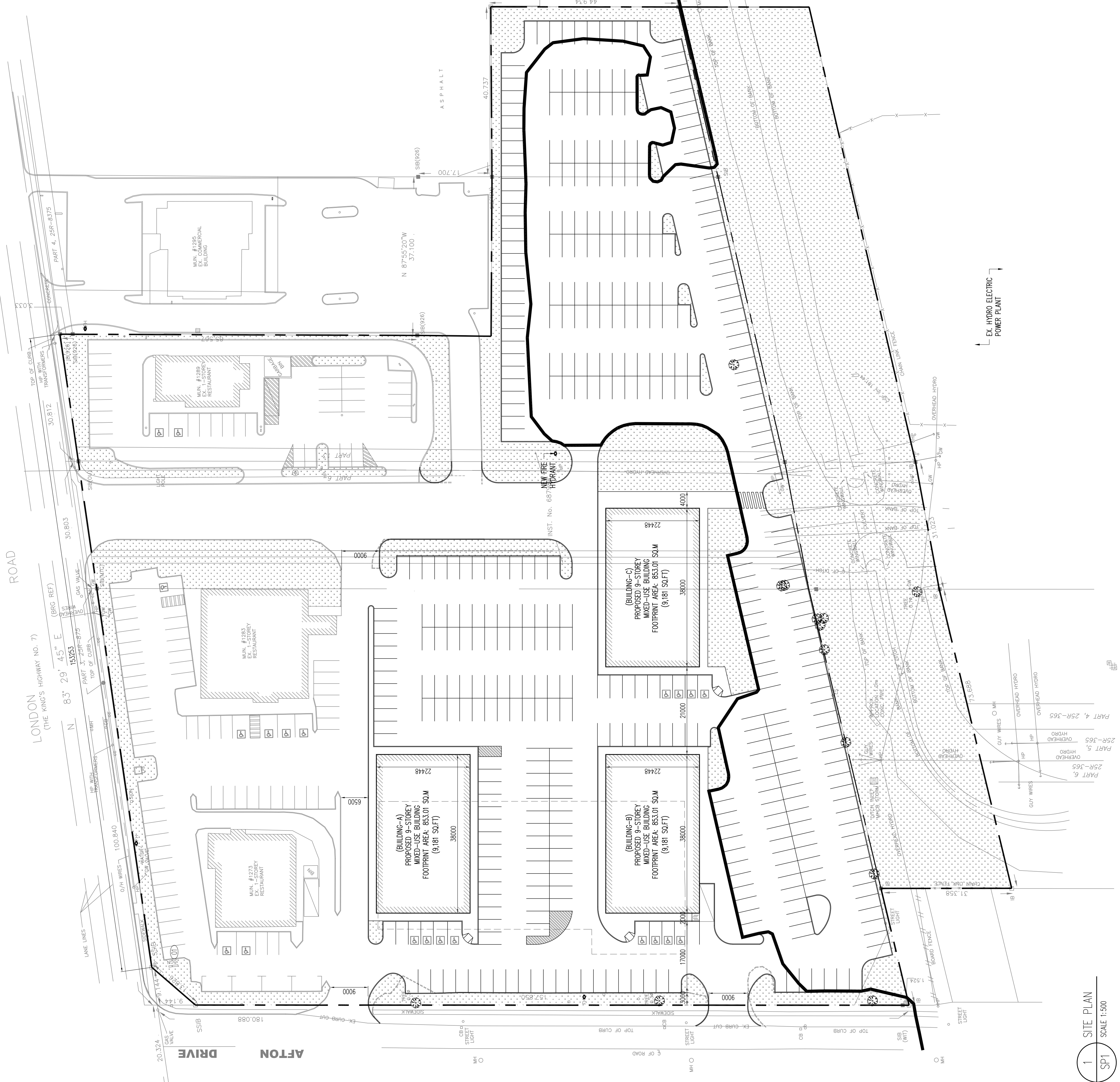


Appendix A

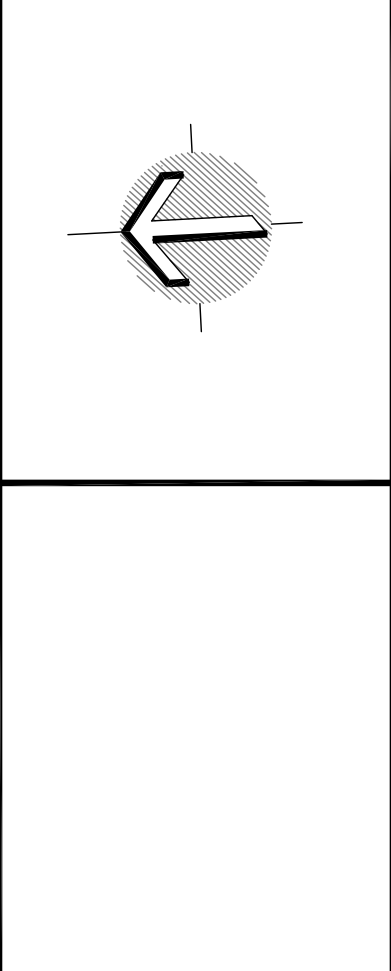
Draft Site Plan



GENERAL NOTES:
 1) ALL DRAWINGS AND DESIGNS ARE COPYRIGHTED AND PROPERTY OF CANTAM GROUP LIMITED AND CANNOT BE REPRODUCED EXCEPT WITH SPECIFIC WRITTEN CONSENT FROM THE DESIGNER.
 2) CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE PROJECT AND MUST REPORT ANY DISCREPANCIES TO THE DESIGNER BEFORE PROCEEDING WITH CONSTRUCTION.
 3) DO NOT SCALE DRAWINGS.

NO.	DESCRIPTIONS	YYYYMMDD
R1	PRE-CONSULTATION MEETING	2014 / 01 / 21
R2	PRE-CONSULTATION MEETING	2015 / 11 / 25
R3	PRE-CONSULTATION MEETING	2016 / 10 / 26
R4	ISSUED FOR SITE PLAN APPLICATION	2017 / 11 / 17
R5	ISSUED FOR OPA, ZBA	2019 / 12 / 18

ZONING CATEGORY:	COMERCIAL CENTRE 1 ZONE (CC1)
BY-LAW REQUIREMENTS	460 SQ.M (MIN)
PROPOSED	38,559.74 SQ.M (9,5283 ACRES)
STUDENT RESIDENCE	153,25 M
LOT FRONTAGE	447.66 SQ.M
LOT COVERAGE	707.76 SQ.M
BUILDING FOOTPRINT AREA	3,987.34 SQ.M (10,288)
EX. 1233 BUILDING	447.66 SQ.M
EX. 1289 BUILDING	707.76 SQ.M
BUILDING-A	252.89 SQ.M
BUILDING-B	853.01 SQ.M
BUILDING-C	853.01 SQ.M
FRONT YARD SETBACK	55.12 M
NORTH - LONDON ROAD	100.71 M
BUILDING-A	117.94 M
BUILDING-B	22.02 M
BUILDING-C	22.02 M
EXTERIOR YARD SETBACK	81.02 M
WEST - AFTON ROAD	100.42 M
BUILDING-A	103.92 M
BUILDING-B	49.52 M
BUILDING-C	118.55 M
INTERIOR YARD SETBACK	65.14 M
EAST	52.84 M
BUILDING-A	18.5 M (5-STORY)
BUILDING-B	18.5 M (5-STORY)
BUILDING-C	13.5 M (MAX)
REAR YARD SETBACK	108 (MIN)
LANDSCAPE AREA	10,949.65 SQ.M (28,396)
PARKING SPACES	438 SPACES INCLUDING ACCESSIBLE PARKING SPACES
EX. #1273 BUILDING	EX. #1273 BUILDING RESTAURANT: 1/4.5 SQ.M OF PUBLIC SPACE = 500.96 / 4.5 = 85 SPACES
EX. #1283 BUILDING	EX. #1283 BUILDING RESTAURANT: 1/4.5 SQ.M OF PUBLIC SPACE = 425.07 / 4.5 = 95 SPACES
EX. #1289 BUILDING	EX. #1289 BUILDING RESTAURANT: 1/4.5 SQ.M OF PUBLIC SPACE = 133.04 / 4.5 = 30 SPACES
BUILDING-A	BUILDING-A: 9-STORY STUDENT RES. 0.2 PER BED = 280 BEDS x 0.2 = 56 SPACES
BUILDING-B	BUILDING-B: 9-STORY STUDENT RES. 0.2 PER BED = 315 BEDS x 0.2 = 63 SPACES
BUILDING-C	BUILDING-C: 9-STORY STUDENT RES. 0.2 PER BED = 305 BEDS x 0.2 = 61 SPACES
TOTAL	TOTAL: 435 PARKING SPACES REQ'D



PROJECT COORDINATOR:
CANTAM
Group Ltd.
 PLANNING & BUILDING CONSULTANTS
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 TEL: 416-335-3359 - FAX: 416-335-7967
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SITE:
 1273-1289 LONDON ROAD, SARNIA, ON

PROJECT:
 PROPOSED 9-STORY MIXED-USE BUILDINGS FOR COMMERCIAL AND STUDENT RESIDENCE

DRAWING:
 SITE PLAN

DATE: 2014 / 01 / 21	SPA
SCALE: AS SHOWN	DRAWING NO.
DRN BY: JC	
CHK BY: MB	

SP1

1 SITE PLAN
 SCALE 1:500

Appendix B

Signal Timing Reports

Programmed EPAC Data

4/6/2017
11:27:05AM

Intersection Name: London @ Harvey's

Intersection Alias: 084

Access Code: 9999 Channel: 7 Address: 9 Revision: 3.32n

Access Data

Port 2 Comm :1200 Baud
Port 3 Comm :1200 Baud

Phase Data

Vehical Basic Timings							Vehical Density Timings			Time B4	Cars	Time To	
Phase	Min_Grn	Passage	Max1	Max2	Yellow	All Red	Added Initial	Max_Initial	Reduction	Before	Reduce	Min_Gap	
2	15	0.0	30	0	4.0	2.2	0.0	0	0	0	0	0.0	
4	8	2.0	22	0	4.0	2.0	0.0	0	0	0	0	0.0	

Pedestrian Timing			Extended	Actuated	General Control					Miscellaneous					
Phase	Walk	Ped Clear	Flashing Walk	Ped Clear	Rest in Walk	Initialize	Non-Act Response	Veh Recall	Ped Recall	Recall Delay	Non Lock	Dual Entry	Last Car Passage	Conditional Service	No Simultaneous Gap Out
2	10	12	No	0	No	Yellow	NonActI	None	Non Act	0	Yes	Yes	No	No	No
4	9	13	No	0	No	Inactive	NonActII	None	None	0	Yes	Yes	No	No	No

Special Sequence Default Data

Vehical Detector Phase Assignment

	Assigned Phase	Mode	Switched Phase	Extend	Delay
Vehical Detector Channel :1	1	Veh	0	0.0	0
Vehical Detector Channel :2	2	Veh	0	0.0	0
Vehical Detector Channel :3	3	Veh	0	0.0	0
Vehical Detector Channel :4	4	Veh	0	0.0	5
Vehical Detector Channel :5	5	Veh	0	0.0	0
Vehical Detector Channel :6	6	Veh	0	0.0	0
Vehical Detector Channel :7	7	Veh	0	0.0	0
Vehical Detector Channel :8	8	Veh	0	0.0	0

Pedestrian Detector Default Data

Special Detector Phase Assignment

	Assign Phase	Mode	Switched Phase	Extend	Delay
Default Data					

Unit Data

General Control

Startup Time: 5sec Startup State: Flash Red Revert: 4sec
 Auto Ped Clear: No Stop Time Reset: No Alternate Sequence: 0
 ABC connector Input Modes: 0
 ABC connector Output Modes: 0
 D connector Input Modes: 0
 D connector Output Modes: 0

Ring	Input Respons	Output Selection
1	Ring 1	Ring 1
2	Ring 2	Ring 2
3	None	None
4	None	None

Remote Flash

Test A = Flash	Flash Channel	Flash Color	Flash Alternat
Default Data - No Flash			

Default Data - No Flash

Overlaps

Phase(s)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trail Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trail Yellow	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Trail Red	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Plus Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minus Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring			Phase(s)															
Phase	Ring	Next Phase																
2	1	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4	1	1	1	2	3	4	1	1	3	3	9	10	11	12	13	14	15	16
			5	5	7	7	2	2	4	4								
			6	6	8	8	5	6	7	8								

Alternate Sequences

Alternate Sequences

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Phase Pair(s)	1	1	3	1	5	1	3	1	7	1	3	1	5	1	3	1
		2	4	2	6	2	4	2	8	2	4	2	6	2	4	2
	2	0	0	3	0	5	5	3	0	7	7	3	7	5	5	3
		0	0	4	0	6	6	4	0	8	8	4	8	6	6	4
3	0	0	0	0	0	0	5	0	0	0	7	0	7	7	5	
	0	0	0	0	0	0	6	0	0	0	8	0	8	8	6	
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	

Port 1 Data

BIU Addr	Port Status	Message
		40

Default Data

Channel Assignment

Control	Channel	Hardware Pin Set	Control	Channel	Hardware Pin Set	Control	Channel	Hardware Pin Set
Ph.1 Veh	1	1 - Ph.1 RYG	Ph.2 Veh	2	2 - Ph.2 RYG	Ph.3 Veh	3	3 - Ph.3 RYG
Ph.4 Veh	4	4 - Ph.4 RYG	Ph.5 Veh	5	5 - Ph.5 RYG	Ph.6 Veh	6	6 - Ph.6 RYG
Ph.7 Veh	7	7 - Ph.7 RYG	Ph.8 Veh	8	8 - Ph.8 RYG	Ph.2 Ped	9	10 - Ph.2 DPW
Ph.4 Ped	10	12 - Ph.4 DPW	Ph.6 Ped	11	14 - Ph.6 DPW	Ph.8 Ped	12	16 - Ph.8 DPW
Ph.1 OLP	13	17 - Ph.1 RYG	Ph.2 OLP	14	18 - Ph.2 RYG	Ph.3 OLP	15	19 - Ph.3 RYG
Ph.4 OLP	16	20 - Ph.4 RYG	Ph.1 Ped	17	9 - Ph.1 DPW	Ph.3 Ped	18	11 - Ph.3 DPW
Ph.5 Ped	19	13 - Ph.5 DPW	Ph.7 Ped	20	15 - Ph.7 DPW			

