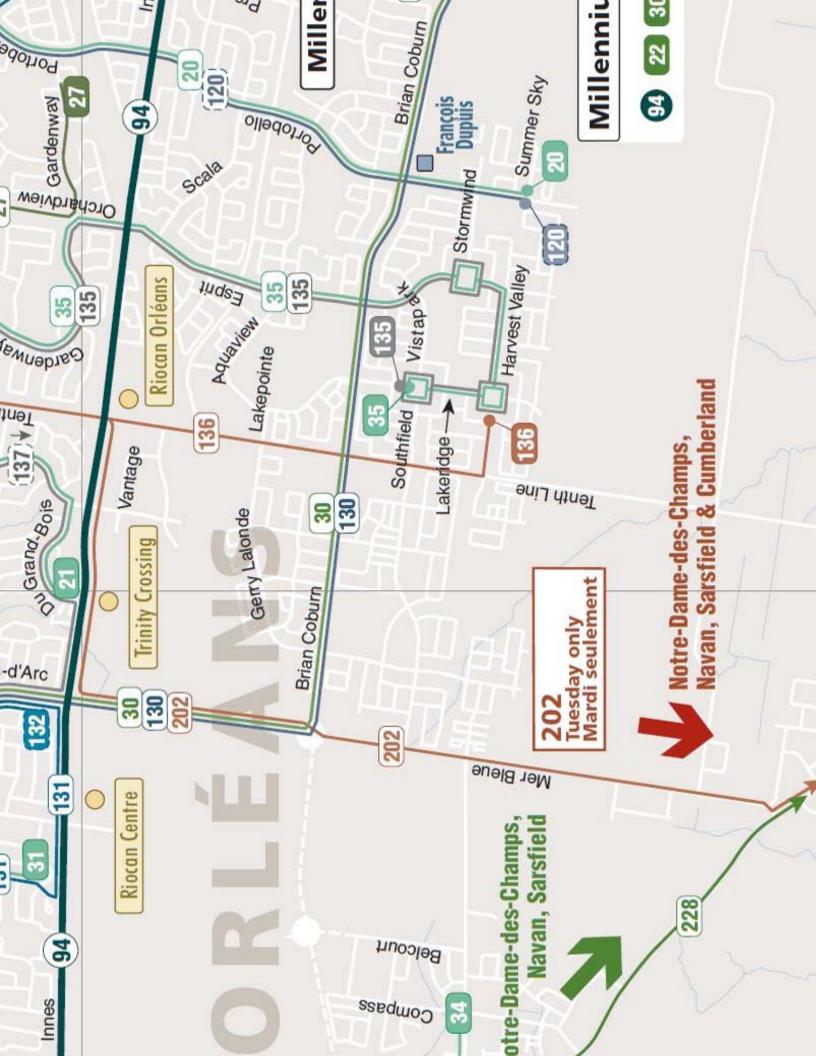
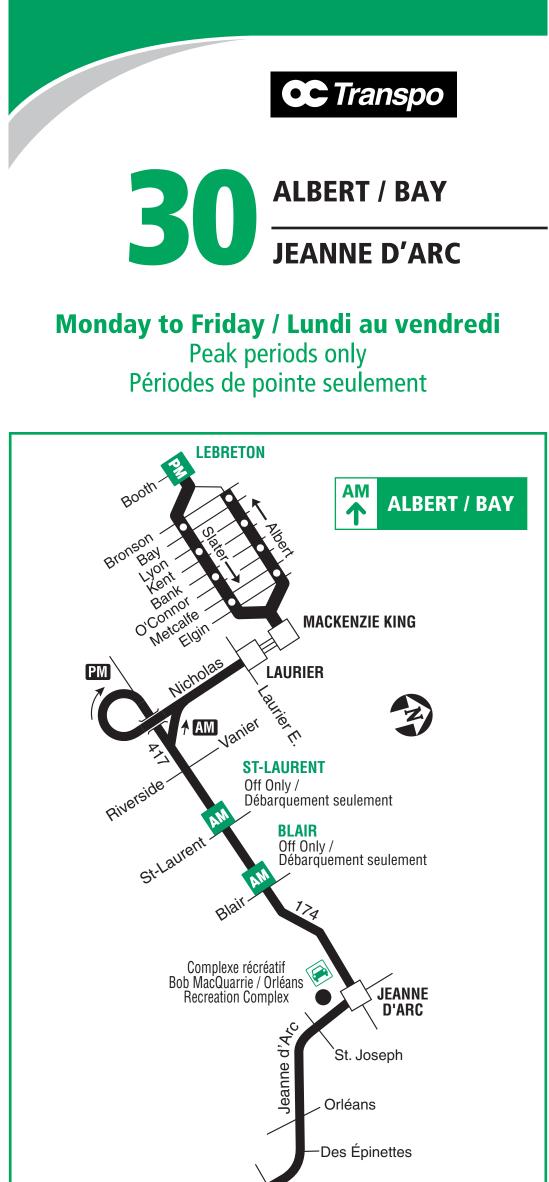
– Appendix A –

OC Transpo Maps

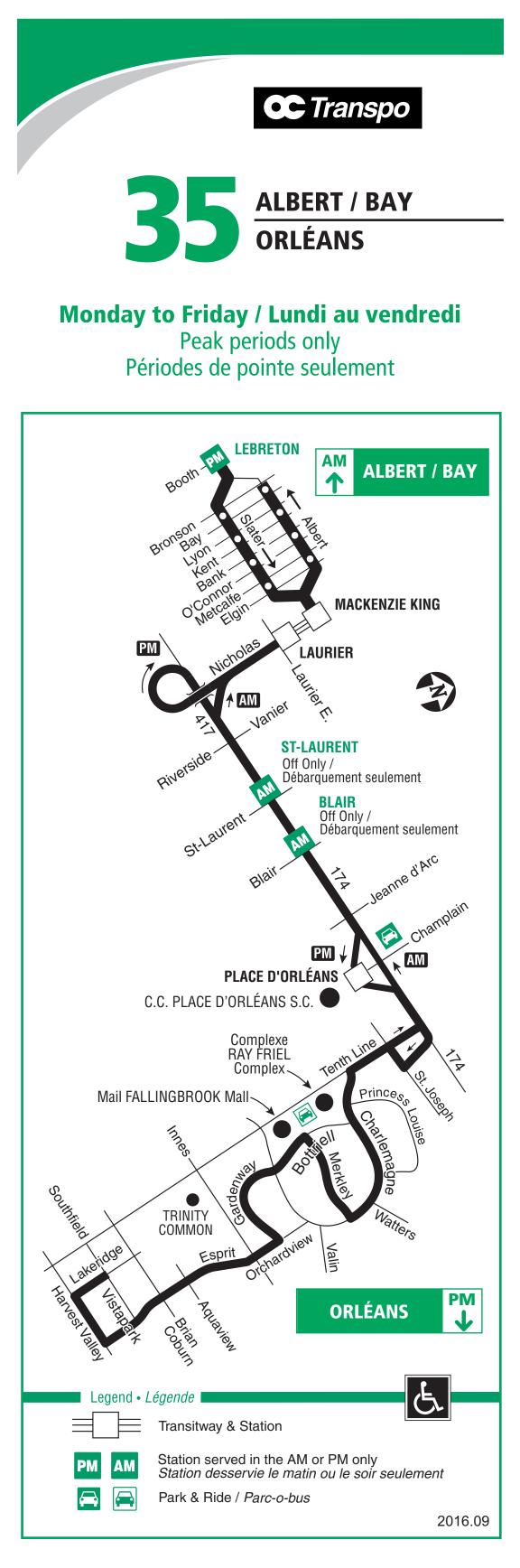




VMer Bleve Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro- Pro-									
JEANNE D'ARC PM J									
Legend • Le	égende 6								
	Transitway & Station								
AM PM	Station served in the AM or PM only Station desservie le matin ou le soir seulement								
	Park & Ride / Parc-o-bus								
		2016.09							

Information / Renseignement	613-741-4390
Customer Relations Service à la clientèle	613-842-3600
Lost and Found / Objets perdus	613-563-4011
Schedule / Horaire	613-560-1000
Text / Texto	
plus your four digit bus stop number / plus votre numér	o d'arrêt à quatre chiffres

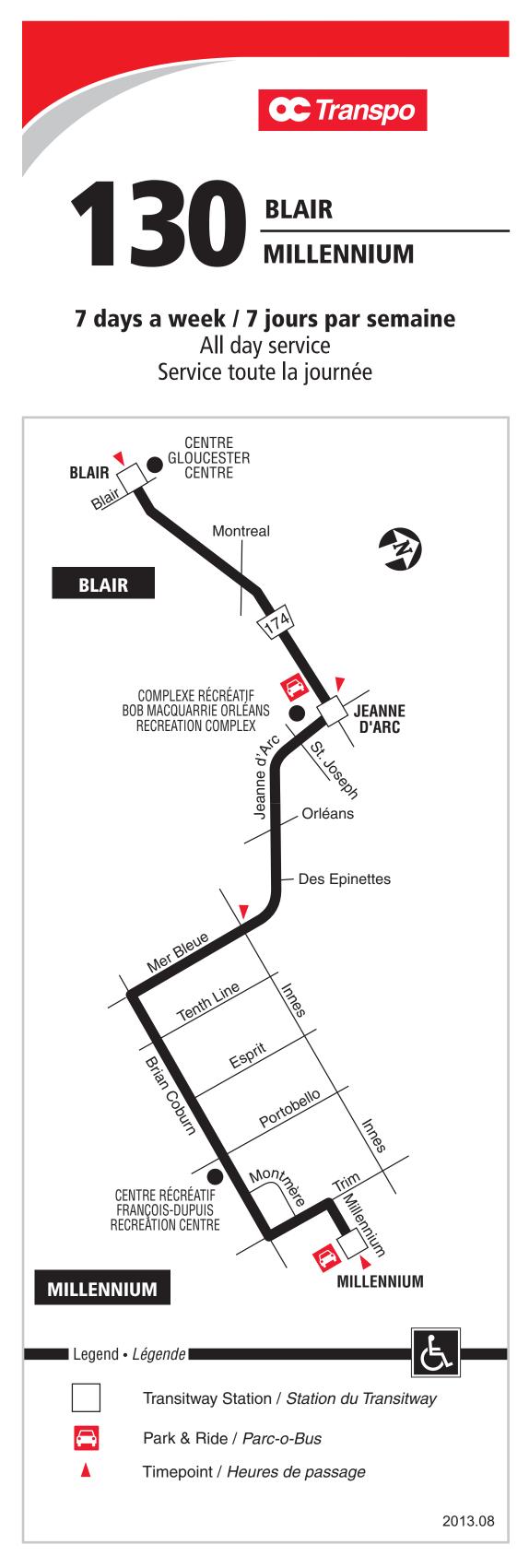
Effective / En vigueur Sept. 6 sept. 2016



Information / Renseignement	613-741-4390
Customer Relations Service à la clientèle	613-842-3600
Lost and Found / Objets perdus	613-563-4011
Schedule / Horaire	613-560-1000
Text / Texto	
nlucyour four digit bus stop number / nlucyotro numé	re d'arrêt à quatre chiffred

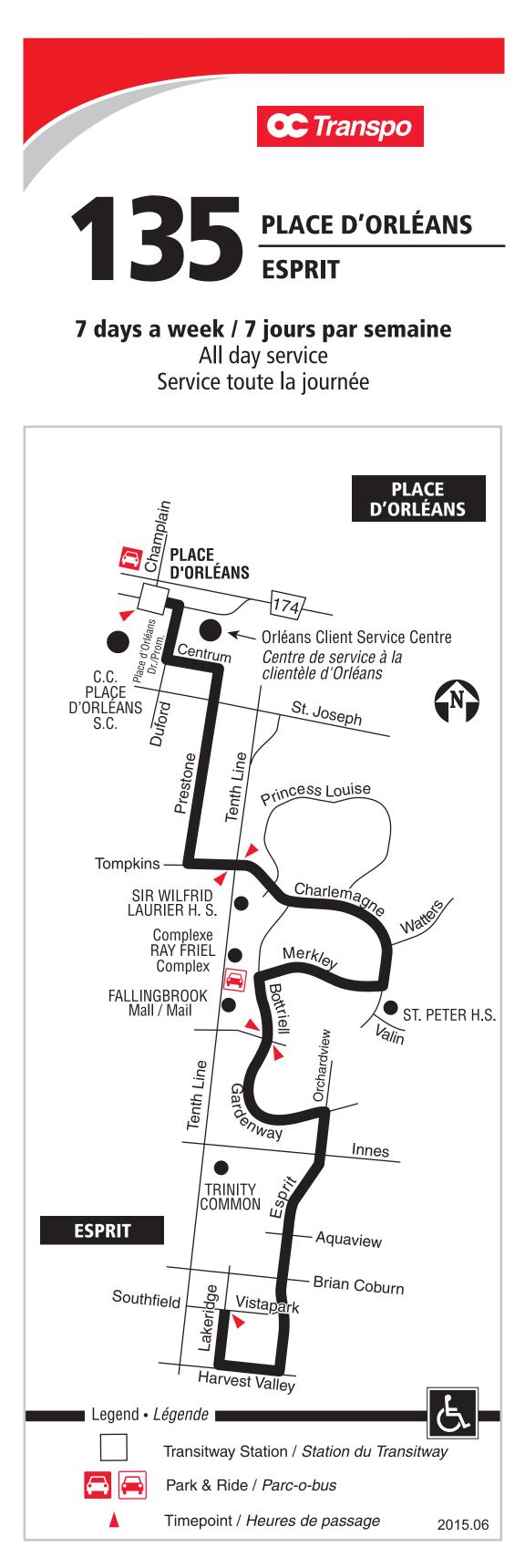
plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

Effective / En vigueur Sept. 6 sept. 2016



Information / Renseignement	613-741-4390
Customer Relations Service à la clientèle	613-842-3600
Lost and Found / Objets perdus	613-563-4011
Schedule / Horaire	613-560-1000
Text / Texto	
plus your four digit bus stop number / plus votre numér	o d'arrêt à quatre chiffres

