.5	15.5	10.5	15.5
Total Split (s)	17.0	34.0	28.0	20.0	37.0	28.0	23.0	23.0	18.0
Total Split (%)	17.0%	34.0%	28.0%	20.0%	37.0%	28.0%	23.0%	23.0%	18.0%
Maximum Green (s)	11.5	28.5	22.5	14.5	31.5	22.5	17.5	17.5	12.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Time To Reduce (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Recall Mode	None	Min	None	None	Min	None	None	None	None
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 87.3
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: West Taft Road & Buckley Road

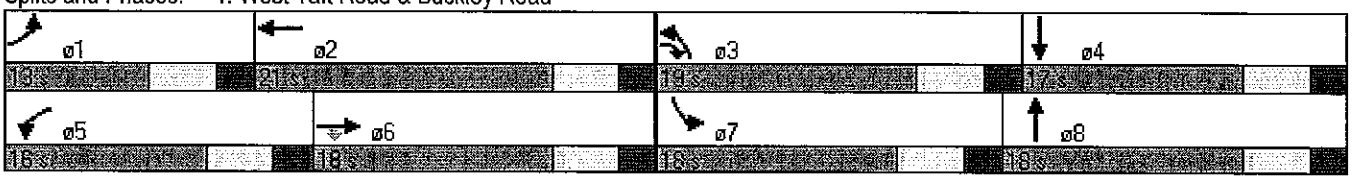


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	44	329	177	120	357	155	180	165	224
Turn Type	Prot		pm+ov	Prot		Prot		Prot	
Protected Phases	1	6	3	5	2	3	8	7	4
Permitted Phases		6	6						
Detector Phase	1	6	3	5	2	3	8	7	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	10.5	15.5	10.5	10.5	15.5	10.5	15.5	10.5	15.5
Total Split (s)	13.0	18.0	19.0	16.0	21.0	19.0	18.0	18.0	17.0
Total Split (%)	18.6%	25.7%	27.1%	22.9%	30.0%	27.1%	25.7%	25.7%	24.3%
Maximum Green (s)	7.5	12.5	13.5	10.5	15.5	13.5	12.5	12.5	11.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	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)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Time To Reduce (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Recall Mode	None	Min	None	None	Min	None	None	None	None
Walk Time (s)									
Flash Dont Walk (s)									
Pedestrian Calls (#/hr)									

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 59.3
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: West Taft Road & Buckley Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	407	189	216	518	74	121	97	114	221	340	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	14	12	12	14	12	12	14	12	12	14
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.92		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3539	1660	1805	3461		1752	3273		1752	3424	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1736	3539	1660	1805	3461		1752	3273		1752	3424	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.91	0.91	0.91	0.84	0.84	0.84
Adj. Flow (vph)	29	509	236	270	648	92	133	107	125	263	405	79
RTOR Reduction (vph)	0	0	74	0	7	0	0	105	0	0	12	0
Lane Group Flow (vph)	29	509	162	270	733	0	133	127	0	263	472	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	2%	3%	0%	2%	5%	3%	3%	0%	3%	3%	2%
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	1	6	3	5	2		3	8		7	4	
Permitted Phases		6	6									
Actuated Green, G (s)	5.2	24.4	38.9	20.4	39.6		14.5	14.3		21.1	20.9	
Effective Green, g (s)	7.2	26.4	42.9	22.4	41.6		16.5	16.3		23.1	22.9	
Actuated g/C Ratio	0.07	0.25	0.41	0.21	0.40		0.16	0.16		0.22	0.22	
Clearance Time (s)	6.0	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	4.0	
Lane Grp Cap (vph)	120	897	747	388	1382		277	512		388	752	
v/s Ratio Prot	0.02	0.14	0.03	c0.15	c0.21		0.08	0.04		c0.15	c0.14	
v/s Ratio Perm			0.06									
v/c Ratio	0.24	0.57	0.22	0.70	0.53		0.48	0.25		0.68	0.63	
Uniform Delay, d1	45.9	33.9	19.8	37.8	23.9		39.9	38.6		37.1	36.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	1.0	0.2	5.8	0.5		1.8	0.3		5.1	1.9	
Delay (s)	47.3	34.9	20.0	43.5	24.4		41.7	38.9		42.2	38.7	
Level of Service	D	C	C	D	C		D	D		D	D	
Approach Delay (s)		30.8			29.5			39.9			39.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	104.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	671	137	170	467	204	248	357	192	247	185	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	14	12	12	14	12	12	14	12	12	14
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.95		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3574	1706	1752	3446		1787	3393		1805	3462	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3574	1706	1752	3446		1787	3393		1805	3462	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.89	0.89	0.89	0.88	0.88	0.88
Adj. Flow (vph)	106	699	143	177	486	212	279	401	216	281	210	67
RTOR Reduction (vph)	0	0	75	0	34	0	0	51	0	0	22	0
Lane Group Flow (vph)	106	699	68	177	664	0	279	566	0	281	255	0
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	1%	1%	3%	0%	0%	1%	0%	1%	0%	0%	2%
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	1	6	3	5	2		3	8		7	4	
Permitted Phases		6	6									
Actuated Green, G (s)	13.8	31.0	54.0	17.3	34.5		23.0	27.0		23.0	27.0	
Effective Green, g (s)	15.8	33.0	58.0	19.3	36.5		25.0	29.0		25.0	29.0	
Actuated g/C Ratio	0.13	0.27	0.47	0.16	0.30		0.20	0.24		0.20	0.24	
Clearance Time (s)	6.0	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	4.0	
Lane Grp Cap (vph)	233	964	865	276	1028		365	805		369	821	
v/s Ratio Prot	0.06	c0.20	0.02	c0.10	c0.19		c0.16	c0.17		0.16	0.07	
v/s Ratio Perm			0.02									
v/c Ratio	0.45	0.73	0.08	0.64	0.65		0.76	0.70		0.76	0.31	
Uniform Delay, d1	49.3	40.5	17.6	48.3	37.3		45.9	42.7		45.8	38.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	2.9	0.1	5.6	1.6		9.7	3.0		9.5	0.3	
Delay (s)	51.2	43.5	17.6	53.8	38.9		55.6	45.7		55.3	38.7	
Level of Service	D	D	B	D	D		E	D		E	D	
Approach Delay (s)		40.4			41.9			48.8			47.1	
Approach LOS		D			D			D			D	

Intersection Summary				
HCM Average Control Delay	44.2	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	122.3	Sum of lost time (s)	20.0	
Intersection Capacity Utilization	71.0%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	329	177	120	357	161	155	180	126	165	224	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	14	12	12	14	12	12	14	12	12	14
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.94		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1723	1805	3442		1805	3387		1805	3498	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1723	1805	3442		1805	3387		1805	3498	
Peak-hour factor, PHF	0.91	0.91	0.91	0.95	0.95	0.95	0.81	0.81	0.81	0.93	0.93	0.93
Adj. Flow (vph)	48	362	195	126	376	169	191	222	156	177	241	63
RTOR Reduction (vph)	0	0	107	0	34	0	0	96	0	0	18	0
Lane Group Flow (vph)	48	362	88	126	511	0	191	282	0	177	286	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	1	6	3	5	2		3	8		7	4	
Permitted Phases		6	6									
Actuated Green, G (s)	5.5	18.5	34.4	12.9	25.9		15.9	14.6		15.3	14.0	
Effective Green, g (s)	7.5	20.5	38.4	14.9	27.9		17.9	16.6		17.3	16.0	
Actuated g/C Ratio	0.09	0.24	0.45	0.17	0.33		0.21	0.19		0.20	0.19	
Clearance Time (s)	6.0	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	4.0	
Lane Grp Cap (vph)	159	868	856	315	1126		379	659		366	656	
v/s Ratio Prot	0.03	0.10	0.02	c0.07	c0.15		c0.11	c0.08		0.10	0.08	
v/s Ratio Perm			0.03									
v/c Ratio	0.30	0.42	0.10	0.40	0.45		0.50	0.43		0.48	0.44	
Uniform Delay, d1	36.4	27.4	13.5	31.2	22.7		29.8	30.2		30.1	30.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.4	0.1	1.1	0.4		1.4	0.6		1.4	0.6	
Delay (s)	37.9	27.8	13.6	32.4	23.1		31.2	30.8		31.4	31.3	
Level of Service	D	C	B	C	C		C	C		C	C	
Approach Delay (s)		24.0			24.8			30.9			31.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	85.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	407	189	216	518	74	121	97	114	221	340	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	14	12	12	14	12	12	14	12	12	14
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.92		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3539	1659	1805	3461		1752	3273		1752	3424	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1736	3539	1659	1805	3461		1752	3273		1752	3424	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.91	0.91	0.91	0.84	0.84	0.84
Adj. Flow (vph)	29	509	236	270	648	92	133	107	125	263	405	79
RTOR Reduction (vph)	0	0	106	0	12	0	0	107	0	0	18	0
Lane Group Flow (vph)	29	509	130	270	728	0	133	125	0	263	466	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	2%	3%	0%	2%	5%	3%	3%	0%	3%	3%	2%
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	1	6	3	5	2		3	8		7	4	
Permitted Phases		6	6									
Actuated Green, G (s)	1.9	18.6	27.7	14.8	31.5		9.1	10.4		14.8	16.1	
Effective Green, g (s)	3.4	20.1	30.7	16.3	33.0		10.6	11.9		16.3	17.6	
Actuated g/C Ratio	0.04	0.25	0.38	0.20	0.41		0.13	0.15		0.20	0.22	
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)	73	883	714	365	1417		230	483		354	748	
v/s Ratio Prot	0.02	0.14	0.02	c0.15	c0.21		0.08	0.04		c0.15	c0.14	
v/s Ratio Perm			0.05									
v/c Ratio	0.40	0.58	0.18	0.74	0.51		0.58	0.26		0.74	0.62	
Uniform Delay, d1	37.6	26.5	16.6	30.2	17.8		32.9	30.4		30.2	28.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.6	0.0	6.6	0.1		2.2	0.1		7.2	1.2	
Delay (s)	38.9	27.1	16.6	36.8	17.9		35.1	30.6		37.4	29.7	
Level of Service	D	C	B	D	B		D	C		D	C	
Approach Delay (s)		24.3			23.0			32.2			32.4	
Approach LOS		C			C			C			C	

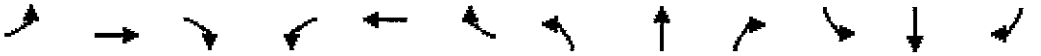
Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	671	137	170	467	204	248	357	192	247	185	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	14	12	12	14	12	12	14	12	12	14
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.95		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3574	1706	1752	3446		1787	3393		1805	3462	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3574	1706	1752	3446		1787	3393		1805	3462	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.89	0.89	0.89	0.88	0.88	0.88
Adj. Flow (vph)	106	699	143	177	486	212	279	401	216	281	210	67
RTOR Reduction (vph)	0	0	74	0	49	0	0	70	0	0	29	0
Lane Group Flow (vph)	106	699	69	177	649	0	279	547	0	281	248	0
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	1%	1%	3%	0%	0%	1%	0%	1%	0%	0%	2%
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	1	6	3	5	2		3	8		7	4	
Permitted Phases		6	6									
Actuated Green, G (s)	7.4	22.7	39.7	11.7	27.0		17.0	16.1		15.8	14.9	
Effective Green, g (s)	8.9	24.2	42.7	13.2	28.5		18.5	17.6		17.3	16.4	
Actuated g/C Ratio	0.10	0.27	0.48	0.15	0.32		0.21	0.20		0.20	0.19	
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)	182	980	902	262	1112		374	676		354	643	
v/s Ratio Prot	0.06	c0.20	0.02	c0.10	0.19		c0.16	c0.16		0.16	0.07	
v/s Ratio Perm			0.02									
v/c Ratio	0.58	0.71	0.08	0.68	0.58		0.75	0.81		0.79	0.39	
Uniform Delay, d1	37.9	28.9	12.2	35.5	24.9		32.7	33.7		33.8	31.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	2.1	0.0	5.3	0.5		6.9	6.7		10.9	0.1	
Delay (s)	41.0	31.0	12.2	40.9	25.5		39.6	40.4		44.7	31.7	
Level of Service	D	C	B	D	C		D	D		D	C	
Approach Delay (s)		29.3			28.6			40.2			38.2	
Approach LOS		C			C			D			D	

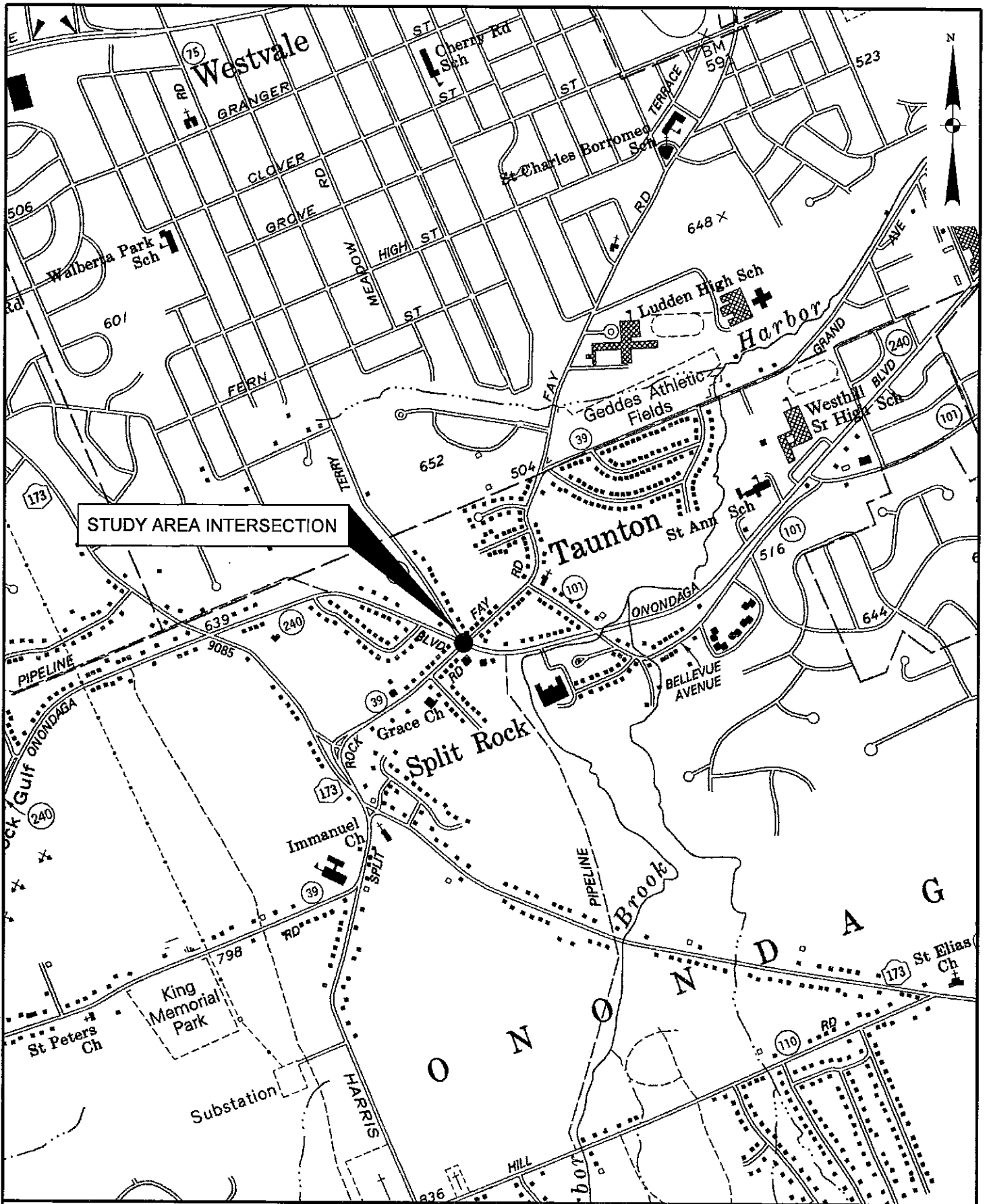
Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	329	177	120	357	161	155	180	126	165	224	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	14	12	12	14	12	12	14	12	12	14
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.94		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1723	1805	3442		1805	3387		1805	3498	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1723	1805	3442		1805	3387		1805	3498	
Peak-hour factor, PHF	0.91	0.91	0.91	0.95	0.95	0.95	0.81	0.81	0.81	0.93	0.93	0.93
Adj. Flow (vph)	48	362	195	126	376	169	191	222	156	177	241	63
RTOR Reduction (vph)	0	0	117	0	71	0	0	117	0	0	32	0
Lane Group Flow (vph)	48	362	78	126	474	0	191	261	0	177	272	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot		pm+ov	Prot			Prot			Prot		
Protected Phases	1	6	3	5	2		3	8		7	4	
Permitted Phases		6	6									
Actuated Green, G (s)	3.5	12.2	22.0	6.5	15.2		9.8	14.2		7.9	12.3	
Effective Green, g (s)	5.0	13.7	25.0	8.0	16.7		11.3	15.7		9.4	13.8	
Actuated g/C Ratio	0.08	0.22	0.40	0.13	0.27		0.18	0.25		0.15	0.22	
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)	144	788	796	230	915		325	847		270	769	
v/s Ratio Prot	0.03	0.10	0.02	c0.07	c0.14		c0.11	0.08		0.10	c0.08	
v/s Ratio Perm			0.03									
v/c Ratio	0.33	0.46	0.10	0.55	0.52		0.59	0.31		0.66	0.35	
Uniform Delay, d1	27.3	21.3	11.8	25.7	19.6		23.6	19.1		25.2	20.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.2	0.0	1.4	0.2		1.8	0.1		4.3	0.1	
Delay (s)	27.8	21.5	11.9	27.1	19.8		25.4	19.2		29.5	20.8	
Level of Service	C	C	B	C	B		C	B		C	C	
Approach Delay (s)		18.9			21.2			21.3			24.0	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



LOCATION MAP
FAY RD/ONONDAGA BLVD/TERRY RD

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 4/10	FIGURE: 8.6

INTERSECTION DIAGRAM

Location: Fay Road at Onondaga Road/Terry Road

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

Drawn By: KK

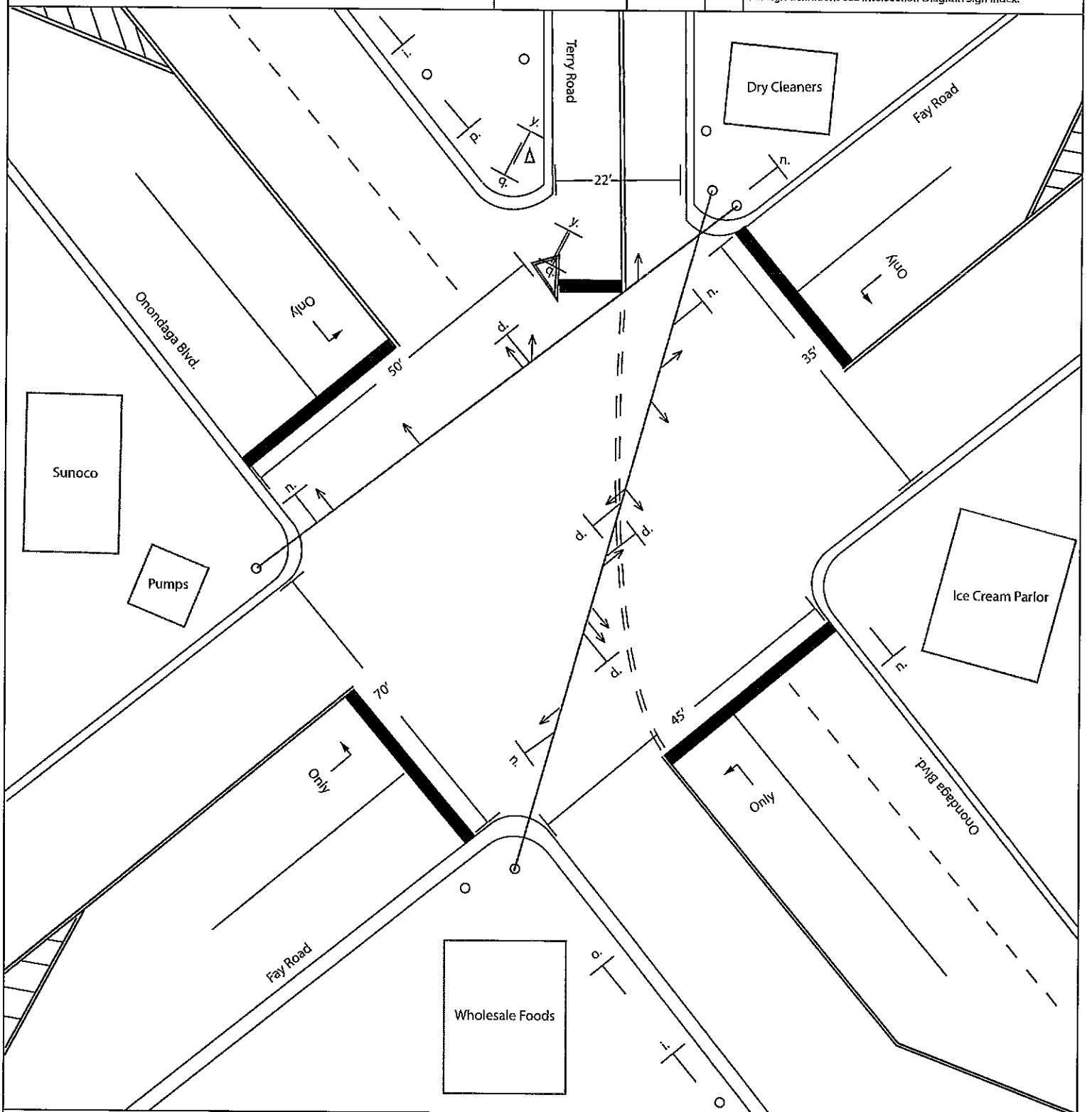
Date: May 2010

Prepared By: SMTC

N

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

For sign definitions see Intersection Diagram Sign Index.