Coordination Data

General Coordination Data

Operation Mode: 1=Auto

Coordination Mode: 1=Yield

Maximun Mode: 0=Inhibit

Correction Mode: 2=Short Way

Offset Mode: 0=Beg Grn

Force Mode: 0=Plan

Max Dwell Time: 0

Yield Period: 3

Manual Dial: 1

Manual Split: 1

Manual Offset: 1

Dial/Split

Cycle

1/1 110

2/1 90

3/1 90

4/1 100

Split Times and Phase Mode

Dial 1 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
2	79	1=Coordinate	4	30	0=Actuated	6	79	1=Coordinate			

Dial 2 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
2	58	1=Coordinate	4	31	0=Actuated	6	58	1=Coordinate			

Dial 3 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
2	59	1=Coordinate	4	30	0=Actuated	6	59	1=Coordinate			

Dial 4 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
2	61	1=Coordinate	4	39	0=Actuated	6	61	1=Coordinate			

Traffic Plan Data

Plan: 1/1/1 Offset Time: 81 Alt. Sequence: 0 Mode: 0=Normal Rg 2 Lag Time: 0 Rg 3 Lag Time: 0 Rg 4 Lag Time: 0

Plan: 2/1/1 Offset Time: 53 Alt. Sequence: 0 Mode: 0=Normal Rg 2 Lag Time: 0 Rg 3 Lag Time: 0 Rg 4 Lag Time: 0

Plan: 3/1/1 Offset Time: 63 Alt. Sequence: 0 Mode: 0=Normal Rg 2 Lag Time: 0 Rg 3 Lag Time: 0 Rg 4 Lag Time: 0

Plan: 4/1/1 Offset Time: 40 Alt. Sequence: 0 Mode: 0=Normal Rg 2 Lag Time: 0 Rg 3 Lag Time: 0 Rg 4 Lag Time: 0

Local TBC Data

Start of Daylight Saving Month: 3 Week: 2 Cycle Zero Reference Hours: 2 Min: 0
 End of Daylight Saving Month: 11 Week: 1

Source	Equate Days							
	Day	1	2	3	4	5	6	7
1	7	0	0	0	0	0	0	0
2	3	4	5	6	0	0	0	0

Traffic Data

Event	Day	Time	D/S/O	flash	PHASE FUNCTION															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0:0	0/0/4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	1	9:0	4/1/1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	1	18:0	0/0/4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	2	0:0	0/0/4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	2	7:30	1/1/1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6	2	10:30	2/1/1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	2	14:0	3/1/1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	2	21:0	0/0/4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

AUX. Events

Event	Program	Day	Hour	Min.	Aux Outputs			Det. Diag.	Det. Rpt.	Det. Mult100	Special Function Outputs													
					1	2	3	D1	D2	D3	Dimming	1	2	3	4	5	6	7	8					
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Default Data - No Special Day(s) or Week(s) Programmed

Special Functions

Function	SF1	SF2	SF3	SF4	SF5	SF6	SF7	SF8
Special Function 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Special Function 2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Special Function 3	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Special Function 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Special Function 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Special Function 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Special Function 7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Special Function 8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Phase Function

Phase Function Map	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Dimming Data

Channel Red Yellow Green Alternate

Default Data - No Dimming Programmed

Preemption Data

General Preemption Data

Ring	Min Grn/Walk Time
1	8
2	8
3	10
4	10

Flash > Preempt 1 Preempt 2 = Preempt 3 Preempt 4 = Preempt 5
 Preempt 1 > Preempt 2 Preempt 3 = Preempt 4 Preempt 5 = Preempt 6

Preempt	Preempt Timers								Select			Track				Dwell	Return		
	Non-Locking	Link to Preempt	Delay	Extend	Duration	MaxCall	Lock-Out	Ped Clear	Yel	Red	Grn	Ped	Yel	Red	Green	Ped Clear	Yel	Red	
1	No	0	0	0	10	0	0	8	4.0	2.4	0	8	4.0	2.0	10	8	4.0	2.4	
2	No	0	0	0	10	0	0	8	4.0	2.4	0	0	4.0	2.0	10	8	4.0	2.4	
3	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0	
4	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0	
5	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0	
6	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0	

Preempt 1			Preempt 2			Preempt 3			Preempt 4			Preempt 5			Preempt 6		
Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls
4	Yes	No	2	Yes	No	1	No	Yes	1	No	Yes	1	No	Yes	1	No	Yes
			6	Yes	No	2	Yes	Yes	2	Yes	Yes	2	Yes	Yes	2	Yes	Yes
						3	No	Yes	3	No	Yes	3	No	Yes	3	No	Yes
						4	No	Yes	4	No	Yes	4	No	Yes	4	No	Yes
						5	No	Yes	5	No	Yes	5	No	Yes	5	No	Yes
						6	Yes	Yes	6	Yes	Yes	6	Yes	Yes	6	Yes	Yes
						7	No	Yes	7	No	Yes	7	No	Yes	7	No	Yes
						8	No	Yes	8	No	Yes	8	No	Yes	8	No	Yes

Priority Timers									
Priority	Non-Locking	Delay	Extend	Duration	Dwell	Max_Call	Lock-Out	Skip Phases	
1	No	0	0	0	0	0	0	0=Do not Skip Phases	
2	No	0	0	0	0	0	0	0=Do not Skip Phases	
3	No	0	0	0	0	0	0	0=Do not Skip Phases	
4	No	0	0	0	0	0	0	0=Do not Skip Phases	
5	No	0	0	0	0	0	0	0=Do not Skip Phases	
6	No	0	0	0	0	0	0	0=Do not Skip Phases	

Priority 1			Priority 2			Priority 3			Priority 4			Priority 5			Priority 6		
Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls

Preempt 1				Pedestrian Phases				Overlaps			
Vehical Phases		Cycle		Ph	Track	Dwell	Cycle	Ovlp	Track	Dwell	Cycle
2	Red	Green	No	Default Data				Default Data			
6	Red	Green	No	Default Data				Default Data			

Preempt 2				Pedestrian Phases				Overlaps			
Vehical Phases		Cycle		Ph	Track	Dwell	Cycle	Ovlp	Track	Dwell	Cycle
4	Red	Green	No	Default Data				Default Data			

Preempt 3

Vehical Phases			Pedestrian Phases			Overlaps		
Ph. Track	Dwell	Cycle	Ph. Track	Dwell	Cycle	Ovlp. Track	Dwell	Cycle

Default Data

Default Data

Default Data

Preempt 4

Vehical Phases			Pedestrian Phases			Overlaps		
Ph. Track	Dwell	Cycle	Ph. Track	Dwell	Cycle	Ovlp. Track	Dwell	Cycle

Default Data

Default Data

Default Data

Preempt 5

Vehical Phases			Pedestrian Phases			Overlaps		
Ph. Track	Dwell	Cycle	Ph. Track	Dwell	Cycle	Ovlp. Track	Dwell	Cycle

Default Data

Default Data

Default Data

Preempt 6

Vehical Phases			Pedestrian Phases			Overlaps		
Ph. Track	Dwell	Cycle	Ph. Track	Dwell	Cycle	Ovlp. Track	Dwell	Cycle

Default Data

Default Data

Default Data

System/Detectors Data

Local Critical Alarms

Local Free: No Cycle Failure: No Coord Failure: No Conflict Flash: No Revert to Backup: 5 Remote Flash: No 1st Phone:
 Local Fash: No Cycle Fault: No Coord Fault: No Preemption: No Voltage Monitor: No 2nd Phone:
 Special Status 1: No Special Status 2: No Special Status 3: No Special Status 4: No Special Status 5: No Special Status 6: No

Traffic Responsive

System Detector	Detector Channel	Average Veh/Hr	Average Time(mins)	Occupancy Correction/10	Min Volume %	Queue 1 Detectors	System Detectors	Weight Factor	Queue 2 Detectors	System Detectors	Weight Factor
1	1	1,200	5	50	50						
3	3	1,200	5	50	50	Default Data		Default Data			
5	5	1,200	5	50	50						
7	7	1,200	5	50	50						

Sample Interval:

Queue: 1 Input Selection: 0=Average Queue: Level Enter Leave Dial / Split / Offset
 Detector Failed Level : 0
 Queue: 2 Input Selection: 0=Average Detector Failed Level : 0 **Default Data**

Vehical Detector

Diagnostic Value 0			
Max	No	Erratic	
Detector	Presence	Activity	Count

Default Data - Diag 0 Values

Vehical Detector

Diagnostic Value 1			
Max	No	Erratic	
Detector	Presence	Activity	Count
1	60	120	120
3	60	120	120
5	60	120	120
7	60	120	120

Special Detector

Diagnostic Value 0			
Max	No	Erratic	
Detector	Presence	Activity	Count

Default Data - No Diag 0 Values

Pedestrian Detector

Diagnostic Value 0			
Max	No	Erratic	
Detector	Presence	Activity	Count

Default Data - No Diag 0 Values

Pedestrian Detector

Diagnostic Value 1			
Max	No	Erratic	
Detector	Presence	Activity	Count

Default Data - No Diag 1 Values

Special Detector

Diagnostic Value 1			
Max	No	Erratic	
Detector	Presence	Activity	Count

Default Data - No Diag 1 Values

Speed Trap Data

Speed Trap:

Measurement:

Detector 1 Detector_2 Distance :

Dial/Split/Offset

//

Speed Trap
Low Treshold

Speed Trap
High Treshold

Default Data

Default Data

Volume Detector Data

Report Interval

Volume Controller

Detector Detector

Number Channel

Default Data

Programmed EPAC Data

4/6/2017
11:29:20AM

Intersection Name: London @ Finch/Lambton Mall Rd

Intersection Alias: 062

Access Code: 9999 Channel: 7 Address: 8 Revision: 3.30

Access Data

Port 2 Comm :1200 Baud
Port 3 Comm :1200 Baud

Phase Data

Vehical Basic Timings							Vehical Density Timings			Time B4	Cars	Time To	
Phase	Min_Grn	Passage	Max1	Max2	Yellow	All Red	Added Initial	Max_Initial	Reduction	Before	Reduce	Min_Gap	
1	5	2.0	25	30	4.0	1.0	0.0	0	0	0	0	0.0	
2	15	5.0	35	50	4.0	2.0	0.0	0	0	0	0	0.0	
3	5	2.0	25	30	4.0	1.0	0.0	0	0	0	0	0.0	
4	15	5.0	35	50	4.0	2.0	0.0	0	0	0	0	0.0	
5	5	2.0	25	30	4.0	1.0	0.0	0	0	0	0	0.0	
6	15	5.0	35	50	4.0	2.0	0.0	0	0	0	0	0.0	
7	5	2.0	25	30	4.0	1.0	0.0	0	0	0	0	0.0	
8	15	5.0	35	50	4.0	2.0	0.0	0	0	0	0	0.0	

Pedestrian Timing			Extended	Actuated	General Control					Miscellaneous				
Phase	Ped Walk	Flashing Clear	Ped Clear	Rest in Walk	Initialize	Non-Act Response	Veh Recall	Ped Recall	Recall Delay	Non Lock	Dual Entry	Last Car Passage	Conditional Service	No Simultaneous Gap Out
1	0	0	No	0	No	Inactive	None	None	None	0	Yes	No	No	No
2	9	8	No	0	No	Yellow	NonActI	Soft	None	0	No	No	No	No
3	0	0	No	0	No	Inactive	None	None	None	0	Yes	No	No	No
4	9	8	No	0	No	Inactive	NonActII	None	None	0	No	No	No	No
5	0	0	No	0	No	Inactive	None	None	None	0	Yes	No	No	No
6	9	8	No	0	No	Yellow	NonActI	Soft	None	0	No	No	No	No
7	0	0	No	0	No	Inactive	None	None	None	0	Yes	No	No	No
8	9	8	No	0	No	Inactive	NonActIII	None	None	0	No	No	No	No

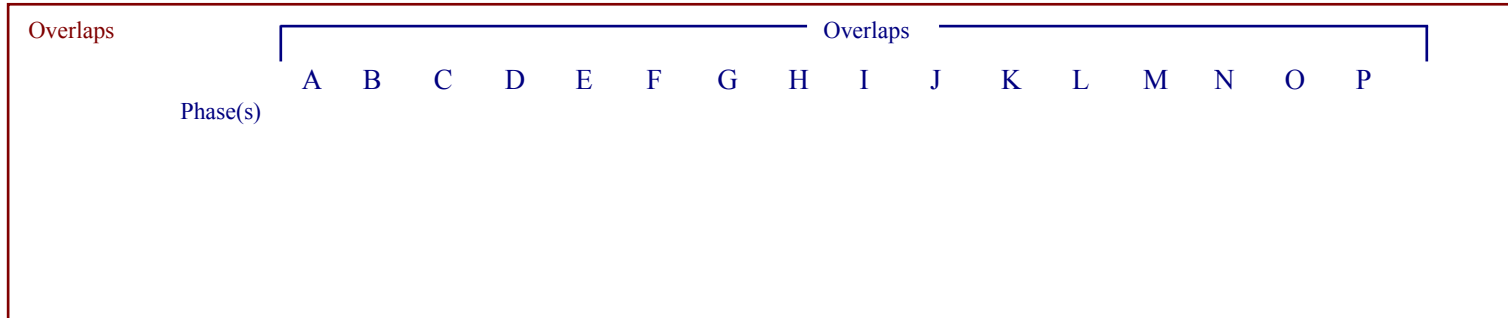
Special Sequence	Vehical Detector Phase Assignment				
Default Data	Assigned Phase	Mode	Switched Phase	Extend	Delay
	Default Data				

Pedestrian Detector	Special Detector Phase Assignment				
Default Data	Assign Phase	Mode	Switched Phase	Extend	Delay
	Default Data				

Unit Data

General Control		
Startup Time: 5sec	Startup State: Flash	Red Revert: 4sec
Auto Ped Clear: No	Stop Time Reset: No	Alternate Sequence: 0
ABC connector Input Modes: 0	Input	Output
ABC connector Output Modes: 0	Ring Respons	Selection
D connector Input Modes: 0	1 Ring 1	Ring 1
D connector Output Modes: 0	2 Ring 2	Ring 2
	3 None	None
	4 None	None

Remote Flash		Flash Channel	Flash Color	Flash Alternat
Test A = Flash				
Flash Phase	Flash Phase	Flash Exit Phase		
Default Data - No Flash				
Default Data - No Flash				