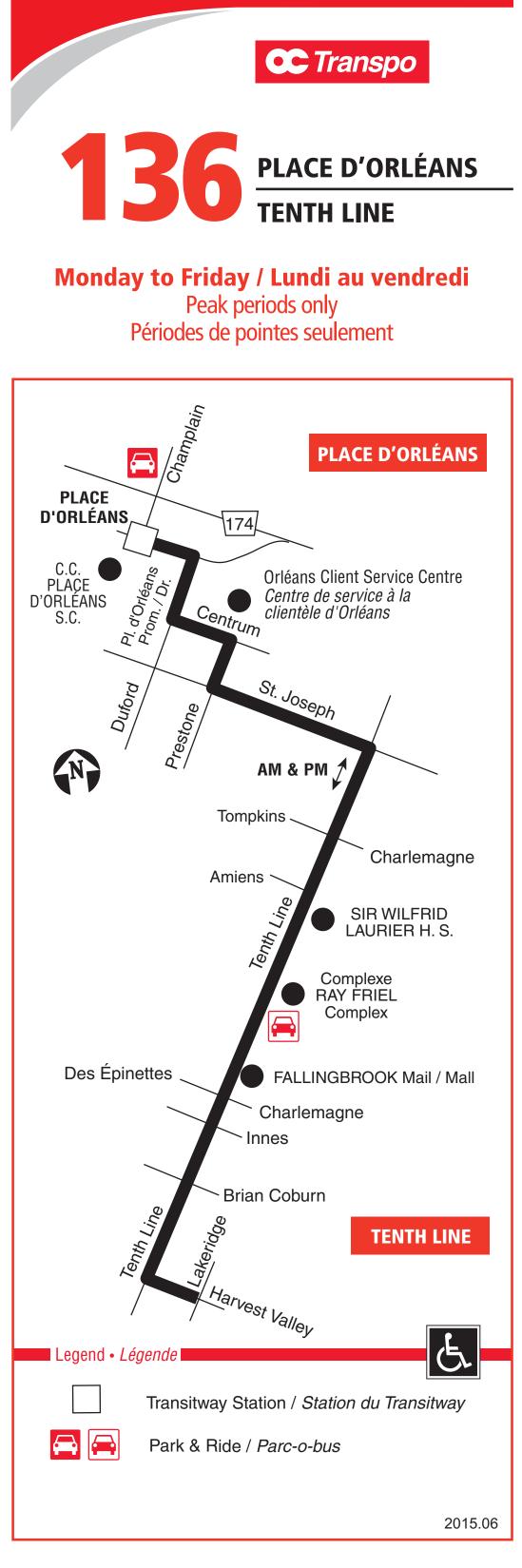
Effective / En vigueur Sept. 1 sept. 2013



Information / Renseignement	613-741-4390
Customer Relations Service à la clientèle	613-842-3600
Lost and Found / Objets perdus	613-563-4011
Schedule / Horaire	613-560-1000
Text / Texto	
plus your four digit bus stop number / plus votre numér	o d'arrêt à quatre chiffres

Effective / En vigueur June 28 juin 2015



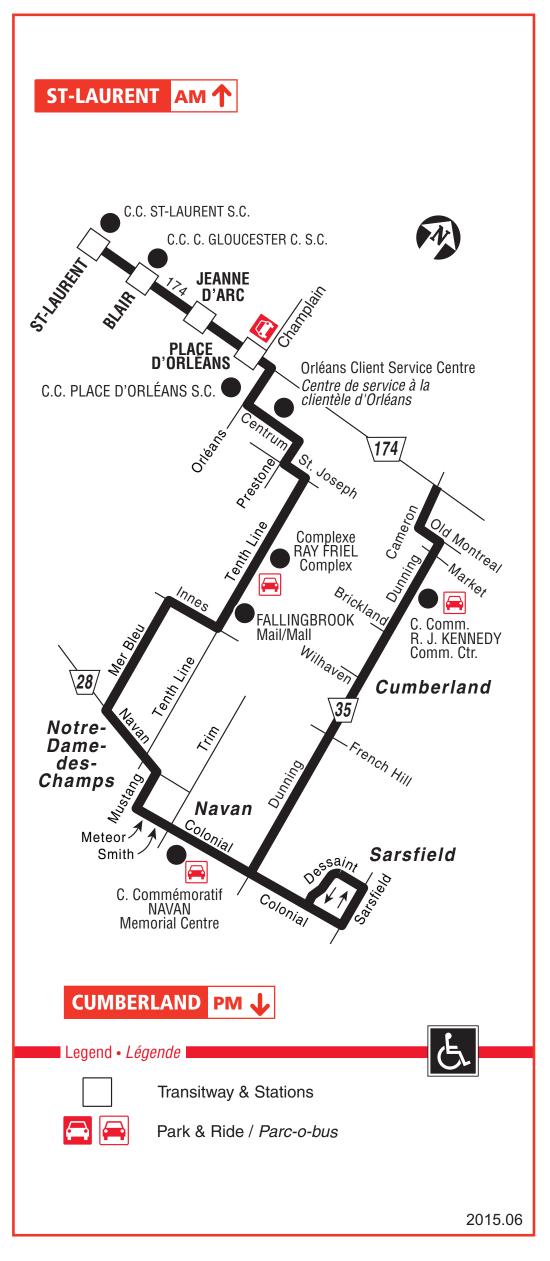


Information / Renseignement	613-741-4390
Customer Relations Service à la clientèle	613-842-3600
Lost and Found / Objets perdus	613-563-4011
Schedule / Horaire	613-560-1000
Text / Texto	
plus your four digit bus stop number / plus votre numér	o d'arrêt à quatre chiffres

Effective / En vigueur June 29 juin 2015



Tuesday Only / Mardi seulement Selected time periods Périodes sélectionnées

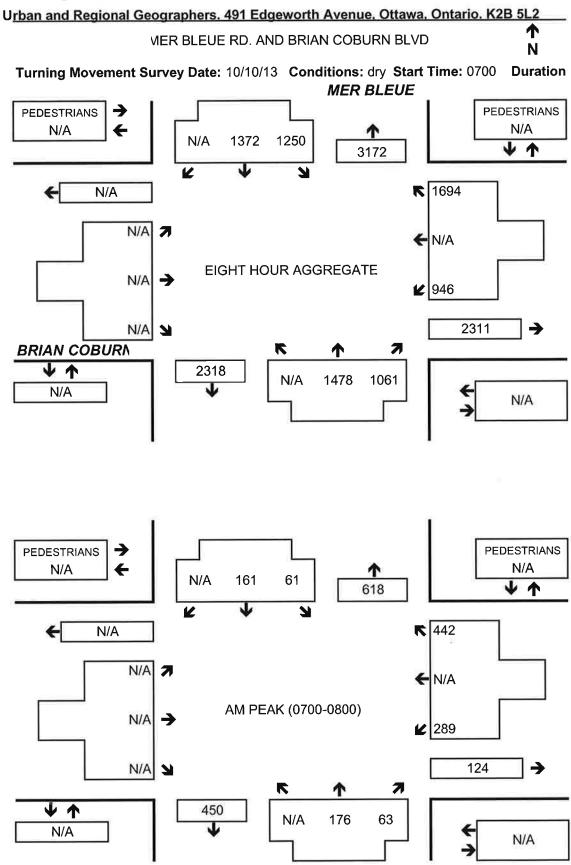


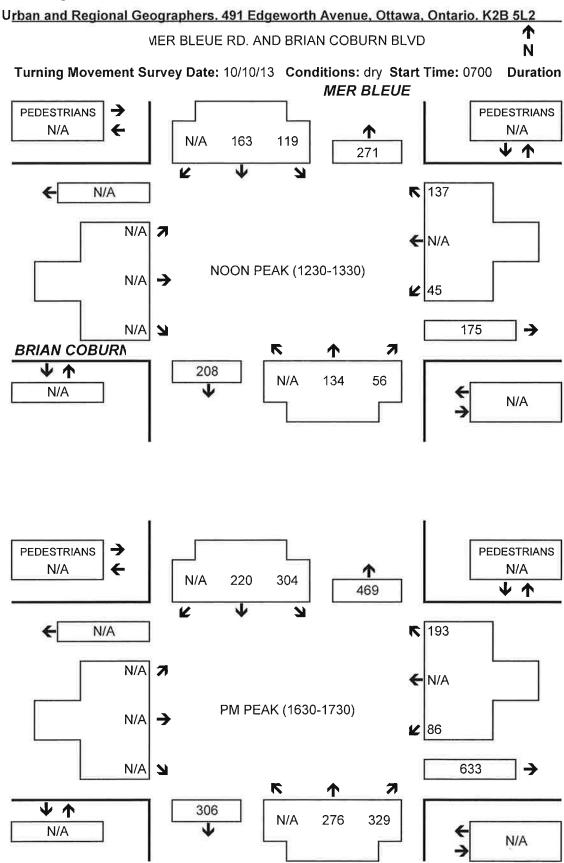
Information / Renseignement	613-741-4390
Customer Relations Service à la clientèle	613-842-3600
Lost and Found / Objets perdus	613-563-4011
Schedule / Horaire	613-560-1000
Text / Texto	
plus your four digit bus stop number / plus votre numér	o d'arrêt à quatre chiffres

Effective / En vigueur June 30 juin 2015

– Appendix B –

Traffic Data

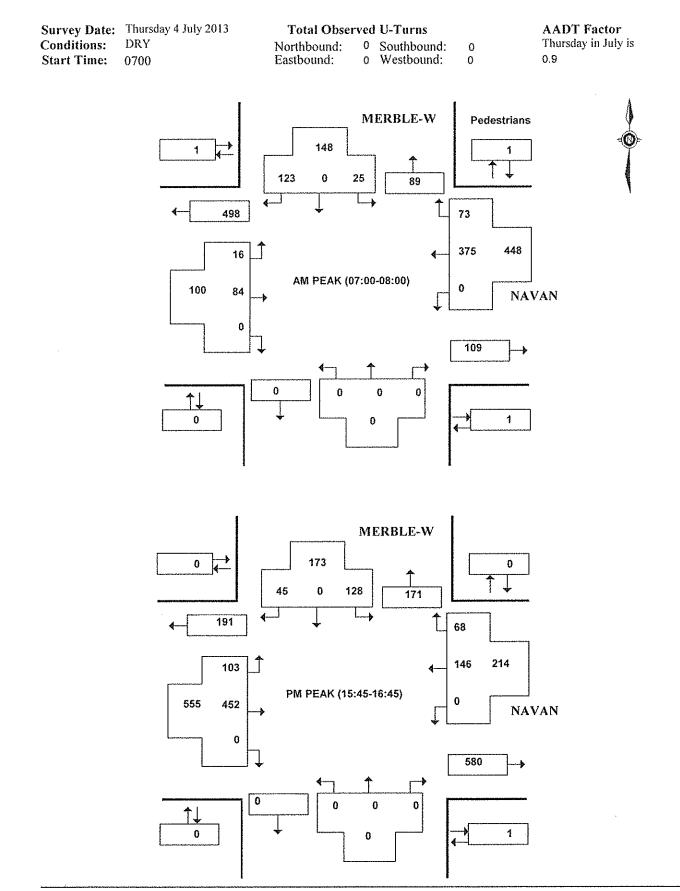


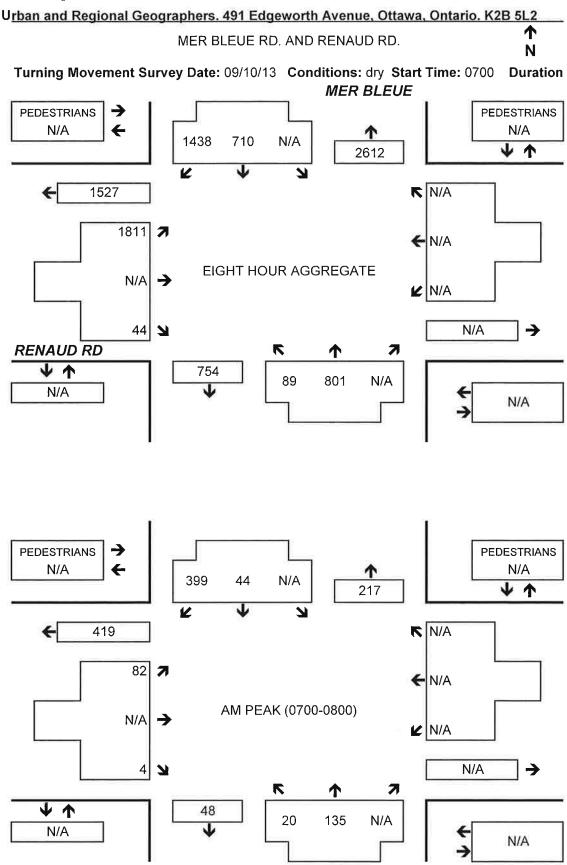


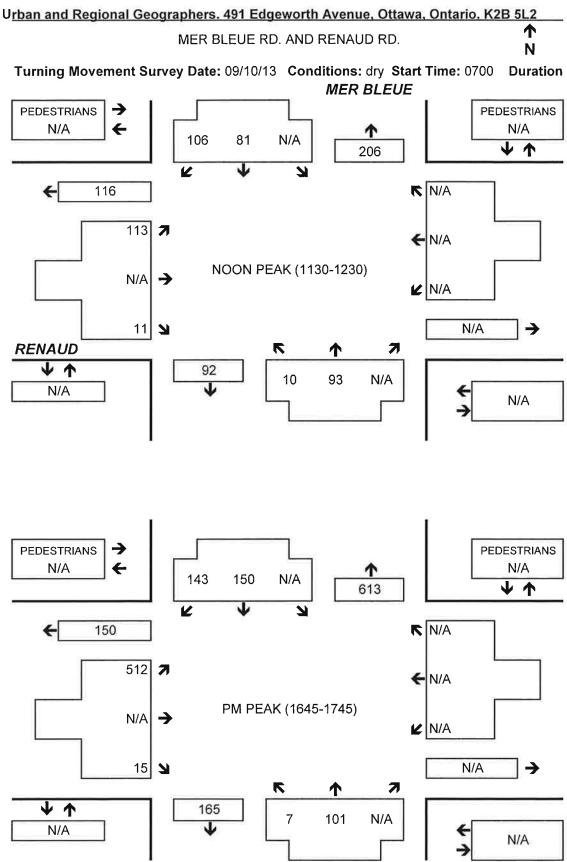
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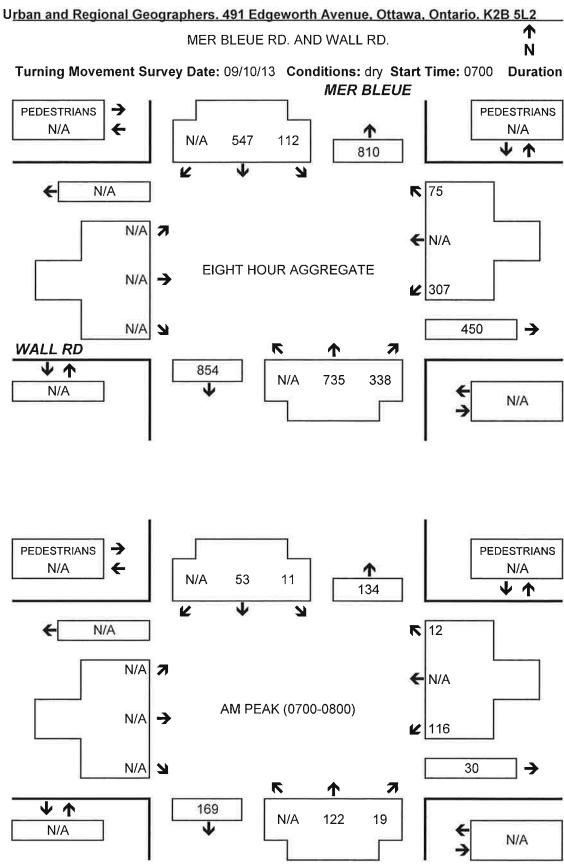
MER BLEUE WEST and NAVAN RD