Task

OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

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

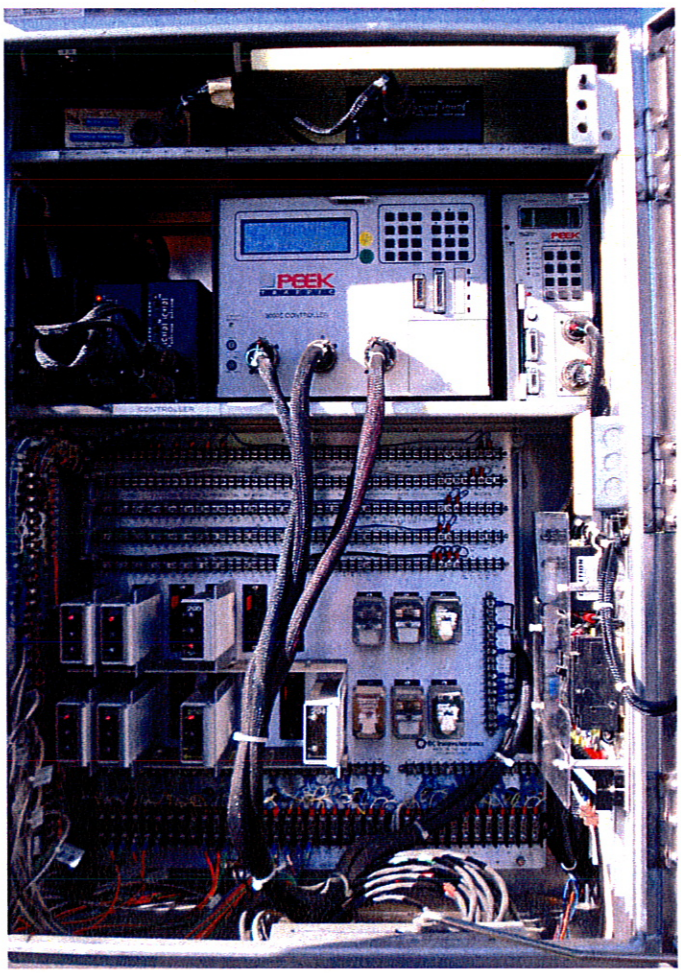
Diagram is not to scale.


ONLY


ONLY

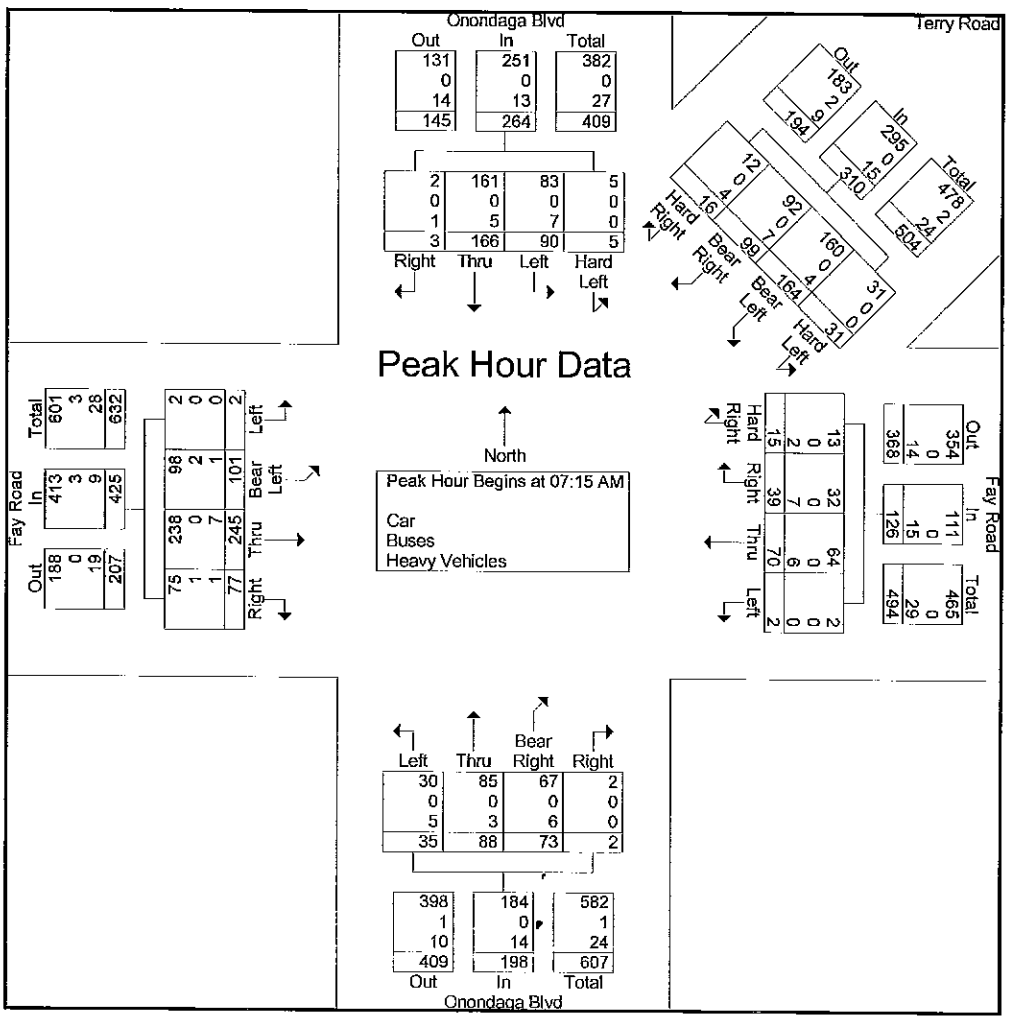

NO TURN ON RED


ONLY


PEEK
TRAFFIC

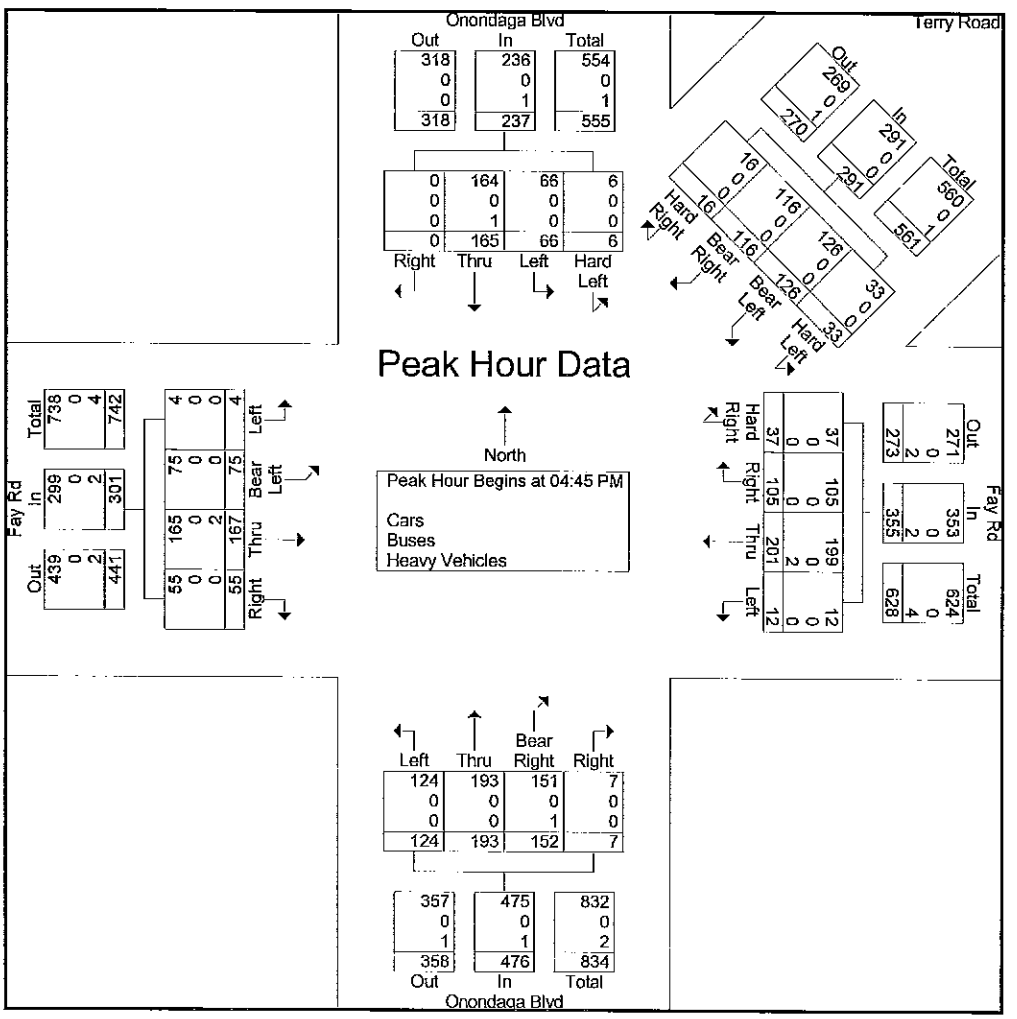
File Name : Onondaga-Fay-Terry- CME AM Peak
Site Code : 00782001
Start Date : 6/3/2009
Page No : 2

	Onondaga Blvd Southbound					Terry Road Southwestbound					Fay Road Westbound					Onondaga Blvd Northbound					Fay Road Eastbound					
Start Time	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Left	Thru	Bear Right	Right	App. Total	Left	Bear Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:45 AM to 08:30 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 07:15 AM																									
07:15 AM	0	**31**	**50**	1	**82**	8	35	25	**6**	74	0	18	11	3	32	**10**	23	**23**	0	**56**	**2**	18	63	21	104	348
07:30 AM	**4**	28	41	0	73	**10**	42	15	4	71	0	17	**12**	**5**	34	7	**24**	21	**1**	53	0	**45**	**72**	**26**	**143**	**374**
07:45 AM	0	22	43	0	65	9	**52**	**32**	3	**96**	1	**19**	12	3	**35**	9	19	14	1	43	0	20	65	9	94	333
08:00 AM	1	9	32	**2**	44	4	35	27	3	69	1	16	4	4	25	9	22	15	0	46	0	18	45	21	84	268
Total Volume	5	90	166	3	264	31	164	99	16	310	2	70	39	15	126	35	88	73	2	198	2	101	245	77	425	1323
% App. Total	1.9	34.1	62.9	1.1			52.9	31.9	5.2		1.6	55.6		11.9		17.7	44.4	36.9			0.5	23.8	57.6	18.1		
PHF	.313	.726	.830	.375	.805	.775	.788	.773	.667	.807	.500	.921	.813	.750	.900	.875	.917	.793	.500	.884	.250	.561	.851	.740	.743	.884
Car	5	83	161	2	251	31	160	92	12	295	2	64	32	13	111	30	85	67	2	184	2	98	238	75	413	1254
% Car	100	92.2	97.0	66.7	95.1	100	97.6	92.9	75.0	95.2	100	91.4	82.1	86.7	88.1	85.7	96.6	91.8	100	92.9	100	97.0	97.1	97.4	97.2	94.8
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3	3
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.0	0	1.3	0.7	0.2
Heavy Vehicles	0	7	5	1	13	0	4	7	4	15	0	6	7	2	15	5	3	6	0	14	0	1	7	1	9	66
% Heavy Vehicles	0	7.8	3.0	33.3	4.9	0	2.4	7.1	25.0	4.8	0	8.6	17.9	13.3	11.9	14.3	3.4	8.2	0	7.1	0	1.0	2.9	1.3	2.1	5.0



File Name : Onondaga-Fay-Terry- CME PM Peak
Site Code : 00782001
Start Date : 6/3/2009
Page No : 2

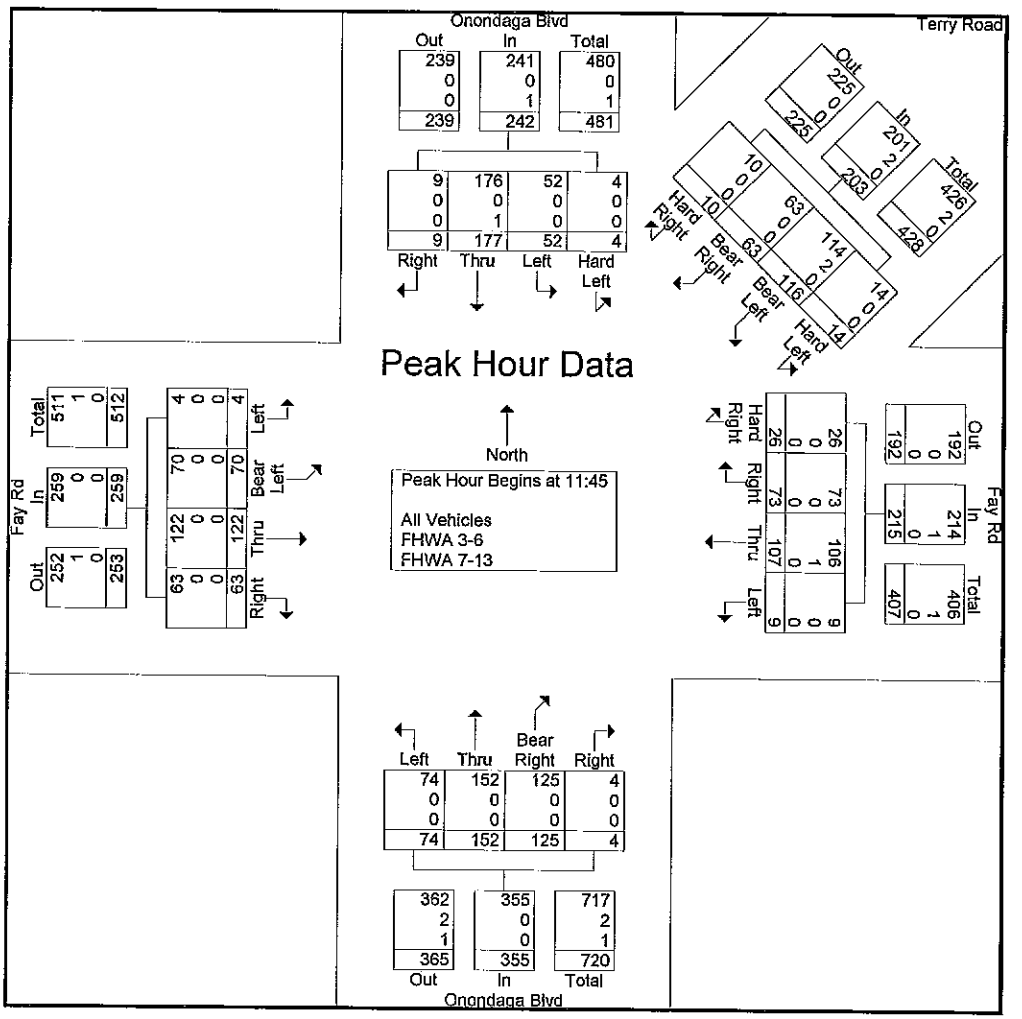
	Onondaga Blvd Southbound					Terry Road Southwestbound					Fay Rd Westbound					Onondaga Blvd Northbound					Fay Rd Eastbound					
Start Time	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Left	Thru	Bear Right	Right	App. Total	Left	Bear Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 04:45 PM																										
04:45 PM	0	16	41	0	57	7	31	30	5	73	4	47	23	9	83	24	50	44	0	118	1	29	32	14	76	407
05:00 PM	4	16	45	0	65	6	26	36	5	73	4	49	27	8	88	31	48	43	0	122	1	14	53	18	86	434
05:15 PM	0	11	32	0	43	8	33	29	3	73	1	60	30	11	102	26	51	37	0	114	1	15	33	13	62	394
05:30 PM	2	23	47	0	72	12	36	21	3	72	3	45	25	9	82	43	44	28	7	122	1	17	49	10	77	425
Total Volume	6	66	165	0	237	33	126	116	16	291	12	201	105	37	355	124	193	152	7	476	4	75	167	55	301	1660
% App. Total	2.5	27.8	69.6			11.3	43.3	39.9	5.5		3.4	56.6	29.6	10.4		26.1	40.5	31.9	1.5		1.3	24.9	55.5	18.3		
PHF	.375	.717	.878	.000	.823	.688	.875	.806	.800	.997	.750	.838	.875	.841	.870	.721	.946	.864	.250	.975	1.000	.647	.788	.764	.875	.956
Cars	6	66	164	0	236	33	126	116	16	291	12	199	105	37	353	124	193	151	7	475	4	75	165	55	299	1654
% Cars	100	100	99.4		99.6	100	100	100	100	100	100	99.0	100	100	99.4	100	100	99.3	100	99.8	100	100	98.8	100	99.3	99.6
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heavy Vehicles	0	0	1	0	1	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	0	2	0	2	6
% Heavy Vehicles	0	0	0.6	0	0.4	0	0	0	0	0	0	1.0	0	0	0.6	0	0	0.7	0	0.2	0	0	1.2	0	0.7	0.4



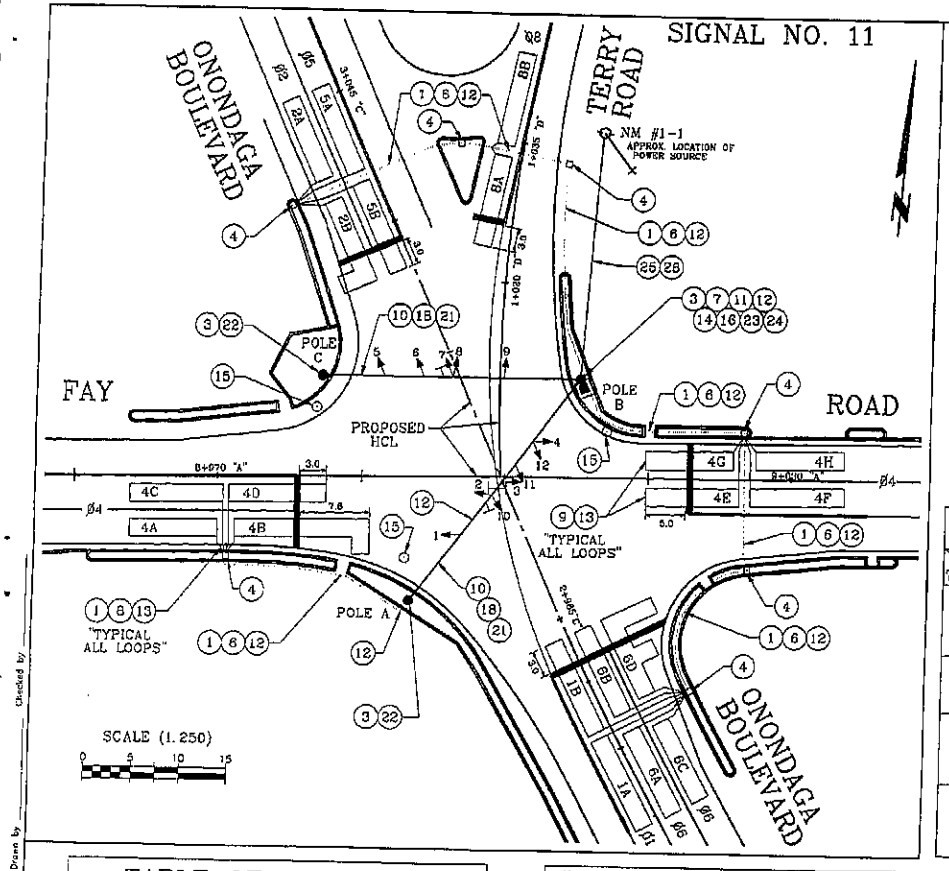
Town of Onondaga, Onondaga County
Fay Road @ Onondaga Blvd/Terry Road
11/21/09
Counters: JR/PSM

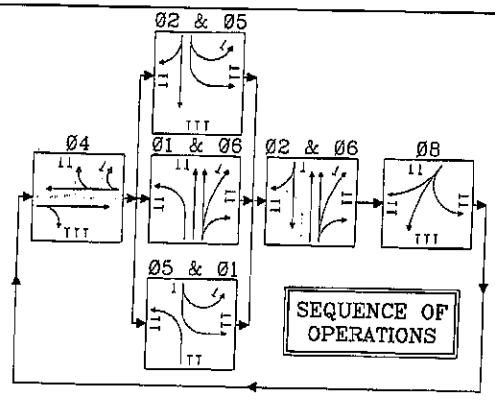
File Name : Onondaga-Fay-Terry- CME MID-DAY Peak
Site Code : 00782041
Start Date : 11/21/2009
Page No : 2

	Onondaga Blvd Southbound					Terry Road Southwestbound					Fay Rd Westbound					Onondaga Blvd Northbound					Fay Rd Eastbound					
Start Time	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Left	Thru	Bear Right	Right	App. Total	Left	Bear Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:45 to 12:30 - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 11:45																									
11:45	1	19	47	0	67	4	34	18	3	59	4	27	17	6	54	13	31	26	0	70	1	18	26	11	56	306
12:00	1	10	43	4	58	3	22	10	1	36	1	33	20	8	62	24	37	31	0	92	1	21	28	12	62	310
12:15	1	12	40	4	57	2	27	19	3	51	2	19	17	6	44	26	41	34	1	102	1	14	41	21	77	331
12:30	1	11	47	1	60	5	33	16	3	57	2	28	19	6	55	11	43	34	3	91	1	17	27	19	64	327
Total Volume	4	52	177	9	242	14	116	63	10	203	9	107	73	26	215	74	152	125	4	355	4	70	122	63	259	1274
% App. Total	1.7	21.5	73.1	3.7		6.9	57.1	31	4.9		4.2	49.8	34	12.1		20.8	42.8	35.2	1.1		1.5	27	47.1	24.3		
PHF	1.000	.684	.941	.563	.903	.700	.853	.829	.833	.860	.563	.811	.913	.813	.867	.712	.884	.919	.333	.870	1.000	.833	.744	.750	.841	.962
All Vehicles	4	52	176	9	241	14	114	63	10	201	9	106	73	26	214	74	152	125	4	355	4	70	122	63	259	1270
% All Vehicles	100	100	99.4	100	99.6	100	98.3	100	100	99.0	100	99.1	100	100	99.5	100	100	100	100	100	100	100	100	100	100	99.7
FHWA 3-6	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
% FHWA 3-6	0	0	0	0	0	0	1.7	0	0	1.0	0	0.9	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0.2
FHWA 7-13	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% FHWA 7-13	0	0	0.6	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1



SIGNAL NO. 11





SYRACUSE-CEDARVALE ROAD (FAY ROAD), C.R. 39

SIGNAL PLAN

COUNTY OF ONONDAGA
DEPARTMENT OF TRANSPORTATION

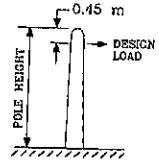
SCALE: HORIZ: NONE VERT: NONE
DATE: MAY 2003
TOTAL SHEETS: 58
SHEET NUMBER: 56
REVISIONS