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trail Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trail Yellow	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Trail Red	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Plus Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minus Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring			Phase(s)															
Phase	Ring	Next Phase	Concurrent Phases															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	2	1	2	3	4	1	1	3	3	9	10	11	12	13	14	15	16
2	1	3	5	5	7	7	2	2	4	4								
3	1	4	6	6	8	8	5	6	7	8								
4	1	1																
5	2	6																
6	2	7																
7	2	8																
8	2	5																

Alternate Sequences

Alternate Sequences

Port 1 Data

BIU Port Message
 Addr Status 40

Phase
 Pair(s)

Default Data

No Alternate
 Sequences
 Programmed

Channel Assignment											
Control	Channel	Hardware Pin Set	Control	Channel	Hardware Pin Set	Control	Channel	Hardware Pin Set	Control	Channel	Hardware Pin Set
Ph.1 Veh	1	1 - Ph.1 RYG	1	Ph.2 Veh	2	2 - Ph.2 RYG	2	Ph.3 Veh	3	3 - Ph.3 RYG	3
Ph.4 Veh	4	4 - Ph.4 RYG	4	Ph.5 Veh	5	5 - Ph.5 RYG	5	Ph.6 Veh	6	6 - Ph.6 RYG	6
Ph.7 Veh	7	7 - Ph.7 RYG	7	Ph.8 Veh	8	8 - Ph.8 RYG	8	Ph.2 Ped	9	10 - Ph.2 DPW	10
Ph.4 Ped	10	12 - Ph.4 DPW	12	Ph.6 Ped	11	14 - Ph.6 DPW	14	Ph.8 Ped	12	16 - Ph.8 DPW	16
Ph.1 OLP	13	17 - Ph.1 RYG	17	Ph.2 OLP	14	18 - Ph.2 RYG	18	Ph.3 OLP	15	19 - Ph.3 RYG	19
Ph.4 OLP	16	20 - Ph.4 RYG	20	Ph.1 Ped	17	9 - Ph.1 DPW	9	Ph.3 Ped	18	11 - Ph.3 DPW	11
Ph.5 Ped	19	13 - Ph.5 DPW	13	Ph.7 Ped	20	15 - Ph.7 DPW	15				

Coordination Data

General Coordination Data

Operation Mode: 1=Auto

Coordination Mode: 1=Yield

Maximun Mode: 0=Inhibit

Correction Mode: 2=Short Way

Offset Mode: 0=Beg Grn

Force Mode: 0=Plan

Max Dwell Time: 0

Yield Period: 3

Manual Dial: 1

Manual Split: 1

Manual Offset: 1

Dial/Split Cycle

1/1 110

2/1 90

3/1 90

4/1 100

Split Times and Phase Mode

Dial 1 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	13	0=Actuated	2	41	1=Coordinate	3	11	0=Actuated	4	44	0=Actuated
5	11	0=Actuated	6	43	1=Coordinate	7	16	0=Actuated	8	39	0=Actuated

Dial 2 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	11	0=Actuated	2	39	1=Coordinate	3	11	0=Actuated	4	28	0=Actuated
5	11	0=Actuated	6	39	1=Coordinate	7	11	0=Actuated	8	28	0=Actuated

Dial 3 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	11	0=Actuated	2	39	1=Coordinate	3	11	0=Actuated	4	28	0=Actuated
5	11	0=Actuated	6	39	0=Actuated	7	11	0=Actuated	8	28	1=Coordinate

Dial 4 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	15	0=Actuated	2	35	1=Coordinate	3	15	0=Actuated	4	35	0=Actuated
5	15	0=Actuated	6	35	0=Actuated	7	24	0=Actuated	8	26	1=Coordinate

Traffic Plan Data

Plan: 1/1/1	Offset Time: 108	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: 2/1/1	Offset Time: 84	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: 4/1/1	Offset Time: 8	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0

Local TBC Data

Start of Daylight Saving Month: 3 Week: 2 Cycle Zero Reference Hours: 2 Min: 0
 End of Daylight Saving Month: 11 Week: 1

Source	Equate Days						
Day	1	2	3	4	5	6	7
1	7	0	0	0	0	0	0
2	3	4	5	6	0	0	0

Traffic Data

Event	Day	Time	D/S/O	flash	PHASE FUNCTION															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0:0	0/0/4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	1	9:0	4/1/1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	1	18:0	0/0/4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	2	0:0	0/0/4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	2	7:30	1/1/1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6	2	10:30	2/1/1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	2	14:0	3/1/1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	2	21:0	0/0/4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

AUX. Events

Event	Program	Day	Hour	Min.	Aux Outputs			Det. Diag.	Det. Rpt.	Det. Mult100	Special Function Outputs									
					1	2	3	D1	D2	D3	Dimming	1	2	3	4	5	6	7	8	
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Default Data - No Special Day(s) or Week(s) Programmed

Special Functions

Function	SF1	SF2	SF3	SF4	SF5	SF6	SF7	SF8
Special Function 1	X							
Special Function 2		X						
Special Function 3			X					
Special Function 4				X				
Special Function 5					X			
Special Function 6						X		
Special Function 7							X	
Special Function 8								X

Phase Function

Phase Function Map	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16

Dimming Data

Channel Red Yellow Green Alternate

Default Data - No Dimming Programmed

Preemption Data

General Preemption Data

Ring Min Grn/Walk Time

- 1 10
- 2 10
- 3 10
- 4 10

Flash > Preempt 1 Preempt 2 = Preempt 3 Preempt 4 = Preempt 5
 Preempt 1 > Preempt 2 Preempt 3 = Preempt 4 Preempt 5 = Preempt 6

Preempt	Preempt Timers		Delay	Extend	Duration	MaxCall	Lock-Out	Select			Track			Dwell Green	Return			
	Non-Locking	Link to Preempt						Ped Clear	Yel	Red	Grn	Ped	Yel		Red	Ped Clear	Yel	Red
1	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0
2	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0
3	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0
4	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0
5	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0
6	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0

Preempt 1 Preempt 2 Preempt 3 Preempt 4 Preempt 5 Preempt 6

Exit Phase Exit Phase Exit Phase Exit Phase Exit Phase Exit Phase

Exit Calls Exit Calls Exit Calls Exit Calls Exit Calls Exit Calls

Priority Timers

Priority	Non-Locking	Delay	Extend	Duration	Dwell	Max_Call	Lock-Out	Skip Phases
1	No	0	0	0	0	0	0	0=Do not Skip Phases
2	No	0	0	0	0	0	0	0=Do not Skip Phases
3	No	0	0	0	0	0	0	0=Do not Skip Phases
4	No	0	0	0	0	0	0	0=Do not Skip Phases
5	No	0	0	0	0	0	0	0=Do not Skip Phases
6	No	0	0	0	0	0	0	0=Do not Skip Phases

Priority 1		Priority 2			Priority 3			Priority 4			Priority 5			Priority 6		
Exit Phase	Exit Calls	Exit Phase	Exit Phase	Exit Calls	Exit Phase	Exit Phase	Exit Calls	Exit Phase	Exit Phase	Exit Calls	Exit Phase	Exit Phase	Exit Calls	Exit Phase	Exit Phase	Exit Calls

Preempt 1

Vehical Phases			Pedestrian Phases						Overlaps		
Ph. Track	Dwell	Cycle	Ph. Track	Dwell	Cycle	Ovlp. Track	Dwell	Cycle			

Default Data

Preempt 2

Vehical Phases			Pedestrian Phases			Overlaps		
Ph. Track	Dwell	Cycle	Ph. Track	Dwell	Cycle	Ovlp. Track	Dwell	Cycle

Default Data

Preempt 3

Vehical Phases			Pedestrian Phases			Overlaps		
Ph. Track	Dwell	Cycle	Ph. Track	Dwell	Cycle	Ovlp. Track	Dwell	Cycle

Default Data

Preempt 4

Vehical Phases			Pedestrian Phases			Overlaps		
Ph. Track	Dwell	Cycle	Ph. Track	Dwell	Cycle	Ovlp. Track	Dwell	Cycle

Default Data

Preempt 5

Vehical Phases			Pedestrian Phases			Overlaps		
Ph. Track	Dwell	Cycle	Ph. Track	Dwell	Cycle	Ovlp. Track	Dwell	Cycle

Default Data

Preempt 6

Vehical Phases			Pedestrian Phases			Overlaps		
Ph. Track	Dwell	Cycle	Ph. Track	Dwell	Cycle	Ovlp. Track	Dwell	Cycle

Default Data

System/Detectors Data

Local Critical Alarms

Local Free: No	Cycle Failure: No	Coord Failure: No	Conflict Flash: No	Remote Flash: No	2nd Phone:
Local Fash: No	Cycle Fault: No	Coord Fault: No	Preemption: No	Voltage Monitor: No	
Special Status 1: No	Special Status 2: No	Special Status 3: No	Special Status 4: No	Special Status 5: No	Special Status 6: No

Traffic Responsive

System Detector	Detector Channel	Average Veh/Hr	Occupancy Time(mins)	Occupancy Correction/10	Min Volume %	Queue 1 Detectors	System Detectors	Weight Factor	Queue 2 Detectors	System Detectors	Weight Factor
-----------------	------------------	----------------	----------------------	-------------------------	--------------	-------------------	------------------	---------------	-------------------	------------------	---------------

Default Data

Default Data

Default Data

Sample Interval:

Queue: 1 Input Selection: 0=Average

Queue:

Detector Failed Level : 0

Level Enter Leave Dial / Split / Offset

Queue: 2 Input Selection: 0=Average

//

Detector Failed Level : 0

Default Data

Vehical Detector

Diagnostic Value 0

Max No Erratic
Detector Presence Activity Count

Vehical Detector

Diagnostic Value 1

Max No Erratic
Detector Presence Activity Count

Special Detector

Diagnostic Value 0

Max No Erratic
Detector Presence Activity Count

Default Data - Diag 0 Values

Default Data - No Diag 1 Values

Default Data - No Diag 0 Values

Pedestrian Detector

Diagnostic Value 0

Max No Erratic
Detector Presence Activity Count

Pedestrian Detector

Diagnostic Value 1

Max No Erratic
Detector Presence Activity Count

Special Detector

Diagnostic Value 1

Max No Erratic
Detector Presence Activity Count

Default Data - No Diag 0 Values

Default Data - No Diag 1 Values

Default Data - No Diag 1 Values

Speed Trap Data

Speed Trap:

Measurement:

Detector 1 Detector_2 Distance :

Dial/Split/Offset
//

Speed Trap Speed Trap
Low Treshold High Treshold

Default Data

Default Data

Volume Detector Data

Report Interval

Volume Controller
Detector Detector
Number Channel

Default Data

Appendix C

Traffic Volumes and Projections

Volumes at AM and PM

London Rd/Afton Dr			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
April	2017	AM	60	504	42	21	5	44	37	422	0	0	5	40	Registered Volumes
April	2017	PM	26	818	81	23	1	64	56	785	0	0	6	42	
Annual Growth Rate 2.00%															
	2019	AM	62	524	44	22	5	46	38	439	0	0	5	42	Existing Volumes
	2019	PM	27	851	84	24	1	67	58	817	0	0	6	44	
	2021	AM	65	546	45	23	5	48	40	457	0	0	5	43	Background Volumes
	2021	PM	28	885	88	25	1	69	61	850	0	0	6	45	
	2026	AM	72	602	50	25	6	53	44	504	0	0	6	48	Background Volumes
	2026	PM	31	978	97	27	1	76	67	938	0	0	7	50	

Volumes at AM and PM

London Rd/Unnamed Rd			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
June	2015	AM	0	531	1	9	0	12	10	448	0	0	0	0	Registered Volumes
June	2015	PM	0	836	30	25	0	36	23	770	0	0	0	0	
Annual Growth Rate 2.00%															
	2019	AM	0	575	1	10	0	13	11	485	0	0	0	0	Existing Volumes
	2019	PM	0	905	32	27	0	39	25	833	0	0	0	0	
	2021	AM	0	598	1	10	0	14	11	505	0	0	0	0	Background Volumes
	2021	PM	0	941	34	28	0	41	26	867	0	0	0	0	
	2026	AM	0	660	1	11	0	15	12	557	0	0	0	0	Background Volumes
	2026	PM	0	1039	37	31	0	45	29	957	0	0	0	0	

Volumes at AM and PM

London Rd/Finch Dr			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
June	2015	AM	119	263	124	171	199	58	27	161	18	32	109	129	Registered Volumes
June	2015	PM	205	370	225	221	308	73	110	331	32	44	248	232	
Annual Growth Rate 2.00%															
	2019	AM	129	285	134	185	215	63	29	174	19	35	118	140	Existing Volumes
	2019	PM	222	400	244	239	333	79	119	358	35	48	268	251	
	2021	AM	134	296	140	193	224	65	30	181	20	36	123	145	Background Volumes
	2021	PM	231	417	253	249	347	82	124	373	36	50	279	261	
	2026	AM	148	327	154	213	247	72	34	200	22	40	136	160	Background Volumes
	2026	PM	255	460	280	275	383	91	137	412	40	55	308	288	






















Appendix D

Existing 2019 Intersection Capacity

Synchro Reports












HCM Unsignalized Intersection Capacity Analysis
8: London Rd & Afton Dr

Existing Volumes 2019
AM Peak Hour

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Volume (veh/h)	62	524	44	38	439	1	22	5	46	1	5	42				
Sign Control		Free			Free			Stop			Stop					
Grade		0%			0%			0%			0%					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
Hourly flow rate (vph)	67	570	48	41	477	1	24	5	50	1	5	46				
Pedestrians																
Lane Width (m)																
Walking Speed (m/s)																
Percent Blockage																
Right turn flare (veh)																
Median type	TWLTL					TWLTL										
Median storage veh	2					2										
Upstream signal (m)	120					140										
pX, platoon unblocked	0.92			0.96			0.94		0.94		0.96		0.94		0.94	
vC, conflicting volume	478			617			1098		1289		309		1033		1312	
vC1, stage 1 conf vol							728		728				560		560	
vC2, stage 2 conf vol							370		561				472		752	
vCu, unblocked vol	261			522			792		995		201		722		1020	
tC, single (s)	4.1			4.3			7.5		6.5		6.9		7.5		6.5	
tC, 2 stage (s)							6.5		5.5				6.5		5.5	
tF (s)	2.2			2.3			3.5		4.0		3.3		3.5		4.0	
p0 queue free %	94			96			94		99		94		100		98	
cM capacity (veh/h)	1211			943			371		365		776		420		345	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2						
Volume Total	67	380	238	41	318	160	29	50	1	51						
Volume Left	67	0	0	41	0	0	24	0	1	0						
Volume Right	0	0	48	0	0	1	0	50	0	46						
cSH	1211	1700	1700	943	1700	1700	370	776	420	834						
Volume to Capacity	0.06	0.22	0.14	0.04	0.19	0.09	0.08	0.06	0.00	0.06						
Queue Length 95th (m)	1.3	0.0	0.0	1.0	0.0	0.0	2.0	1.6	0.1	1.5						
Control Delay (s)	8.1	0.0	0.0	9.0	0.0	0.0	15.6	10.0	13.6	9.6						
Lane LOS	A			A			C		A		B		A			
Approach Delay (s)	0.8			0.7			12.0		9.7							
Approach LOS							B		A							
Intersection Summary																
Average Delay				1.8												
Intersection Capacity Utilization	37.4%			ICU Level of Service						A						
Analysis Period (min)	15															