(ULRS Listing MERBLE-W & NAVAN)

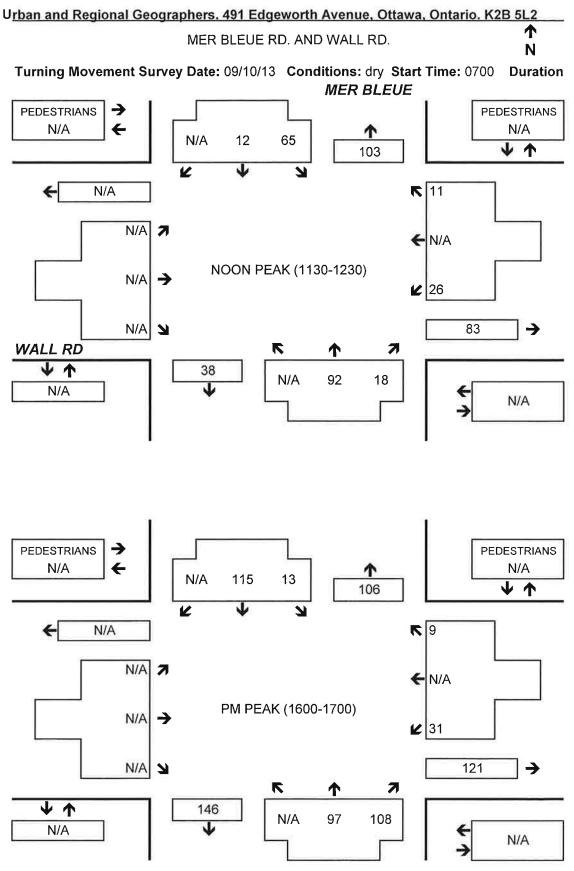








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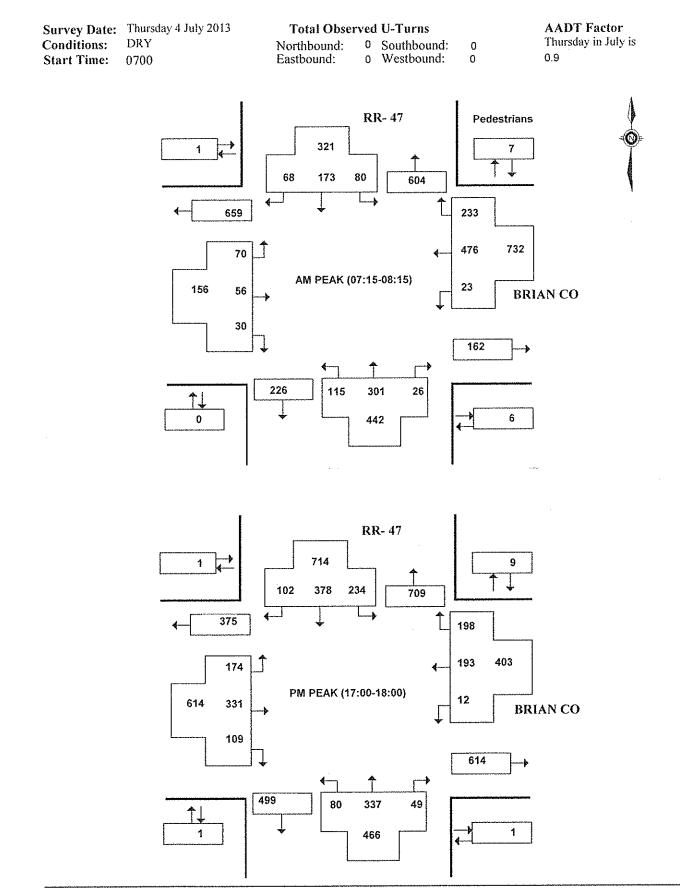


Public Works and Services Department

Count ID 3203

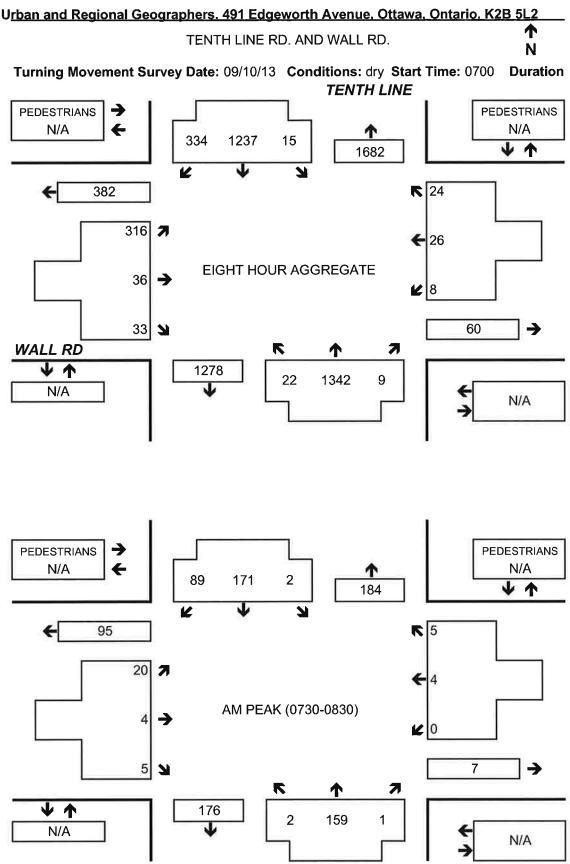
TENTH LINE ROAD and BRIAN COBURN BLVD

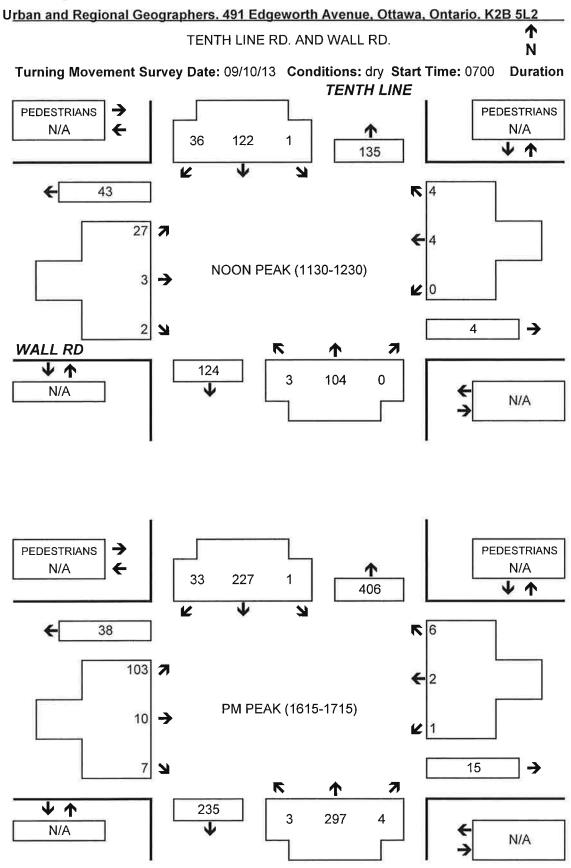
(ULRS Listing RR- 47 & BRIAN CO)



Urban and Regional Geographers. 491 Edgeworth Avenue, Ottawa, Ontario. K2	2B 5L2
TENTH LINE RD. AND NAVAN RD.	↑ N
Turning Movement Survey Date: 10/10/13 Conditions: dry Start Time: 0700 TENTH LINE	Duration:
N/A ← 995 112 314 ↑	DESTRIANS N/A
	• 1
<a>€ 2617 <a>911	
1603 → EIGHT HOUR AGGREGATE	
73 № 1933	→
↓ ↑ 203 61 70 16 N/A ↓ 61 70 16	N/A
PEDESTRIANS N/A \leftarrow 84 10 59 146 \leftarrow 492 \leftarrow 492 \leftarrow 11 7 \leftarrow 399	DESTRIANS N/A ✔ ↑
104 → AM PEAK (0700-0800) ∠ 1 4 > 166	 >
$ \begin{array}{c c} $	N/A

Urban and Regional Geographers. 491 Edgeworth Avenue, Ottawa, Ontario. K2B 5L2
TENTH LINE RD. AND NAVAN RD.
N
Turning Movement Survey Date: 10/10/13 Conditions: dry Start Time: 0700 Duration:
PEDESTRIANS \rightarrow \rightarrow \uparrow PEDESTRIANS N/A \leftarrow 116 13 41 \uparrow \checkmark \checkmark \checkmark \checkmark \checkmark
€ 237
36 7 ← 117 138 → NOON PEAK (1230-1330) ← 1
12 ¥ 181 →
$\begin{array}{c c} \bullet & \bullet \\ \hline N/A \end{array} \end{array} \begin{array}{c c} 26 \\ \bullet \end{array} \end{array} 4 4 2 \\ \hline \bullet \end{array} \end{array} \left(\begin{array}{c} \bullet \\ \bullet \end{array} \right) \left(\begin{array}{c} \bullet \\ \end{array} \right) \left(\begin{array}{c} \bullet \\ \bullet \end{array} \right) \left(\begin{array}{c} \bullet \\ \end{array} \right) \left(\begin{array}{c} \bullet \\ \end{array} \right) \left(\begin{array}{c} \bullet \\ \end{array} \right) \left(\begin{array}{c} \bullet \end{array} \right) \left(\begin{array}{c} $
PEDESTRIANS \rightarrow N/A \leftarrow 217 20 301 \checkmark
116 7 ← 150 440 → PM PEAK (1630-1730) 2
$\begin{array}{c c} 11 \\ & & & \\ \hline \\ & & \\ \hline \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ $





– Appendix C –

Collision Data

Collision Main Detail Summary

OnTRAC Reporting System

MER BLEUE RD, DU PALAIS ST to RENAUD RD

Former Municip	Traffic (Control: No con	trol		Numl	per of Collisions: 5						
COLLISION ID	DATE DA	Y TIME	ENV LIGHT	IMPACT TYPE	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
1	2008/05/22 Th	u 16:09 F	Rain Dayligl	nt Rear end	P.D. only	V1 S V2 S	Wet Wet	Going ahead Slowing or	Automobile, station Pick-up truck	Other motor vehicle Other motor vehicle		0
2	2008/06/20 Fri	d 08:39 (Clear Daylig	nt Other	P.D. only	V1 N V2 S	Dry Dry	Reversing Stopped	Off-road 2 wheels Automobile, station	Other motor vehicle Other motor vehicle		0
3	2011/04/27 We	e 20:30 (Clear Dark	Single vehicle	P.D. only	V1 N	Dry	Going ahead	Passenger van	Animal - wild		0
4	2011/07/25 Mc	00:19 0	Clear Dark	Single vehicle	P.D. only	V1 U	Dry	Unknown	Automobile, station	Ran off road		0
5	2011/11/30 We	e 19:50 (Clear Dark	Single vehicle	P.D. only	V1 N	Dry	Going ahead	Automobile, station	Animal - wild		0

MER BLEUE RD & NAVAN RD W

Former Municip	oality: Glouc	ester			Traffic Co	ontrol: Stop sig	ın		Numbe	er of Collisions: 4				
COLLISION ID	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
6	2011/01/1	5 Sat	19:38	Clear	Dark	Turning	P.D. only	V1 W	Loose snow	Going ahead	Pick-up truck	Other motor vehicle		0
7	2011/07/2	7 We	17:58	Clear	Daylight	Turning	P.D. only	V1 E	Dry	Turning left	Automobile, station	Other motor vehicle		0
8	2012/06/2	5 Mo	15:45	Rain	Daylight	Turning	P.D. only	V1 E	Wet	Turning left	Automobile, station	Other motor vehicle		0
9	2012/09/1	4 Frid	12:20	Clear	Daylight	Angle	P.D. only	V1 S	Wet	Turning left	Automobile, station	Other motor vehicle		0
						•	-	V2 W	Wet	Going ahead	Automobile, station	Other motor vehicle		
MER BLEUE	RD & REM	NAUD	RD							-				
Former Municip	oality: Cumb	erland			Traffic Co	ontrol: Stop sig	ın		Numbe	er of Collisions: 2				
COLLISION ID	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
10	2011/08/0	9 Tue	18:00	Clear	Daylight	Rear end	P.D. only	V1 E V2 E	Dry Dry	Slowing or Stopped	Pick-up truck Automobile, station	Other motor vehicle Other motor vehicle		0
11	2012/02/0	8 We	17:07	Clear	Dark	Rear end	Non-fatal	V1 E V2 E	Dry Dry	Going ahead Slowing or	Pick-up truck Automobile, station	Other motor vehicle Other motor vehicle		0

MER BLEUE RD, BRIAN COBURN to RENAUD RD

Former Municipalit	ty: Cumberland	Traffic Control: No	o control		Nun	ber of Collisions: 1				
COLLISION		IMPACT	ТҮРЕ		SURFACE	VEHICLE			DRIVER	No.
ID	DATE DAY TIME E	NV LIGHT	CLASS	DIR	COND'N	MANOEUVRE	VEHICLE TYPE	FIRST EVENT	ACTION	PED
12 2	009/09/20 Sun 19:02 Cl	ear Daylight Approacl	hing Non-fatal	V1 S	Dry	Going ahead	Pick-up truck	Other motor vehicle		0
				V2 N	Dry	Going ahead	Pick-up truck	Other motor vehicle		