KEY FOR WIRE COLOR CODE

R/BK = WIRE COLOR/TRACER COLOR
O = ORANGE BK = BLACK
R = RED W = WHITE
G = GREEN BL = BLUE

LEGEND

- NEW TRAFFIC SIGNAL POLE
- NEW POLE MOUNTED CONTROLLER
- NEW PULLBOX
- UTILITY POLE (POWER SOURCE)
- NEW SIGNAL HEAD
- NEW SIGN AND MOUNTING ASSEMBLY
- Ø SIGNAL PHASE
- X KEY NUMBERS - SEE PAGE NO. 57



POLE LOCATION

POLE "A" - 2+993.000 "C", 13.90 M LT
POLE "B" - 3+007.000 "C", 11.60 M RT
POLE "C" - 3+018.000 "C", 13.10 M LT

DESIGN LOADS

POLE "A" - 40 kN - 10 M
POLE "B" - 60 kN - 11 M
POLE "C" - 40 kN - 10 M

FOOTING MOMENT

POLE "A" - 382 kN/M
POLE "B" - 573 kN/M
POLE "C" - 382 kN/M

FOOTING ELEVATION

POLE "A" - 168.250
POLE "B" - 168.050
POLE "C" - 168.450

FOUNDATION

POLE "A" CODE M-16
POLE "B" CODE M-19
POLE "C" CODE M-16

TABLE OF CLEARANCES

FROM / TO	G	R	G ◄G	R ◄G
G	G	R	G ◄Y	R ◄G
	G	R	G	R ◄Y
R	Y	R	Y ◄Y	R ◄Y
	R	R	R	R
G ◄G	G	R	G ◄G	R ◄G
	G	R	G ◄G	R ◄G
R ◄G	Y	R	Y ◄G	R ◄G
	R	R	R ◄G	R ◄G

TABLE OF OPERATION

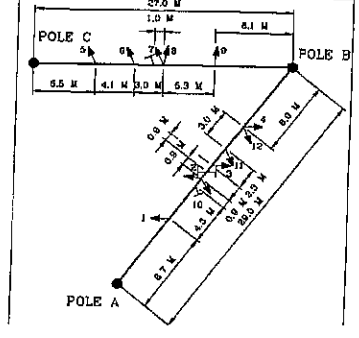
PHASE / HEAD	1	2	3	4	5	6	7	8	9	10	11	12
1	R	R	R	R	R	R	R R	R	R	◄G R	R	R
2	R	R	R	R	G	G	R R	R	R	G	R	R
4	G	G	G	G	R	R	R	R	R	R	R	R
5	R	R	R	R	R	R	◄G R	R	R	R	R	R
6	R	R	R	R	R	R	R R	R	R	R	G	G
8	R	R	R	R	R	R	R	G	G	R	R	R
1 & 5	R	R	R	R	R	R	◄G R	R	R	◄G R	R	R
1 & 6	R	R	R	R	R	R	R	R	R	◄G G	G	G
2 & 5	R	R	R	R	G	G	◄G G	R	R	R	R	R
2 & 6	R	R	R	R	G	C	R	R	R	C	G	G
FLASHER	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR

LOOP DATA TABLE ⑧⑭

DETECTOR NO.	DESCRIPTION
1A,1B	1 - 1.8 M x 9.2 M 0.6 M APART 1 - 1.8 M x 10.4 M
2A,2B	1 - 1.8 M x 9.2 M 2.4 M APART 1 - 1.8 M x 9.6 M WITH 1.8 M x 1.8 M LEG
4A,4B	1 - 1.8 M x 9.2 M 1.2 M APART 1 - 1.8 M x 14.0 M WITH 1.8 M x 1.8 M LEG
4C,4D	1 - 1.8 M x 9.2 M 0.6 M APART 1 - 1.8 M x 9.8 M
4E,4F	1 - 1.8 M x 9.2 M 1.2 M APART 1 - 1.8 M x 9.8 M
4G,4H	1 - 1.8 M x 9.2 M 2.4 M APART 1 - 1.8 M x 9.8 M
5A,5B	1 - 1.8 M x 9.8 M 1.2 M APART 1 - 1.8 M x 10.2 M
6A,6B	1 - 1.8 M x 9.8 M 1.8 M APART 1 - 1.8 M x 9.8 M
6C,6D	1 - 1.8 M x 9.2 M 3.0 M APART 1 - 1.8 M x 9.2 M WITH 1.8 M x 2.0 M LEG & 1.8 M x 3.6 M LEG
8A,8B	1 - 1.8 M x 9.8 M 1.2 M APART 1 - 1.8 M x 9.8 M

HEAD LAYOUT

HEAD	HCL STA.	OFFSET
1	2+997.230 "C"	6.23 M LT.
4 & 12	3+003.100 "C"	4.54 M RT.
5	3+015.340 "C"	7.12 M LT.
9	3+010.250 "C"	4.24 M RT.



BRYANT ASSOCIATES, P.C.
Engineers • Surveyors
EAST AURORA

Designed by
Drawn by
Checked by
Project No.
FILES

INTERSECTION NAME: Onondaga Blvd. @ Terry Rd.
INTERSECTION NUMBER: 11

NSTALLATION DATE
PROGRAM DATE:

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

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	8	10		8	8	10		8
PASSAGE	4	4		4	4	4		4
YELLOW	4	4		4	4	4		4
RED	2	2		2	2	2		2
MAX I	15	25		30	15	25		25
MAX II	15	35		35	15	35		35
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

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

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

DETECTOR ASSIGNMENT								
Det PH	1	2	3	4	5	6	7	8
1	X							
2		X						
3			X					
4				X				
5					X			
6						X		
7							X	
8								X

PEEK 3000E

PEEK 3000E

INTERSECTION NAME: Onondaga Blvd. @ Terry Rd.
INTERSECTION NUMBER: 11

INSTALLATION DATE:
PROGRAM DATE:

OPTIMIZED TIMINGS

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

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	10		10	5	10		5
PASSAGE	1	1		1	1	1		1
YELLOW	3.5	3.5		3.5	3.5	3.5		3.5
RED	3	3		3	3	3		3
MAX I (AM)	7.5	15.5		31.5	11.5	11.5		29.5
MAX II (PM)	11.5	14.5		26.5	9.5	16.5		21.5
MAX III (Sat)	7.5	11.5		15.5	8.5	10.5		14.5
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

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

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

DETECTOR ASSIGNMENT								
Det PH	1	2	3	4	5	6	7	8
1	X							
2		X						
3			X					
4				X				
5					X			
6						X		
7							X	
8								X

PEEK 3000E

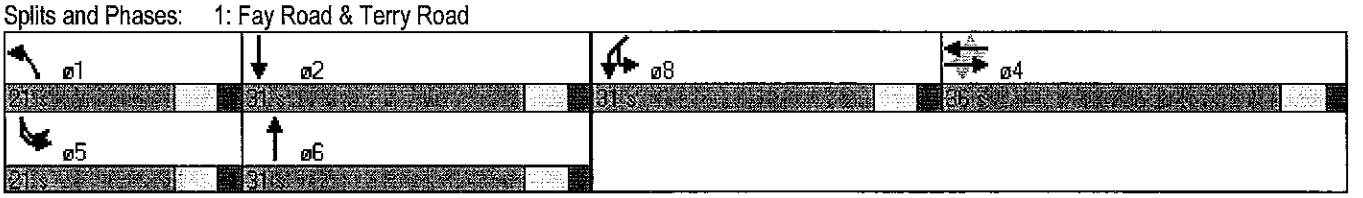
PEEK 3000E

Lane Group	EBL2	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SWL
Lane Configurations										
Volume (vph)	2	101	245	2	70	35	88	90	166	164
Turn Type	Perm	Perm		Perm		Prot		Prot		
Protected Phases			4		4	1	6	5	2	8
Permitted Phases	4	4		4						
Detector Phase	4	4	4	4	4	1	6	5	2	8
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	10.0	8.0	10.0	8.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	14.0	16.0	14.0	16.0	14.0
Total Split (s)	36.0	36.0	36.0	36.0	36.0	21.0	31.0	21.0	31.0	31.0
Total Split (%)	30.3%	30.3%	30.3%	30.3%	30.3%	17.6%	26.1%	17.6%	26.1%	26.1%
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	15.0	25.0	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)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						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	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	None	None	None	None	None	Max	None	Max	None
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

Intersection Summary

Cycle Length: 119
Actuated Cycle Length: 116.5
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Fay Road & Terry Road

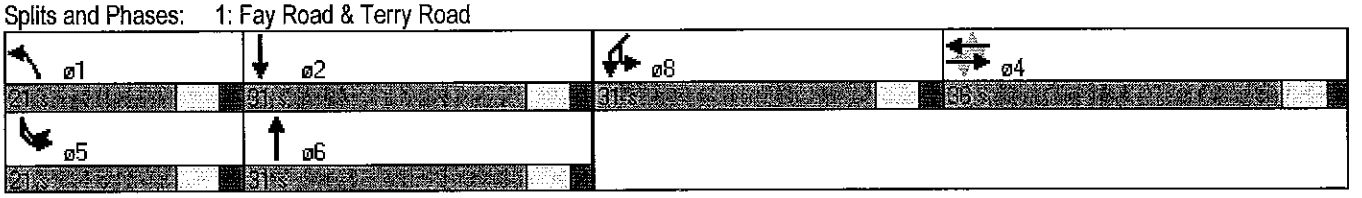


Lane Group	EBL2	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SWL
Lane Configurations										
Volume (vph)	4	75	167	12	201	124	193	66	165	126
Turn Type	Perm	Perm		Perm		Prot		Prot		
Protected Phases			4		4	1	6	5	2	8
Permitted Phases	4	4		4						
Detector Phase	4	4	4	4	4	1	6	5	2	8
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	10.0	8.0	10.0	8.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	14.0	16.0	14.0	16.0	14.0
Total Split (s)	36.0	36.0	36.0	36.0	36.0	21.0	31.0	21.0	31.0	31.0
Total Split (%)	30.3%	30.3%	30.3%	30.3%	30.3%	17.6%	26.1%	17.6%	26.1%	26.1%
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	15.0	25.0	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)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						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	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	None	None	None	None	None	Max	None	Max	None
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

Intersection Summary

Cycle Length: 119
Actuated Cycle Length: 113.8
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Fay Road & Terry Road

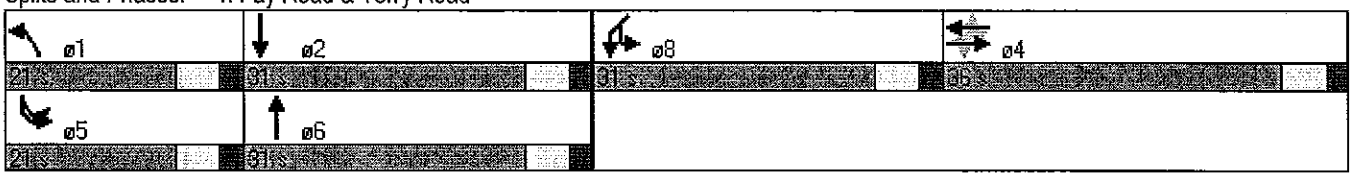


Lane Group	EBL2	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SWL
Lane Configurations										
Volume (vph)	4	70	122	9	107	74	152	52	177	116
Turn Type	Perm	Perm		Perm		Prot		Prot		
Protected Phases			4		4	1	6	5	2	8
Permitted Phases	4	4		4						
Detector Phase	4	4	4	4	4	1	6	5	2	8
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	10.0	8.0	10.0	8.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	14.0	16.0	14.0	16.0	14.0
Total Split (s)	36.0	36.0	36.0	36.0	36.0	21.0	31.0	21.0	31.0	31.0
Total Split (%)	30.3%	30.3%	30.3%	30.3%	30.3%	17.6%	26.1%	17.6%	26.1%	26.1%
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	15.0	25.0	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)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						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	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	None	None	None	None	None	Max	None	Max	None
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

Intersection Summary

Cycle Length: 119
Actuated Cycle Length: 97.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Fay Road & Terry Road

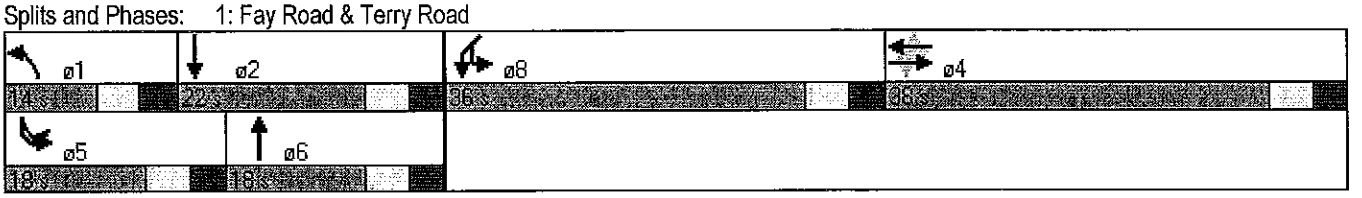


Lane Group	EBL2	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SWL
Lane Configurations										
Volume (vph)	2	101	245	2	70	35	88	90	166	164
Turn Type	Perm	Perm		Perm		Prot		Prot		
Protected Phases			4		4	1	6	5	2	8
Permitted Phases	4	4		4						
Detector Phase	4	4	4	4	4	1	6	5	2	8
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	16.5	16.5	16.5	16.5	16.5	11.5	16.5	11.5	16.5	11.5
Total Split (s)	38.0	38.0	38.0	38.0	38.0	14.0	18.0	18.0	22.0	36.0
Total Split (%)	34.5%	34.5%	34.5%	34.5%	34.5%	12.7%	16.4%	16.4%	20.0%	32.7%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	7.5	11.5	11.5	15.5	29.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	Min	None	Min	None
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 97.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Fay Road & Terry Road

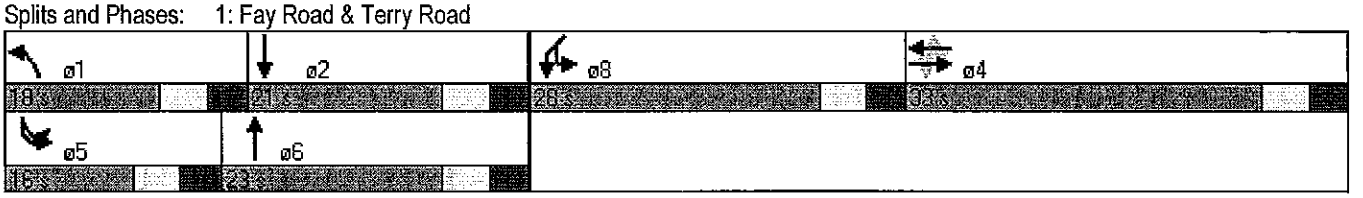


Lane Group	EBL2	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SWL
Lane Configurations										
Volume (vph)	4	75	167	12	201	124	193	66	165	126
Turn Type	Perm	Perm		Perm		Prot		Prot		
Protected Phases			4		4	1	6	5	2	8
Permitted Phases	4	4		4						
Detector Phase	4	4	4	4	4	1	6	5	2	8
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	16.5	16.5	16.5	16.5	16.5	11.5	16.5	11.5	16.5	11.5
Total Split (s)	33.0	33.0	33.0	33.0	33.0	18.0	23.0	16.0	21.0	28.0
Total Split (%)	33.0%	33.0%	33.0%	33.0%	33.0%	18.0%	23.0%	16.0%	21.0%	28.0%
Maximum Green (s)	26.5	26.5	26.5	26.5	26.5	11.5	16.5	9.5	14.5	21.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	Min	None	Min	None
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 87.5
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Fay Road & Terry Road

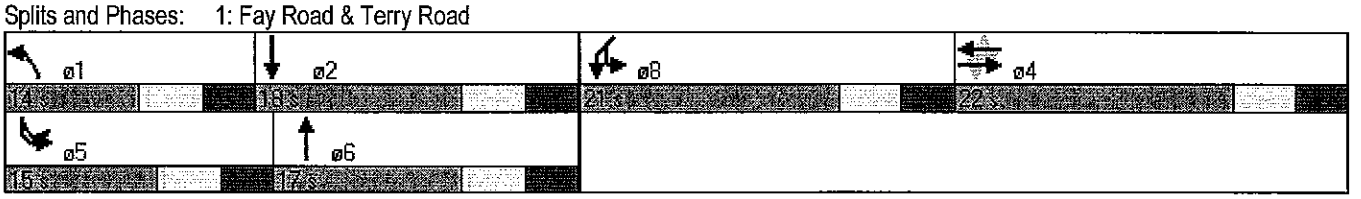


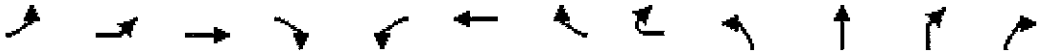
Lane Group	EBL2	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SWL
Lane Configurations										
Volume (vph)	4	70	122	9	107	74	152	52	177	116
Turn Type	Perm	Perm		Perm		Prot		Prot		
Protected Phases			4		4	1	6	5	2	8
Permitted Phases	4	4		4						
Detector Phase	4	4	4	4	4	1	6	5	2	8
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	16.5	16.5	16.5	16.5	16.5	11.5	16.5	11.5	16.5	11.5
Total Split (s)	22.0	22.0	22.0	22.0	22.0	14.0	17.0	15.0	18.0	21.0
Total Split (%)	29.3%	29.3%	29.3%	29.3%	29.3%	18.7%	22.7%	20.0%	24.0%	28.0%
Maximum Green (s)	15.5	15.5	15.5	15.5	15.5	7.5	10.5	8.5	11.5	14.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	Min	None	Min	None
Walk Time (s)										
Flash Dont Walk (s)										
Pedestrian Calls (#/hr)										

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 65.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Fay Road & Terry Road





Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Volume (vph)	2	101	245	77	2	70	39	15	35	88	73	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	11	11	11	11
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	0.95		
Frt		1.00	0.96		1.00	0.93			1.00	0.93		
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00		
Satd. Flow (prot)		1754	1779		1805	1582			1531	3088		
Flt Permitted		0.60	1.00		0.13	1.00			0.95	1.00		
Satd. Flow (perm)		1105	1779		244	1582			1531	3088		
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.90	0.90	0.90	0.90	0.88	0.88	0.88	0.88
Adj. Flow (vph)	3	136	331	104	2	78	43	17	40	100	83	2
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	139	435	0	2	138	0	0	40	185	0	0
Heavy Vehicles (%)	0%	3%	3%	3%	0%	9%	18%	13%	14%	3%	8%	0%
Turn Type	Perm	Perm			Perm				Prot			
Protected Phases			4			4			1	6		
Permitted Phases	4	4			4							
Actuated Green, G (s)		29.2	29.2		29.2	29.2			6.5	27.5		
Effective Green, g (s)		31.2	31.2		31.2	31.2			8.5	29.5		
Actuated g/C Ratio		0.26	0.26		0.26	0.26			0.07	0.25		
Clearance Time (s)		6.0	6.0		6.0	6.0			6.0	6.0		
Vehicle Extension (s)		4.0	4.0		4.0	4.0			4.0	4.0		
Lane Grp Cap (vph)		290	467		64	415			109	766		
v/s Ratio Prot			c0.24			0.09			0.03	0.06		
v/s Ratio Perm		0.13			0.01							
v/c Ratio		0.48	0.93		0.03	0.33			0.37	0.24		
Uniform Delay, d1		37.0	42.8		32.6	35.4			52.6	35.8		
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00		
Incremental Delay, d2		1.7	25.8		0.3	0.6			2.8	0.7		
Delay (s)		38.7	68.6		32.9	36.1			55.5	36.5		
Level of Service		D	E		C	D			E	D		
Approach Delay (s)			61.3			36.0				39.9		
Approach LOS			E			D				D		

Intersection Summary			
HCM Average Control Delay	59.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	118.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Volume (vph)	5	90	166	3	31	164	99	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0			4.0		
Lane Util. Factor		1.00	1.00			1.00		
Frt		1.00	1.00			0.95		
Flt Protected		0.95	1.00			0.97		
Satd. Flow (prot)		1622	1829			1673		
Flt Permitted		0.95	1.00			0.97		
Satd. Flow (perm)		1622	1829			1673		
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	6	111	205	4	38	202	122	20
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	117	209	0	0	382	0	0
Heavy Vehicles (%)	0%	8%	3%	33%	0%	2%	7%	25%
Turn Type	Prot	Prot			Split			
Protected Phases	5	5	2		8	8		
Permitted Phases								
Actuated Green, G (s)		13.2	34.2			25.0		
Effective Green, g (s)		15.2	36.2			27.0		
Actuated g/C Ratio		0.13	0.30			0.23		
Clearance Time (s)		6.0	6.0			6.0		
Vehicle Extension (s)		4.0	4.0			4.0		
Lane Grp Cap (vph)		207	557			380		
v/s Ratio Prot		c0.07	c0.11			c0.23		
v/s Ratio Perm								
v/c Ratio		0.57	0.38			1.01		
Uniform Delay, d1		48.7	32.5			46.0		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		4.2	1.9			47.5		
Delay (s)		53.0	34.4			93.4		
Level of Service		D	C			F		
Approach Delay (s)			41.1			93.4		
Approach LOS			D			F		