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Existing Volumes 2019
 AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	575	1	11	485	10	13
Satd. Flow (prot)	3544	0	1825	3544	1825	1420
Flt Permitted			0.377		0.950	
Satd. Flow (perm)	3544	0	724	3544	1825	1420
Satd. Flow (RTOR)						14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	0%	0%	3%	0%	15%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	626	0	12	527	11	14
Turn Type			Perm			Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						
Minimum Initial (s)	15.0		15.0	15.0	8.0	8.0
Minimum Split (s)	29.2		29.2	29.2	27.0	27.0
Total Split (s)	36.2	0.0	36.2	36.2	28.0	28.0
Total Split (%)	56.4%	0.0%	56.4%	56.4%	43.6%	43.6%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.2		2.2	2.2	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	4.0	6.2	6.2	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		None	None	Max	Max
Act Effect Green (s)	16.4		16.4	16.4	22.0	22.0
Actuated g/C Ratio	0.32		0.32	0.32	0.43	0.43
v/c Ratio	0.55		0.05	0.46	0.01	0.02
Control Delay	16.0		12.1	15.0	9.2	5.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	16.0		12.1	15.0	9.2	5.5
LOS	B		B	B	A	A
Approach Delay	16.0			14.9	7.1	
Approach LOS	B			B	A	
Queue Length 50th (m)	23.8		0.7	19.4	0.5	0.0
Queue Length 95th (m)	35.8		3.3	29.8	2.9	2.6
Internal Link Dist (m)	115.6			270.4	88.1	
Turn Bay Length (m)			25.0			
Base Capacity (vph)	2103		429	2103	794	626
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.30		0.03	0.25	0.01	0.02

Intersection Summary

Cycle Length: 64.2
 Actuated Cycle Length: 50.6
 Natural Cycle: 60

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Existing Volumes 2019
 AM Peak Hour

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 15.3

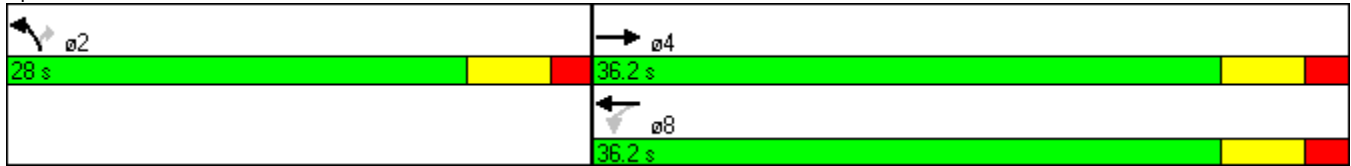
Intersection LOS: B

Intersection Capacity Utilization 32.8%

ICU Level of Service A





















Analysis Period (min) 15

Splits and Phases: 11: London Rd & Unnamed Rd



HCM Signalized Intersection Capacity Analysis
13: London Rd & Finch Rd

Existing Volumes 2019
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	129	285	134	29	174	19	185	215	63	35	118	140
Satd. Flow (prot)	1825	3383	0	1706	3515	0	1825	3526	0	1825	3274	0
Flt Permitted	0.487			0.489			0.449			0.568		
Satd. Flow (perm)	936	3383	0	878	3515	0	863	3526	0	1091	3274	0
Satd. Flow (RTOR)		75			11			36			152	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	7%	2%	5%	0%	0%	0%	0%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	456	0	32	210	0	201	302	0	38	280	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	10.0	26.0		10.0	26.0		10.0	26.0		10.0	26.0	
Total Split (s)	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0
Total Split (%)	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%
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	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effect Green (s)	30.5	25.1		22.4	15.1		31.5	23.8		22.5	15.1	
Actuated g/C Ratio	0.42	0.35		0.31	0.21		0.44	0.33		0.31	0.21	
v/c Ratio	0.27	0.37		0.09	0.28		0.39	0.26		0.09	0.35	
Control Delay	15.0	17.5		14.1	25.1		15.6	18.2		13.5	13.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.0	17.5		14.1	25.1		15.6	18.2		13.5	13.5	
LOS	B	B		B	C		B	B		B	B	
Approach Delay		16.9			23.6			17.1			13.5	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	11.4	17.4		2.4	12.1		16.8	15.1		2.9	7.6	
Queue Length 95th (m)	23.5	39.0		7.6	22.9		31.0	26.4		8.0	18.7	
Internal Link Dist (m)		270.4			267.5			93.1			89.9	
Turn Bay Length (m)	45.0			30.0			40.0			40.0		
Base Capacity (vph)	582	1285		537	1128		577	1257		610	1147	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.24	0.35		0.06	0.19		0.35	0.24		0.06	0.24	

Intersection Summary

Cycle Length: 98
Actuated Cycle Length: 72.4
Natural Cycle: 75

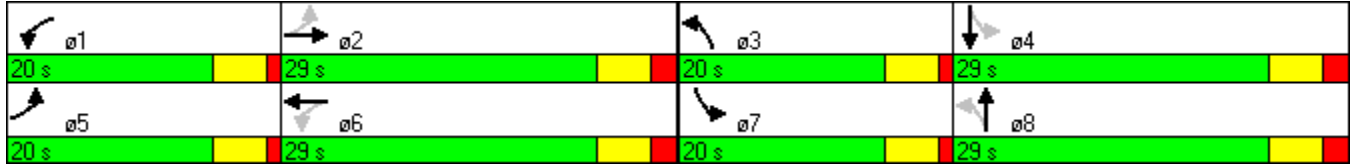
HCM Signalized Intersection Capacity Analysis
 13: London Rd & Finch Rd

Existing Volumes 2019
 AM Peak Hour

Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.39
 Intersection Signal Delay: 17.3
 Intersection Capacity Utilization 60.7%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B


























Splits and Phases: 13: London Rd & Finch Rd



HCM Unsignalized Intersection Capacity Analysis

8: London Rd & Afton Dr

Existing Volumes 2019
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 				 		 	
Volume (veh/h)	27	851	84	58	817	1	24	1	67	1	6	44
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	925	91	63	888	1	26	1	73	1	7	48
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh		2			2							
Upstream signal (m)		120			140							
pX, platoon unblocked	0.81			0.84			0.89	0.89	0.84	0.89	0.89	0.81
vC, conflicting volume	889			1016			1651	2045	508	1609	2090	445
vC1, stage 1 conf vol							1029	1029		1015	1015	
vC2, stage 2 conf vol							621	1015		595	1075	
vCu, unblocked vol	396			633			670	1112	27	623	1162	0
tC, single (s)	4.1			4.3			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			92			92	100	92	100	98	95
cM capacity (veh/h)	951			743			337	293	874	351	263	884
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2		
Volume Total	29	617	400	63	592	297	27	73	1	54		
Volume Left	29	0	0	63	0	0	26	0	1	0		
Volume Right	0	0	91	0	0	1	0	73	0	48		
cSH	951	1700	1700	743	1700	1700	335	874	351	689		
Volume to Capacity	0.03	0.36	0.24	0.08	0.35	0.17	0.08	0.08	0.00	0.08		
Queue Length 95th (m)	0.7	0.0	0.0	2.1	0.0	0.0	2.0	2.1	0.1	1.9		
Control Delay (s)	8.9	0.0	0.0	10.3	0.0	0.0	16.7	9.5	15.3	10.7		
Lane LOS	A			B			C	A	C	B		
Approach Delay (s)	0.2			0.7			11.5		10.8			
Approach LOS							B		B			
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			47.6%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Existing Volumes 2019
 PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Volume (vph)	905	32	25	833	27	39
Satd. Flow (prot)	3563	0	1755	3614	1755	1541
Flt Permitted			0.182		0.950	
Satd. Flow (perm)	3563	0	336	3614	1755	1541
Satd. Flow (RTOR)	7					42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	4%	1%	4%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1019	0	27	905	29	42
Turn Type			Perm			Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						
Minimum Initial (s)	15.0		15.0	15.0	8.0	8.0
Minimum Split (s)	29.2		29.2	29.2	27.0	27.0
Total Split (s)	36.2	0.0	36.2	36.2	28.0	28.0
Total Split (%)	56.4%	0.0%	56.4%	56.4%	43.6%	43.6%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.2		2.2	2.2	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	4.0	6.2	6.2	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		None	None	Max	Max
Act Effect Green (s)	23.9		23.9	23.9	22.2	22.2
Actuated g/C Ratio	0.41		0.41	0.41	0.38	0.38
v/c Ratio	0.70		0.20	0.61	0.04	0.07
Control Delay	16.7		14.5	15.3	13.7	5.7
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	16.7		14.5	15.3	13.7	5.7
LOS	B		B	B	B	A
Approach Delay	16.7			15.2	9.0	
Approach LOS	B			B	A	
Queue Length 50th (m)	44.4		1.8	37.8	2.0	0.0
Queue Length 95th (m)	61.5		6.5	52.7	6.9	5.5
Internal Link Dist (m)	115.6			270.4	88.1	
Turn Bay Length (m)			25.0			
Base Capacity (vph)	1849		174	1872	667	611
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.55		0.16	0.48	0.04	0.07

Intersection Summary

Cycle Length: 64.2
 Actuated Cycle Length: 58.4
 Natural Cycle: 60

HCM Signalized Intersection Capacity Analysis
11: London Rd & Unnamed Rd

Existing Volumes 2019
PM Peak Hour

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 15.8

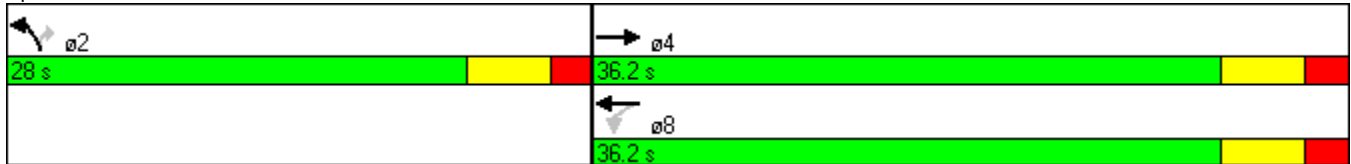
Intersection LOS: B

Intersection Capacity Utilization 42.9%

ICU Level of Service A





















Analysis Period (min) 15

Splits and Phases: 11: London Rd & Unnamed Rd



HCM Signalized Intersection Capacity Analysis
13: London Rd & Finch Rd

Existing Volumes 2019
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	222	400	244	119	358	35	239	333	79	48	268	251
Satd. Flow (prot)	1825	3400	0	1789	3538	0	1825	3544	0	1825	3384	0
Flt Permitted	0.347			0.228			0.229			0.493		
Satd. Flow (perm)	667	3400	0	429	3538	0	440	3544	0	947	3384	0
Satd. Flow (RTOR)		123			10			28			226	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	241	700	0	129	427	0	260	448	0	52	564	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	10.0	26.0		10.0	26.0		10.0	26.0		10.0	26.0	
Total Split (s)	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0
Total Split (%)	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%
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	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effect Green (s)	33.8	20.6		27.7	17.5		35.5	27.4		24.9	17.0	
Actuated g/C Ratio	0.42	0.25		0.34	0.21		0.44	0.34		0.31	0.21	
v/c Ratio	0.53	0.74		0.43	0.56		0.65	0.37		0.14	0.64	
Control Delay	20.1	28.9		19.9	31.9		23.7	22.4		16.0	21.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.1	28.9		19.9	31.9		23.7	22.4		16.0	21.6	
LOS	C	C		B	C		C	C		B	C	
Approach Delay		26.7			29.1			22.9			21.1	
Approach LOS		C			C			C			C	
Queue Length 50th (m)	22.4	41.8		11.2	29.8		25.7	28.1		4.5	24.8	
Queue Length 95th (m)	44.7	73.0		25.1	51.0		47.2	46.2		11.9	45.5	
Internal Link Dist (m)		270.4			267.5			93.1			89.9	
Turn Bay Length (m)	45.0			30.0			40.0			40.0		
Base Capacity (vph)	505	1066		430	1021		450	1225		546	1131	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.48	0.66		0.30	0.42		0.58	0.37		0.10	0.50	

Intersection Summary

Cycle Length: 98

Actuated Cycle Length: 81.4

Natural Cycle: 75

HCM Signalized Intersection Capacity Analysis
 13: London Rd & Finch Rd

Existing Volumes 2019
 PM Peak Hour

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 25.0

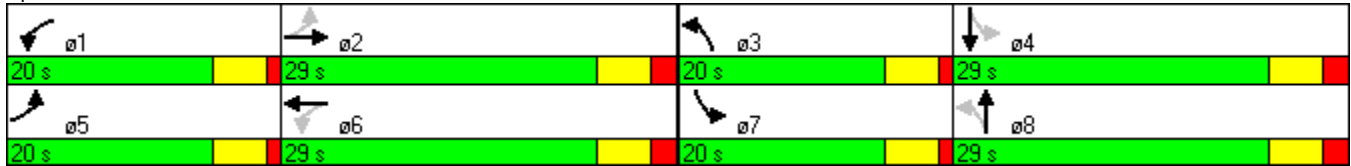
Intersection LOS: C

Intersection Capacity Utilization 72.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 13: London Rd & Finch Rd