MER BLEUE	RD, NAVAN RD W to	SAPHIR AV	E								
Former Municip	oality: Gloucester	Traff	c Control: No cor	ntrol		Numb	er of Collisions: 1				
COLLISION ID	DATE DAY TIM	ENV LIG	IMPACT TYPE HT	E CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
13	2008/08/13 We 15:4	Clear Day	ight Rear end	P.D. only	V1 S V2 S	Dry Dry	Going ahead Turning right	Automobile, station Automobile, station	Other motor vehicle Other motor vehicle		0
MER BLEUE	RD, SAPHIR to SAP	IR AVE									
Former Municip	oality: Cumberland	Traff	c Control: No cor	ntrol		Numb	per of Collisions: 2				
COLLISION ID	DATE DAY TIM	ENV LIG	IMPACT TYPI HT	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
14 15	2010/06/20 Sun 02:44 2011/06/28 Tue 21:20		- 3			Dry Wet	Reversing Going ahead	Passenger van Automobile, station	Unattended vehicle Building or wall		0 0
-	RD & SAPHIR AVE	T (1)				Normal					
	oality: Cumberland	Iram	c Control: Stop s	•			er of Collisions: 1				
COLLISION ID	DATE DAY TIM	ENV LIG	IMPACT TYPI HT	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
16	2012/06/04 Mo 16:59	Clear Day	ight Turning	Non-fatal	V1 S V2 N	Dry Dry	Turning left Going ahead	Automobile, station Motorcycle	Other motor vehicle Other motor vehicle		0
-	RD & WALL RD bality: Cumberland	Traff	c Control: Stop s	ign		Numb	per of Collisions: 2				
COLLISION ID	DATE DAY TIM	ENV LIG	IMPACT TYPI HT	E CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
17	2008/02/07 Thu 08:20	Snow Day	ight Angle	P.D. only	V1 W V2 S	Loose snow Loose snow	Slowing or Stopped	Automobile, station Passenger van	Other motor vehicle Other motor vehicle		0
18	2011/12/16 Frid 23:4	Clear Darl	Single vehicle	P.D. only	V1 S	Ice	Turning right	Passenger van	Curb		0
	RD, DU DOMAINE ST pality: Cumberland		S ST c Control: No cor	ntrol		Numb	per of Collisions: 1				
COLLISION ID	DATE DAY TIM	ENV LIG	IMPACT TYPI HT	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
19	2008/03/05 We 08:4	Snow Day	ight Other	P.D. only	V1 E V2 S	Loose snow Loose snow	Reversing Going ahead	Automobile, station Automobile, station	Other motor vehicle Other motor vehicle		0

Collision Main Detail Summary

OnTRAC Reporting System

NAVAN RD, DIAMOND WAY to TENTH LINE RD

Former Municip	ality: Cumber	rland			Traffic Co	ontrol: No cont	trol		Numbe	er of Collisions: 7				
COLLISION ID	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
1 2 3	2008/11/25 2009/01/14 2009/09/09	We	18:36	Fog,	Dark Dark Daylight	Single vehicle Angle Rear end	P.D. only P.D. only Non-fatal	V1 S V2 W	Loose snow Ice Ice Dry Dry	Going ahead Turning left Going ahead Going ahead Slowing or	Passenger van Automobile, station Automobile, station Automobile, station Automobile, station	Animal - wild Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle		0 0 0
4 5 6 7	2010/07/05 2010/07/09 2011/09/15 2012/06/22	Frid Thu	15:21 10:14	Clear Clear	, ,	-	P.D. only P.D. only P.D. only P.D. only	V2 E V1 N V2 E V1 W	Dry Dry Wet Wet Dry Dry Dry	Turning right Turning left Reversing Going ahead Going ahead Slowing or Slowing or	Automobile, station Passenger van Pick-up truck Passenger van Automobile, station Automobile, station Automobile, station	Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle Ditch Other motor vehicle Other motor vehicle		0 0 0 0
NAVAN RD 8 Former Municip COLLISION ID	ality: Cumber	rland	D TIME	ENV		ontrol: Traffic s	•	DIR	Numbe SURFACE COND'N	er of Collisions: 5 VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
8 9	2008/03/14 2008/03/15				Daylight Daylight	0	P.D. only P.D. only	V2 S	Dry Dry Slush Slush	Going ahead Turning left Slowing or Turning right	Automobile, station Automobile, station Pick-up truck Pick-up truck	Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle		0 0
10 11 12	2011/03/16 2012/02/10 2012/11/22	Frid	15:01	Clear	Dark Daylight Dark	Rear end Angle Sideswipe	P.D. only Non-fatal P.D. only	V2 S V1 E V2 N	Wet Wet Dry Dry Dry Dry	Going ahead Stopped Going ahead Going ahead Overtaking Stopped	Automobile, station Automobile, station Passenger van Automobile, station Automobile, station Automobile, station	Skidding/Sliding Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle		0 0 0

BRIAN COBURN & TENTH LINE ROAD

Former Municipality: Cumberland	Traffic Control: Signal		Number of Collisions: 10	
COLLISION ID DATE DAY TIME ENV	IMPACT TYPE LIGHT CLA	SURFA		DRIVER No. FIRST EVENT ACTION PED
13 2011/01/15 Sat 18:04 Snow	Dark Rear end P.D.	D. only V1 N Loose si V2 N Loose si		Skidding/Sliding 0 Other motor vehicle
14 2010/09/18 Sat 12:20 Clear	Daylight Rear end Non	on-fatal V1 S Dry V2 S Dry	- J	Other motor vehicle 0 Other motor vehicle
15 2011/03/21 Mo 16:18 Snow	Daylight Rear end Non	on-fatal V1 S Slush V2 S Slush		Other motor vehicle 0 Other motor vehicle
16 2011/10/11 Tue 12:57 Clear	Daylight Turning Non	on-fatal V1 S Dry V2 N Dry	· ····································	Other motor vehicle 0 Other motor vehicle
17 2012/09/21 Frid 17:04 Rain	Daylight Turning P.D.	D. only V1 E Wet V2 W Wet	Turning left Automobile, station	Other motor vehicle 0 Other motor vehicle
18 2012/06/02 Sat 14:55 Rain	Daylight Turning Non	on-fatal V1 S Wet V2 N Wet V3 N Wet V4 S Wet	Going ahead Car and trailer Going ahead Automobile, station	Other motor vehicle 0 Other motor vehicle Other motor vehicle Other motor vehicle
19 2009/12/10 Thu 15:29 Freezin	ng Daylight Angle Non	on V1 S Ice V2 E Loose si		Other motor vehicle 0 Other motor vehicle
20 2008/03/10 Mo 16:21 Clear	Daylight Angle P.D.	D. only V1 W Wet V2 S Wet	5	Other motor vehicle 0 Other motor vehicle
21 2009/02/02 Mo 18:38 Clear	Dark Approaching Non	on-fatal V1 N Packed V2 S Packed	· · · · · · · · · · · · · · · · · · ·	Other motor vehicle 0 Other motor vehicle
22 2008/01/11 Frid 07:26 Freezin	ng Dawn Single vehicle Non	on-fatal V1 S Loose si	now Going ahead Pick-up truck	Roll over 0

WALL RD, DENISE AVE to MONIQUE AVE

Former Municip	ality: Cumb	erland	Traffic Control: No con	trol		Numbe	er of Collisions: 1				
COLLISION			IMPACT TYPE			SURFACE	VEHICLE			DRIVER	No.
ID	DATE	DAY TIME ENV	LIGHT	CLASS	DIR	COND'N	MANOEUVRE	VEHICLE TYPE	FIRST EVENT	ACTION	PED
23	2008/06/0	6 Frid 19:30 Clear	Daylight Single vehicle	P.D. only	V1 W	Dry	Going ahead	Automobile, station	Unattended vehicle		0

WALL RD, MONIQUE AVE to TENTH LINE RD

Former Municip	oality: Cumberla	Ind		Traffic Co	ontrol: No cont	rol			Numbe	r of Collisions: 5				
COLLISION ID		AY TI	ME E		IMPACT TYPE	CLASS	DIR		SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
24	2009/04/07 T	ue 22:	:43 Cl	ear Dark	Approaching	Non-fatal	V1 V2		lce lce	Going ahead Going ahead	Passenger van Passenger van	Other motor vehicle Other motor vehicle		0
25	2010/01/18 N	1o 05:	:40 Fr	eezing Dark	Single vehicle	P.D. only	V1	W	Ice	Going ahead	Pick-up truck	Skidding/Sliding		0
26	2010/06/19 S	at 14:	:00 Cl	ear Daylight	Single vehicle	P.D. only	V1	W	Wet	Going ahead	Passenger van	Skidding/Sliding		0
27 28	2010/07/22 T 2012/06/17 S			, 0	Single vehicle Single vehicle	,			Dry Dry	Changing lanes Going ahead	Pick-up truck Automobile, station	Ran off road Ran off road		0 0

Collision Main Detail Summary

OnTRAC Reporting System

TENTH LINE RD, HARVEST VALLEY to SOUTHFIELD WAY

Former Municipa	ality: Cumber	rland			Traffic Co	ontrol: No cont	rol		Numbe	er of Collisions: 2				
COLLISION ID	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
1 2	2011/01/01 2012/01/12				Dark Daylight	Single vehicle Single vehicle	,		Wet Slush	Going ahead Going ahead	Automobile, station Automobile, station	Ran off road Ran off road		0 0
TENTH LINE	RD, HARVE	ST \	/ALLE	Y to W	ALL RD									
Former Municipa	ality: Cumber	land			Traffic Co	ontrol: No cont	rol		Numbe	er of Collisions: 5				
COLLISION ID	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
3 4	2010/05/22 2010/06/12					Single vehicle Rear end	Non-fatal P.D. only		Wet Dry Dry	Going ahead Going ahead Stopped	Pick-up truck Automobile, station Automobile, station	Skidding/Sliding Other motor vehicle Other motor vehicle		0 0
5	2010/07/29	Thu	23:56	Clear	Dark	Single vehicle	P.D. only	-	Dry	Reversing	Automobile, station	Ditch		0
6 7	2012/08/03 2012/12/09				Daylight Dark	Single vehicle Single vehicle			Dry Ice	Going ahead Going ahead	Truck and trailer Automobile, station	Other Fixed Objects Skidding/Sliding		0 0
HARVEST VA			LINE	-										
HARVEST VA			LINE	-	Traffic Co	ontrol: Traffic s	signal		Numbe	er of Collisions: 1				
-	ality: Cumber	land	LINE	-		ontrol: Traffic s	•	DIR	Numbe SURFACE COND'N	er of Collisions: 1 VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
Former Municipa	DATE 2012/07/09	rland DAY Mo	TIME 16:54	ENV Clear	LIGHT Daylight	IMPACT TYPE	CLASS		SURFACE	VEHICLE	VEHICLE TYPE Automobile, station	FIRST EVENT Ditch		
Former Municipa COLLISION ID 8	DATE 2012/07/09 RD, HARVE	Tand DAY Mo ST V	TIME 16:54	ENV Clear Y to SC	LIGHT Daylight DUTHFIE	IMPACT TYPE	CLASS P.D. only		SURFACE COND'N Dry	VEHICLE MANOEUVRE				PED
Former Municipa COLLISION ID 8 TENTH LINE	DATE 2012/07/09 RD, HARVE ality: Cumber	DAY Mo SST \ Jand	TIME 16:54	ENV Clear EY to SC	LIGHT Daylight DUTHFIE Traffic Co	IMPACT TYPE Single vehicle ELD	CLASS P.D. only		SURFACE COND'N Dry	VEHICLE MANOEUVRE Turning right				PED
Former Municipa COLLISION ID 8 TENTH LINE Former Municipa COLLISION	DATE 2012/07/09 RD, HARVE ality: Cumber	rland DAY Mo EST V rland DAY	TIME 16:54 /ALLE TIME	ENV Clear Y to SC ENV	LIGHT Daylight DUTHFIE Traffic Co LIGHT	IMPACT TYPE Single vehicle ELD pontrol: No cont	CLASS P.D. only	V1 N DIR	SURFACE COND'N Dry Numbe SURFACE	VEHICLE MANOEUVRE Turning right er of Collisions: 4 VEHICLE	Automobile, station	Ditch FIRST EVENT Other motor vehicle Other motor vehicle Other motor vehicle	ACTION DRIVER	PED 0 No.
Former Municipa COLLISION ID 8 TENTH LINE Former Municipa COLLISION ID	DATE 2012/07/09 RD, HARVE ality: Cumber DATE	Mo ST V Iand DAY Frid	TIME 16:54 /ALLE TIME 13:06 18:15	ENV Clear EY to SC ENV Rain Rain	LIGHT Daylight DUTHFIE Traffic Co LIGHT Daylight Dark	IMPACT TYPE Single vehicle SLD Sontrol: No cont IMPACT TYPE Rear end	CLASS P.D. only rol CLASS	V1 N DIR V1 N V2 N V3 N V4 N V4 N V1 S	SURFACE COND'N Dry Number SURFACE COND'N Wet Wet Wet Wet	VEHICLE MANOEUVRE Turning right er of Collisions: 4 VEHICLE MANOEUVRE Going ahead Stopped Stopped	Automobile, station VEHICLE TYPE Automobile, station Automobile, station Pick-up truck	Ditch FIRST EVENT Other motor vehicle Other motor vehicle	ACTION DRIVER	PED O No. PED