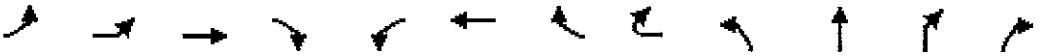
Intersection Summary

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Volume (vph)	4	75	167	55	12	201	105	37	124	193	152	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	11	11	11	11
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	0.95		
Frt		1.00	0.96		1.00	0.94			1.00	0.93		
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00		
Satd. Flow (prot)		1805	1816		1805	1771			1745	3239		
Flt Permitted		0.19	1.00		0.41	1.00			0.95	1.00		
Satd. Flow (perm)		362	1816		784	1771			1745	3239		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.87	0.87	0.87	0.87	0.98	0.98	0.98	0.98
Adj. Flow (vph)	5	85	190	62	14	231	121	43	127	197	155	7
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	90	252	0	14	395	0	0	127	359	0	0
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	1%	0%
Turn Type	Perm	Perm			Perm				Prot			
Protected Phases			4			4			1	6		
Permitted Phases	4	4			4							
Actuated Green, G (s)		28.8	28.8		28.8	28.8			13.2	29.8		
Effective Green, g (s)		30.8	30.8		30.8	30.8			15.2	31.8		
Actuated g/C Ratio		0.27	0.27		0.27	0.27			0.13	0.28		
Clearance Time (s)		6.0	6.0		6.0	6.0			6.0	6.0		
Vehicle Extension (s)		4.0	4.0		4.0	4.0			4.0	4.0		
Lane Grp Cap (vph)		97	486		210	474			230	895		
v/s Ratio Prot			0.14			0.22			c0.07	c0.11		
v/s Ratio Perm		c0.25			0.02							
v/c Ratio		0.93	0.52		0.07	0.83			0.55	0.40		
Uniform Delay, d1		41.1	35.8		31.4	39.7			46.8	33.9		
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00		
Incremental Delay, d2		68.3	1.2		0.2	12.4			3.5	1.3		
Delay (s)		109.4	37.1		31.6	52.1			50.3	35.2		
Level of Service		F	D		C	D			D	D		
Approach Delay (s)			56.1			51.4				39.2		
Approach LOS			E			D				D		

Intersection Summary			
HCM Average Control Delay	48.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	115.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SWL2	SWL	SWR	SWR2
Lane Configurations							
Volume (vph)	6	66	165	33	126	116	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12
Total Lost time (s)		4.0	4.0		4.0		
Lane Util. Factor		1.00	1.00		1.00		
Frt		1.00	1.00		0.94		
Flt Protected		0.95	1.00		0.97		
Satd. Flow (prot)		1745	1881		1736		
Flt Permitted		0.95	1.00		0.97		
Satd. Flow (perm)		1745	1881		1736		
Peak-hour factor, PHF	0.82	0.82	0.82	0.99	0.99	0.99	0.99
Adj. Flow (vph)	7	80	201	33	127	117	16
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	87	201	0	293	0	0
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	0%
Turn Type	Prot	Prot		Split			
Protected Phases	5	5	2	8	8		
Permitted Phases							
Actuated Green, G (s)		9.9	26.5		22.6		
Effective Green, g (s)		11.9	28.5		24.6		
Actuated g/C Ratio		0.10	0.25		0.21		
Clearance Time (s)		6.0	6.0		6.0		
Vehicle Extension (s)		4.0	4.0		4.0		
Lane Grp Cap (vph)		180	466		371		
v/s Ratio Prot		0.05	0.11		c0.17		
v/s Ratio Perm							
v/c Ratio		0.48	0.43		0.79		
Uniform Delay, d1		48.7	36.5		42.8		
Progression Factor		1.00	1.00		1.00		
Incremental Delay, d2		2.8	2.9		11.3		
Delay (s)		51.5	39.4		54.1		
Level of Service		D	D		D		
Approach Delay (s)			43.0		54.1		
Approach LOS			D		D		

Intersection Summary

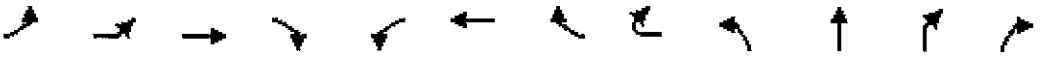


Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Volume (vph)	4	70	122	63	9	107	73	26	74	152	125	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	11	11	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0			4.0	4.0		
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	0.95		
Frt		1.00	0.95		1.00	0.93			1.00	0.93		
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00		
Satd. Flow (prot)		1805	1803		1805	1754			1745	3249		
Flt Permitted		0.40	1.00		0.44	1.00			0.95	1.00		
Satd. Flow (perm)		769	1803		831	1754			1745	3249		
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	5	83	145	75	10	123	84	30	85	175	144	5
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	88	220	0	10	237	0	0	85	324	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	Perm			Perm				Prot			
Protected Phases			4			4			1	6		
Permitted Phases	4	4			4							
Actuated Green, G (s)		20.3	20.3		20.3	20.3			9.0	27.0		
Effective Green, g (s)		22.3	22.3		22.3	22.3			11.0	29.0		
Actuated g/C Ratio		0.23	0.23		0.23	0.23			0.11	0.29		
Clearance Time (s)		6.0	6.0		6.0	6.0			6.0	6.0		
Vehicle Extension (s)		4.0	4.0		4.0	4.0			4.0	4.0		
Lane Grp Cap (vph)		174	409		188	398			195	958		
v/s Ratio Prot			0.12			c0.14			c0.05	0.10		
v/s Ratio Perm		0.11			0.01							
v/c Ratio		0.51	0.54		0.05	0.60			0.44	0.34		
Uniform Delay, d1		33.2	33.5		29.8	34.0			40.8	27.2		
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00		
Incremental Delay, d2		3.1	1.7		0.2	2.8			2.1	1.0		
Delay (s)		36.4	35.2		29.9	36.8			42.9	28.1		
Level of Service		D	D		C	D			D	C		
Approach Delay (s)			35.6			36.5				31.2		
Approach LOS			D			D				C		

Intersection Summary			
HCM Average Control Delay	34.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Volume (vph)	4	52	177	9	14	116	63	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0			4.0		
Lane Util. Factor		1.00	1.00			1.00		
Frt		1.00	0.99			0.95		
Flt Protected		0.95	1.00			0.97		
Satd. Flow (prot)		1745	1868			1732		
Flt Permitted		0.95	1.00			0.97		
Satd. Flow (perm)		1745	1868			1732		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.86	0.86	0.86	0.86
Adj. Flow (vph)	4	58	197	10	16	135	73	12
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	62	207	0	0	236	0	0
Heavy Vehicles (%)	0%	0%	1%	0%	0%	2%	0%	0%
Turn Type	Prot	Prot			Split			
Protected Phases	5	5	2		8	8		
Permitted Phases								
Actuated Green, G (s)		8.1	26.1			19.0		
Effective Green, g (s)		10.1	28.1			21.0		
Actuated g/C Ratio		0.10	0.29			0.21		
Clearance Time (s)		6.0	6.0			6.0		
Vehicle Extension (s)		4.0	4.0			4.0		
Lane Grp Cap (vph)		179	533			370		
v/s Ratio Prot		0.04	c0.11			c0.14		
v/s Ratio Perm								
v/c Ratio		0.35	0.39			0.64		
Uniform Delay, d1		41.1	28.2			35.2		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		1.6	2.1			4.0		
Delay (s)		42.7	30.4			39.3		
Level of Service		D	C			D		
Approach Delay (s)			33.2			39.3		
Approach LOS			C			D		

Intersection Summary



Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Volume (vph)	2	101	245	77	2	70	39	15	35	88	73	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	11	11	11	11
Total Lost time (s)		4.5	4.5		4.5	4.5			4.5	4.5		
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	0.95		
Frt		1.00	0.96		1.00	0.93			1.00	0.93		
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00		
Satd. Flow (prot)		1754	1779		1805	1582			1531	3088		
Flt Permitted		0.63	1.00		0.18	1.00			0.95	1.00		
Satd. Flow (perm)		1170	1779		334	1582			1531	3088		
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.90	0.90	0.90	0.90	0.88	0.88	0.88	0.88
Adj. Flow (vph)	3	136	331	104	2	78	43	17	40	100	83	2
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	139	435	0	2	138	0	0	40	185	0	0
Heavy Vehicles (%)	0%	3%	3%	3%	0%	9%	18%	13%	14%	3%	8%	0%
Turn Type	Perm	Perm			Perm				Prot			
Protected Phases			4			4			1	6		
Permitted Phases	4	4			4							
Actuated Green, G (s)		26.1	26.1		26.1	26.1			3.8	14.0		
Effective Green, g (s)		28.1	28.1		28.1	28.1			5.8	16.0		
Actuated g/C Ratio		0.28	0.28		0.28	0.28			0.06	0.16		
Clearance Time (s)		6.5	6.5		6.5	6.5			6.5	6.5		
Vehicle Extension (s)		1.0	1.0		1.0	1.0			1.0	1.0		
Lane Grp Cap (vph)		329	500		94	445			89	494		
v/s Ratio Prot			c0.24			0.09			0.03	0.06		
v/s Ratio Perm		0.12			0.01							
v/c Ratio		0.42	0.87		0.02	0.31			0.45	0.37		
Uniform Delay, d1		29.3	34.2		26.0	28.3			45.6	37.5		
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00		
Incremental Delay, d2		0.3	14.7		0.0	0.1			1.3	0.2		
Delay (s)		29.6	49.0		26.0	28.5			46.9	37.7		
Level of Service		C	D		C	C			D	D		
Approach Delay (s)			44.3			28.4				39.3		
Approach LOS			D			C				D		

Intersection Summary			
HCM Average Control Delay	42.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Volume (vph)	5	90	166	3	31	164	99	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	12
Total Lost time (s)		4.5	4.5			4.5		
Lane Util. Factor		1.00	1.00			1.00		
Frt		1.00	1.00			0.95		
Flt Protected		0.95	1.00			0.97		
Satd. Flow (prot)		1622	1829			1673		
Flt Permitted		0.95	1.00			0.97		
Satd. Flow (perm)		1622	1829			1673		
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	6	111	205	4	38	202	122	20
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	117	209	0	0	382	0	0
Heavy Vehicles (%)	0%	8%	3%	33%	0%	2%	7%	25%
Turn Type	Prot	Prot			Split			
Protected Phases	5	5	2		8	8		
Permitted Phases								
Actuated Green, G (s)		9.4	19.6			24.5		
Effective Green, g (s)		11.4	21.6			26.5		
Actuated g/C Ratio		0.11	0.22			0.26		
Clearance Time (s)		6.5	6.5			6.5		
Vehicle Extension (s)		1.0	1.0			1.0		
Lane Grp Cap (vph)		185	395			443		
v/s Ratio Prot		c0.07	c0.11			c0.23		
v/s Ratio Perm								
v/c Ratio		0.63	0.53			0.86		
Uniform Delay, d1		42.3	34.7			35.0		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		5.1	0.6			15.3		
Delay (s)		47.4	35.3			50.3		
Level of Service		D	D			D		
Approach Delay (s)			39.6			50.3		
Approach LOS			D			D		

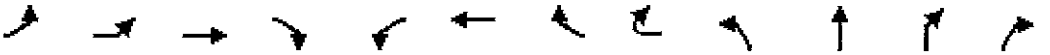
Intersection Summary

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Volume (vph)	4	75	167	55	12	201	105	37	124	193	152	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	11	11	11	11
Total Lost time (s)		4.5	4.5		4.5	4.5			4.5	4.5		
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	0.95		
Frt		1.00	0.96		1.00	0.94			1.00	0.93		
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00		
Satd. Flow (prot)		1805	1816		1805	1771			1745	3239		
Flt Permitted		0.23	1.00		0.45	1.00			0.95	1.00		
Satd. Flow (perm)		428	1816		856	1771			1745	3239		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.87	0.87	0.87	0.87	0.98	0.98	0.98	0.98
Adj. Flow (vph)	5	85	190	62	14	231	121	43	127	197	155	7
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	90	252	0	14	395	0	0	127	359	0	0
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	1%	0%
Turn Type	Perm	Perm			Perm				Prot			
Protected Phases			4			4			1	6		
Permitted Phases	4	4			4							
Actuated Green, G (s)		21.8	21.8		21.8	21.8			9.0	17.2		
Effective Green, g (s)		23.8	23.8		23.8	23.8			11.0	19.2		
Actuated g/C Ratio		0.27	0.27		0.27	0.27			0.12	0.22		
Clearance Time (s)		6.5	6.5		6.5	6.5			6.5	6.5		
Vehicle Extension (s)		1.0	1.0		1.0	1.0			1.0	1.0		
Lane Grp Cap (vph)		115	489		230	477			217	703		
v/s Ratio Prot			0.14			c0.22			c0.07	c0.11		
v/s Ratio Perm		0.21			0.02							
v/c Ratio		0.78	0.52		0.06	0.83			0.59	0.51		
Uniform Delay, d1		29.9	27.4		24.0	30.4			36.5	30.5		
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00		
Incremental Delay, d2		26.6	0.4		0.0	10.8			2.6	0.3		
Delay (s)		56.5	27.8		24.0	41.2			39.1	30.7		
Level of Service		E	C		C	D			D	C		
Approach Delay (s)			35.3			40.6				32.9		
Approach LOS			D			D				C		

Intersection Summary			
HCM Average Control Delay	37.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SWL2	SWL	SWR	SWR2
Lane Configurations							
Volume (vph)	6	66	165	33	126	116	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12
Total Lost time (s)		4.5	4.5		4.5		
Lane Util. Factor		1.00	1.00		1.00		
Frt		1.00	1.00		0.94		
Flt Protected		0.95	1.00		0.97		
Satd. Flow (prot)		1745	1881		1736		
Flt Permitted		0.95	1.00		0.97		
Satd. Flow (perm)		1745	1881		1736		
Peak-hour factor, PHF	0.82	0.82	0.82	0.99	0.99	0.99	0.99
Adj. Flow (vph)	7	80	201	33	127	117	16
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	87	201	0	293	0	0
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	0%
Turn Type	Prot	Prot		Split			
Protected Phases	5	5	2	8	8		
Permitted Phases							
Actuated Green, G (s)		6.2	14.4		17.2		
Effective Green, g (s)		8.2	16.4		19.2		
Actuated g/C Ratio		0.09	0.19		0.22		
Clearance Time (s)		6.5	6.5		6.5		
Vehicle Extension (s)		1.0	1.0		1.0		
Lane Grp Cap (vph)		162	349		377		
v/s Ratio Prot		0.05	0.11		c0.17		
v/s Ratio Perm							
v/c Ratio		0.54	0.58		0.78		
Uniform Delay, d1		38.3	32.8		32.6		
Progression Factor		1.00	1.00		1.00		
Incremental Delay, d2		1.7	1.4		8.9		
Delay (s)		40.0	34.3		41.5		
Level of Service		D	C		D		
Approach Delay (s)			36.0		41.5		
Approach LOS			D		D		

Intersection Summary

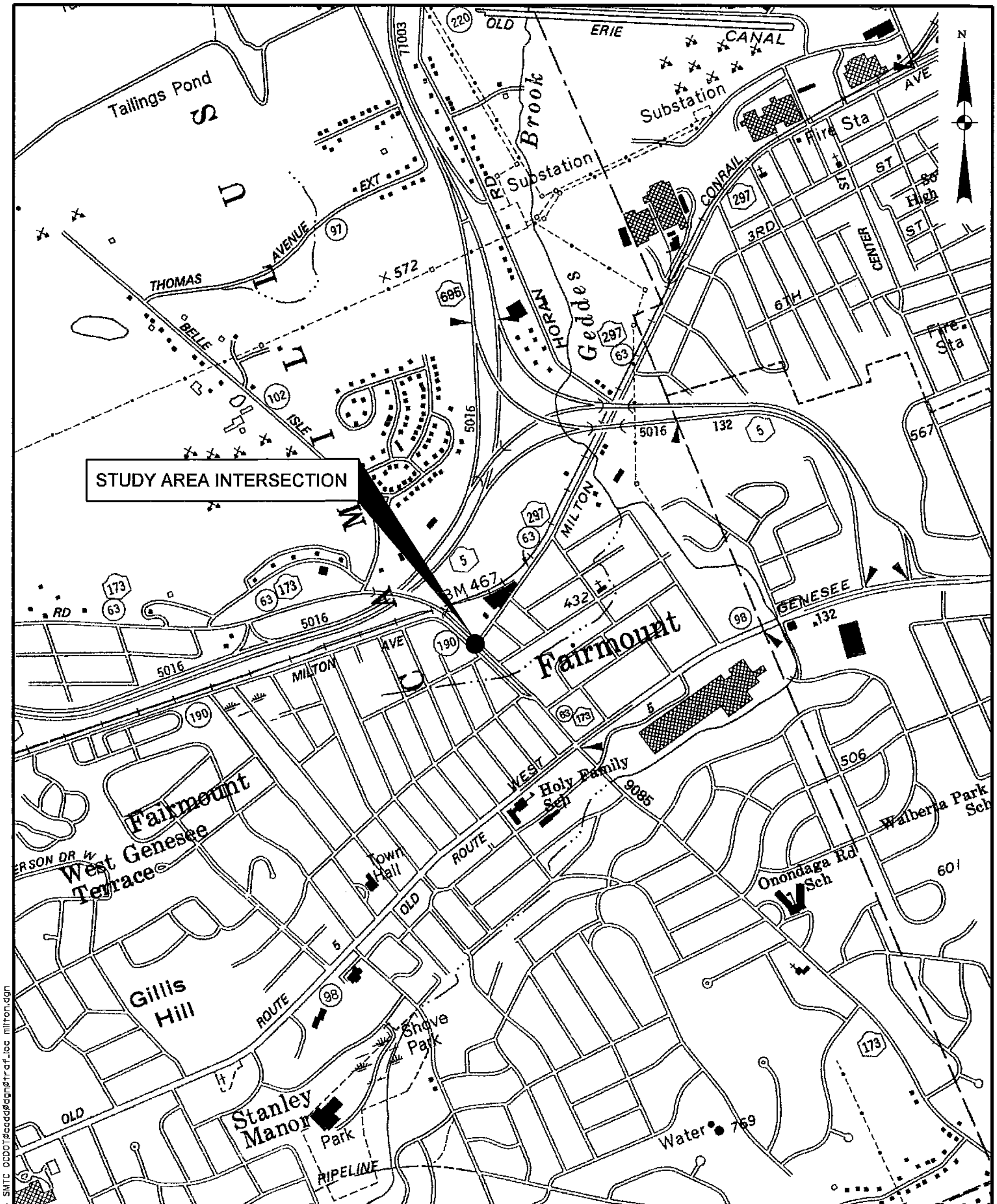


Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Volume (vph)	4	70	122	63	9	107	73	26	74	152	125	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	11	11	11	11
Total Lost time (s)		4.5	4.5		4.5	4.5			4.5	4.5		
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	0.95		
Frt		1.00	0.95		1.00	0.93			1.00	0.93		
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00		
Satd. Flow (prot)		1805	1803		1805	1754			1745	3249		
Flt Permitted		0.47	1.00		0.50	1.00			0.95	1.00		
Satd. Flow (perm)		885	1803		951	1754			1745	3249		
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	5	83	145	75	10	123	84	30	85	175	144	5
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	88	220	0	10	237	0	0	85	324	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	Perm			Perm				Prot			
Protected Phases			4			4			1	6		
Permitted Phases	4	4			4							
Actuated Green, G (s)		12.8	12.8		12.8	12.8			5.0	13.7		
Effective Green, g (s)		14.8	14.8		14.8	14.8			7.0	15.7		
Actuated g/C Ratio		0.22	0.22		0.22	0.22			0.10	0.23		
Clearance Time (s)		6.5	6.5		6.5	6.5			6.5	6.5		
Vehicle Extension (s)		1.0	1.0		1.0	1.0			1.0	1.0		
Lane Grp Cap (vph)		193	394		208	383			180	753		
v/s Ratio Prot			0.12			c0.14			c0.05	0.10		
v/s Ratio Perm		0.10			0.01							
v/c Ratio		0.46	0.56		0.05	0.62			0.47	0.43		
Uniform Delay, d1		23.0	23.5		20.9	23.9			28.6	22.2		
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00		
Incremental Delay, d2		0.6	1.0		0.0	2.1			0.7	0.1		
Delay (s)		23.6	24.5		20.9	26.0			29.3	22.3		
Level of Service		C	C		C	C			C	C		
Approach Delay (s)			24.3			25.8				23.8		
Approach LOS			C			C				C		

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Volume (vph)	4	52	177	9	14	116	63	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	12
Total Lost time (s)		4.5	4.5			4.5		
Lane Util. Factor		1.00	1.00			1.00		
Frt		1.00	0.99			0.95		
Flt Protected		0.95	1.00			0.97		
Satd. Flow (prot)		1745	1868			1732		
Flt Permitted		0.95	1.00			0.97		
Satd. Flow (perm)		1745	1868			1732		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.86	0.86	0.86	0.86
Adj. Flow (vph)	4	58	197	10	16	135	73	12
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	62	207	0	0	236	0	0
Heavy Vehicles (%)	0%	0%	1%	0%	0%	2%	0%	0%
Turn Type	Prot	Prot			Split			
Protected Phases	5	5	2		8	8		
Permitted Phases								
Actuated Green, G (s)		3.9	12.6			11.3		
Effective Green, g (s)		5.9	14.6			13.3		
Actuated g/C Ratio		0.09	0.22			0.20		
Clearance Time (s)		6.5	6.5			6.5		
Vehicle Extension (s)		1.0	1.0			1.0		
Lane Grp Cap (vph)		152	403			340		
v/s Ratio Prot		0.04	c0.11			c0.14		
v/s Ratio Perm								
v/c Ratio		0.41	0.51			0.69		
Uniform Delay, d1		29.2	23.4			25.3		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		0.7	0.5			4.9		
Delay (s)		29.9	23.9			30.2		
Level of Service		C	C			C		
Approach Delay (s)			25.3			30.2		
Approach LOS			C			C		

Intersection Summary



LOCATION MAP
MILTON RD/WARNERS RD

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d | DATE: 4/10 | FIGURE: B.7

ddoran
F:\Projects\2009\109-094 SMTC OCDOT\cadd\dgn\traf_loc milton.dgn

INTERSECTION DIAGRAM

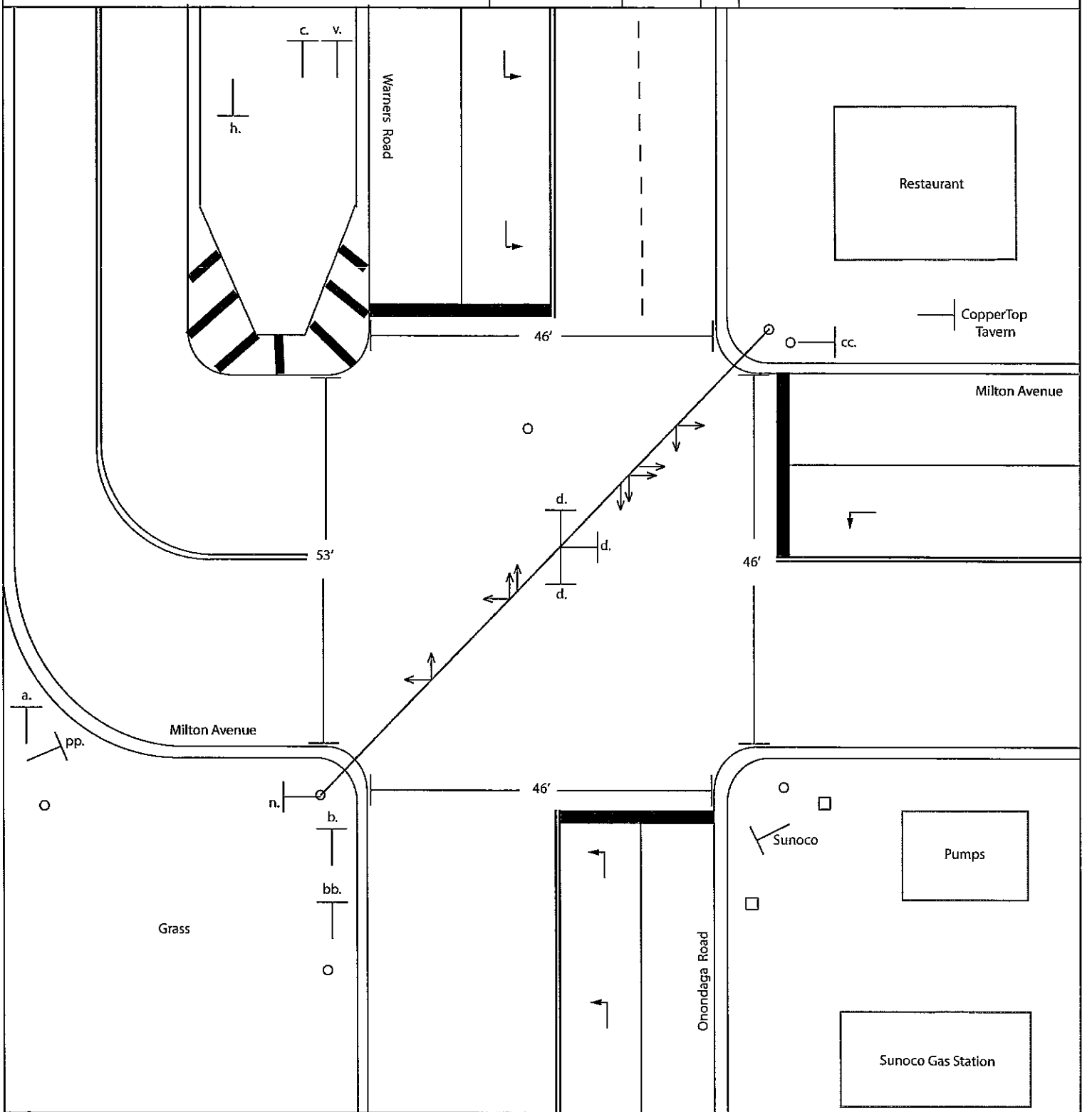
Location: Milton Avenue at Warners Road

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

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

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

For sign definitions see Intersection Diagram Sign Index.