Appendix E























Background 2021 Intersection Capacity

Synchro Reports

HCM Unsignalized Intersection Capacity Analysis

8: London Rd & Afton Dr

Background Volumes 2021
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	65	546	45	40	457	1	23	5	48	1	5	43
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	593	49	43	497	1	25	5	52	1	5	47
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	TWLTL					TWLTL						
Median storage veh	2					2						
Upstream signal (m)	120					140						
pX, platoon unblocked	0.91			0.96			0.93	0.93	0.96	0.93	0.93	0.91
vC, conflicting volume	498			642			1144	1344	321	1077	1368	249
vC1, stage 1 conf vol							759	759		584	584	
vC2, stage 2 conf vol							385	585		493	784	
vCu, unblocked vol	262			549			827	1041	215	755	1067	0
tC, single (s)	4.1			4.3			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			95			93	98	93	100	98	95
cM capacity (veh/h)	1201			920			353	351	760	402	329	997
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2		
Volume Total	71	396	247	43	331	167	30	52	1	52		
Volume Left	71	0	0	43	0	0	25	0	1	0		
Volume Right	0	0	49	0	0	1	0	52	0	47		
cSH	1201	1700	1700	920	1700	1700	353	760	402	823		
Volume to Capacity	0.06	0.23	0.15	0.05	0.19	0.10	0.09	0.07	0.00	0.06		
Queue Length 95th (m)	1.4	0.0	0.0	1.1	0.0	0.0	2.1	1.7	0.1	1.5		
Control Delay (s)	8.2	0.0	0.0	9.1	0.0	0.0	16.2	10.1	14.0	9.7		
Lane LOS	A			A			C	B	B	A		
Approach Delay (s)	0.8			0.7			12.3		9.8			
Approach LOS							B		A			
Intersection Summary												
Average Delay				1.8								
Intersection Capacity Utilization			38.1%				ICU Level of Service		A			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Background Volumes 2021
 AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Volume (vph)	598	1	11	505	10	14
Satd. Flow (prot)	3544	0	1825	3544	1825	1420
Flt Permitted			0.360		0.950	
Satd. Flow (perm)	3544	0	692	3544	1825	1420
Satd. Flow (RTOR)						15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	0%	0%	3%	0%	15%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	651	0	12	549	11	15
Turn Type			Perm			Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						
Minimum Initial (s)	15.0		15.0	15.0	8.0	8.0
Minimum Split (s)	29.2		29.2	29.2	27.0	27.0
Total Split (s)	36.2	0.0	36.2	36.2	28.0	28.0
Total Split (%)	56.4%	0.0%	56.4%	56.4%	43.6%	43.6%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.2		2.2	2.2	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	4.0	6.2	6.2	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		None	None	Max	Max
Act Effect Green (s)	16.7		16.7	16.7	22.0	22.0
Actuated g/C Ratio	0.33		0.33	0.33	0.43	0.43
v/c Ratio	0.56		0.05	0.47	0.01	0.02
Control Delay	16.1		12.0	15.0	9.4	5.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	16.1		12.0	15.0	9.4	5.5
LOS	B		B	B	A	A
Approach Delay	16.1			15.0	7.2	
Approach LOS	B			B	A	
Queue Length 50th (m)	25.0		0.7	20.3	0.5	0.0
Queue Length 95th (m)	37.2		3.4	31.0	3.0	2.6
Internal Link Dist (m)	115.6			270.4	88.1	
Turn Bay Length (m)			25.0			
Base Capacity (vph)	2089		408	2089	789	622
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.31		0.03	0.26	0.01	0.02

Intersection Summary

Cycle Length: 64.2
 Actuated Cycle Length: 51
 Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 15.4

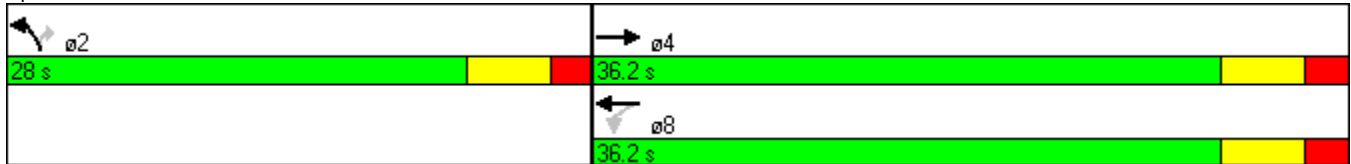
Intersection LOS: B

Intersection Capacity Utilization 33.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 11: London Rd & Unnamed Rd



HCM Signalized Intersection Capacity Analysis
13: London Rd & Finch Rd

Background Volumes 2021
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	296	140	30	181	20	193	224	65	36	123	145
Satd. Flow (prot)	1825	3383	0	1706	3514	0	1825	3526	0	1825	3274	0
Flt Permitted	0.482			0.481			0.443			0.561		
Satd. Flow (perm)	926	3383	0	864	3514	0	851	3526	0	1078	3274	0
Satd. Flow (RTOR)		75			11			36			158	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	7%	2%	5%	0%	0%	0%	0%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	474	0	33	219	0	210	314	0	39	292	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	10.0	26.0		10.0	26.0		10.0	26.0		10.0	26.0	
Total Split (s)	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0
Total Split (%)	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%
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	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effct Green (s)	30.7	25.3		22.4	15.0		31.8	24.0		22.5	15.0	
Actuated g/C Ratio	0.42	0.35		0.31	0.21		0.44	0.33		0.31	0.21	
v/c Ratio	0.29	0.39		0.10	0.30		0.41	0.26		0.10	0.36	
Control Delay	15.3	17.9		14.3	25.5		15.9	18.4		13.6	13.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.3	17.9		14.3	25.5		15.9	18.4		13.6	13.7	
LOS	B	B		B	C		B	B		B	B	
Approach Delay		17.3			24.1			17.4			13.7	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	12.0	18.5		2.6	12.8		17.7	16.0		3.0	8.1	
Queue Length 95th (m)	24.6	41.2		7.6	24.1		32.6	27.6		8.2	19.5	
Internal Link Dist (m)		270.4			267.5			93.1			89.9	
Turn Bay Length (m)	45.0			30.0			40.0			40.0		
Base Capacity (vph)	578	1283		532	1120		574	1252		604	1144	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.37		0.06	0.20		0.37	0.25		0.06	0.26	

Intersection Summary												
Cycle Length: 98												
Actuated Cycle Length: 72.9												
Natural Cycle: 75												

HCM Signalized Intersection Capacity Analysis
 13: London Rd & Finch Rd

Background Volumes 2021
 AM Peak Hour

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 17.6

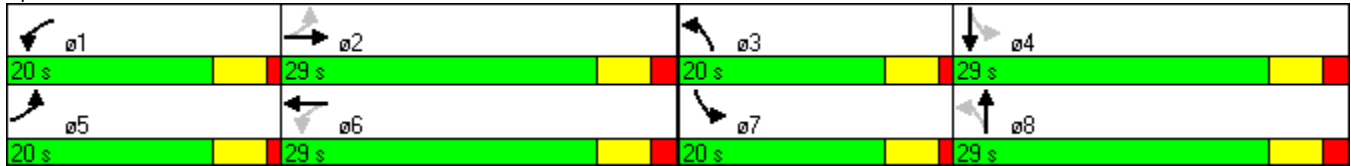
Intersection LOS: B

Intersection Capacity Utilization 61.4%

ICU Level of Service B


























Analysis Period (min) 15

Splits and Phases: 13: London Rd & Finch Rd



HCM Unsignalized Intersection Capacity Analysis
8: London Rd & Afton Dr

Background Volumes 2021
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 				 		 	
Volume (veh/h)	28	885	88	61	850	1	25	1	69	1	6	45
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	962	96	66	924	1	27	1	75	1	7	49
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (m)		120			140							
pX, platoon unblocked	0.80			0.84			0.88	0.88	0.84	0.88	0.88	0.80
vC, conflicting volume	925			1058			1717	2128	529	1674	2176	462
vC1, stage 1 conf vol							1071	1071		1057	1057	
vC2, stage 2 conf vol							647	1058		617	1118	
vCu, unblocked vol	412			682			721	1187	51	673	1240	0
tC, single (s)	4.1			4.3			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			91			91	100	91	100	97	94
cM capacity (veh/h)	928			711			314	274	843	330	243	875
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2		
Volume Total	30	641	416	66	616	309	28	75	1	55		
Volume Left	30	0	0	66	0	0	27	0	1	0		
Volume Right	0	0	96	0	0	1	0	75	0	49		
cSH	928	1700	1700	711	1700	1700	312	843	330	670		
Volume to Capacity	0.03	0.38	0.24	0.09	0.36	0.18	0.09	0.09	0.00	0.08		
Queue Length 95th (m)	0.8	0.0	0.0	2.3	0.0	0.0	2.3	2.2	0.1	2.1		
Control Delay (s)	9.0	0.0	0.0	10.6	0.0	0.0	17.7	9.7	15.9	10.9		
Lane LOS	A			B			C	A	C	B		
Approach Delay (s)	0.3			0.7			11.9		11.0			
Approach LOS							B		B			
Intersection Summary												
Average Delay				1.3								
Intersection Capacity Utilization			48.7%			ICU Level of Service			A			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Background Volumes 2021
 PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Volume (vph)	941	34	26	867	28	41
Satd. Flow (prot)	3563	0	1755	3614	1755	1541
Flt Permitted			0.169		0.950	
Satd. Flow (perm)	3563	0	312	3614	1755	1541
Satd. Flow (RTOR)	7					45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	4%	1%	4%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1060	0	28	942	30	45
Turn Type			Perm			Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						
Minimum Initial (s)	15.0		15.0	15.0	8.0	8.0
Minimum Split (s)	29.2		29.2	29.2	27.0	27.0
Total Split (s)	36.2	0.0	36.2	36.2	28.0	28.0
Total Split (%)	56.4%	0.0%	56.4%	56.4%	43.6%	43.6%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.2		2.2	2.2	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	4.0	6.2	6.2	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		None	None	Max	Max
Act Effect Green (s)	24.8		24.8	24.8	22.1	22.1
Actuated g/C Ratio	0.42		0.42	0.42	0.37	0.37
v/c Ratio	0.71		0.22	0.62	0.05	0.07
Control Delay	16.9		15.2	15.3	14.0	5.6
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	16.9		15.2	15.3	14.0	5.6
LOS	B		B	B	B	A
Approach Delay	16.9			15.3	8.9	
Approach LOS	B			B	A	
Queue Length 50th (m)	46.8		1.8	39.9	2.1	0.0
Queue Length 95th (m)	64.8		6.8	55.5	7.0	5.6
Internal Link Dist (m)	115.6			270.4	88.1	
Turn Bay Length (m)			25.0			
Base Capacity (vph)	1821		159	1844	656	605
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.58		0.18	0.51	0.05	0.07

Intersection Summary

Cycle Length: 64.2
 Actuated Cycle Length: 59.2
 Natural Cycle: 60

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Background Volumes 2021
 PM Peak Hour

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 15.9

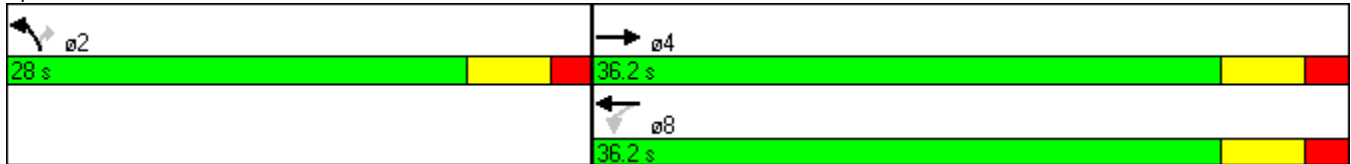
Intersection LOS: B

Intersection Capacity Utilization 43.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 11: London Rd & Unnamed Rd



HCM Signalized Intersection Capacity Analysis
13: London Rd & Finch Rd

Background Volumes 2021
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	231	417	253	124	373	36	249	347	82	50	279	261
Satd. Flow (prot)	1825	3400	0	1789	3538	0	1825	3544	0	1825	3384	0
Flt Permitted	0.328			0.223			0.213			0.484		
Satd. Flow (perm)	630	3400	0	420	3538	0	409	3544	0	930	3384	0
Satd. Flow (RTOR)		122			10			27			227	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	251	728	0	135	444	0	271	466	0	54	587	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	10.0	26.0		10.0	26.0		10.0	26.0		10.0	26.0	
Total Split (s)	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0
Total Split (%)	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%
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	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effect Green (s)	34.5	21.0		28.4	17.9		36.2	28.1		25.6	17.5	
Actuated g/C Ratio	0.42	0.25		0.34	0.22		0.44	0.34		0.31	0.21	
v/c Ratio	0.57	0.76		0.45	0.57		0.69	0.38		0.15	0.66	
Control Delay	21.2	30.6		20.6	32.7		25.6	22.8		16.3	22.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.2	30.6		20.6	32.7		25.6	22.8		16.3	22.6	
LOS	C	C		C	C		C	C		B	C	
Approach Delay		28.2			29.9			23.8			22.0	
Approach LOS		C			C			C			C	
Queue Length 50th (m)	24.3	45.7		12.2	32.1		28.1	30.5		4.9	28.0	
Queue Length 95th (m)	46.9	77.7		26.2	53.3		49.9	48.8		12.2	48.6	
Internal Link Dist (m)		270.4			267.5			93.1			89.9	
Turn Bay Length (m)	45.0			30.0			40.0			40.0		
Base Capacity (vph)	492	1052		423	1004		439	1226		540	1116	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.51	0.69		0.32	0.44		0.62	0.38		0.10	0.53	

Intersection Summary												
Cycle Length: 98												
Actuated Cycle Length: 82.9												
Natural Cycle: 75												

HCM Signalized Intersection Capacity Analysis
 13: London Rd & Finch Rd

Background Volumes 2021
 PM Peak Hour

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 26.1

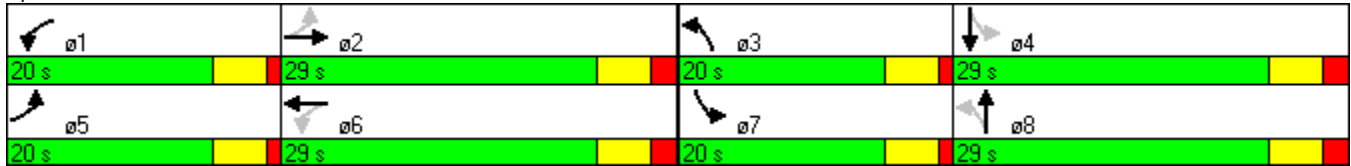
Intersection LOS: C

Intersection Capacity Utilization 74.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 13: London Rd & Finch Rd