October 8, 2013

Page 1 of 1

FROM: 2010/01/01 TO: 2013/01/01

Collision Main Detail Summary

OnTRAC Reporting System

TENTH LINE RD, HARVEST VALLEY to WALL

Former Municipality: Cumberland	Traffic Control: No control	Number of Co	ollisions: 13	
COLLISION ID DATE DAY TIME ENV	IMPACT TYPE LIGHT CLASS		EHICLE NOEUVRE VEHICLE TYPE FIRST EVENT	DRIVER No. ACTION PED
1 2008/08/06 We 23:48 Clear	Dark Single vehicle P.D. only	y V1 S Mud Going	g ahead Automobile, station Ran off road	0
2 2008/09/03 We 14:59 Clear	Daylight Turning Non-fatal	,	ing left Delivery van Other motor vehicle g ahead Automobile, station Other motor vehicle	0
3 2008/09/08 Mo 18:43 Clear	Daylight Single vehicle Non-fatal		g ahead Pick-up truck Pole (utility, tower)	0
4 2008/12/02 Tue 12:45 Clear	Daylight Turning P.D. only	V2 S Mud Turni	g ahead Automobile, station Other motor vehicle ing left Pick-up truck Other motor vehicle	0
5 2009/02/18 We 16:03 Snow	Daylight Approaching P.D. only		g ahead Pick-up truck Other motor vehicle g ahead Automobile, station Other motor vehicle	0
6 2009/02/25 We 07:07 Clear	Dawn Single vehicle P.D. only	y V1 S Dry Going	g ahead Automobile, station Roll over	0
7 2009/11/28 Sat 01:53 Rain	Dark Single vehicle Non-fatal	I V1 S Wet Going	ig ahead Pick-up truck Ran off road	0
8 2010/05/22 Sat 11:38 Rain	Daylight Single vehicle Non-fatal	I V1 N Wet Going	g ahead Pick-up truck Skidding/Sliding	0
9 2010/06/12 Sat 18:04 Clear	Daylight Rear end P.D. only	y V1 S Dry Going V2 S Dry Stop	g ahead Automobile, station Other motor vehicle ped Automobile, station Other motor vehicle	0
10 2010/07/29 Thu 23:56 Clear	Dark Single vehicle P.D. only	y V1 S Dry Reve	ersing Automobile, station Ditch	0
11 2012/08/03 Frid 06:30 Clear	Daylight Single vehicle P.D. only	V1 N Dry Goine	a ahead Truck and trailer Other Fixed Objects	0
12 2012/12/09 Sun 21:57 Drifting			g ahead Automobile, station Skidding/Sliding	0
13 2009/11/10 Tue 13:50 Clear	Daylight Rear end Non-fatal		ing right Pick-up truck Other motor vehicle Other motor vehicle	0

FROM: 2010/01/01 TO: 2013/01/01

TENTH LINE RD, NAVAN RD to WALL RD

Fo	rmer Municip	ality: Cumb	perland		Traffic Control: No cont	rol		Numbe	r of Collisions: 2				
(COLLISION				IMPACT TYPE			SURFACE	VEHICLE			DRIVER	No.
	ID	DATE	DAY T	TIME ENV	LIGHT	CLASS	DIR	COND'N	MANOEUVRE	VEHICLE TYPE	FIRST EVENT	ACTION	PED
14		2009/06/1	4 Sun 14	4:12 Clear	Daylight Rear end	P.D. only	V1 N V2 N	Dry Dry	Overtaking Going ahead	Motorcycle Pick-up truck	Other motor vehicle Other motor vehicle		0
15		2009/06/1	7 We 19	9:50 Clear	Daylight Single vehicle	P.D. only	V1 N	Dry	Going ahead	Automobile, station	Animal - wild		0

TENTH LINE RD, HARVEST VALLEY to SOUTHFIELD

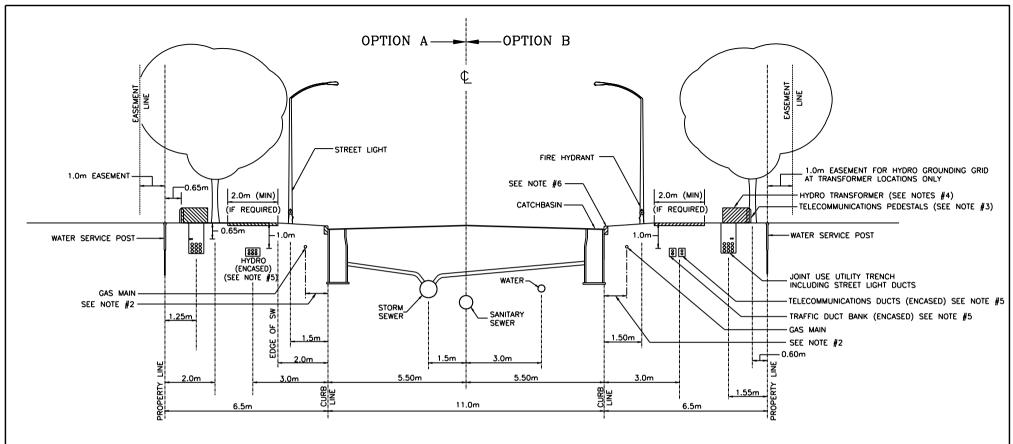
Former Muni	cipality: Cumberland	Traffic Control: No control	Numb	er of Collisions: 2			
COLLISIO ID	ON DATE DAY TIME ENV	IMPACT TYPE LIGHT CLASS	SURFACE DIR COND'N	VEHICLE MANOEUVRE VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
16	2009/02/02 Mo 18:38 Clear	Dark Approaching Non-fata	al V1 N Packed snow V2 S Packed snow	Going ahead Automobile, statior Going ahead Pick-up truck	Other motor vehicle Other motor vehicle		0
17	2009/04/18 Sat 02:43 Clear	Dark Single vehicle P.D. only	y V1 N Dry	Going ahead Automobile, station	Skidding/Sliding		0

TENTH LINE RD & WALL RD

Former Municip	ality: Cumberland		Traffic Control: Stop sign Number of Collisions: 6								
COLLISION ID	DATE DAY	TIME ENV	IMPACT TYPE LIGHT	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	DRIVER ACTION	No. PED
18	2010/02/17 We	09:19 Snow	Daylight Single vehicle	P.D. only	V1 N	Slush	Going ahead	Automobile, station	Ran off road		0
19	2010/09/29 We	16:40 Clear	Daylight Approaching	Non-fatal	V1 N V2 S	Dry Dry	Going ahead Going ahead	Truck - closed Pick-up truck	Other motor vehicle Other motor vehicle		0
20		11:59 Clear	Daylight Angle	Non-fatal	V1 W V2 S	Dry Loose sand or	Going ahead Going ahead	Pick-up truck Automobile, station	Other motor vehicle Other motor vehicle		0
21		08:19 Clear	Daylight Angle	P.D. only	V2 S	Dry Dry	Going ahead Going ahead	Truck - dump Automobile, station	Other motor vehicle Other motor vehicle		0
22 23	2012/05/08 Tue 2012/08/06 Mo	12:31 Rain 12:33 Clear	Daylight Single vehicle Daylight Angle	P.D. only Non-fatal		Wet Dry Dry	Going ahead Going ahead Going ahead	Automobile, station Pick-up truck Motorcycle	Ran off road Other motor vehicle Other motor vehicle		0 0

– Appendix D –

Standard Residential Road Cross-Sections



NOTES:

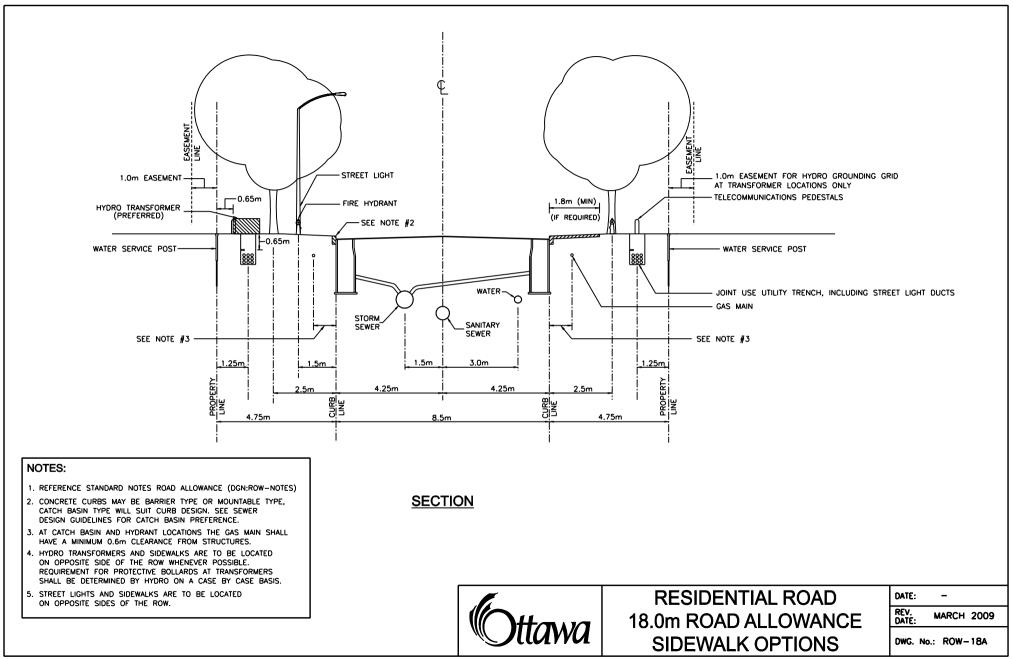
- 1. REFERENCE STANDARD NOTES ROAD ALLOWANCE (DGN: ROW-NOTES)
- 2. AT CATCH BASIN LOCATIONS THE GAS MAIN SHALL HAVE A MINIMUM 0.6m CLEARANCE FROM STRUCTURES.
- 3. ALL PEDESTALS TO BE INSTALLED IN LINE WITH HYDRO TRANSFORMERS OR ON SIDE OF TRENCH AWAY FROM ROAD.
- REQUIREMENT FOR PROTECTIVE BOLLARDS AT TRANSFORMERS SHALL BE DETERMINED BY HYDRO ON A CASE BY CASE BASIS.
- Hydro DuCTS & COMMUNICATION DUCTS (ENCASED) TYPICALLY REQUIRED ON ONE SIDE OF ROW ONLY. PROVIDE 1.0m COVER ON ALL CONCRETE ENCASED DUCTS.
- 6. CONCRETE CURBS MAY BE BARRIER TYPE OR MOUNTABLE TYPE, CATCH BASIN TYPE WILL SUIT CURB DESIGN. SEE SEWER DESIGN GUIDELINES FOR CATCH BASIN PREFERENCE.

SECTION

RESIDENTIAL ROAD 24.0m ROAD ALLOWANCE SIDEWALK OPTIONS

DATE:	-	
REV. DATE:	MARCH	2009

DWG. No.: ROW-24



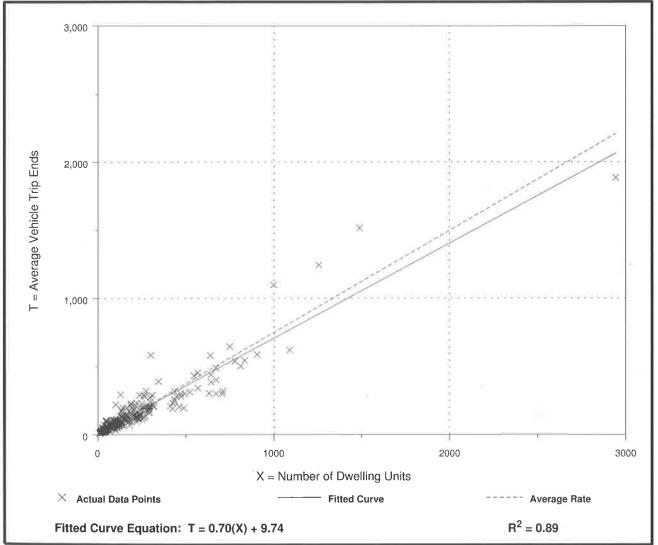
– Appendix E –

Trip Generation Data

Single-Family Detached Housing (210)					
Average Vehicle Trip Ends vs: On a:	Dwelling Units Weekday, Peak Hour of Adjacent Street Traffic One Hour Between 7 and 9 a.m.				
Number of Studies: Avg. Number of Dwelling Units: Directional Distribution:					

Average Rate	Range of Rates	Standard Deviation
0.75	0.33 - 2.27	0.90

Data Plot and Equation

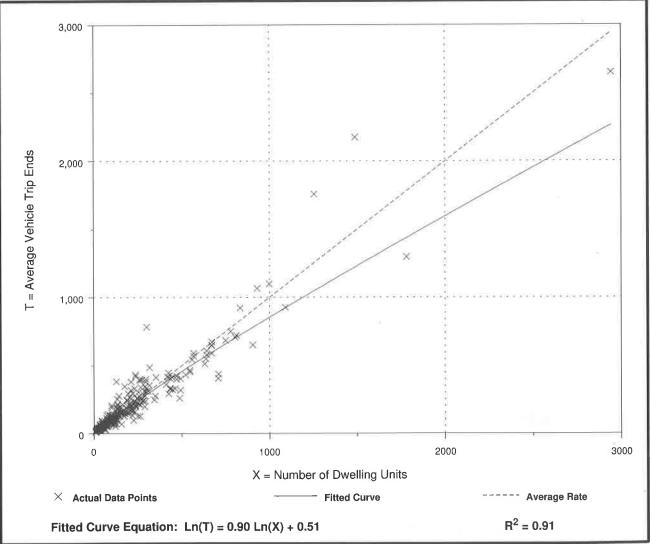


Single-Family Detached Housing (210)			
Average Vehicle Trip Ends vs: On a:	Dwelling Units Weekday, Peak Hour of Adjacent Street Traffic One Hour Between 4 and 6 p.m.		
Number of Studies: Avg. Number of Dwelling Units: Directional Distribution:			

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
1.00	0.42 = 2.98	1.05

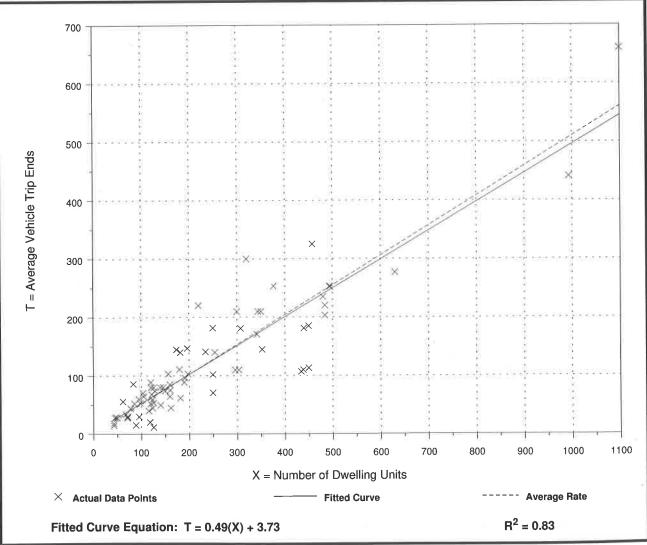
Data Plot and Equation



Apar (2	rtment 20)
Average Vehicle Trip Ends vs: On a:	Dwelling Units Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.
Number of Studies: Avg. Number of Dwelling Units: Directional Distribution:	