Task: OCDOT Signal Optimization

Data Source: SMTC, OCDOT, 2009.

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


297

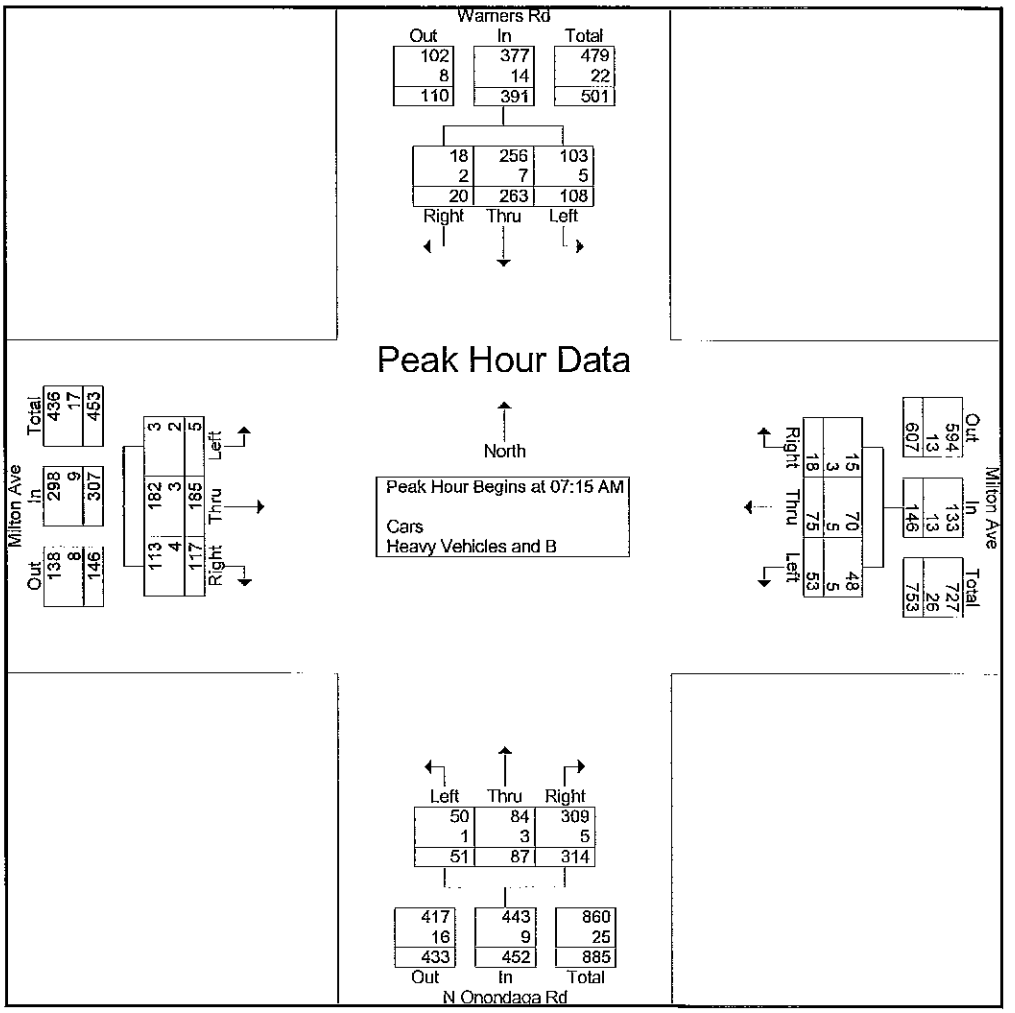

SUNOCO


297
173

City of Syracuse, Onondaga Co.
Mi Ave and Warners Rd/N Onondaga Rd
6/10/09
JR and JC

File Name : 6_10_0~1
Site Code : 00267275
Start Date : 6/10/2009
Page No : 2

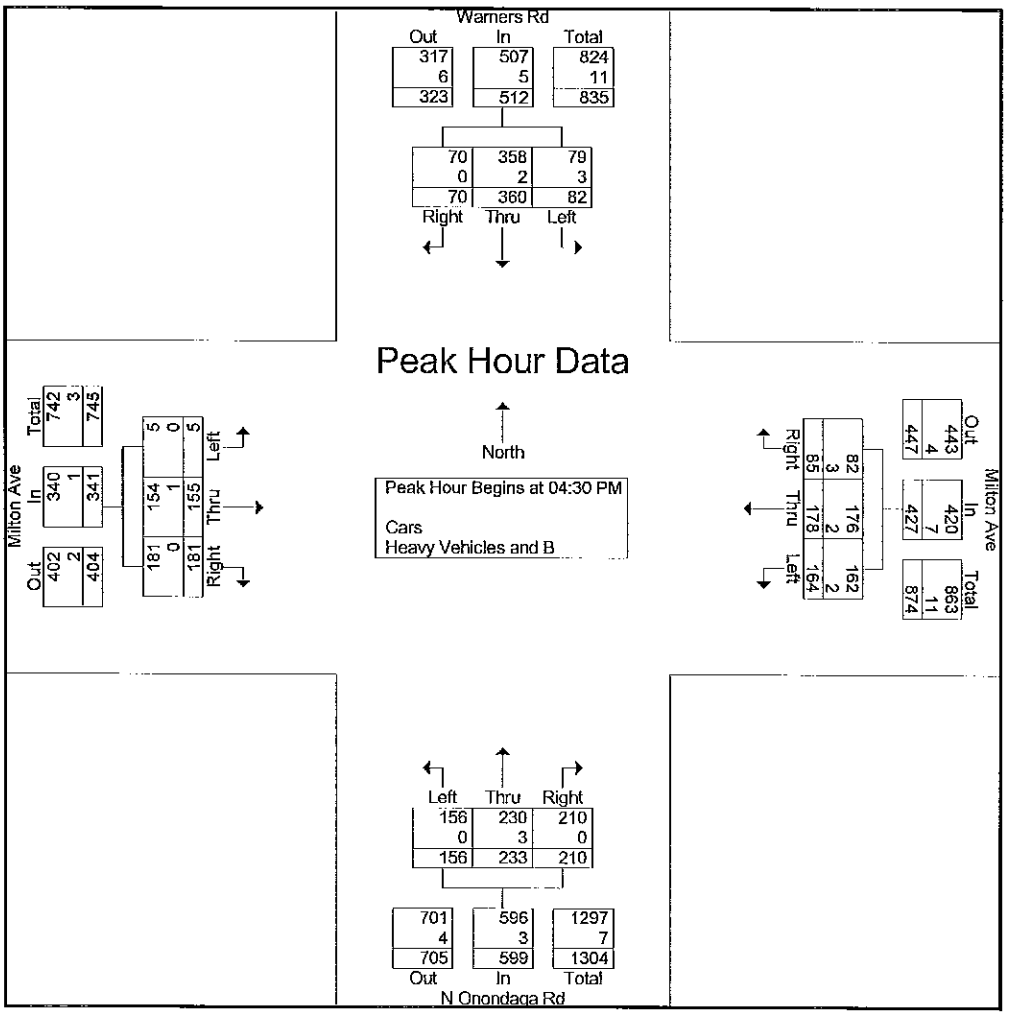
	Warners Rd Southbound				Milton Ave Westbound				N Onondaga Rd Northbound				Milton Ave Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**28**	57	**1**	86	7	13	4	24	10	25	77	112	0	47	27	74	296
07:30 AM	28	64	6	98	6	16	4	26	9	17	**86**	112	1	44	27	72	308
07:45 AM	24	70	5	99	**20**	**23**	**8**	**51**	**16**	**28**	74	**118**	**3**	**56**	25	**84**	**352**
08:00 AM	28	**72**	**8**	**108**	20	23	2	45	16	17	77	110	1	38	**38**	77	340
Total Volume	108	263	20	391	53	75	18	146	51	87	314	452	5	185	117	307	1296
% App. Total	27.6	67.3	5.1		36.3	51.4	12.3		11.3	19.2	69.5		1.6	60.3	38.1		
PHF	.964	.913	.625	.905	.663	.815	.563	.716	.797	.777	.913	.958	.417	.826	.770	.914	.920
Cars	103	256	18	377	48	70	15	133	50	84	309	443	3	182	113	298	1251
% Cars	95.4	97.3	90.0	96.4	90.6	93.3	83.3	91.1	98.0	96.6	98.4	98.0	60.0	98.4	96.6	97.1	96.5
Heavy Vehicles and B	5	7	2	14	5	5	3	13	1	3	5	9	2	3	4	9	45
% Heavy Vehicles and B	4.6	2.7	10.0	3.6	9.4	6.7	16.7	8.9	2.0	3.4	1.6	2.0	40.0	1.6	3.4	2.9	3.5



City of Syracuse, Onondaga Co.
Mi Ave and Warners Rd/N Onondaga Rd
6/1[illegible]
JR and JC

File Name : 6_10_0~1
Site Code : 00267275
Start Date : 6/10/2009
Page No : 3

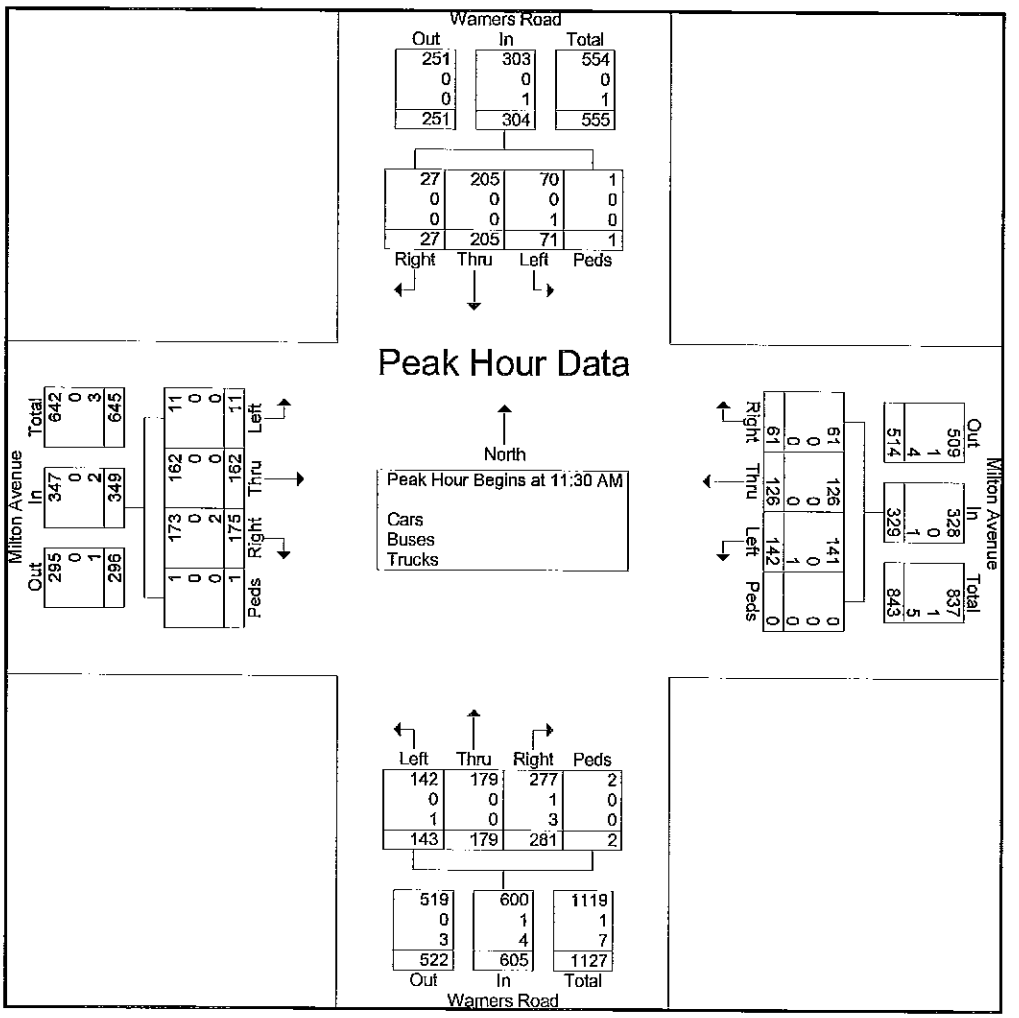
	Warners Rd Southbound				Milton Ave Westbound				N Onondaga Rd Northbound				Milton Ave Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	18	85	12	115	**50**	34	18	102	23	62	44	129	1	**45**	**51**	**97**	443
04:45 PM	**23**	80	**22**	125	37	46	19	102	44	**63**	52	159	**3**	36	43	82	468
05:00 PM	23	104	18	**145**	37	42	22	101	43	57	45	145	0	45	49	94	**485**
05:15 PM	18	91	18	127	40	**56**	**26**	**122**	**46**	51	**69**	**166**	1	29	38	68	483
Total Volume	82	360	70	512	164	178	85	427	156	233	210	599	5	155	181	341	1879
% App. Total	16	70.3	13.7		38.4	41.7	19.9		26	38.9	35.1		1.5	45.5	53.1		
PHF	.891	.865	.795	.883	.820	.795	.817	.875	.848	.925	.761	.902	.417	.861	.887	.879	.969
Cars	79	358	70	507	162	176	82	420	156	230	210	596	5	154	181	340	1863
% Cars	96.3	99.4	100	99.0	98.8	98.9	96.5	98.4	100	98.7	100	99.5	100	99.4	100	99.7	99.1
Heavy Vehicles and B	3	2	0	5	2	2	3	7	0	3	0	3	0	1	0	1	16
% Heavy Vehicles and B	3.7	0.6	0	1.0	1.2	1.1	3.5	1.6	0	1.3	0	0.5	0	0.6	0	0.3	0.9



Fisher Associates P.E., L.S., P.C.
135 Calkins Road
Rochester, NY 14623
e: (585) 334-1310

File Name : All - Sat MD Warner & Milton
Site Code : 00066666
Start Date : 1/16/2010

	Warners Road Southbound					Milton Avenue Westbound					Warners Road Northbound					Milton Avenue Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	**20**	40	7	0	67	27	**40**	14	0	81	32	39	77	**1**	149	4	30	40	0	74	371
11:45 AM	17	58	3	0	78	**47**	34	11	0	**92**	**38**	45	**85**	1	**169**	**5**	**51**	42	**1**	**99**	**438**
12:00 PM	16	45	**12**	0	73	29	21	**20**	0	70	37	**54**	62	0	153	0	42	**56**	0	98	394
12:15 PM	18	**62**	5	**1**	**86**	39	31	16	0	86	36	41	57	0	134	2	39	37	0	78	384
Total Volume	71	205	27	1	304	142	126	61	0	329	143	179	281	2	605	11	162	175	1	349	1587
% App. Total	23.4	67.4	8.9	0.3		43.2	38.3	18.5	0		23.6	29.6	46.4	0.3		3.2	46.4	50.1	0.3		
PHF	.888	.827	.563	.250	.884	.755	.788	.763	.000	.894	.941	.829	.826	.500	.895	.550	.794	.781	.250	.881	.906
Cars	70	205	27	1	303	141	126	61	0	328	142	179	277	2	600	11	162	173	1	347	1578
% Cars	98.6	100	100	100	99.7	99.3	100	100	0	99.7	99.3	100	98.6	100	99.2	100	100	98.9	100	99.4	99.4
Buses	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0.2	0	0	0	0	0	0.1
Trucks	1	0	0	0	1	1	0	0	0	1	1	0	3	0	4	0	0	2	0	2	8
% Trucks	1.4	0	0	0	0.3	0.7	0	0	0	0.3	0.7	0	1.1	0	0.7	0	0	1.1	0	0.6	0.5



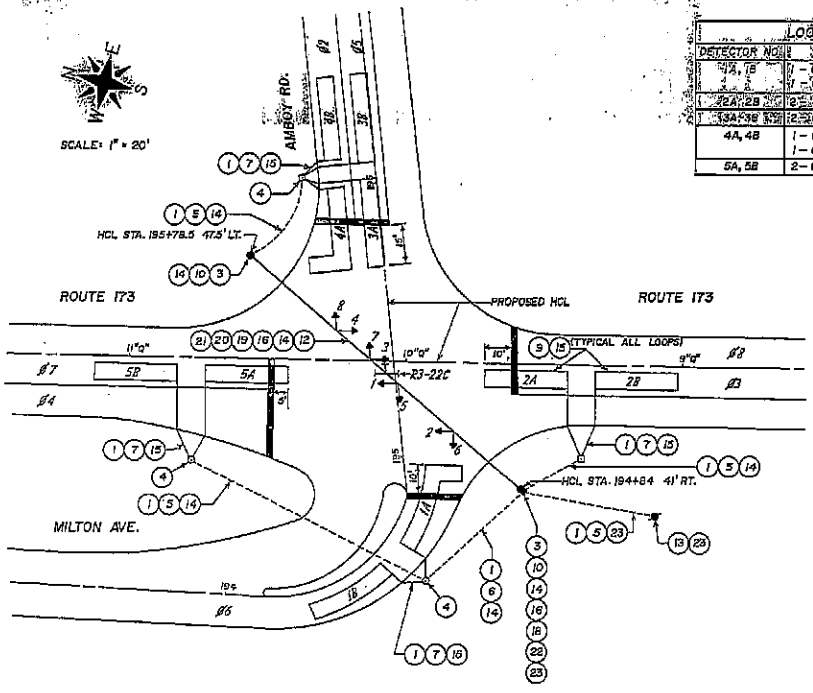
AS BUILT

MILTON AVE.-AMBOY C.R. NO. 190

SIGNAL NO. 17

SCALE: AS SHOWN | COUNTY OF ONONDAGA DEPARTMENT OF TRANSPORTATION

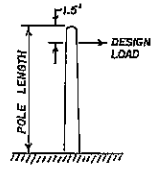
REVISIONS | DATE: NOV. 1989 | TOTAL SHEETS: 57 | SHEET NO.: 54



LOOP DATA TABLE (9) (15)	
DETECTOR NO.	DESCRIPTION
1, 1S	1 - 6'X30' LOOP WITH 6'X 8' LEG 1 - 6'X30' LOOP, 10' APART
2A, 2B	2 - 6'X30' LOOPS, 10' APART
3A, 3B	2 - 6'X32' LOOPS, 6' APART
4A, 4B	1 - 6'X30' LOOP WITH 6'X 8' LEG 1 - 6'X30' LOOP, 10' APART
5A, 5B	2 - 6'X30' LOOPS, 10' APART

KEY FOR WIRE COLOR CODE

R/BK = Wire Color / Tracer Color
O = Orange — BK = Black
R = Red — W = White
G = Green — BL = Blue



DESIGN LOADS
POLE A-8 KIPS-32'
POLE B-6 KIPS-32'

FOOTING MOMENT
POLE A-244 FT. KIPS
POLE B-244 FT. KIPS

TABLE OF OPERATION

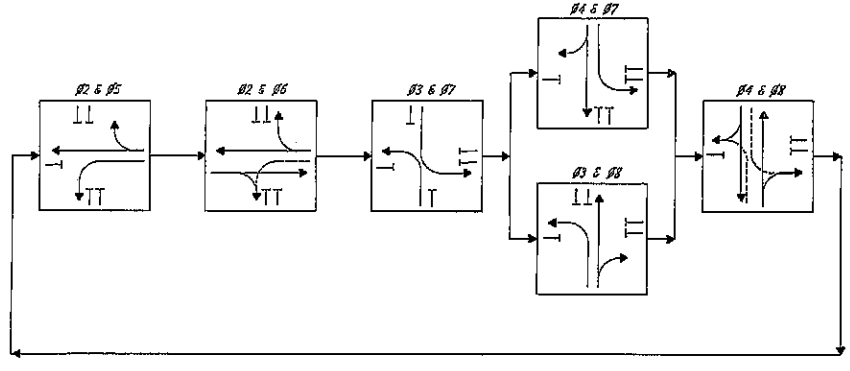
PHASE \ HEAD	1	2	3	4	5	6	7	8
2	R	R	R	R	R	R	G	G
3	R	R	R	R	R	R	R	R
4	G	G	R	R	R	R	R	R
5	R	R	R	R	R	R	R	R
6	R	R	R	R	G	G	R	R
7	R	R	R	R	R	R	R	R
8	R	R	G	G	R	R	R	R
2 & 5	R	R	R	R	R	R	G	G
2 & 6	R	R	R	R	G	G	G	G
3 & 7	R	R	R	R	R	R	R	R
4 & 7	G	G	R	R	R	R	R	R
3 & 8	R	R	G	G	R	R	R	R
4 & 8	G	G	G	G	R	R	R	R
FLASHER	R	R	R	R	R	R	R	R

TABLE OF SWITCH PACKS

CABLE NO.	SWITCH PACK	FUNCTION	FACE NO'S.	INDICATIONS	WIRE COLOR CODES
1	SP1	Ø6	5 & 6	R Y G GRND. WIRE	R O G W
2	SP2	Ø2	7 & 8	R Y G GRND. WIRE	R O G W
2	SP3	Ø5	7	Y G GRND. WIRE	O/BK G/BK W/BK
2	SP4	Ø3	3	Y G GRND. WIRE	O/R BL/R W/R
2	SP5	Ø8	3 & 4	R Y G GRND. WIRE	R/W BL/W G/W BK/W
1	SP6	Ø4	1 & 2	R Y G GRND. WIRE	R/W BL/W G/W BK/W
1	SP7	Ø7	1	Y G GRND. WIRE	O/R BL/R W/R

TABLE OF CLEARANCES

TO \ FROM	G	G	G	R
G	G	G	Y	R
	G	G	R	R
G G	G	G	G	R
	G G	G G	G G	R
G	Y	Y G	G	R
	R	G	G	R
R	Y	Y G	Y	R
	R	R	R	R



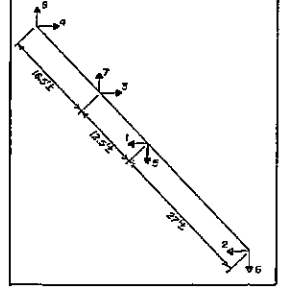
SEQUENCE OF OPERATIONS

LEGEND

- New Traffic Signal Pole
- New Pole Mounted Controller
- New Pullbox
- Utility Pole (Power Source)
- New Signal Head
- New Sign And Mounting Assembly
- Ø Signal Phase
- X Key Numbers - See Page No. 55

HEAD LAYOUT

HEAD	HCL STA.	OFFSET
2 & 6	195+07.5	19' RT.
4 & 8	195+48.5	19' LT.