Appendix F

























Background 2026 Intersection Capacity

Synchro Reports

HCM Unsignalized Intersection Capacity Analysis

8: London Rd & Afton Dr

Background Volumes 2026
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 				 		 	
Volume (veh/h)	72	602	50	44	504	1	25	6	53	1	6	48
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	78	654	54	48	548	1	27	7	58	1	7	52
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	TWLTL					TWLTL						
Median storage veh	2					2						
Upstream signal (m)	120					140						
pX, platoon unblocked	0.90			0.96			0.92	0.92	0.96	0.92	0.92	0.90
vC, conflicting volume	549			709			1263	1483	354	1189	1509	274
vC1, stage 1 conf vol							838	838		644	644	
vC2, stage 2 conf vol							425	645		545	865	
vCu, unblocked vol	269			618			917	1157	249	836	1186	0
tC, single (s)	4.1			4.3			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			94			91	98	92	100	98	95
cM capacity (veh/h)	1173			865			313	316	722	360	292	979
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2		
Volume Total	78	436	272	48	365	184	34	58	1	59		
Volume Left	78	0	0	48	0	0	27	0	1	0		
Volume Right	0	0	54	0	0	1	0	58	0	52		
cSH	1173	1700	1700	865	1700	1700	314	722	360	776		
Volume to Capacity	0.07	0.26	0.16	0.06	0.21	0.11	0.11	0.08	0.00	0.08		
Queue Length 95th (m)	1.6	0.0	0.0	1.3	0.0	0.0	2.7	2.0	0.1	1.9		
Control Delay (s)	8.3	0.0	0.0	9.4	0.0	0.0	17.8	10.4	15.0	10.0		
Lane LOS	A			A			C	B	C	B		
Approach Delay (s)	0.8			0.8			13.2		10.1			
Approach LOS							B		B			
Intersection Summary												
Average Delay			1.9									
Intersection Capacity Utilization		39.9%			ICU Level of Service				A			
Analysis Period (min)		15										

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Background Volumes 2026
 AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Volume (vph)	660	1	12	557	11	15
Satd. Flow (prot)	3544	0	1825	3544	1825	1420
Flt Permitted			0.317		0.950	
Satd. Flow (perm)	3544	0	609	3544	1825	1420
Satd. Flow (RTOR)						16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	0%	0%	3%	0%	15%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	718	0	13	605	12	16
Turn Type			Perm			Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						
Minimum Initial (s)	15.0		15.0	15.0	8.0	8.0
Minimum Split (s)	29.2		29.2	29.2	27.0	27.0
Total Split (s)	36.2	0.0	36.2	36.2	28.0	28.0
Total Split (%)	56.4%	0.0%	56.4%	56.4%	43.6%	43.6%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.2		2.2	2.2	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	4.0	6.2	6.2	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		None	None	Max	Max
Act Effect Green (s)	17.8		17.8	17.8	22.1	22.1
Actuated g/C Ratio	0.34		0.34	0.34	0.42	0.42
v/c Ratio	0.59		0.06	0.50	0.02	0.03
Control Delay	16.3		11.8	15.0	10.4	6.0
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	16.3		11.8	15.0	10.4	6.0
LOS	B		B	B	B	A
Approach Delay	16.3			15.0	7.9	
Approach LOS	B			B	A	
Queue Length 50th (m)	28.2		0.8	22.8	0.6	0.0
Queue Length 95th (m)	41.2		3.5	34.2	3.3	2.9
Internal Link Dist (m)	115.6			270.4	88.1	
Turn Bay Length (m)			25.0			
Base Capacity (vph)	2046		351	2046	772	610
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.35		0.04	0.30	0.02	0.03

Intersection Summary

Cycle Length: 64.2
 Actuated Cycle Length: 52.2
 Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 15.5

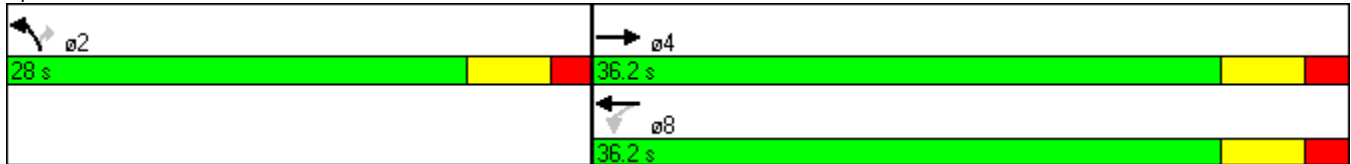
Intersection LOS: B

Intersection Capacity Utilization 35.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 11: London Rd & Unnamed Rd



HCM Signalized Intersection Capacity Analysis
13: London Rd & Finch Rd

Background Volumes 2026
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	327	154	34	200	22	213	247	72	40	136	160
Satd. Flow (prot)	1825	3383	0	1706	3515	0	1825	3526	0	1825	3274	0
Flt Permitted	0.468			0.459			0.422			0.544		
Satd. Flow (perm)	899	3383	0	824	3515	0	811	3526	0	1045	3274	0
Satd. Flow (RTOR)		74			11			36			174	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	7%	2%	5%	0%	0%	0%	0%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	522	0	37	241	0	232	346	0	43	322	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	10.0	26.0		10.0	26.0		10.0	26.0		10.0	26.0	
Total Split (s)	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0
Total Split (%)	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%
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	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effect Green (s)	31.2	23.6		22.9	15.4		32.5	24.5		22.7	15.1	
Actuated g/C Ratio	0.42	0.32		0.31	0.21		0.44	0.33		0.31	0.20	
v/c Ratio	0.32	0.46		0.11	0.33		0.45	0.29		0.11	0.40	
Control Delay	15.7	20.5		14.5	26.1		16.9	19.1		14.1	14.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.7	20.5		14.5	26.1		16.9	19.1		14.1	14.2	
LOS	B	C		B	C		B	B		B	B	
Approach Delay		19.3			24.6			18.2			14.2	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	13.6	28.1		2.9	14.3		19.6	17.9		3.3	9.0	
Queue Length 95th (m)	26.7	46.0		8.3	26.2		37.5	31.6		9.3	21.6	
Internal Link Dist (m)		270.4			267.5			93.1			89.9	
Turn Bay Length (m)	45.0			30.0			40.0			40.0		
Base Capacity (vph)	571	1208		521	1104		562	1244		591	1141	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.28	0.43		0.07	0.22		0.41	0.28		0.07	0.28	

Intersection Summary

Cycle Length: 98

Actuated Cycle Length: 74.1

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 18.8

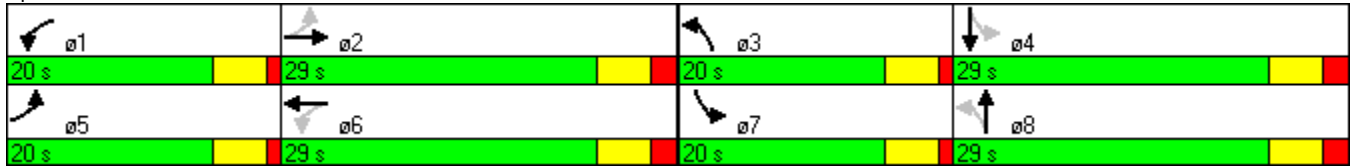
Intersection LOS: B

Intersection Capacity Utilization 63.3%

ICU Level of Service B






















Analysis Period (min) 15

Splits and Phases: 13: London Rd & Finch Rd



HCM Unsignalized Intersection Capacity Analysis
8: London Rd & Afton Dr

Background Volumes 2026
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	978	97	67	938	1	27	1	76	1	7	50
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	1063	105	73	1020	1	29	1	83	1	8	54
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh		2			2							
Upstream signal (m)		120			140							
pX, platoon unblocked	0.78			0.84			0.86	0.86	0.84	0.86	0.86	0.78
vC, conflicting volume	1021			1168			1897	2349	584	1848	2402	510
vC1, stage 1 conf vol							1183	1183		1166	1166	
vC2, stage 2 conf vol							714	1166		682	1236	
vCu, unblocked vol	450			815			864	1392	118	807	1453	0
tC, single (s)	4.1			4.3			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			88			89	100	89	100	96	94
cM capacity (veh/h)	870			631			258	230	764	281	195	847
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2		
Volume Total	34	709	460	73	680	341	30	83	1	62		
Volume Left	34	0	0	73	0	0	29	0	1	0		
Volume Right	0	0	105	0	0	1	0	83	0	54		
cSH	870	1700	1700	631	1700	1700	257	764	281	600		
Volume to Capacity	0.04	0.42	0.27	0.12	0.40	0.20	0.12	0.11	0.00	0.10		
Queue Length 95th (m)	0.9	0.0	0.0	3.0	0.0	0.0	3.0	2.8	0.1	2.6		
Control Delay (s)	9.3	0.0	0.0	11.5	0.0	0.0	20.9	10.3	17.9	11.7		
Lane LOS	A			B			C	B	C	B		
Approach Delay (s)	0.3			0.8			13.1		11.8			
Approach LOS							B		B			
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			52.1%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Background Volumes 2026
 PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Volume (vph)	1039	37	29	957	31	45
Satd. Flow (prot)	3563	0	1755	3614	1755	1541
Flt Permitted			0.150		0.950	
Satd. Flow (perm)	3563	0	277	3614	1755	1541
Satd. Flow (RTOR)	7					42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	4%	1%	4%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1169	0	32	1040	34	49
Turn Type			Perm			Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						
Minimum Initial (s)	15.0		15.0	15.0	8.0	8.0
Minimum Split (s)	29.2		29.2	29.2	27.0	27.0
Total Split (s)	36.2	0.0	36.2	36.2	28.0	28.0
Total Split (%)	56.4%	0.0%	56.4%	56.4%	43.6%	43.6%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.2		2.2	2.2	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	4.0	6.2	6.2	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		None	None	Max	Max
Act Effect Green (s)	26.7		26.7	26.7	22.1	22.1
Actuated g/C Ratio	0.44		0.44	0.44	0.36	0.36
v/c Ratio	0.75		0.26	0.66	0.05	0.08
Control Delay	17.6		17.2	15.7	14.4	6.6
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	17.6		17.2	15.7	14.4	6.6
LOS	B		B	B	B	A
Approach Delay	17.6			15.8	9.8	
Approach LOS	B			B	A	
Queue Length 50th (m)	54.1		2.2	45.8	2.6	0.5
Queue Length 95th (m)	74.5		8.2	63.1	7.7	6.5
Internal Link Dist (m)	115.6			270.4	88.1	
Turn Bay Length (m)			25.0			
Base Capacity (vph)	1762		136	1783	635	584
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.66		0.24	0.58	0.05	0.08

Intersection Summary

Cycle Length: 64.2
 Actuated Cycle Length: 61.1
 Natural Cycle: 60

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Background Volumes 2026
 PM Peak Hour

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 16.5




Intersection LOS: B

Intersection Capacity Utilization 46.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 11: London Rd & Unnamed Rd

 28 s	 36.2 s
 36.2 s	

HCM Signalized Intersection Capacity Analysis
13: London Rd & Finch Rd

Background Volumes 2026
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	255	460	280	137	412	40	275	383	91	55	308	288
Satd. Flow (prot)	1825	3400	0	1789	3538	0	1825	3544	0	1825	3387	0
Flt Permitted	0.291			0.207			0.161			0.462		
Satd. Flow (perm)	559	3400	0	390	3538	0	309	3544	0	888	3387	0
Satd. Flow (RTOR)		123			10			28			224	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	277	804	0	149	491	0	299	515	0	60	648	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	10.0	26.0		10.0	26.0		10.0	26.0		10.0	26.0	
Total Split (s)	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0
Total Split (%)	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%
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	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effect Green (s)	36.5	22.4		30.3	19.3		38.4	27.7		26.8	18.6	
Actuated g/C Ratio	0.42	0.26		0.35	0.22		0.44	0.32		0.31	0.21	
v/c Ratio	0.65	0.83		0.50	0.62		0.79	0.45		0.17	0.72	
Control Delay	24.6	35.5		22.3	34.7		36.1	25.4		16.9	26.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.6	35.5		22.3	34.7		36.1	25.4		16.9	26.0	
LOS	C	D		C	C		D	C		B	C	
Approach Delay		32.7			31.8			29.3			25.2	
Approach LOS		C			C			C			C	
Queue Length 50th (m)	30.2	58.2		15.1	39.8		32.5	35.4		5.6	35.4	
Queue Length 95th (m)	51.8	#97.7		28.7	59.0		#76.3	55.1		13.4	57.3	
Internal Link Dist (m)		270.4			267.5			93.1			89.9	
Turn Bay Length (m)	45.0			30.0			40.0			40.0		
Base Capacity (vph)	461	1013		402	954		401	1153		518	1070	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.60	0.79		0.37	0.51		0.75	0.45		0.12	0.61	

Intersection Summary

Cycle Length: 98
Actuated Cycle Length: 87
Natural Cycle: 75

HCM Signalized Intersection Capacity Analysis

13: London Rd & Finch Rd

Background Volumes 2026

PM Peak Hour

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 30.0

Intersection LOS: C

Intersection Capacity Utilization 80.6%

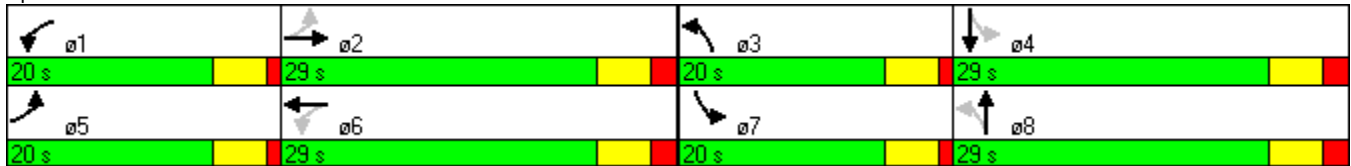
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 13: London Rd & Finch Rd