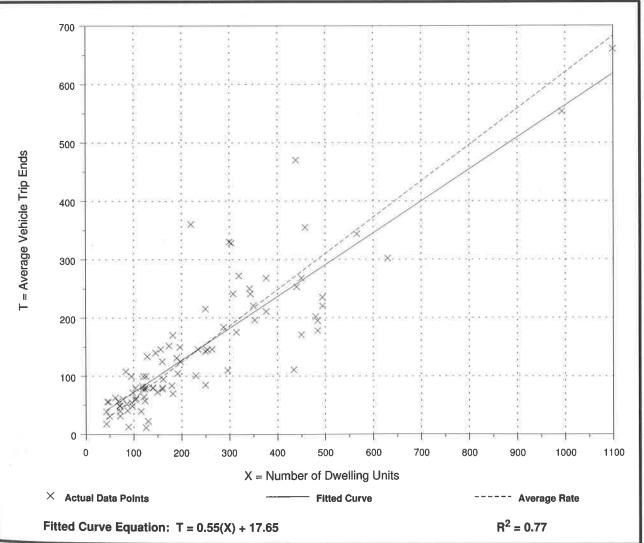
Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.51	0.10 - 1.02	0.73



Apartment (220)						
Average Vehicle Trip Ends vs: On a:	Dwelling Units Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.					
Number of Studies:						
Avg. Number of Dwelling Units:	233					

Average Rate	Range of Rates	Standard Deviation		
0.62	0.10 - 1.64	0.82		



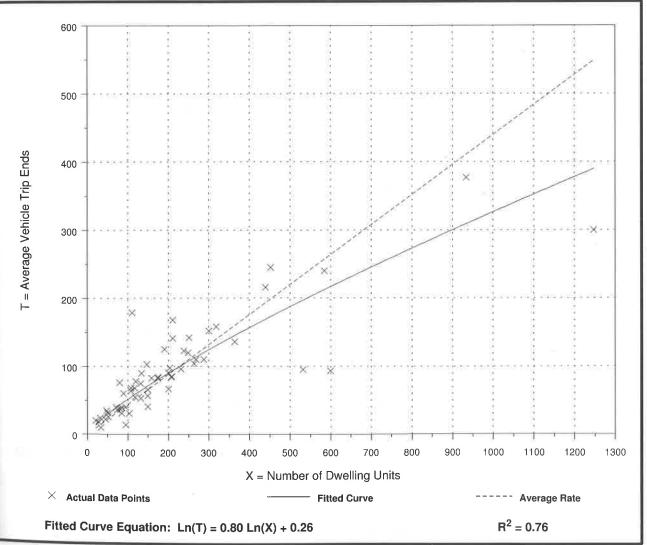
Residential Condominium/Townhouse (230)

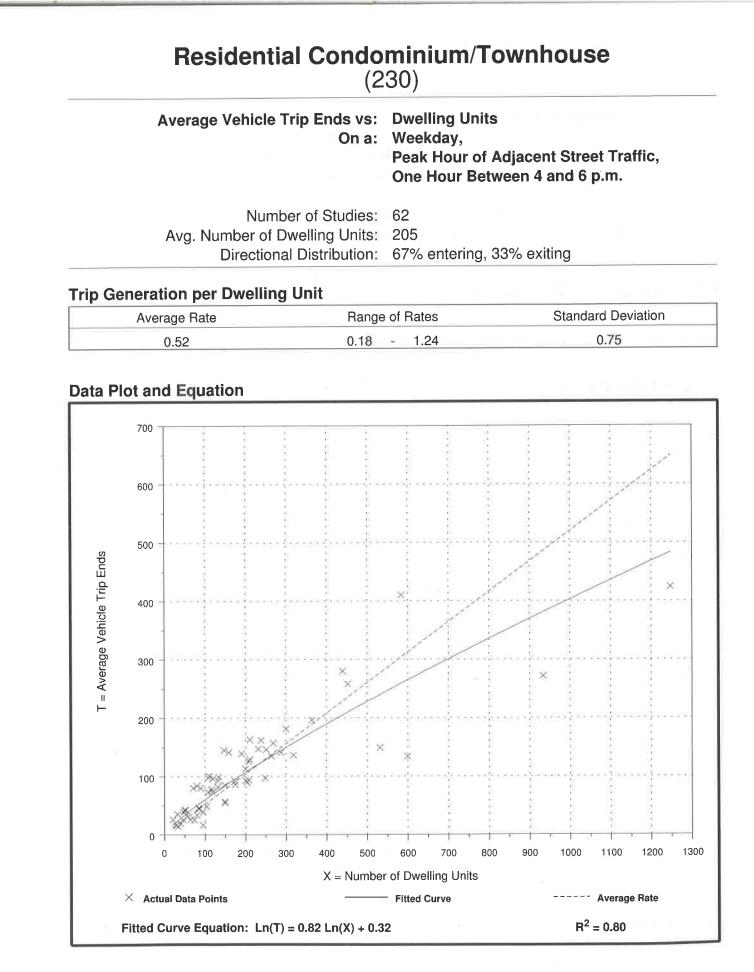
Average Vehicle Trip Ends vs: Dwelling Units On a: Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.

Number of Studies: 59 Avg. Number of Dwelling Units: 213 Directional Distribution: 17% entering, 83% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.44	0.15 - 1.61	0.69





6 Trip Generation, 9th Edition • Institute of Transportation Engineers

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CONMERCIAL SITE GENERATION RATES

Blended Retail Centre Trlp Generation:	AM Peak			DAT Develo			C			
AVERAGE (trip/hectare)	102	57%	43%	PM Peak 226	51%	49%	Saturday Peak 277	50%	50%	Average Pass-By Trips 40%
				Ave	arage Rate					
LAND USES	RATE/1000 soft	AM %IN	%OUT	RATE/1000 saft	PM %IN	%OUT	SA RATE/1000 sqft	FURDAY %IN	%OUT	ITE D D
Pharmacy	2.94	65%	35%	8.4	49%	51%	10.68	49%	51%	ITE Pass-By % 49%
Supermarket	3.4	62%	33%	9.48	49% 51%	49%	10.65	49%	49%	49% 30%
Quality Restaurant	0.81	50%	50%	7,49	67%	33%	10.82	59%	43%	44%
Specialty Retail	0	50%	50%	2.71	44%	56%	2.71	44%	56%	40%
Coffee Shop	100,58	51%	49%	42.8	50%	50%	84.52	50%	50%	40%
High-Turnover Restaurant	10.81	55%	45%	9.85	60%	40%	14.07	53%	47%	50%
Gas Station	11.84	51%	49%	13.86	51%	49%	19.46	50%	50%	47%
Apparel Store	0	50%	50%	3.83	50%	50%	3.83	50%	50%	44%
Office Supply Superstore	0	50%	50%	3.4	53%	47%	3.4	50%	50%	40%
							20			
Site #1 (2.90ha) 1465 Merivale Rd.	AM Trips	IN	OUT	PM Trips	IN	OUT	Saturday Trips	IN	OUT	
Pharmacy	51			145			184			
Supermarket	117			327			367			
Quality Restaurant	5			48			70			
Specialty Retail	0			58			58			
TOTAL	173			578			679			
Generation per Hectare	60	62%		199	51%		234	50%		38%
Site #2 (4.43ha) 1675 Tenth Line Rd	AM Trips	IN	OUT	PM Trips	IN	OUT	Saturday Trips	IN	OUT	
Supermarket	110			306			344			
Pharmacy	101			290			368			
Coffee Shop	216			92			182			
High-Turnover Restaurant	88			80			114			
Specialty Retail	0			100			100			
Gas Station	95			111			156			
TOTAL	610			979			1264			
Generation per Hectare	138	56%		221	50%		285	50%		40%
Site #3 (3.62ha) 1811 Robertson Rd.	AM Trips	IN	OUT	PM Trips	IN	OUT	Saturday Trips	IN	OUT	
Supermarket	114			318			357 🔨			
Apparel Store	0			192			192			
Pharmacy	38			109			139			
Office Supply Superstore	о <u>о</u>			54			54			
Coffee Shop	211			90			177			
Specialty Retail	0			91			91			
High-Turnover Restaurant	23			21			30			
Quality Restaurant	7			64			93			
TOTAL	393			938			1132			
Generation per Hectare	109	56%		259	51%		313	50%		40%

1.8

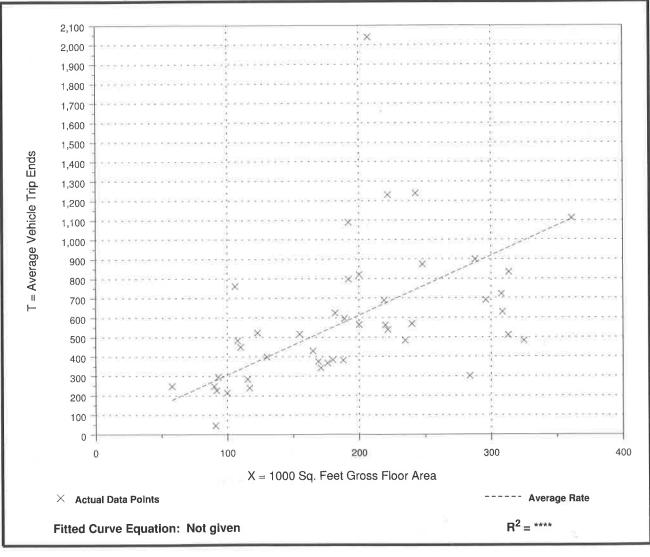
High School (530)

Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area On a: Weekday, A.M. Peak Hour

Number of Studies:	44
Average 1000 Sq. Feet GFA:	194
Directional Distribution:	71% entering, 29% exiting

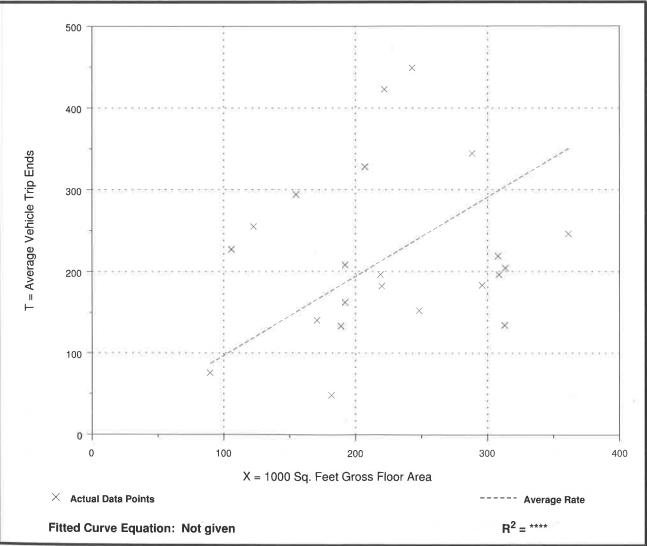
Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.06	0.51 - 9.86	2.36



High School (530)						
•	1000 Sq. Feet Gross Floor Area Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.					
Number of Studies:	22					
Average 1000 Sq. Feet GFA:	225					
Directional Distribution:	54% entering, 46% exiting					

Average Rate	Range of Rates	Standard Deviation
0.97	0.27 - 2.14	1.11



– Appendix F –

Intersection Capacity Analysis

Existing (2013) Traffic

1: Tenth Line Road & Brian Coburn Boulevard Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	t,		3	1	7	7	† ‡>		٦	≜ t}	
Traffic Volume (vph)	70	56	30	23	476	233	115	301	26	80	173	68
Future Volume (vph)	70	56	30	23	476	233	115	301	26	80	173	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	1000	0.0	55.0	1000	55.0	100.0	1000	0.0	100.0	1000	0.0
Storage Lanes	1		0.0	1	-	1	100.0		0.0	100.0	-	0.0
Taper Length (m)	20.0		0	20.0			20.0		U	20.0		U
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt	1.00	0.947	1.00	1.00	1.00	0.850	1.00	0.988	0.00	1.00	0.957	0.00
Fit Protected	0.950	0.047		0.950		0.000	0.950	0.000		0.950	0.001	1.121
Satd. Flow (prot)	1695	1690	0	1695	1784	1517	1695	3350	0	1695	3244	0
Flt Permitted	0.230	1000	U	0.698	1104	1017	0.595	0000	U	0.545	0244	0
Satd. Flow (perm)	410	1690	0	1245	1784	1517	1062	3350	0	972	3244	0
Right Turn on Red	10	1000	Yes	1240	1104	Yes	1002	0000	Yes	512	5244	Yes
Satd. Flow (RTOR)		32	163			245		13	103		72	103
Link Speed (k/h)		60			60	240		60			60	-
Link Distance (m)		1433.8			622.5			183.3			310.4	
Travel Time (s)		86.0			37.4			11.0			18.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0.95	59	32	24	501	245	121	317	0.95	84	182	0.95
	/4	09	52	24	501	240	121	317	21	04	102	12
Shared Lane Traffic (%)	74	91	0	24	501	245	121	344	0	84	254	0
Lane Group Flow (vph)		NA	U	Perm	NA	Perm	Perm	NA	U		Z34 NA	U
Turn Type	Perm	4		Penn	8	Feim	Feim	2		Perm	NA 6	
Protected Phases	4	4		0	0	8	2	2		0	0	11
Permitted Phases	4	4		8 8	8	8	2	2		6 6	6	
Detector Phase	4	4		0	0	0	2	2		0	0	
Switch Phase	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	-
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	31.4	31.4		31.4	31.4	31.4	29.0	29.0		29.0	29.0	
Total Split (s)	42.0	42.0		42.0	42.0	42.0	48.0	48.0		48.0	48.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%	46.7%	53.3%	53.3%		53.3%	53.3%	
Maximum Green (s)	35.6	35.6		35.6	35.6	35.6	42.0	42.0		42.0	42.0	
Yellow Time (s)	3.7	3.7	_	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	2.7	2.7		2.7	2.7	2.7	2.3	2.3		2.3	2.3	1.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4	6.0	6.0		6.0	6.0	
Lead/Lag		and a state of the										
Lead-Lag Optimize?	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	vil 11
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	-
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0	16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	-
Act Effct Green (s)	28.2	28.2		28.2	28.2	28.2	42.3	42.3		42.3	42.3	
Actuated g/C Ratio	0.34	0.34		0.34	0.34	0.34	0.51	0.51		0.51	0.51	-
v/c Ratio	0.53	0.15		0.06	0.83	0.36		0.20		0.17	0.15	1000
Control Delay	37.0	13.1		17.7	37.2	4.2	14.6	12.2		14.2	9.0	_
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	1000
Total Delay	37.0	13.1		17.7	37.2	4.2	14.6	12.2		14.2	9.0	