INTERSECTION NAME: WARNERS @ MILTON
INTERSECTION NUMBER: 17

INSTALLATION DATE: LMD 9200 INST. 7/06
PROGRAM DATE:

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

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

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

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

INTERSECTION NAME: WARNERS @ MILTON
INTERSECTION NUMBER: 17

INSTALLATION DATE:
PROGRAM DATE:

OPTIMIZED TIMINGS

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

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN		10	5	10	5	10	5	10
PASSAGE		1	1	2.4	1	1	1	2.4
YELLOW		3	3	3	3	3	3	3
RED		2	2	2	2	2	2	2
MAX I (AM)		29	8	28	7	17	10	26
MAX II (PM)		35	10	40	10	20	8	42
MAX III (Sat)		34	8	33	10	19	7	34
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

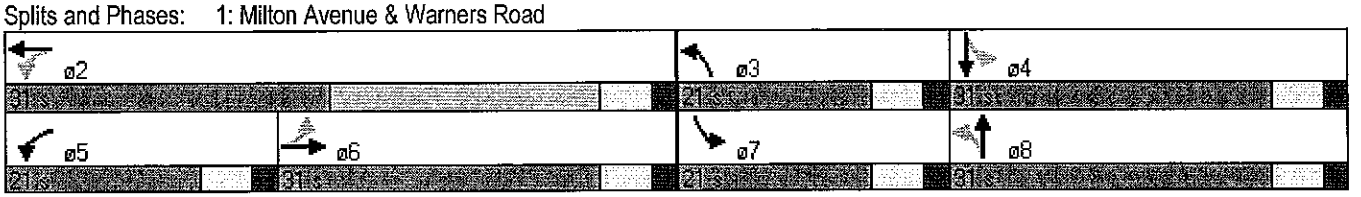
	PHASES USED							
	1	2	3	4	5	6	7	8
ON/OFF		X	X	X	X	X	X	X

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	5	185	53	75	51	87	108	263
Turn Type	Perm		pm+pt		pm+pt		pm+pt	
Protected Phases		6	5	2	3	8	7	4
Permitted Phases	6		2		8		4	
Detector Phase	6	6	5	2	3		7	
Switch Phase								
Minimum Initial (s)	7.0	7.0	4.0	7.0	4.0	7.0	4.0	7.0
Minimum Split (s)	13.0	13.0	10.0	13.0	10.0	13.0	10.0	13.0
Total Split (s)	31.0	31.0	21.0	31.0	21.0	31.0	21.0	31.0
Total Split (%)	29.8%	29.8%	20.2%	29.8%	20.2%	29.8%	20.2%	29.8%
Maximum Green (s)	25.0	25.0	15.0	25.0	15.0	25.0	15.0	25.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	Max	None	Max
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary
Cycle Length: 104
Actuated Cycle Length: 84.4
Natural Cycle: 60
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Milton Avenue & Warners Road

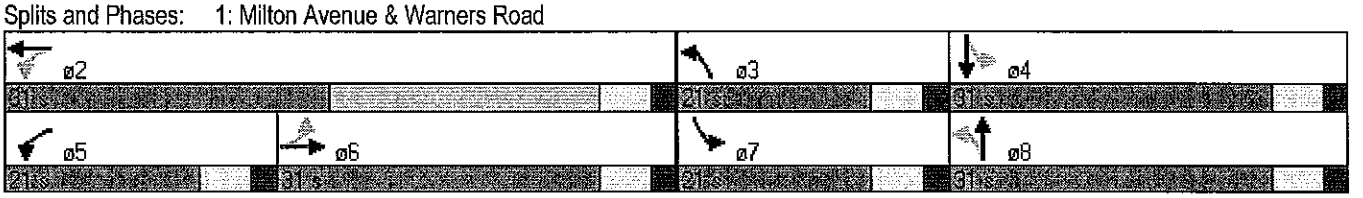


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	5	155	164	178	156	233	82	360
Turn Type	Perm		pm+pt		pm+pt		pm+pt	
Protected Phases		6	5	2	3	8	7	4
Permitted Phases	6		2		8		4	
Detector Phase	6	6	5	2	3		7	
Switch Phase								
Minimum Initial (s)	7.0	7.0	4.0	7.0	4.0	7.0	4.0	7.0
Minimum Split (s)	13.0	13.0	10.0	13.0	10.0	13.0	10.0	13.0
Total Split (s)	31.0	31.0	21.0	31.0	21.0	31.0	21.0	31.0
Total Split (%)	29.8%	29.8%	20.2%	29.8%	20.2%	29.8%	20.2%	29.8%
Maximum Green (s)	25.0	25.0	15.0	25.0	15.0	25.0	15.0	25.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	Max	None	Max
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 104
Actuated Cycle Length: 97.3
Natural Cycle: 60
Control Type: Semi Act-Uncoord

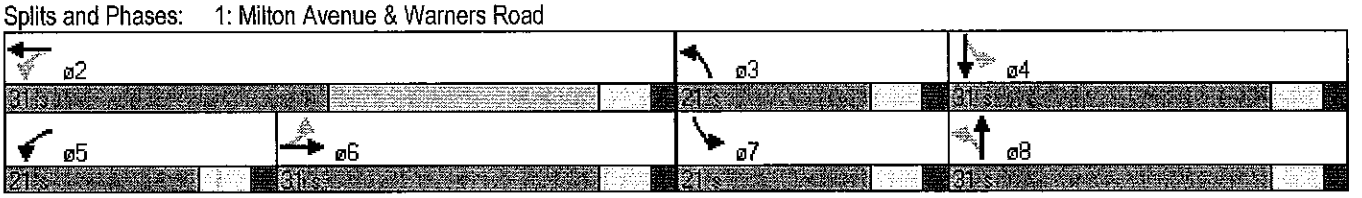
Splits and Phases: 1: Milton Avenue & Warners Road



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	11	162	142	126	143	179	71	205
Turn Type	Perm		pm+pt		pm+pt		pm+pt	
Protected Phases		6	5	2	3	8	7	4
Permitted Phases	6		2		8		4	
Detector Phase	6	6	5	2	3		7	
Switch Phase								
Minimum Initial (s)	7.0	7.0	4.0	7.0	4.0	7.0	4.0	7.0
Minimum Split (s)	13.0	13.0	10.0	13.0	10.0	13.0	10.0	13.0
Total Split (s)	31.0	31.0	21.0	31.0	21.0	31.0	21.0	31.0
Total Split (%)	29.8%	29.8%	20.2%	29.8%	20.2%	29.8%	20.2%	29.8%
Maximum Green (s)	25.0	25.0	15.0	25.0	15.0	25.0	15.0	25.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	Max	None	Max
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary
Cycle Length: 104
Actuated Cycle Length: 96.5
Natural Cycle: 60
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Milton Avenue & Warners Road

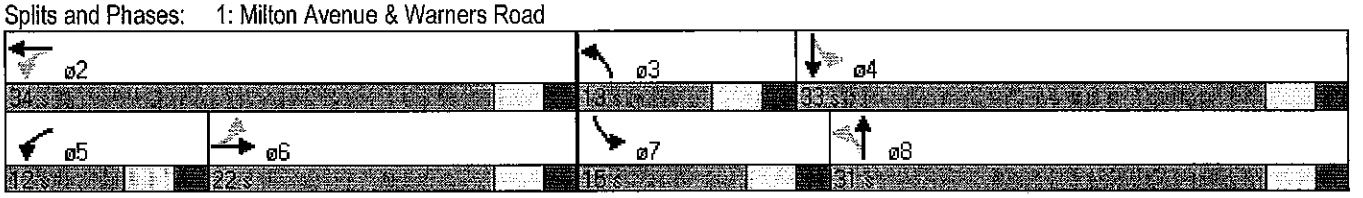


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	5	185	53	75	51	87	108	263
Turn Type	Perm		pm+pt		pm+pt		pm+pt	
Protected Phases		6	5	2	3	8	7	4
Permitted Phases	6		2		8		4	
Detector Phase	6	6	5	2	3	8	7	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	15.0	15.0	10.0	15.0	10.0	15.0	10.0	15.0
Total Split (s)	22.0	22.0	12.0	34.0	13.0	31.0	15.0	33.0
Total Split (%)	27.5%	27.5%	15.0%	42.5%	16.3%	38.8%	18.8%	41.3%
Maximum Green (s)	17.0	17.0	7.0	29.0	8.0	26.0	10.0	28.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	3.5	1.0	3.5
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.0	3.5	1.0	3.5
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	None	None	None	None	Min	None	Min
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 53.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Milton Avenue & Warners Road

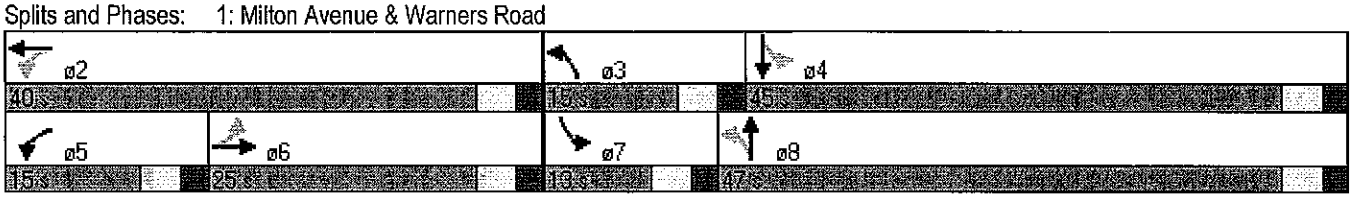


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	5	155	164	178	156	233	82	360
Turn Type	Perm		pm+pt		pm+pt		pm+pt	
Protected Phases		6	5	2	3	8	7	4
Permitted Phases	6		2		8		4	
Detector Phase	6	6	5	2	3	8	7	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	15.0	15.0	10.0	15.0	10.0	15.0	10.0	15.0
Total Split (s)	25.0	25.0	15.0	40.0	15.0	47.0	13.0	45.0
Total Split (%)	25.0%	25.0%	15.0%	40.0%	15.0%	47.0%	13.0%	45.0%
Maximum Green (s)	20.0	20.0	10.0	35.0	10.0	42.0	8.0	40.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	3.5	1.0	3.5
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.0	3.5	1.0	3.5
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	None	None	None	None	Min	None	Min
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 79.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Milton Avenue & Warners Road

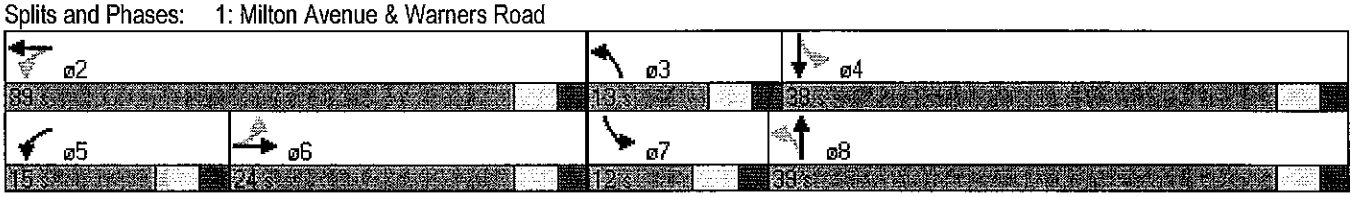


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	11	162	142	126	143	179	71	205
Turn Type	Perm		pm+pt		pm+pt		pm+pt	
Protected Phases		6	5	2	3	8	7	4
Permitted Phases	6		2		8		4	
Detector Phase	6	6	5	2	3	8	7	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	15.0	15.0	10.0	15.0	10.0	15.0	10.0	15.0
Total Split (s)	24.0	24.0	15.0	39.0	13.0	39.0	12.0	38.0
Total Split (%)	26.7%	26.7%	16.7%	43.3%	14.4%	43.3%	13.3%	42.2%
Maximum Green (s)	19.0	19.0	10.0	34.0	8.0	34.0	7.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	3.5	1.0	3.5
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.0	3.5	1.0	3.5
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	None	None	None	None	Min	None	Min
Walk Time (s)								
Flash Dont Walk (s)								
Pedestrian Calls (#/hr)								

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 73.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Milton Avenue & Warners Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	185	117	53	75	18	51	87	314	108	263	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	13	15	15	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-6%	
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.95		1.00	0.97		1.00	0.88		1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1964		1711	1855		1769	1641		1771	1868	
Flt Permitted		1.00		0.26	1.00		0.45	1.00		0.26	1.00	
Satd. Flow (perm)		1958		467	1855		844	1641		481	1868	
Peak-hour factor, PHF	0.91	0.91	0.91	0.72	0.72	0.72	0.96	0.96	0.96	0.91	0.91	0.91
Adj. Flow (vph)	5	203	129	74	104	25	53	91	327	119	289	22
RTOR Reduction (vph)	0	0	0	0	9	0	0	112	0	0	3	0
Lane Group Flow (vph)	0	337	0	74	120	0	53	306	0	119	308	0
Confl. Peds. (#/hr)			2	2			1					1
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	40%	2%	3%	9%	7%	17%	2%	3%	2%	5%	3%	10%
Turn Type	Perm			pm+pt			pm+pt			pm+pt		
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		20.2		34.1	34.1		32.9	26.8		36.5	28.6	
Effective Green, g (s)		22.2		36.1	36.1		36.9	28.8		40.5	30.6	
Actuated g/C Ratio		0.26		0.42	0.42		0.43	0.33		0.47	0.35	
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)		501		336	771		445	544		372	659	
v/s Ratio Prot				c0.03	0.06		0.01	c0.19		c0.04	0.17	
v/s Ratio Perm		c0.17		0.07			0.04			0.11		
v/c Ratio		0.67		0.22	0.16		0.12	0.56		0.32	0.47	
Uniform Delay, d1		29.0		17.4	15.8		15.0	23.8		14.8	21.8	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.9		0.5	0.1		0.2	4.2		0.7	2.4	
Delay (s)		32.9		17.9	16.0		15.2	28.0		15.5	24.2	
Level of Service		C		B	B		B	C		B	C	
Approach Delay (s)		32.9			16.7			26.5			21.8	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	86.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	155	181	164	178	85	156	233	210	82	360	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	13	15	15	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-6%	
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.93		1.00	0.95		1.00	0.93		1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1960		1846	1934		1805	1737		1788	1887	
Flt Permitted		0.99		0.20	1.00		0.12	1.00		0.20	1.00	
Satd. Flow (perm)		1949		383	1934		233	1737		379	1887	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.90	0.90	0.90	0.88	0.88	0.88
Adj. Flow (vph)	6	176	206	186	202	97	173	259	233	93	409	80
RTOR Reduction (vph)	0	0	0	0	17	0	0	28	0	0	6	0
Lane Group Flow (vph)	0	388	0	186	282	0	173	464	0	93	483	0
Confl. Peds. (#/hr)	1		2	2		1						
Confl. Bikes (#/hr)			2			4			2			1
Heavy Vehicles (%)	0%	1%	0%	1%	1%	4%	0%	1%	0%	4%	1%	0%
Turn Type	Perm			pm+pt			pm+pt			pm+pt		
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		22.6		42.1	42.1		42.6	30.7		34.4	26.6	
Effective Green, g (s)		24.6		44.1	44.1		46.5	32.7		38.4	28.6	
Actuated g/C Ratio		0.25		0.45	0.45		0.47	0.33		0.39	0.29	
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)		486		401	865		331	576		288	547	
v/s Ratio Prot				c0.07	0.15		c0.07	0.27		0.03	c0.26	
v/s Ratio Perm		c0.20		0.13			0.17			0.09		
v/c Ratio		0.80		0.46	0.33		0.52	0.81		0.32	0.88	
Uniform Delay, d1		34.7		19.5	17.6		19.3	30.0		21.0	33.4	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		9.4		1.2	0.3		1.9	11.4		0.9	18.3	
Delay (s)		44.1		20.7	17.9		21.2	41.5		21.9	51.7	
Level of Service		D		C	B		C	D		C	D	
Approach Delay (s)		44.1			19.0			36.2			46.9	
Approach LOS		D			B			D			D	

Intersection Summary			
HCM Average Control Delay	36.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	162	175	142	126	61	143	179	281	71	205	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	13	15	15	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-6%	
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.93		1.00	0.95		1.00	0.91		1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1970		1846	1974		1787	1716		1841	1918	
Flt Permitted		0.99		0.20	1.00		0.38	1.00		0.18	1.00	
Satd. Flow (perm)		1949		392	1974		711	1716		357	1918	
Peak-hour factor, PHF	0.88	0.88	0.88	0.89	0.89	0.89	0.90	0.90	0.90	0.88	0.88	0.88
Adj. Flow (vph)	12	184	199	160	142	69	159	199	312	81	233	31
RTOR Reduction (vph)	0	0	0	0	17	0	0	49	0	0	4	0
Lane Group Flow (vph)	0	395	0	160	194	0	159	462	0	81	260	0
Confl. Peds. (#/hr)	1		2	2		1	1					1
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	1%	0%	1%	1%	0%	0%
Turn Type	Perm			pm+pt			pm+pt			pm+pt		
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		22.7		41.7	41.7		42.4	30.8		33.8	26.5	
Effective Green, g (s)		24.7		43.7	43.7		46.1	32.8		37.8	28.5	
Actuated g/C Ratio		0.25		0.45	0.45		0.47	0.34		0.39	0.29	
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)		492		398	882		485	576		279	559	
v/s Ratio Prot				c0.06	0.10		c0.05	c0.27		0.03	0.14	
v/s Ratio Perm		c0.20		0.12			0.11			0.08		
v/c Ratio		0.80		0.40	0.22		0.33	0.80		0.29	0.46	
Uniform Delay, d1		34.3		19.1	16.6		15.8	29.6		21.0	28.4	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		9.7		0.9	0.2		0.5	11.3		0.8	2.8	
Delay (s)		43.9		20.1	16.8		16.4	40.9		21.8	31.2	
Level of Service		D		C	B		B	D		C	C	
Approach Delay (s)		43.9			18.2			35.0			29.0	
Approach LOS		D			B			D			C	