Appendix G

























Total 2021 Intersection Capacity

Synchro Reports

HCM Unsignalized Intersection Capacity Analysis

8: London Rd & Afton Dr

Total Volumes 2021
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 					 		 	
Volume (veh/h)	65	552	51	46	469	1	35	5	60	1	5	43	
Sign Control		Free			Free			Stop			Stop		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	71	600	55	50	510	1	38	5	65	1	5	47	
Pedestrians													
Lane Width (m)													
Walking Speed (m/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	TWLTL					TWLTL							
Median storage veh	2					2							
Upstream signal (m)	120					140							
pX, platoon unblocked	0.93			0.96			0.95	0.95	0.96	0.95	0.95	0.93	
vC, conflicting volume	511			655			1173	1380	328	1120	1407	255	
vC1, stage 1 conf vol							769	769		610	610		
vC2, stage 2 conf vol							404	611		509	797		
vCu, unblocked vol	313			561			884	1103	220	828	1132	37	
tC, single (s)	4.1			4.3			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)							6.5	5.5		6.5	5.5		
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	94			95			89	98	91	100	98	95	
cM capacity (veh/h)	1166			910			342	336	753	371	315	958	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2			
Volume Total	71	400	255	50	340	171	43	65	1	52			
Volume Left	71	0	0	50	0	0	38	0	1	0			
Volume Right	0	0	55	0	0	1	0	65	0	47			
cSH	1166	1700	1700	910	1700	1700	341	753	371	789			
Volume to Capacity	0.06	0.24	0.15	0.05	0.20	0.10	0.13	0.09	0.00	0.07			
Queue Length 95th (m)	1.5	0.0	0.0	1.3	0.0	0.0	3.3	2.2	0.1	1.6			
Control Delay (s)	8.3	0.0	0.0	9.2	0.0	0.0	17.1	10.2	14.7	9.9			
Lane LOS	A			A			C	B	B	A			
Approach Delay (s)	0.8			0.8			13.0		10.0				
Approach LOS							B		A				
Intersection Summary													
Average Delay	2.1												
Intersection Capacity Utilization	39.1%			ICU Level of Service						A			
Analysis Period (min)	15												

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Total Volumes 2021
 AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Volume (vph)	610	7	31	511	22	58
Satd. Flow (prot)	3537	0	1825	3544	1825	1420
Flt Permitted			0.263		0.950	
Satd. Flow (perm)	3537	0	505	3544	1825	1420
Satd. Flow (RTOR)	2					63
Confl. Peds. (#/hr)		5				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	0%	0%	3%	0%	15%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	671	0	34	555	24	63
Turn Type			pm+pt			Perm
Protected Phases	4		3	8	2	
Permitted Phases			8			2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	15.0		5.0	15.0	8.0	8.0
Minimum Split (s)	29.2		9.0	29.2	27.0	27.0
Total Split (s)	43.0	0.0	10.0	53.0	27.0	27.0
Total Split (%)	53.8%	0.0%	12.5%	66.3%	33.8%	33.8%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.2		0.0	2.2	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	4.0	4.0	6.2	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None		None	None	Max	Max
Act Effect Green (s)	18.3		24.0	21.7	21.4	21.4
Actuated g/C Ratio	0.33		0.43	0.39	0.38	0.38
v/c Ratio	0.57		0.09	0.40	0.03	0.11
Control Delay	18.1		8.6	12.5	14.5	5.7
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	18.1		8.6	12.5	14.5	5.7
LOS	B		A	B	B	A
Approach Delay	18.1			12.3	8.1	
Approach LOS	B			B	A	
Queue Length 50th (m)	24.9		1.8	19.8	1.3	0.0
Queue Length 95th (m)	48.6		5.2	29.0	6.6	7.2
Internal Link Dist (m)	115.6			270.4	88.1	
Turn Bay Length (m)			25.0			
Base Capacity (vph)	2388		363	3042	703	586
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.28		0.09	0.18	0.03	0.11

Intersection Summary

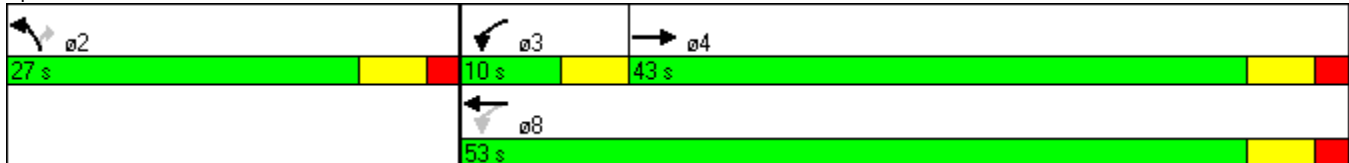
Cycle Length: 80
 Actuated Cycle Length: 55.6

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Total Volumes 2021
 AM Peak Hour





















Natural Cycle: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 14.9	Intersection LOS: B
Intersection Capacity Utilization 41.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: London Rd & Unnamed Rd



HCM Signalized Intersection Capacity Analysis
13: London Rd & Finch Rd

Total Volumes 2021
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	352	140	30	207	20	193	224	65	36	123	145
Satd. Flow (prot)	1825	3396	0	1706	3523	0	1825	3526	0	1825	3274	0
Flt Permitted	0.473			0.453			0.444			0.561		
Satd. Flow (perm)	909	3396	0	813	3523	0	853	3526	0	1078	3274	0
Satd. Flow (RTOR)		56			10			36			158	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	7%	2%	5%	0%	0%	0%	0%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	535	0	33	247	0	210	314	0	39	292	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	10.0	26.0		10.0	26.0		10.0	26.0		10.0	26.0	
Total Split (s)	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0
Total Split (%)	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%
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	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effect Green (s)	31.2	25.9		23.0	15.6		31.9	24.1		22.6	15.1	
Actuated g/C Ratio	0.42	0.35		0.31	0.21		0.43	0.33		0.31	0.21	
v/c Ratio	0.29	0.43		0.10	0.33		0.41	0.27		0.10	0.37	
Control Delay	15.1	19.3		14.1	25.7		16.3	18.8		14.1	14.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.1	19.3		14.1	25.7		16.3	18.8		14.1	14.0	
LOS	B	B		B	C		B	B		B	B	
Approach Delay		18.4			24.3			17.8			14.0	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	12.0	22.7		2.6	14.7		17.7	16.0		3.0	8.1	
Queue Length 95th (m)	24.4	48.5		7.7	26.5		34.5	28.8		8.7	20.2	
Internal Link Dist (m)		270.4			267.5			93.1			89.9	
Turn Bay Length (m)	45.0			30.0			40.0			40.0		
Base Capacity (vph)	577	1269		524	1115		571	1245		600	1138	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.42		0.06	0.22		0.37	0.25		0.07	0.26	

Intersection Summary

Cycle Length: 98

Actuated Cycle Length: 73.5

Natural Cycle: 75

HCM Signalized Intersection Capacity Analysis
 13: London Rd & Finch Rd

Total Volumes 2021
 AM Peak Hour

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.43

Intersection Signal Delay: 18.3

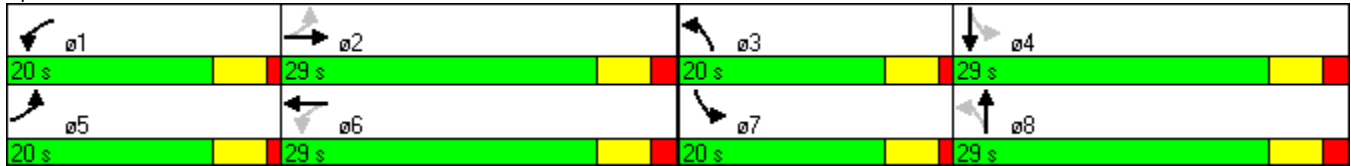
Intersection LOS: B

Intersection Capacity Utilization 61.4%

ICU Level of Service B

Analysis Period (min) 15























Splits and Phases: 13: London Rd & Finch Rd



HCM Unsignalized Intersection Capacity Analysis

8: London Rd & Afton Dr

Total Volumes 2021
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	28	902	104	77	866	1	41	1	85	1	6	45
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	980	113	84	941	1	45	1	92	1	7	49
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (m)		120			140							
pX, platoon unblocked	0.84			0.84			0.92	0.92	0.84	0.92	0.92	0.84
vC, conflicting volume	942			1093			1788	2208	547	1753	2264	471
vC1, stage 1 conf vol							1098	1098		1109	1109	
vC2, stage 2 conf vol							690	1110		644	1154	
vCu, unblocked vol	542			725			886	1343	72	848	1404	0
tC, single (s)	4.1			4.3			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			88			85	100	89	100	97	95
cM capacity (veh/h)	868			684			289	239	817	265	209	913
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2		
Volume Total	30	654	440	84	628	315	46	92	1	55		
Volume Left	30	0	0	84	0	0	45	0	1	0		
Volume Right	0	0	113	0	0	1	0	92	0	49		
cSH	868	1700	1700	684	1700	1700	287	817	265	654		
Volume to Capacity	0.04	0.38	0.26	0.12	0.37	0.19	0.16	0.11	0.00	0.08		
Queue Length 95th (m)	0.8	0.0	0.0	3.2	0.0	0.0	4.2	2.9	0.1	2.1		
Control Delay (s)	9.3	0.0	0.0	11.0	0.0	0.0	19.9	10.0	18.6	11.0		
Lane LOS	A			B			C	A	C	B		
Approach Delay (s)	0.3			0.9			13.2		11.2			
Approach LOS							B		B			
Intersection Summary												
Average Delay			1.6									
Intersection Capacity Utilization			51.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Total Volumes 2021
 PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	↵
Volume (vph)	957	51	85	883	44	98
Satd. Flow (prot)	3553	0	1755	3614	1755	1541
Flt Permitted			0.123		0.950	
Satd. Flow (perm)	3553	0	227	3614	1755	1541
Satd. Flow (RTOR)	9					107
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	4%	1%	4%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1095	0	92	960	48	107
Turn Type			pm+pt			Perm
Protected Phases	4		3	8	2	
Permitted Phases			8			2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	15.0		5.0	15.0	8.0	8.0
Minimum Split (s)	29.2		9.0	29.2	27.0	27.0
Total Split (s)	43.0	0.0	10.0	53.0	27.0	27.0
Total Split (%)	53.8%	0.0%	12.5%	66.3%	33.8%	33.8%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.2		0.0	2.2	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	4.0	4.0	6.2	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None		None	None	Max	Max
Act Effect Green (s)	29.4		39.2	37.0	21.5	21.5
Actuated g/C Ratio	0.41		0.55	0.52	0.30	0.30
v/c Ratio	0.74		0.36	0.51	0.09	0.20
Control Delay	20.9		10.6	11.5	22.0	6.4
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	20.9		10.6	11.5	22.0	6.4
LOS	C		B	B	C	A
Approach Delay	20.9			11.5	11.2	
Approach LOS	C			B	B	
Queue Length 50th (m)	64.8		5.1	39.5	4.9	0.0
Queue Length 95th (m)	85.4		10.5	52.5	13.4	11.0
Internal Link Dist (m)	115.6			270.4	88.1	
Turn Bay Length (m)			25.0			
Base Capacity (vph)	1892		258	2443	532	542
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.58		0.36	0.39	0.09	0.20

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 71
 Natural Cycle: 70

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Total Volumes 2021
 PM Peak Hour

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 15.9

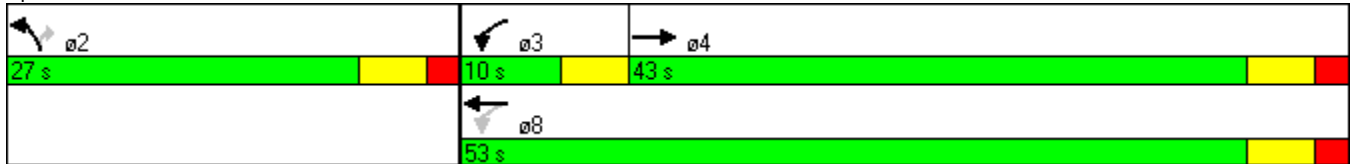
Intersection LOS: B

Intersection Capacity Utilization 53.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 11: London Rd & Unnamed Rd



HCM Signalized Intersection Capacity Analysis
13: London Rd & Finch Rd

Total Volumes 2021
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	231	490	253	124	448	36	249	347	82	50	279	261
Satd. Flow (prot)	1825	3419	0	1789	3544	0	1825	3544	0	1825	3384	0
Flt Permitted	0.274			0.200			0.207			0.484		
Satd. Flow (perm)	526	3419	0	377	3544	0	398	3544	0	930	3384	0
Satd. Flow (RTOR)		88			8			27			227	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	251	808	0	135	526	0	271	466	0	54	587	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	10.0	26.0		10.0	26.0		10.0	26.0		10.0	26.0	
Total Split (s)	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0
Total Split (%)	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%
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	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effect Green (s)	36.4	23.0		30.4	19.9		36.5	28.3		25.7	17.6	
Actuated g/C Ratio	0.43	0.27		0.36	0.23		0.43	0.33		0.30	0.21	
v/c Ratio	0.60	0.82		0.46	0.63		0.70	0.39		0.15	0.67	
Control Delay	22.3	34.9		20.8	33.7		27.3	23.6		16.9	23.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.3	34.9		20.8	33.7		27.3	23.6		16.9	23.4	
LOS	C	C		C	C		C	C		B	C	
Approach Delay		31.9			31.0			25.0			22.8	
Approach LOS		C			C			C			C	
Queue Length 50th (m)	24.4	56.9		12.2	39.7		28.5	30.8		5.0	28.3	
Queue Length 95th (m)	46.7	#101.0		26.2	63.6		50.6	49.3		12.3	49.1	
Internal Link Dist (m)		270.4			267.5			93.1			89.9	
Turn Bay Length (m)	45.0			30.0			40.0			40.0		
Base Capacity (vph)	465	1030		411	976		425	1200		526	1091	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.54	0.78		0.33	0.54		0.64	0.39		0.10	0.54	

Intersection Summary												
Cycle Length: 98												
Actuated Cycle Length: 85.1												
Natural Cycle: 75												

HCM Signalized Intersection Capacity Analysis

13: London Rd & Finch Rd

Total Volumes 2021
PM Peak Hour

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 28.2

Intersection LOS: C

Intersection Capacity Utilization 76.7%

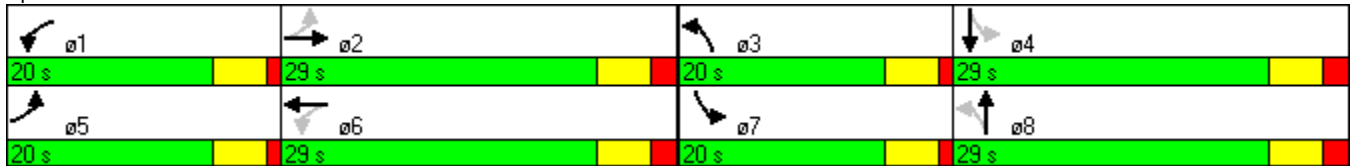
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 13: London Rd & Finch Rd




