Lanes, Volumes, Timings dhook

Synchro 9 Report Page 1

1: Tenth Line Road & Brian Coburn Boulevard Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NET	NBR	SBL	SBT	SBR
LOS	D	В	a ly are	В	D	А	В	В		В	А	1. 2.
Approach Delay		23.8			26.1			12.8			10.3	
Approach LOS		С			С	100		В			В	
Queue Length 50th (m)	9.2	6.3		2.5	71.2	0.0	10.4	14.7		7.0	7.7	
Queue Length 95th (m)	23.5	15.5		7.4	107.4	13.6	23.5	25.5		17.1	15.7	
Internal Link Dist (m)		1409.8			598.5			159.3			286.4	
Turn Bay Length (m)	40.0			55.0		55.0	100.0			100.0		
Base Capacity (vph)	177	747		537	770	794	541	1712		495	1687	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.42	0.12		0.04	0.65	0.31	0.22	0,20		0.17	0.15	
Intersection Summary						Sec. 1		- 1			- 11 - 11	
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 83	3											
Natural Cycle: 65												
Control Type: Semi Act-U	ncoord											
Maximum v/c Ratio: 0.83												
Intersection Signal Delay:	19.3			Ir	tersection	n LOS: B						
Intersection Capacity Utiliz	zation 73.4%	1.1		10	CU Level	of Service	D					
Analysis David (min) 45	201011 7 0.4 /0			I.	JO LOVEI (.0					

Analysis Period (min) 15

Splits and Phases: 1: Tenth Line Road & Brian Coburn Boulevard

1 Ø2	-04
48 s	42's
↓ Ø6	4 −
48 s	42 s

7: Tenth Line Road & Navan Road Mer Bleue Expansion - Master Transportation Study

space Struto EBI EBR WBI WBT WBT NBT NBT NBT SBL GBT SBF Lane Configurations N A Y A Y A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A		۶	-+	\mathbf{F}	4	+	*	1	1	1	1	Ļ	1
Traffic Volime (vph) 11 104 4 1 399 128 9 7 3 59 10 84 Future Volume (vph) 1100 1600 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 111 111	Lane Group	EBL	EBT	EBR	WBL	WIBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph) 11 104 4 1 399 128 9 7 3 59 10 84 Iduar Volume (vph) 11 100 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800	Lane Configurations	ሻ	f,		٦	1	1		4			ર્સ	7
ideal Flow (php) 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800	Traffic Volume (vph)	11	104	4	1		128	9	7	3	59	10	
Storage Length (m) 110.0 0.0 70.0 100.0 0.0 0.0 0.0 0.0 Storage Lanes 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <	Future Volume (vph)	11	104	4	1	399	128	9	7	3	59	10	84
Storage Lanes 1 0 1 1 0 0 0 1 Taper Length (m) 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0<	Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Taper Length (m) 20.0 20.0 20.0 20.0 Lane UIL Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.050 FIP Protected 0.950 0.950 0.973 0.973 0.9745 0.975 Satd. Flow (port) 1695 1775 0 1220 1784 1517 0 120 0 0 1329 1517 Satd. Flow (port) 892 1775 0 1220 1784 1517 0 1420 0 0 1329 1517 Satd. Flow (prot) 802 1775 0 1220 1784 1517 0 1420 0 0 0 1329 1517 Satd. Flow (prot) 600 60 60 60 60 60 60 60 60 60 60 60 60 60	Storage Length (m)	110.0		0.0	70.0		100.0	0.0		0.0	0.0		40.0
Lane Util. Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 <td>Storage Lanes</td> <td>1</td> <td></td> <td>0</td> <td>1</td> <td></td> <td>1</td> <td>0</td> <td></td> <td>0</td> <td>0</td> <td></td> <td>1</td>	Storage Lanes	1		0	1		1	0		0	0		1
Frt 0.995 0.850 0.979 0.850 Flt Protected 0.950 0.977 0.959 175 0.959 175 0.959 175 0.917 0.917 0.917 100 111 1517 0.101 1707 0 0.111 1517 0.120 175 0.120 1761 0.111 1517 0.120 1761 0.121 1517 0.120 1761 0.121 1517 0.120 1761 0.121 1517 0.120 1761 0.121 1517 0.120 1761 0.120 1761 0.121 1517 0.120 1761 0.121 1329 1517 1615.5 1517 1615.5 1517 1615.5 1517 1615.5 1517 1615.5 1517 1615.5 1517 1615.5 1517 1615.5 1517 1615.5 1517 1615.5 1517 1615.5 1517 1615.5 1517 1615.5 1517 1615.5 1517 1615.5 1517 1615.5 <td>Taper Length (m)</td> <td>20.0</td> <td></td> <td></td> <td>20.0</td> <td></td> <td></td> <td>20.0</td> <td></td> <td></td> <td>20.0</td> <td></td> <td></td>	Taper Length (m)	20.0			20.0			20.0			20.0		
Fit Protected 0.950 0.950 0.970 0.959 Satd. Flow (prot) 1685 1775 0 1695 1784 1517 0 1707 0 0 1711 1517 Right Turn on Red Yes	Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satal. Flow (prot) 1695 1775 0 1695 1784 1517 0 1707 0 0 1711 1517 FI Permitted 0.517 0 684 0.884 0.884 0.745 0.745 Satd. Flow (perm) 922 1775 0 1220 1784 1517 0 1420 0 0 139 1517 Right Fur on Red Yes Yes Yes Yes Yes Yes Yes Yes Yes Satal Flow (Prot) 1615.8 1615.8 1615.8 1615.8 1779 237.6 368.7 1615.8 118 1615.8 1784 135 9 7 3 62 11 88 144 420 135 9 7 3 62 11 88 1476 1420 135 0 19 0 0 73 88 1470 1470 10.0 10.0 10.0 10.0 10.0 10.0 10.0 <	Frt		0.995				0.850		0.979				0.850
Fit Permitted 0.517 0.684 0.813 0.745 Satd. Flow (perm) 922 1775 0 1220 1784 1517 0 0.20 0 0 1329 1517 Right Turn on Red Yes	Flt Protected	0.950			0.950				0.977			0.959	
Satal, Flow (perm) 922 1775 0 1220 1784 1517 0 1420 0 0 1329 1517 Right Turn on Red Yes Yes Yes Yes Yes Yes Yes Satd. Flow (ROR) 3 135 3 136 60 60 60 60 160 1778 Yes Yes <t< td=""><td>Satd. Flow (prot)</td><td>1695</td><td>1775</td><td>0</td><td>1695</td><td>1784</td><td>1517</td><td>0</td><td>1707</td><td>0</td><td>0</td><td>1711</td><td>1517</td></t<>	Satd. Flow (prot)	1695	1775	0	1695	1784	1517	0	1707	0	0	1711	1517
Right Turn on Red Yes Yes Yes Yes Yes Satd. Flow (RTOR) 3 135 3 88 Link Speed (kh) 60 60 60 60 Link Distance (m) 1579.7 237.6 368.7 1615.8 Travel Time (s) 94.8 14.3 22.1 96.9 Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0	Flt Permitted	0.517			0.684				0.813			0.745	
Satul, Flow (RTOR) 3 135 3 88 Link Speed (k/h) 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 615 615 615 055 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95	Satd. Flow (perm)	922	1775	0	1220	1784	1517	0	1420	0	0	1329	1517
Link Speed (k/h) 60 60 60 60 Link Distance (m) 1579.7 237.6 368.7 1615.8 Travel Time (s) 94.8 14.3 22.1 96.9 Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 </td <td>Right Turn on Red</td> <td></td> <td></td> <td>Yes</td> <td></td> <td></td> <td>Yes</td> <td></td> <td></td> <td>Yes</td> <td></td> <td></td> <td>Yes</td>	Right Turn on Red			Yes			Yes			Yes			Yes
Link Distance (m) 1579.7 237.6 368.7 1615.8 Travel Time (s) 94.8 14.3 22.1 96.9 Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 <td>Satd. Flow (RTOR)</td> <td></td> <td>3</td> <td></td> <td></td> <td></td> <td>135</td> <td></td> <td>3</td> <td></td> <td></td> <td></td> <td>88</td>	Satd. Flow (RTOR)		3				135		3				88
Travel Time (s) 94.8 14.3 22.1 96.9 Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0	Link Speed (k/h)		60			60			60			60	
Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95	Link Distance (m)		1579.7			237.6			368.7			1615.8	
Adj. Flow (vph) 12 109 4 1 420 135 9 7 3 62 11 88 Shared Lane Traffic (%) 12 113 0 1 420 135 0 19 0 0 73 88 Lane Group Flow (vph) 12 113 0 1 420 135 0 19 0 0 73 88 Tum Type Perm NA NA NA NA	Travel Time (s)		94.8			14.3			22.1			96.9	
Shared Lane Traffic (%) Lane Group Flow (vph) 12 113 0 1 420 135 0 19 0 0 73 88 Turn Type Perm NA Satt Satt Satt Satt Satt Satt Satt Satt	Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Lane Group Flow (vph) 12 113 0 1 420 135 0 19 0 0 73 88 Turn Type Perm NA Perm Perm Perm NA NA Perm NA NA Perm NA SA	Adj. Flow (vph)	12	109	4	1	420	135	9	7	3	62	11	88
Turn Type Perm NA Perm	Shared Lane Traffic (%)												
Protected Phases 4 8 2 6 Permitted Phases 4 8 8 2 6 6 Detector Phase 4 4 8 8 2 2 6 6 Switch Phase 5 5 25 25.2 25.2 25.2 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 24.7 </td <td>Lane Group Flow (vph)</td> <td>12</td> <td>113</td> <td>0</td> <td>1</td> <td>420</td> <td>135</td> <td>0</td> <td>19</td> <td>0</td> <td>0</td> <td>73</td> <td>88</td>	Lane Group Flow (vph)	12	113	0	1	420	135	0	19	0	0	73	88
Permitted Phases 4 8 8 2 6 6 Detector Phase 4 4 8 8 2 2 6 6 6 Switch Phase	Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Detector Phase 4 4 8 8 8 2 2 6 6 6 Switch Phase Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 <td< td=""><td>Protected Phases</td><td></td><td>4</td><td></td><td></td><td>8</td><td></td><td></td><td>2</td><td></td><td></td><td>6</td><td></td></td<>	Protected Phases		4			8			2			6	
Switch Phase Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 1	Permitted Phases	4									6		6
Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 </td <td>Detector Phase</td> <td>4</td> <td>4</td> <td></td> <td>8</td> <td>8</td> <td>8</td> <td>2</td> <td>2</td> <td></td> <td>6</td> <td>6</td> <td>6</td>	Detector Phase	4	4		8	8	8	2	2		6	6	6
Minimum Split (s) 25.2 25.2 25.2 25.2 25.2 24.7 24.7 24.7 24.7 24.7 Total Split (s) 57.2 57.2 57.2 57.2 57.2 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7 36.7	Switch Phase												
Total Split (s)57.257.257.257.257.257.236.736.736.736.736.736.7Total Split (%)60.9%60.9%60.9%60.9%60.9%60.9%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%30.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.0 <td< td=""><td>Minimum Initial (s)</td><td></td><td></td><td></td><td>10.0</td><td>10.0</td><td>10.0</td><td>10.0</td><td>10.0</td><td></td><td>10.0</td><td>10.0</td><td>10.0</td></td<>	Minimum Initial (s)				10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Total Split (%)60.9%60.9%60.9%60.9%60.9%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%39.1%30.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.030.0	Minimum Split (s)	25.2	25.2		25.2	25.2	25.2	24.7	24.7		24.7	24.7	24.7
Maximum Green (s) 50.0 50.0 50.0 50.0 50.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 <td>Total Split (s)</td> <td></td> <td>57.2</td> <td></td> <td>57.2</td> <td>57.2</td> <td>57.2</td> <td>36.7</td> <td></td> <td></td> <td>36.7</td> <td>36.7</td> <td>36.7</td>	Total Split (s)		57.2		57.2	57.2	57.2	36.7			36.7	36.7	36.7
Yellow Time (s) 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7	Total Split (%)	60.9%	60.9%		60.9%	60.9%	60.9%	39.1%	39.1%		39.1%	39.1%	39.1%
All-Red Time (s) 3.5 3.5 3.5 3.5 3.5 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Maximum Green (s)	50.0	50.0		50.0	50.0	50.0	30.0	30.0		30.0	30.0	30.0
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 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
Total Lost Time (s) 7.2 7.2 7.2 7.2 7.2 7.2 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7 6.7	All-Red Time (s)	3.5	3.5		3.5	3.5	3.5	3.0	3.0		3.0	3.0	3.0
Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3		0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 <td>Total Lost Time (s)</td> <td>7.2</td> <td>7.2</td> <td></td> <td>7.2</td> <td>7.2</td> <td>7.2</td> <td></td> <td>6.7</td> <td></td> <td></td> <td>6.7</td> <td>6.7</td>	Total Lost Time (s)	7.2	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Lead/Lag												
Recall ModeMaxMaxMaxMaxMaxNoneNoneNoneNoneNoneNoneWalk Time (s)7.07.07.07.07.07.07.07.07.07.07.0Flash Dont Walk (s)10.010.010.010.010.09.09.09.09.09.09.0Pedestrian Calls (#/hr)0000000000Act Effct Green (s)56.356.356.356.356.310.810.810.8Actuated g/C Ratio0.740.740.740.740.140.140.14v/c Ratio0.020.090.000.320.120.090.390.30Control Delay4.64.55.05.71.225.836.010.1Queue Delay0.00.00.00.00.00.00.00.0	Lead-Lag Optimize?												
Walk Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 <	Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Flash Dont Walk (s) 10.0 10.0 10.0 10.0 10.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 <td>Recall Mode</td> <td>Max</td> <td>Max</td> <td></td> <td>Max</td> <td>Max</td> <td>Max</td> <td>None</td> <td>None</td> <td></td> <td>None</td> <td>None</td> <td>None</td>	Recall Mode	Max	Max		Max	Max	Max	None	None		None	None	None
Pedestrian Calls (#/hr) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Pedestrian Calls (#/hr) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	9.0	9.0		9.0	9.0	9.0
Act Effct Green (s)56.356.356.356.356.310.810.810.8Actuated g/C Ratio0.740.740.740.740.740.140.140.14v/c Ratio0.020.090.000.320.120.090.390.30Control Delay4.64.55.05.71.225.836.010.1Queue Delay0.00.00.00.00.00.00.00.0	Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Actuated g/C Ratio0.740.740.740.740.140.140.14v/c Ratio0.020.090.000.320.120.090.390.30Control Delay4.64.55.05.71.225.836.010.1Queue Delay0.00.00.00.00.00.00.00.0		56.3	56.3		56.3	56.3	56.3						10.8
v/c Ratio 0.02 0.09 0.00 0.32 0.12 0.09 0.39 0.30 Control Delay 4.6 4.5 5.0 5.7 1.2 25.8 36.0 10.1 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0													and the second se
Control Delay 4.6 4.5 5.0 5.7 1.2 25.8 36.0 10.1 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0													and the second se
Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
	Total Delay	4.6	4.5		5.0	5.7	1.2		25.8			36.0	10.1