Intersection Summary			
HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	97.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	185	117	53	75	18	51	87	314	108	263	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	13	15	15	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-6%	
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.95		1.00	0.97		1.00	0.88		1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1964		1711	1855		1769	1641		1771	1868	
Flt Permitted		1.00		0.29	1.00		0.51	1.00		0.22	1.00	
Satd. Flow (perm)		1958		529	1855		945	1641		405	1868	
Peak-hour factor, PHF	0.91	0.91	0.91	0.72	0.72	0.72	0.96	0.96	0.96	0.91	0.91	0.91
Adj. Flow (vph)	5	203	129	74	104	25	53	91	327	119	289	22
RTOR Reduction (vph)	0	0	0	0	10	0	0	176	0	0	3	0
Lane Group Flow (vph)	0	337	0	74	119	0	53	242	0	119	308	0
Confl. Peds. (#/hr)			2	2			1					1
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	40%	2%	3%	9%	7%	17%	2%	3%	2%	5%	3%	10%
Turn Type	Perm			pm+pt			pm+pt			pm+pt		
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		14.3		22.5	22.5		17.7	15.0		22.5	17.4	
Effective Green, g (s)		15.3		23.5	23.5		19.7	16.0		24.5	18.4	
Actuated g/C Ratio		0.27		0.41	0.41		0.34	0.28		0.43	0.32	
Clearance Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		1.0		1.0	1.0		1.0	3.5		1.0	3.5	
Lane Grp Cap (vph)		520		302	757		376	456		317	597	
v/s Ratio Prot				c0.02	0.06		0.01	0.15		c0.04	c0.16	
v/s Ratio Perm		c0.17		0.08			0.04			0.12		
v/c Ratio		0.65		0.25	0.16		0.14	0.53		0.38	0.52	
Uniform Delay, d1		18.8		12.1	10.8		12.9	17.6		11.4	16.0	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.1		0.2	0.0		0.1	1.3		0.3	0.9	
Delay (s)		20.9		12.2	10.8		12.9	19.0		11.7	16.8	
Level of Service		C		B	B		B	B		B	B	
Approach Delay (s)		20.9			11.3			18.3			15.4	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	57.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	155	181	164	178	85	156	233	210	82	360	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	13	15	15	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-6%	
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.93		1.00	0.95		1.00	0.93		1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1960		1846	1934		1805	1737		1788	1887	
Flt Permitted		0.99		0.20	1.00		0.15	1.00		0.25	1.00	
Satd. Flow (perm)		1950		398	1934		293	1737		464	1887	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.90	0.90	0.90	0.88	0.88	0.88
Adj. Flow (vph)	6	176	206	186	202	97	173	259	233	93	409	80
RTOR Reduction (vph)	0	0	0	0	16	0	0	37	0	0	8	0
Lane Group Flow (vph)	0	388	0	186	283	0	173	455	0	93	481	0
Confl. Peds. (#/hr)	1		2	2		1						
Confl. Bikes (#/hr)			2			4			2			1
Heavy Vehicles (%)	0%	1%	0%	1%	1%	4%	0%	1%	0%	4%	1%	0%
Turn Type	Perm			pm+pt			pm+pt			pm+pt		
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		19.2		33.2	33.2		35.4	27.6		29.4	24.6	
Effective Green, g (s)		20.2		34.2	34.2		37.4	28.6		31.4	25.6	
Actuated g/C Ratio		0.25		0.42	0.42		0.46	0.35		0.39	0.32	
Clearance Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		1.0		1.0	1.0		1.0	3.5		1.0	3.5	
Lane Grp Cap (vph)		489		349	821		301	616		276	599	
v/s Ratio Prot				c0.07	0.15		c0.06	c0.26		0.02	0.25	
v/s Ratio Perm		c0.20		0.16			0.20			0.11		
v/c Ratio		0.79		0.53	0.35		0.57	0.74		0.34	0.80	
Uniform Delay, d1		28.2		17.3	15.6		15.7	22.7		16.9	25.2	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		8.1		0.8	0.1		1.7	4.8		0.3	7.9	
Delay (s)		36.3		18.1	15.7		17.4	27.5		17.2	33.0	
Level of Service		D		B	B		B	C		B	C	
Approach Delay (s)		36.3			16.6			24.9			30.5	
Approach LOS		D			B			C			C	

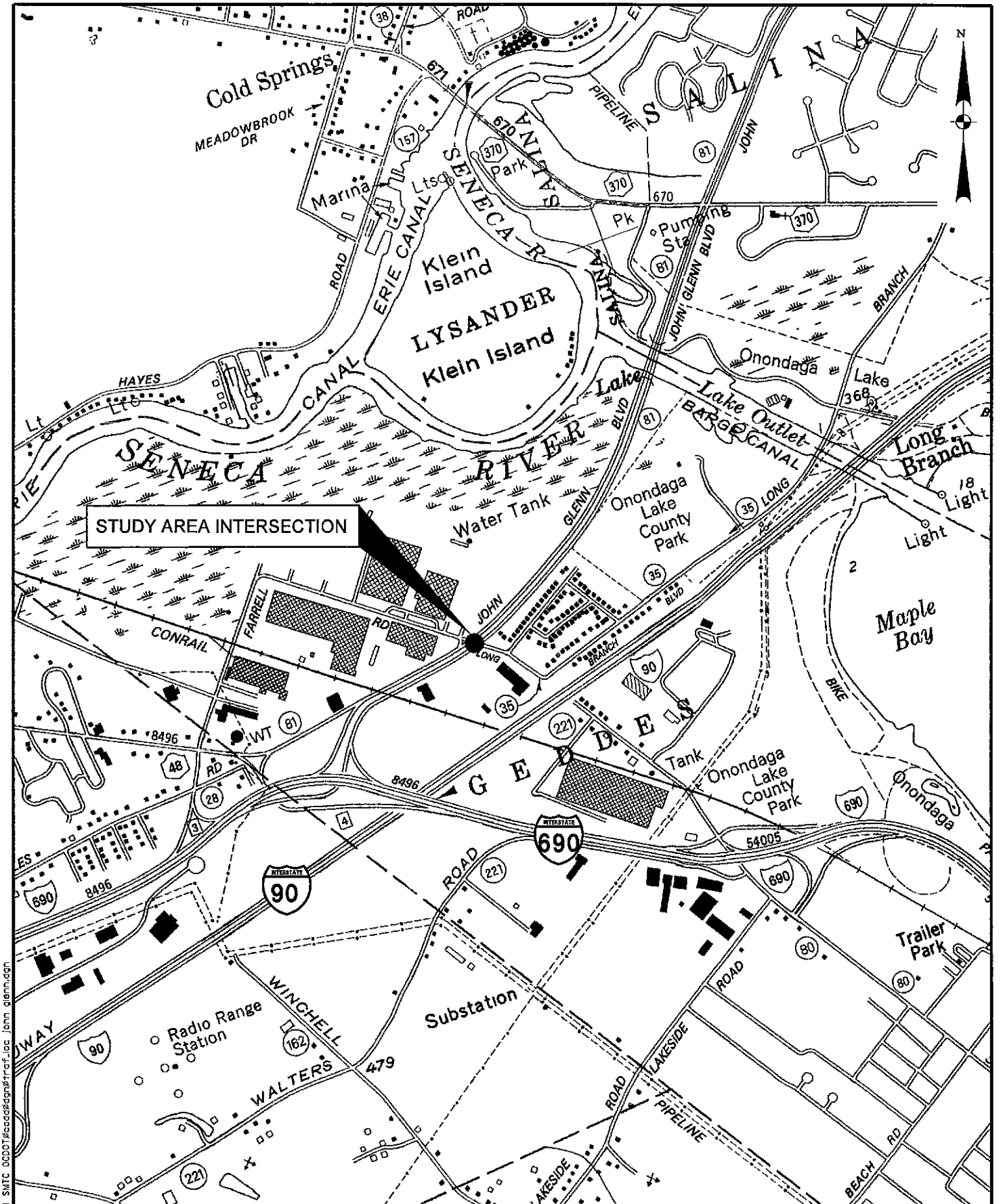
Intersection Summary				
HCM Average Control Delay	26.6	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	80.6	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	79.4%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	162	175	142	126	61	143	179	281	71	205	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	13	15	15	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-6%	
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.93		1.00	0.95		1.00	0.91		1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1970		1846	1974		1787	1716		1841	1918	
Flt Permitted		0.99		0.21	1.00		0.42	1.00		0.20	1.00	
Satd. Flow (perm)		1949		401	1974		792	1716		380	1918	
Peak-hour factor, PHF	0.88	0.88	0.88	0.89	0.89	0.89	0.90	0.90	0.90	0.88	0.88	0.88
Adj. Flow (vph)	12	184	199	160	142	69	159	199	312	81	233	31
RTOR Reduction (vph)	0	0	0	0	18	0	0	69	0	0	6	0
Lane Group Flow (vph)	0	395	0	160	193	0	159	442	0	81	258	0
Confl. Peds. (#/hr)	1		2	2		1	1					1
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	1%	0%	1%	1%	0%	0%
Turn Type	Perm			pm+pt			pm+pt			pm+pt		
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		17.6		30.9	30.9		30.9	23.9		26.1	21.5	
Effective Green, g (s)		18.6		31.9	31.9		32.9	24.9		28.1	22.5	
Actuated g/C Ratio		0.25		0.43	0.43		0.44	0.33		0.38	0.30	
Clearance Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		1.0		1.0	1.0		1.0	3.5		1.0	3.5	
Lane Grp Cap (vph)		487		353	846		457	574		253	580	
v/s Ratio Prot				c0.06	0.10		c0.04	c0.26		0.02	0.13	
v/s Ratio Perm		c0.20		0.14			0.12			0.10		
v/c Ratio		0.81		0.45	0.23		0.35	0.77		0.32	0.44	
Uniform Delay, d1		26.2		15.7	13.5		13.1	22.2		16.4	20.9	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		9.4		0.3	0.1		0.2	6.5		0.3	0.6	
Delay (s)		35.6		16.0	13.5		13.3	28.7		16.6	21.6	
Level of Service		D		B	B		B	C		B	C	
Approach Delay (s)		35.6			14.6			25.1			20.4	
Approach LOS		D			B			C			C	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	74.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



LOCATION MAP
JOHN GLENN BLVD/LONG BRANCH RD/FARRELL RD

TRAFFIC SIGNAL OPTIMIZATION
ONONDAGA COUNTY
SYRACUSE, NEW YORK

CME
CREIGHTON MANNING ENGINEERING, LLP

PROJECT: 09-094d	DATE: 4/10	FIGURE: B.8

INTERSECTION DIAGRAM

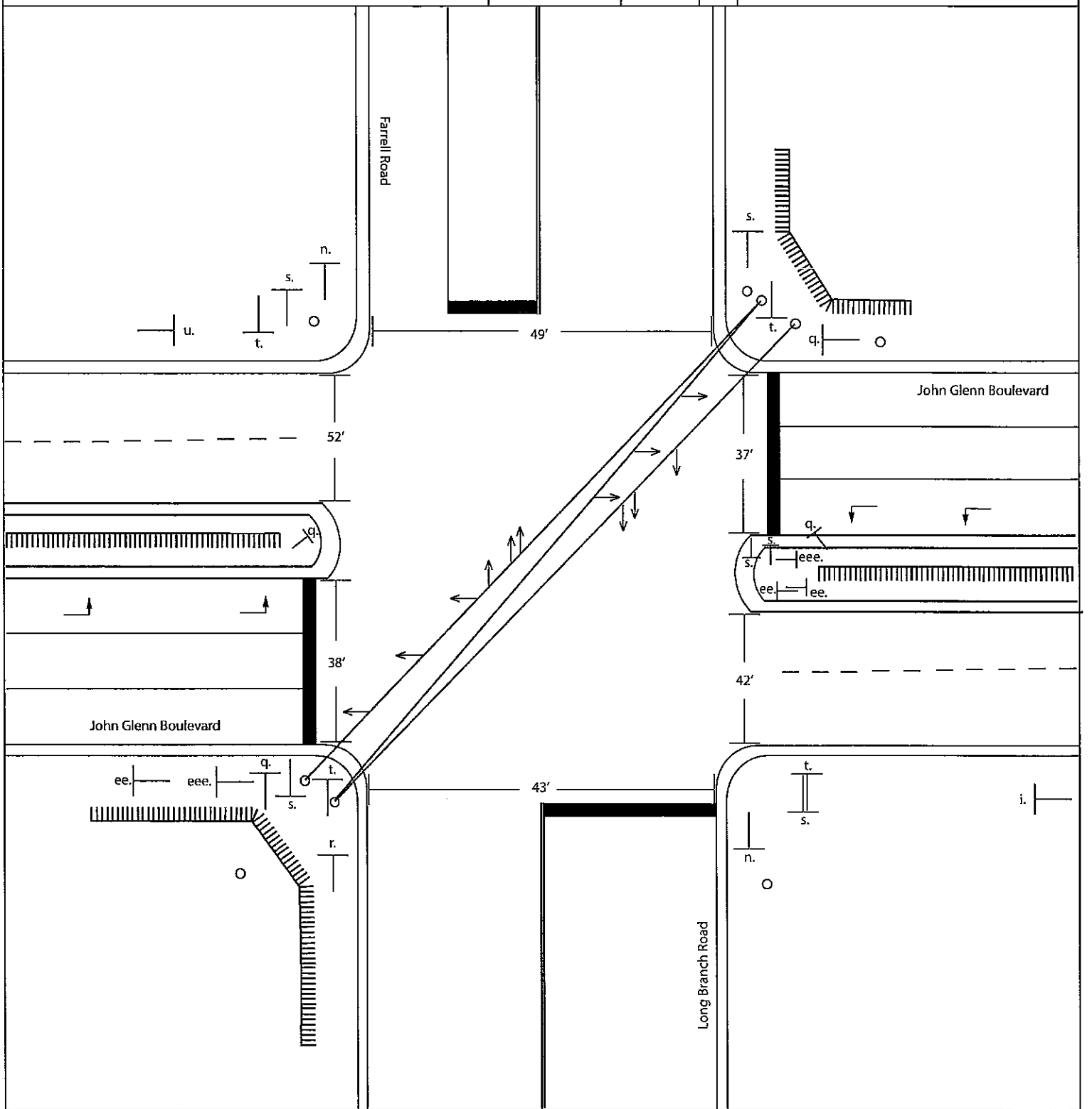
Location: John Glenn Boulevard at Longbranch Road (Van Vleck Rd)/Farrell Road

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

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

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

For sign definitions see Intersection Diagram Sign Index.



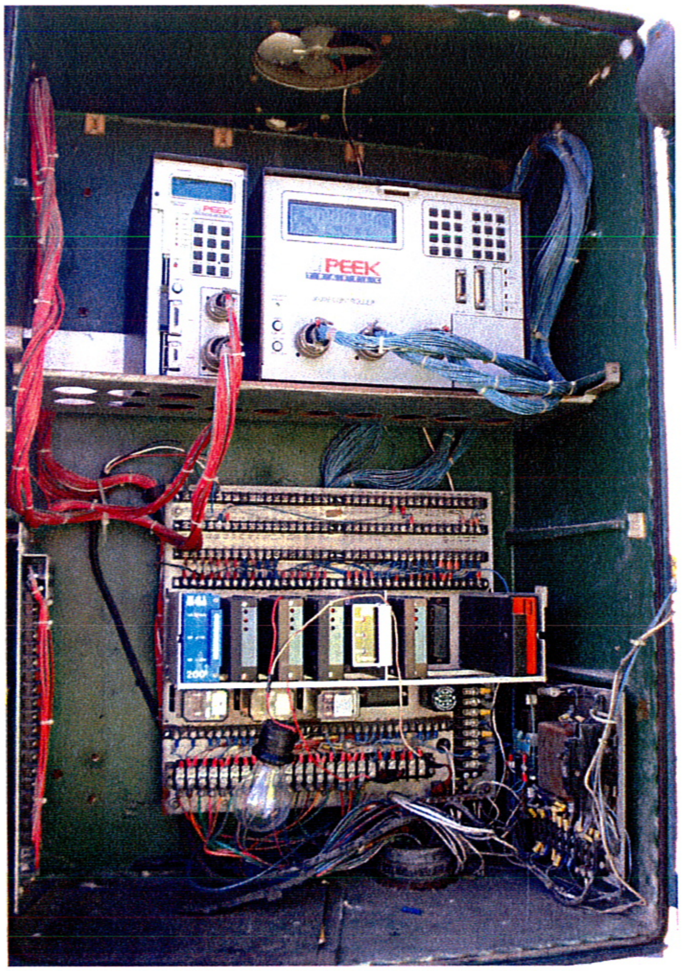
Task: OCDOT Signal Optimization

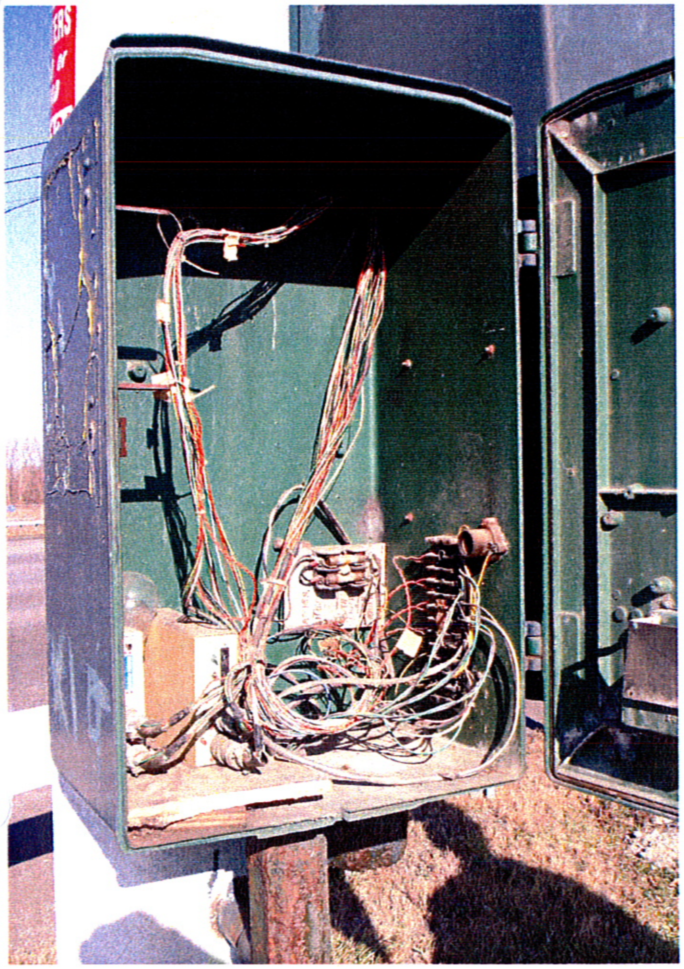
Data Source: SMTC, OCDOT, 2009.

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

Diagram is not to scale.


Farrell Rd
Long Branch Rd
John Glenn Blvd

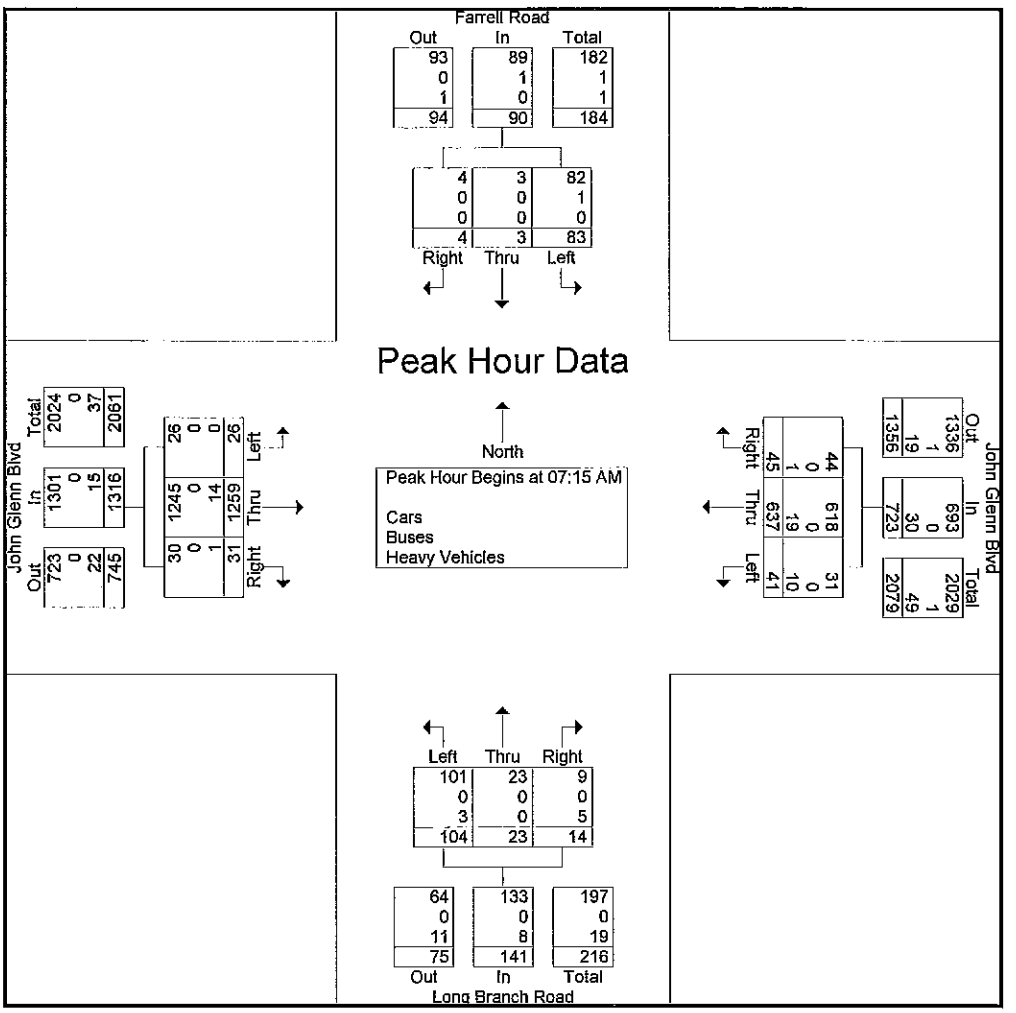

PEEK



Town of Clay, Onondaga County
John Glenn Blvd @ Long Branch Rd.
6/25/09
Counters: KB/JC

File Name : 6_25_09_JohnGlenn_LongBranch_AM
Site Code : 07820444
Start Date : 6/25/2009
Page No : 2