Appendix H

Total 2026 Intersection Capacity

Synchro Reports

HCM Unsignalized Intersection Capacity Analysis
8: London Rd & Afton Dr

Total Volumes 2026
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 		 		
Volume (veh/h)	72	608	56	50	516	1	37	6	65	1	6	48	
Sign Control		Free			Free			Stop			Stop		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	78	661	61	54	561	1	40	7	71	1	7	52	
Pedestrians													
Lane Width (m)													
Walking Speed (m/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	TWLTL					TWLTL							
Median storage veh	2					2							
Upstream signal (m)	120					140							
pX, platoon unblocked	0.91			0.96			0.93	0.93	0.96	0.93	0.93	0.91	
vC, conflicting volume	562			722			1292	1518	361	1231	1548	281	
vC1, stage 1 conf vol							848	848		670	670		
vC2, stage 2 conf vol							445	671		561	878		
vCu, unblocked vol	326			630			979	1222	255	913	1254	18	
tC, single (s)	4.1			4.3			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)							6.5	5.5		6.5	5.5		
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	93			94			87	98	90	100	98	95	
cM capacity (veh/h)	1135			855			303	303	716	331	278	969	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2			
Volume Total	78	441	281	54	374	188	47	71	1	59			
Volume Left	78	0	0	54	0	0	40	0	1	0			
Volume Right	0	0	61	0	0	1	0	71	0	52			
cSH	1135	1700	1700	855	1700	1700	303	716	331	760			
Volume to Capacity	0.07	0.26	0.17	0.06	0.22	0.11	0.15	0.10	0.00	0.08			
Queue Length 95th (m)	1.7	0.0	0.0	1.5	0.0	0.0	4.1	2.5	0.1	1.9			
Control Delay (s)	8.4	0.0	0.0	9.5	0.0	0.0	19.0	10.6	15.9	10.1			
Lane LOS	A			A			C	B	C	B			
Approach Delay (s)	0.8			0.8			13.9		10.2				
Approach LOS							B		B				
Intersection Summary													
Average Delay	2.1												
Intersection Capacity Utilization	41.0%			ICU Level of Service						A			
Analysis Period (min)	15												

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Total Volumes 2026
 AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Volume (vph)	672	7	32	563	23	59
Satd. Flow (prot)	3538	0	1825	3544	1825	1420
Flt Permitted			0.234		0.950	
Satd. Flow (perm)	3538	0	450	3544	1825	1420
Satd. Flow (RTOR)	2					64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	0%	0%	3%	0%	15%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	738	0	35	612	25	64
Turn Type			pm+pt			Perm
Protected Phases	4		3	8	2	
Permitted Phases			8			2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	15.0		5.0	15.0	8.0	8.0
Minimum Split (s)	29.2		9.5	29.2	27.0	27.0
Total Split (s)	43.0	0.0	10.0	53.0	27.0	27.0
Total Split (%)	53.8%	0.0%	12.5%	66.3%	33.8%	33.8%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.2		0.0	2.2	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	4.0	4.0	6.2	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None		None	None	Max	Max
Act Effect Green (s)	19.5		25.2	22.9	21.5	21.5
Actuated g/C Ratio	0.34		0.44	0.40	0.38	0.38
v/c Ratio	0.61		0.10	0.43	0.04	0.11
Control Delay	18.2		8.4	12.5	15.6	6.0
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	18.2		8.4	12.5	15.6	6.0
LOS	B		A	B	B	A
Approach Delay	18.2			12.3	8.7	
Approach LOS	B			B	A	
Queue Length 50th (m)	28.1		1.9	22.4	1.4	0.0
Queue Length 95th (m)	53.7		5.3	32.0	7.2	7.5
Internal Link Dist (m)	115.6			270.4	88.1	
Turn Bay Length (m)			25.0			
Base Capacity (vph)	2344		347	2985	690	576
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.31		0.10	0.21	0.04	0.11

Intersection Summary
 Cycle Length: 80
 Actuated Cycle Length: 56.9
 Natural Cycle: 70

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Total Volumes 2026
 AM Peak Hour

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 15.0

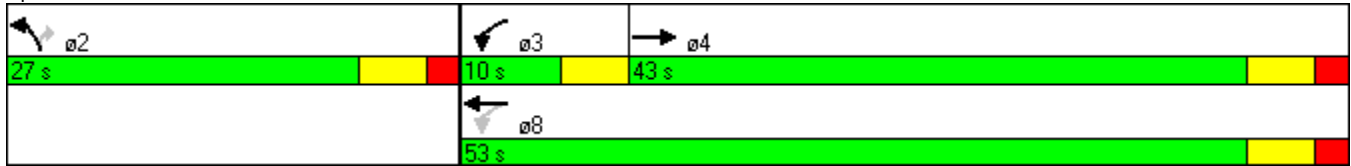
Intersection LOS: B

Intersection Capacity Utilization 43.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 11: London Rd & Unnamed Rd



HCM Signalized Intersection Capacity Analysis
13: London Rd & Finch Rd

Total Volumes 2026
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	383	154	34	226	22	213	247	72	40	136	160
Satd. Flow (prot)	1825	3396	0	1706	3523	0	1825	3526	0	1825	3274	0
Flt Permitted	0.458			0.432			0.422			0.544		
Satd. Flow (perm)	880	3396	0	776	3523	0	811	3526	0	1045	3274	0
Satd. Flow (RTOR)		57			10			36			174	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	7%	2%	5%	0%	0%	0%	0%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	583	0	37	270	0	232	346	0	43	322	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	10.0	26.0		10.0	26.0		10.0	26.0		10.0	26.0	
Total Split (s)	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0
Total Split (%)	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%
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	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effect Green (s)	31.6	24.1		23.3	15.8		32.5	24.5		22.7	15.1	
Actuated g/C Ratio	0.42	0.32		0.31	0.21		0.44	0.33		0.30	0.20	
v/c Ratio	0.32	0.51		0.11	0.36		0.46	0.29		0.11	0.40	
Control Delay	15.6	22.0		14.4	26.4		17.3	19.4		14.4	14.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.6	22.0		14.4	26.4		17.3	19.4		14.4	14.4	
LOS	B	C		B	C		B	B		B	B	
Approach Delay		20.6			25.0			18.5			14.4	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	13.6	34.0		2.9	16.3		19.6	17.9		3.3	9.0	
Queue Length 95th (m)	26.7	53.7		8.3	29.1		38.3	32.0		9.4	21.9	
Internal Link Dist (m)		270.4			267.5			93.1			89.9	
Turn Bay Length (m)	45.0			30.0			40.0			40.0		
Base Capacity (vph)	569	1194		513	1099		558	1237		588	1135	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.28	0.49		0.07	0.25		0.42	0.28		0.07	0.28	

Intersection Summary												
Cycle Length: 98												
Actuated Cycle Length: 74.6												
Natural Cycle: 75												

HCM Signalized Intersection Capacity Analysis
 13: London Rd & Finch Rd

Total Volumes 2026
 AM Peak Hour

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 19.5

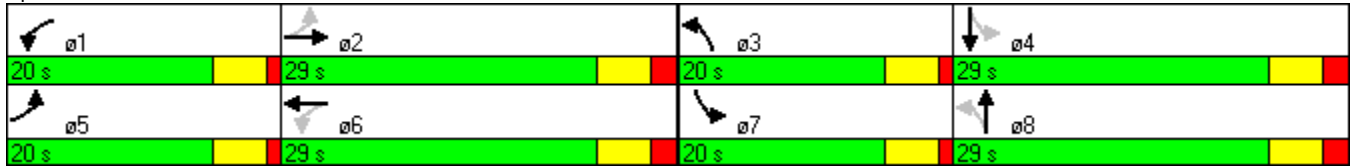
Intersection LOS: B

Intersection Capacity Utilization 63.3%

ICU Level of Service B






















Analysis Period (min) 15

Splits and Phases: 13: London Rd & Finch Rd



HCM Unsignalized Intersection Capacity Analysis
8: London Rd & Afton Dr

Total Volumes 2026
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	995	113	83	954	1	43	1	92	1	7	50
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	1082	123	90	1037	1	47	1	100	1	8	54
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh		2			2							
Upstream signal (m)		120			140							
pX, platoon unblocked	0.82			0.84			0.90	0.90	0.84	0.90	0.90	0.82
vC, conflicting volume	1038			1204			1967	2429	602	1927	2490	519
vC1, stage 1 conf vol							1210	1210		1218	1218	
vC2, stage 2 conf vol							757	1218		709	1272	
vCu, unblocked vol	595			857			1036	1550	139	990	1618	0
tC, single (s)	4.1			4.3			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			85			80	99	87	100	95	94
cM capacity (veh/h)	809			607			237	199	741	223	165	890
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2		
Volume Total	34	721	483	90	691	347	48	100	1	62		
Volume Left	34	0	0	90	0	0	47	0	1	0		
Volume Right	0	0	123	0	0	1	0	100	0	54		
cSH	809	1700	1700	607	1700	1700	236	741	223	578		
Volume to Capacity	0.04	0.42	0.28	0.15	0.41	0.20	0.20	0.13	0.00	0.11		
Queue Length 95th (m)	1.0	0.0	0.0	3.9	0.0	0.0	5.6	3.5	0.1	2.7		
Control Delay (s)	9.6	0.0	0.0	12.0	0.0	0.0	24.1	10.6	21.3	12.0		
Lane LOS	A			B			C	B	C	B		
Approach Delay (s)	0.3			1.0			15.0		12.1			
Approach LOS							B		B			
Intersection Summary												
Average Delay				1.7								
Intersection Capacity Utilization			54.8%			ICU Level of Service			A			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Total Volumes 2026
 PM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Volume (vph)	1055	54	88	973	47	102
Satd. Flow (prot)	3557	0	1755	3614	1755	1541
Flt Permitted			0.112		0.950	
Satd. Flow (perm)	3557	0	207	3614	1755	1541
Satd. Flow (RTOR)	9					111
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	4%	1%	4%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1206	0	96	1058	51	111
Turn Type			pm+pt			Perm
Protected Phases	4		3	8	2	
Permitted Phases			8			2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	15.0		5.0	15.0	8.0	8.0
Minimum Split (s)	29.2		9.0	29.2	27.0	27.0
Total Split (s)	43.0	0.0	10.0	53.0	27.0	27.0
Total Split (%)	53.8%	0.0%	12.5%	66.3%	33.8%	33.8%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.2		0.0	2.2	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	4.0	4.0	6.2	6.0	6.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None		None	None	Max	Max
Act Effect Green (s)	31.7		41.5	39.2	21.5	21.5
Actuated g/C Ratio	0.43		0.57	0.54	0.29	0.29
v/c Ratio	0.78		0.39	0.55	0.10	0.21
Control Delay	21.8		11.2	11.8	22.8	6.4
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	21.8		11.2	11.8	22.8	6.4
LOS	C		B	B	C	A
Approach Delay	21.8			11.7	11.6	
Approach LOS	C			B	B	
Queue Length 50th (m)	74.7		5.4	45.3	5.8	0.0
Queue Length 95th (m)	98.1		10.9	59.5	14.0	11.1
Internal Link Dist (m)	115.6			270.4	88.1	
Turn Bay Length (m)			25.0			
Base Capacity (vph)	1834		247	2365	515	531
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.66		0.39	0.45	0.10	0.21

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 73.2
 Natural Cycle: 70

HCM Signalized Intersection Capacity Analysis
 11: London Rd & Unnamed Rd

Total Volumes 2026
 PM Peak Hour

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 16.6

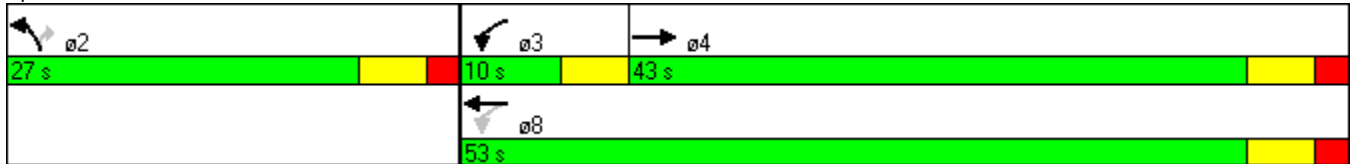
Intersection LOS: B

Intersection Capacity Utilization 55.9%

ICU Level of Service B





















Analysis Period (min) 15

Splits and Phases: 11: London Rd & Unnamed Rd



HCM Signalized Intersection Capacity Analysis
13: London Rd & Finch Rd

Total Volumes 2026
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	255	533	280	137	487	40	275	383	91	55	308	288
Satd. Flow (prot)	1825	3416	0	1789	3544	0	1825	3544	0	1825	3387	0
Flt Permitted	0.242			0.187			0.161			0.462		
Satd. Flow (perm)	465	3416	0	352	3544	0	309	3544	0	888	3387	0
Satd. Flow (RTOR)		91			8			28			224	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	277	883	0	149	572	0	299	515	0	60	648	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	10.0	26.0		10.0	26.0		10.0	26.0		10.0	26.0	
Total Split (s)	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0	20.0	29.0	0.0
Total Split (%)	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%	20.4%	29.6%	0.0%
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	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effect Green (s)	38.6	24.5		32.4	21.4		38.7	27.8		27.0	18.7	
Actuated g/C Ratio	0.43	0.27		0.36	0.24		0.43	0.31		0.30	0.21	
v/c Ratio	0.69	0.88		0.52	0.67		0.81	0.46		0.17	0.73	
Control Delay	26.5	40.6		22.7	35.8		38.1	26.2		17.3	26.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	26.5	40.6		22.7	35.8		38.1	26.2		17.3	26.9	
LOS	C	D		C	D		D	C		B	C	
Approach Delay		37.2			33.1			30.6			26.1	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	30.4	70.5		15.2	48.7		34.4	37.0		6.0	36.9	
Queue Length 95th (m)	#52.0	#120.3		28.7	69.5		#76.3	55.1		13.4	57.3	
Internal Link Dist (m)		270.4			267.5			93.1			89.9	
Turn Bay Length (m)	45.0			30.0			40.0			40.0		
Base Capacity (vph)	436	1002		390	926		391	1128		505	1045	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.64	0.88		0.38	0.62		0.76	0.46		0.12	0.62	

Intersection Summary
 Cycle Length: 98
 Actuated Cycle Length: 89.3
 Natural Cycle: 80

HCM Signalized Intersection Capacity Analysis

13: London Rd & Finch Rd

Total Volumes 2026

PM Peak Hour

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 32.4

Intersection LOS: C

Intersection Capacity Utilization 82.6%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 13: London Rd & Finch Rd