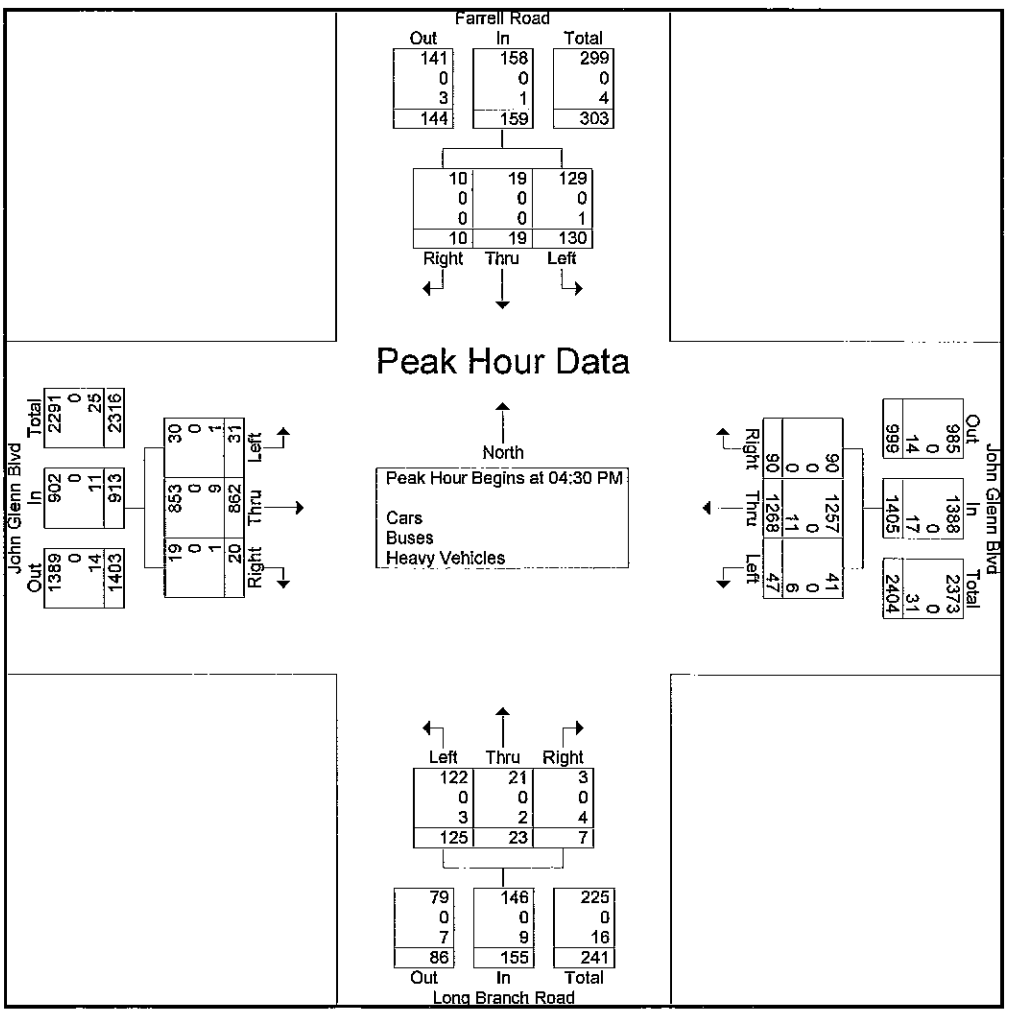
	Farrell Road Southbound				John Glenn Blvd Westbound				Long Branch Road Northbound				John Glenn Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	1	11	13	12	145	14	171	5	6	23	34	7	284	13	304	522
07:30 AM	1	1	28	30	8	160	8	176	2	4	31	37	11	312	6	329	572
07:45 AM	1	1	25	27	20	184	10	214	6	8	32	46	5	346	1	352	639
08:00 AM	1	0	19	20	5	148	9	162	1	5	18	24	8	317	6	331	537
Total Volume	4	3	83	90	45	637	41	723	14	23	104	141	31	1259	26	1316	2270
% App. Total	4.4	3.3	92.2		6.2	88.1	5.7		9.9	16.3	73.8		2.4	95.7	2		
PHF	1.000	.750	.741	.750	.563	.865	.732	.845	.583	.719	.813	.766	.705	.910	.500	.935	.888
Cars	4	3	82	89	44	618	31	693	9	23	101	133	30	1245	26	1301	2216
% Cars	100	100	98.8	98.9	97.8	97.0	75.6	95.9	64.3	100	97.1	94.3	96.8	98.9	100	98.9	97.6
Buses	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% Buses	0	0	1.2	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Heavy Vehicles	0	0	0	0	1	19	10	30	5	0	3	8	1	14	0	15	53
% Heavy Vehicles	0	0	0	0	2.2	3.0	24.4	4.1	35.7	0	2.9	5.7	3.2	1.1	0	1.1	2.3



Town of Clay, Onondaga County
John Glenn Blvd @ Long Branch Rd.
6/25/09
Counters: KB/JC

File Name : 6_25_09_JohnGlenn_LongBranch_PM
Site Code : 07820444
Start Date : 6/25/2009
Page No : 2

	Farrell Road Southbound				John Glenn Blvd Westbound				Long Branch Road Northbound				John Glenn Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**5**	**17**	**41**	**63**	11	288	**14**	313	**5**	**8**	**38**	**51**	3	243	**15**	261	**688**
04:45 PM	3	1	22	26	14	320	9	343	0	4	28	32	6	**253**	6	**265**	666
05:00 PM	1	0	36	37	**35**	302	11	348	1	6	26	33	**7**	165	3	175	593
05:15 PM	1	1	31	33	30	**358**	13	**401**	1	5	33	39	4	201	7	212	685
Total Volume	10	19	130	159	90	1268	47	1405	7	23	125	155	20	862	31	913	2632
% App. Total	6.3	11.9	81.8		6.4	90.2	3.3		4.5	14.8	80.6		2.2	94.4	3.4		
PHF	.500	.279	.793	.631	.643	.885	.839	.876	.350	.719	.822	.760	.714	.852	.517	.861	.956
Cars	10	19	129	158	90	1257	41	1388	3	21	122	146	19	853	30	902	2594
% Cars	100	100	99.2	99.4	100	99.1	87.2	98.8	42.9	91.3	97.6	94.2	95.0	99.0	96.8	98.8	98.6
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heavy Vehicles	0	0	1	1	0	11	6	17	4	2	3	9	1	9	1	11	38
% Heavy Vehicles	0	0	0.8	0.6	0	0.9	12.8	1.2	57.1	8.7	2.4	5.8	5.0	1.0	3.2	1.2	1.4



INTERSECTION NAME: J GLENN @ FARRELL
INTERSECTION NUMBER: 19

INSTALLATION DATE:
PROGRAM DATE:

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

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

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

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

INTERSECTION NAME: J GLENN @ FARRELL
INTERSECTION NUMBER: 19

INSTALLATION DATE:
PROGRAM DATE:

OPTIMIZED TIMINGS

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

INTERVAL	PHASE TIMINGS							
	1	2	3	4	5	6	7	8
MIN GREEN	5	15	7	10	5	15		
PASSAGE	1.8	2.8	1	1	1.8	2.8		
YELLOW	4.5	4.5	4.5	4.5	4.5	4.5		
RED	3	3	3	3	3	3		
MAX I (AM)	9.5	47.5	14.5	18.5	8.5	48.5		
MAX II (PM)	7.5	47.5	19.5	15.5	11.5	43.5		
WALK								
PED CLEAR								
S/A								
TBR								
TTR								
MIN GAP								
MAX VI								
MAX EXT								
AUTO MAX								
AMR								

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

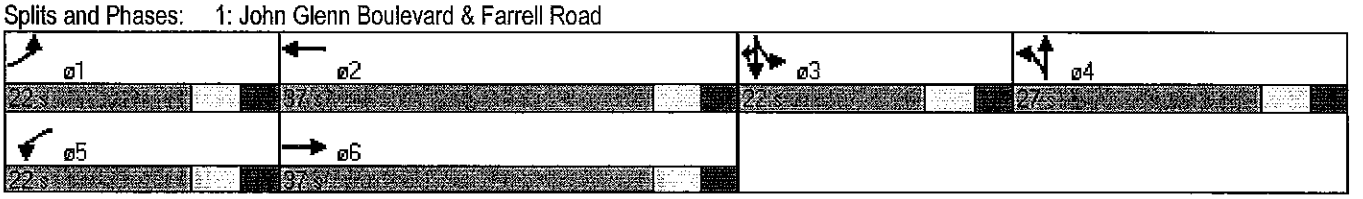
INHIBIT O/L	PED Overlaps							
	1	2	3	4	5	6	7	8
OLA								
OVERLAP B								
OVERLAP C								
OVERLAP D								

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	26	1259	41	637	23	3	4
Turn Type	Prot		Prot				Prot
Protected Phases	1	6	5	2	4	3	3
Permitted Phases							
Detector Phase	1		5		4	3	3
Switch Phase							
Minimum Initial (s)	8.0	10.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	15.0	17.0	15.0	17.0	15.0	15.0	15.0
Total Split (s)	22.0	37.0	22.0	37.0	27.0	22.0	22.0
Total Split (%)	20.4%	34.3%	20.4%	34.3%	25.0%	20.4%	20.4%
Maximum Green (s)	15.0	30.0	15.0	30.0	20.0	15.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Max	None	Max	None	None	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							

Intersection Summary

Cycle Length: 108
Actuated Cycle Length: 86.2
Natural Cycle: 80
Control Type: Semi Act-Uncoord

Splits and Phases: 1: John Glenn Boulevard & Farrell Road

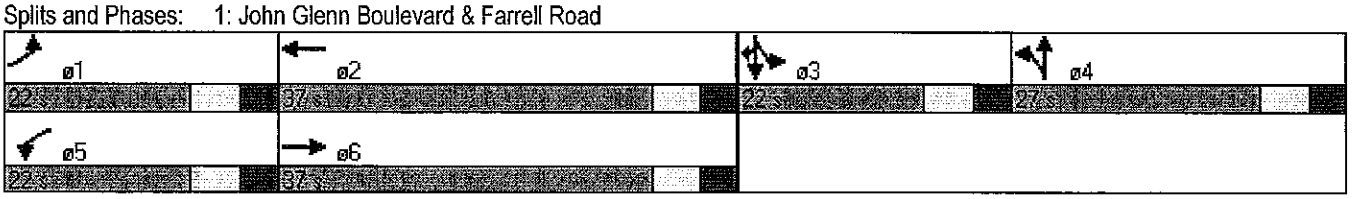


Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	31	862	47	1268	23	19	10
Turn Type	Prot		Prot				Prot
Protected Phases	1	6	5	2	4	3	3
Permitted Phases							
Detector Phase	1		5		4	3	3
Switch Phase							
Minimum Initial (s)	8.0	10.0	8.0	10.0	8.0	8.0	8.0
Minimum Split (s)	15.0	17.0	15.0	17.0	15.0	15.0	15.0
Total Split (s)	22.0	37.0	22.0	37.0	27.0	22.0	22.0
Total Split (%)	20.4%	34.3%	20.4%	34.3%	25.0%	20.4%	20.4%
Maximum Green (s)	15.0	30.0	15.0	30.0	20.0	15.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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	Max	None	Max	None	None	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							

Intersection Summary

Cycle Length: 108
Actuated Cycle Length: 93.7
Natural Cycle: 90
Control Type: Semi Act-Uncoord

Splits and Phases: 1: John Glenn Boulevard & Farrell Road

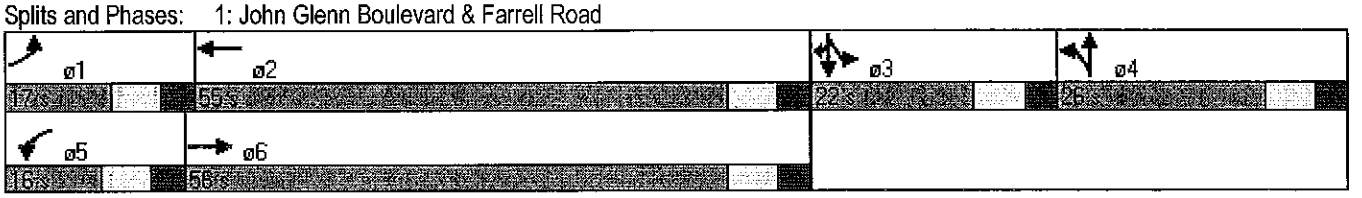


Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	26	1259	41	637	23	3	4
Turn Type	Prot		Prot				Prot
Protected Phases	1	6	5	2	4	3	3
Permitted Phases							
Detector Phase	1	6	5	2	4	3	3
Switch Phase							
Minimum Initial (s)	5.0	15.0	5.0	15.0	10.0	7.0	7.0
Minimum Split (s)	12.5	22.5	12.5	22.5	17.5	14.5	14.5
Total Split (s)	17.0	56.0	16.0	55.0	26.0	22.0	22.0
Total Split (%)	14.2%	46.7%	13.3%	45.8%	21.7%	18.3%	18.3%
Maximum Green (s)	9.5	48.5	8.5	47.5	18.5	14.5	14.5
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.8	2.8	1.8	2.8	1.0	1.0	1.0
Minimum Gap (s)	1.8	2.8	1.8	2.8	1.0	1.0	1.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	None	Min	None	None	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 101.4
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

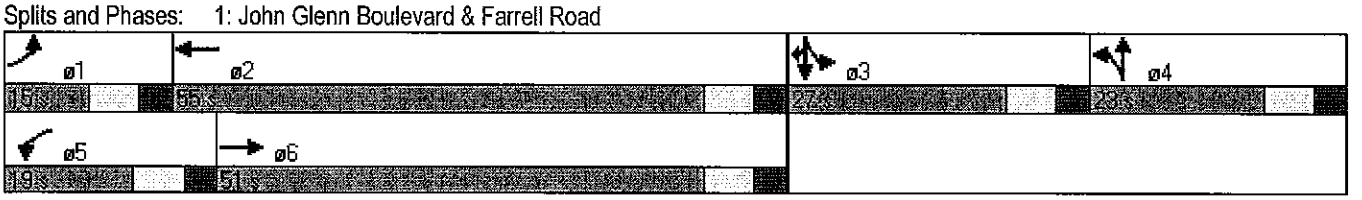
Splits and Phases: 1: John Glenn Boulevard & Farrell Road



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	31	862	47	1268	23	19	10
Turn Type	Prot		Prot				Prot
Protected Phases	1	6	5	2	4	3	3
Permitted Phases							
Detector Phase	1	6	5	2	4	3	3
Switch Phase							
Minimum Initial (s)	5.0	15.0	5.0	15.0	10.0	7.0	7.0
Minimum Split (s)	12.5	22.5	12.5	22.5	17.5	14.5	14.5
Total Split (s)	15.0	51.0	19.0	55.0	23.0	27.0	27.0
Total Split (%)	12.5%	42.5%	15.8%	45.8%	19.2%	22.5%	22.5%
Maximum Green (s)	7.5	43.5	11.5	47.5	15.5	19.5	19.5
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.8	2.8	1.8	2.8	1.0	1.0	1.0
Minimum Gap (s)	1.8	2.8	1.8	2.8	1.0	1.0	1.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	None	Min	None	None	None
Walk Time (s)							
Flash Dont Walk (s)							
Pedestrian Calls (#/hr)							

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 107.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: John Glenn Boulevard & Farrell Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	1259	31	41	637	45	104	23	14	83	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	13	12	16	16	16	11	11	14
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.99			0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.95	1.00
Satd. Flow (prot)	1865	3560		1456	3588			1938			1735	1723
Flt Permitted	0.95	1.00		0.95	1.00			0.96			0.95	1.00
Satd. Flow (perm)	1865	3560		1456	3588			1938			1735	1723
Peak-hour factor, PHF	0.94	0.94	0.94	0.85	0.85	0.85	0.77	0.77	0.77	0.75	0.75	0.75
Adj. Flow (vph)	28	1339	33	48	749	53	135	30	18	111	4	5
RTOR Reduction (vph)	0	1	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	28	1371	0	48	798	0	0	183	0	0	115	5
Heavy Vehicles (%)	0%	1%	3%	24%	3%	2%	3%	0%	36%	1%	0%	0%
Turn Type	Prot			Prot			Split			Split		Prot
Protected Phases	1	6		5	2		4	4		3	3	3
Permitted Phases												
Actuated Green, G (s)	4.6	32.0		5.8	33.2			15.0			9.7	9.7
Effective Green, g (s)	7.6	35.0		8.8	36.2			18.0			12.7	12.7
Actuated g/C Ratio	0.08	0.39		0.10	0.40			0.20			0.14	0.14
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Vehicle Extension (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Grp Cap (vph)	157	1377		142	1435			385			243	242
v/s Ratio Prot	0.02	c0.39		c0.03	0.22			c0.09			c0.07	0.00
v/s Ratio Perm												
v/c Ratio	0.18	1.00		0.34	0.56			0.48			0.47	0.02
Uniform Delay, d1	38.5	27.7		38.1	20.9			32.1			35.8	33.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.7	23.2		1.9	1.6			1.3			2.0	0.0
Delay (s)	39.3	50.9		40.1	22.5			33.3			37.8	33.6
Level of Service	D	D		D	C			C			D	C
Approach Delay (s)		50.6			23.5			33.3			37.6	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	39.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	862	20	47	1268	90	125	23	7	130	19	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	13	12	16	16	16	11	11	14
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.99			0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.96	1.00
Satd. Flow (prot)	1811	3559		1597	3659			1951			1745	1723
Flt Permitted	0.95	1.00		0.95	1.00			0.96			0.96	1.00
Satd. Flow (perm)	1811	3559		1597	3659			1951			1745	1723
Peak-hour factor, PHF	0.86	0.86	0.86	0.88	0.88	0.88	0.76	0.76	0.76	0.63	0.63	0.63
Adj. Flow (vph)	36	1002	23	53	1441	102	164	30	9	206	30	16
RTOR Reduction (vph)	0	1	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	36	1024	0	53	1539	0	0	203	0	0	236	16
Heavy Vehicles (%)	3%	1%	5%	13%	1%	0%	2%	9%	57%	1%	0%	0%
Turn Type	Prot			Prot			Split			Split		Prot
Protected Phases	1	6		5	2		4	4		3	3	3
Permitted Phases												
Actuated Green, G (s)	4.9	32.0		7.3	34.4			14.7			14.3	14.3
Effective Green, g (s)	7.9	35.0		10.3	37.4			17.7			17.3	17.3
Actuated g/C Ratio	0.08	0.36		0.11	0.39			0.18			0.18	0.18
Clearance Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	149	1294		171	1421			359			313	310
v/s Ratio Prot	0.02	0.29		c0.03	c0.42			c0.10			c0.14	0.01
v/s Ratio Perm												
v/c Ratio	0.24	0.79		0.31	1.08			0.57			0.75	0.05
Uniform Delay, d1	41.4	27.4		39.7	29.4			35.8			37.5	32.7
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.8	5.0		1.0	49.7			2.0			9.9	0.1
Delay (s)	42.2	32.4		40.8	79.1			37.8			47.4	32.8
Level of Service	D	C		D	E			D			D	C
Approach Delay (s)		32.7			77.9			37.8			46.4	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM Average Control Delay	57.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	96.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	1259	31	41	637	45	104	23	14	83	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	13	12	16	16	16	11	11	14
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.99			0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.95	1.00
Satd. Flow (prot)	1865	3560		1456	3588			1938			1735	1723
Flt Permitted	0.95	1.00		0.95	1.00			0.96			0.95	1.00
Satd. Flow (perm)	1865	3560		1456	3588			1938			1735	1723
Peak-hour factor, PHF	0.94	0.94	0.94	0.85	0.85	0.85	0.77	0.77	0.77	0.75	0.75	0.75
Adj. Flow (vph)	28	1339	33	48	749	53	135	30	18	111	4	5
RTOR Reduction (vph)	0	2	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	28	1370	0	48	798	0	0	183	0	0	115	5
Heavy Vehicles (%)	0%	1%	3%	24%	3%	2%	3%	0%	36%	1%	0%	0%
Turn Type	Prot			Prot			Split			Split		Prot
Protected Phases	1	6		5	2		4	4		3	3	3
Permitted Phases												
Actuated Green, G (s)	3.7	43.2		5.7	45.2			14.1			10.7	10.7
Effective Green, g (s)	7.2	46.7		9.2	48.7			17.6			14.2	14.2
Actuated g/C Ratio	0.07	0.45		0.09	0.47			0.17			0.14	0.14
Clearance Time (s)	7.5	7.5		7.5	7.5			7.5			7.5	7.5
Vehicle Extension (s)	1.8	2.8		1.8	2.8			1.0			1.0	1.0
Lane Grp Cap (vph)	129	1603		129	1685			329			238	236
v/s Ratio Prot	0.02	c0.38		c0.03	0.22			c0.09			c0.07	0.00
v/s Ratio Perm												
v/c Ratio	0.22	0.85		0.37	0.47			0.56			0.48	0.02
Uniform Delay, d1	45.6	25.5		44.5	18.8			39.5			41.4	38.7
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.3	4.7		0.7	0.2			1.2			0.6	0.0
Delay (s)	45.9	30.1		45.2	18.9			40.6			41.9	38.7
Level of Service	D	C		D	B			D			D	D
Approach Delay (s)		30.5			20.4			40.6			41.8	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	103.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	862	20	47	1268	90	125	23	7	130	19	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	13	12	16	16	16	11	11	14
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.99			0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.96	1.00
Satd. Flow (prot)	1811	3559		1597	3659			1951			1745	1723
Flt Permitted	0.95	1.00		0.95	1.00			0.96			0.96	1.00
Satd. Flow (perm)	1811	3559		1597	3659			1951			1745	1723
Peak-hour factor, PHF	0.86	0.86	0.86	0.88	0.88	0.88	0.76	0.76	0.76	0.63	0.63	0.63
Adj. Flow (vph)	36	1002	23	53	1441	102	164	30	9	206	30	16
RTOR Reduction (vph)	0	1	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	36	1024	0	53	1539	0	0	203	0	0	236	16
Heavy Vehicles (%)	3%	1%	5%	13%	1%	0%	2%	9%	57%	1%	0%	0%
Turn Type	Prot			Prot			Split			Split		Prot
Protected Phases	1	6		5	2		4	4		3	3	3
Permitted Phases												
Actuated Green, G (s)	3.9	44.0		6.7	46.8			13.5			16.3	16.3
Effective Green, g (s)	7.4	47.5		10.2	50.3			17.0			19.8	19.8
Actuated g/C Ratio	0.07	0.43		0.09	0.46			0.15			0.18	0.18
Clearance Time (s)	7.5	7.5		7.5	7.5			7.5			7.5	7.5
Vehicle Extension (s)	1.8	2.8		1.8	2.8			1.0			1.0	1.0
Lane Grp Cap (vph)	121	1530		147	1666			300			313	309
v/s Ratio Prot	0.02	0.29		c0.03	c0.42			c0.10			c0.14	0.01
v/s Ratio Perm												
v/c Ratio	0.30	0.67		0.36	0.92			0.68			0.75	0.05
Uniform Delay, d1	49.1	25.2		47.1	28.3			44.2			43.0	37.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.5	1.1		0.6	9.0			4.7			8.8	0.0
Delay (s)	49.6	26.3		47.6	37.3			48.8			51.9	37.6
Level of Service	D	C		D	D			D			D	D
Approach Delay (s)		27.1			37.7			48.8			50.9	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	35.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	110.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			