Lanes, Volumes, Timings dhook

Synchro 9 Report Page 1

7: Tenth Line Road & Navan Road Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	А	А	2.00	А	А	А		С		1	D	В
Approach Delay	-	4.5			4.6			25.8			21.8	
Approach LOS		А		5 X.	А			С			С	(The second
Queue Length 50th (m)	0.5	4.4		0.0	20.8	0.0		2.0			9.5	0.0
Queue Length 95th (m)	2.2	10.4		0.5	38.8	5.0		7.4			21.0	11.3
Internal Link Dist (m)		1555.7			213.6			344.7			1591.8	
Turn Bay Length (m)	110.0	-17.		70.0		100.0			10.00			40.0
Base Capacity (vph)	683	1316		904	1322	1159		563			525	653
Starvation Cap Reductn	0	0	1	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	0.02	0.09		0.00	0.32	0,12		0.03			0.14	0.13
Intersection Summary		Sec.	1.257	5.157		1.1.1	2.2		×		de la	
Area Type:	Other											
Cycle Length: 93.9												
Actuated Cycle Length: 76	6											

Natural Cycle: 50		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.39		
Intersection Signal Delay: 8.3	Intersection LOS: A	
Intersection Capacity Utilization 56.0%	ICU Level of Service B	and the second
Analysis Period (min) 15		

Splits and Phases: 7: Tenth Line Road & Navan Road

Ø2	
36.7 s	57.2 s
↓ <i>∅</i> 6	◆ ▼ Ø8
36.7 5	57.2.9

Intersection			E_{2} (2)		1015	1.000	t ne di v	\mathcal{M}	ē., ,	
Intersection Delay, s/veh	16									
Intersection LOS	С	14	201				, in the			
Movement	WBU	WBL	1	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Traffic Vol, veh/h	0	289	The second	442	0	176	63	0	61	161
Future Vol, veh/h	0	289		442	0	176	63	0	61	161
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2		2	2	2	2	2	2	2
Mvmt Flow	0	304		465	0	185	66	0	64	169
Number of Lanes	0	1		1	0	1	0	0	0	1
						1. C. M. N.				
Approach	- 21.72	WB	t up		122	NB			SB	
Opposing Approach			10 3300			SB	1 2 2		NB	
Opposing Lanes		0				1			1	
Conflicting Approach Left		NB							WB	
Conflicting Lanes Left		1				0			2	
Conflicting Approach Right		SB				WB				
Conflicting Lanes Right		1				2			0	
HCM Control Delay	1.8	17.8				13			13.2	
HCM LOS		С				В			В	
									1 A. 198	
Lane		NBLn1	WBLn1	WBLn2	SBLn1					1.0
Vol Left, %		0%	100%	0%	27%					
Vol Thru, %		74%	0%	0%	73%					
Vol Right, %		26%	0%	100%	0%					
Sign Control		Stop	Stop	Stop	Stop					
Traffic Vol by Lane		239	289	442	222					
LT Vol		0	289	0	61					
Through Vol		176	0	0	161				1	1200
RT Vol		63	0	442	0					
Lane Flow Rate		252	304	465	234					
Geometry Grp		2	7	7	2					
Degree of Util (X)		0 444	0.548	0.681	0.397					
Departure Headway (Hd)		0.411								
		5.887	6.483	5.268	6.12					
		5.887 Yes	6.483 Yes	5.268 Yes	6.12 Yes					
Convergence, Y/N Cap		5.887 Yes 611	6.483 Yes 557	5.268 Yes 684	6.12 Yes 589					
Convergence, Y/N Cap Service Time		5.887 Yes 611 3.925	6.483 Yes 557 4.215	5.268 Yes 684 3	6.12 Yes 589 4.159					
Convergence, Y/N Cap		5.887 Yes 611 3.925 0.412	6.483 Yes 557 4.215 0.546	5.268 Yes 684 3 0.68	6.12 Yes 589 4.159 0.397					
Convergence, Y/N Cap Service Time		5.887 Yes 611 3.925 0.412 13	6.483 Yes 557 4.215 0.546 16.8	5.268 Yes 684 3 0.68 18.5	6.12 Yes 589 4.159 0.397 13.2					
Convergence, Y/N Cap Service Time HCM Lane V/C Ratio		5.887 Yes 611 3.925 0.412	6.483 Yes 557 4.215 0.546	5.268 Yes 684 3 0.68	6.12 Yes 589 4.159 0.397					

Intersection									
Intersection Delay, s/veh	10								
Intersection LOS	А	Jan							
Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Traffic Vol, veh/h	0	82	4	0	20	135	0	44	399
Future Vol, veh/h	0	82	4	0	20	135	0	44	399
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	86	4	0	21	142	0	46	420
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.2	8.9	10.6
HCM LOS	А	A	В

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	13%	95%	0%
Vol Thru, %	87%	0%	10%
Vol Right, %	0%	5%	90%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	155	86	443
LT Vol	20	82	0
Through Vol	135	0	44
RT Vol	0	4	399
Lane Flow Rate	163	91	466
Geometry Grp	1	1	1
Degree of Util (X)	0.21	0.135	0.496
Departure Headway (Hd)	4.639	5.359	3.828
Convergence, Y/N	Yes	Yes	Yes
Сар	773	667	942
Service Time	2.668	3.407	1.844
HCM Lane V/C Ratio	0.211	0.136	0.495
HCM Control Delay	8.9	9.2	10.6
HCM Lane LOS	А	А	В
HCM 95th-tile Q	0.8	0.5	2.8

Intersection

Int Delay, s/veh

Contract Contract	7 1 1 1 1 1		178 1999					and the second
Movement	WBL	WBR		NBT	NBR	SBL	SBT	المتتحصير من
Traffic Vol, veh/h	116	12	- ALT	122	19	11	53	
Future Vol, veh/h	116	12		122	19	11	53	
Conflicting Peds, #/hr	0	0		0	0	0	0	
Sign Control	Stop	Stop		Free	Free	Free	Free	
RT Channelized		None			None	set the	None	
Storage Length	0	-		-			200	
Veh in Median Storage, #	0			0	-		0	
Grade, %	0	2		0	-		0	
Peak Hour Factor	95	95		95	95	95	95	
Heavy Vehicles, %	2	2		2	2	2	2	
Mvmt Flow	122	13		128	20	12	56	

Major/Minor	Minor1			Major	Û,		Major2			1
Conflicting Flow All	217	138		()	0	148	0		
Stage 1	138	() () () () () () () () () ()			•	-		- S.		
Stage 2	79	-				(#1				
Critical Hdwy	6.42	6.22			2	127	4.12			
Critical Hdwy Stg 1	5.42	÷.					.			
Critical Hdwy Stg 2	5.42									
Follow-up Hdwy	3.518	3.318			-		2.218			
Pot Cap-1 Maneuver	771	910			•	1. 	1434	-		
Stage 1	889	-			-	1961	:•)	5 9 0		
Stage 2	944				-	-	N			
Platoon blocked, %					<u>_</u>	84		-		
Mov Cap-1 Maneuver	764	910			-	0 in 1	1434	1		
Mov Cap-2 Maneuver	764				-					
Stage 1	889						-			
Stage 2	936	.			-	•				
Approach	WB			NI	3		SB			
HCM Control Delay, s	10.6	Sec. 19)		1.3	× 1	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	
HCM LOS	В									
Minor Lane/Major Mymt	NBT	NBRWBLn1	SBL	SBT						
Capacity (veh/h)	-	- 776	1434							
HCM Lane V/C Ratio	8	- 0.174	0.008	-						

HCM Control Delay (s) 7.5 10.6 0 . = HCM Lane LOS В = А А ÷ 0.6 HCM 95th %tile Q(veh) 0 -* Ļ

1

Intersection

Int Delay, s/veh

			100	12.00			1.00	1.11		10 ⁴ 2 7 10		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	20	4	5	0	4	5	2	159	1	2	171	89
Future Vol, veh/h	20	4	5	0	4	5	2	159	1	2	171	89
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-		None		1.00	None			None			None
Storage Length	-	-	-	-	-	-		-	8 4 8	2	-	-
Veh in Median Storage, #	-	0			0	2 - 2 - 2		0			0	-
Grade, %	-	0	-	-	0	-	12	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	4	5	0	4	5	2	167	1	2	180	94

Major/Minor	Minor2		1	Minor1		1.1.1	N	Aajor1			Major2		
Conflicting Flow All	408	404	227	408	450	168		274	0	0	168	0	0
Stage 1	231	231	-	172	172	-						1	-
Stage 2	177	173	-	236	278	-				-	4	2	2
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22		4.12	14	- 191 191	4.12		1
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-			-	-	-		-
Critical Hdwy Stg 2	6.12	5.52	1.	6.12	5.52			-					-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318		2.218			2.218		÷
Pot Cap-1 Maneuver	554	536	812	554	504	876		1289	•		1410		-
Stage 1	772	713	-	830	756	-				5 4 3	-	-	-
Stage 2	825	756	15 T X 1	767	680	1 1 1 1 1 1		1.0		-		4	
Platoon blocked, %										-		-	4
Mov Cap-1 Maneuver	545	534	812	545	502	876		1289	1 747	×	1410		
Mov Cap-2 Maneuver	545	534	-	545	502	-			-	-	-	-	-
Stage 1	770	712		828	754	5 64		1.00			1.1.1.1.1.1.1		
Stage 2	814	754	-	756	679	-				-	-		-
Approach	EB		1	WB	دانية	100	100	NB	- 1 J.		SB	10	
HCM Control Delay, s	11.6	10.00	1. 1.	10.6				0.1		1.	0.1		
HCM LOS	В			В									
Minor Lane/Major Mymt	NBL	NBT	NBRE	BLn1WBLn1	SBL	SBT	SBR						
Canacity (uch/h)	1000			57C CE0	1440			1				_	-

WINTER EXCITEMENT WEATH	i dan far	A Avenue I	T distant.	the sector is a sector	station and fair	Contraction of the local distance of the loc		CHENTY	
Capacity (veh/h)	1289	10		576	658	1410	1220	(44)	
HCM Lane V/C Ratio	0.002	-		0.053	0.014	0.001	÷	1	
HCM Control Delay (s)	7.8	0		11.6	10.6	7.6	0		
HCM Lane LOS	А	А	-	В	В	А	A	: - 2	
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-		

3

Intersection

Int Delay, s/veh

		j ruhi		11,12	100 The 11-11-2	1010300452	
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Traffic Vol, veh/h	16	84	375	73	25	123	the state
Future Vol, veh/h	16	84	375	73	25	123	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	Strate!	None		None		None	
Storage Length	-	-	-	-	0		
eh in Median Storage, #	-	0	0	1	0		
Grade, %	-	0	0	-	0	-	
Peak Hour Factor	95	95	95	95	95	95	
leavy Vehicles, %	2	2	2	2	2	2	
Nvmt Flow	17	88	395	77	26	129	

Major/Minor	Major1	direct a	1-1-2	N	lajor2		Minor2			- Y -
Conflicting Flow All	472	0			.e	0	555	433		
Stage 1							433	di kanatan d		
Stage 2	-	-				.*:	122			
Critical Hdwy	4.12	*			-	-	6.42	6.22		
Critical Hdwy Stg 1	2	5			360	249	5.42	7 <u>4</u>		
Critical Hdwy Stg 2					-		5.42	1000		
Follow-up Hdwy	2.218	8			<u>.</u>		3.518	3.318		
Pot Cap-1 Maneuver	1090					1.00	493	623		
Stage 1					S.#2	672	654			
Stage 2							903			
Platoon blocked, %					() +)	5 8 5				
Nov Cap-1 Maneuver	1090	11 #			-	14	485	623		
Nov Cap-2 Maneuver	2	- 2			8 6 8	8 6	485	54 I		
Stage 1	1				1	-	654			
Stage 2	ŝ	Ē			(*	18	889	÷.		
								YE 21 - 1		
Approach	EB			and the second s	WB	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	SB			
ICM Control Delay, s	1.3				0		13.2			
HCM LOS							B			
a little and				الماري القرار		1.1				
Minor Lane/Major Mvmt	EBL	EBT	WBT	WER SBLn1		10 10	AND CARE			
Capacity (veh/h)	1090		-	- 594	1	201			1000	= 17
ICM Lane V/C Ratio	0.015	-	4	- 0.262						
CM Control Delay (s)	8.4	0	- 49	- 13.2	1		1.000			
ICM Lane LOS	А	А	-	- B						
ICM 95th %tile Q(veh)	0	-		- 1			1. A.			

LANE SUMMARY

♥ Site: Mer Bleue and Brian Coburn Roundabout - 2013 - Existing - AM

New Site Roundabout

Lane Use a	nd Perform	nance							1 Martin		Barren A.		
	Demand F Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back o Veh	f Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Mer E	Bleue Road		- 1.05										
Lane 1	126	3.0	1015	0.124	100	4.7	LOS A	0.4	3.5	Full	500	0.0	0.0
Lane 2 ^d	126	3.0	1015	0.124	100	4,7	LOS A	0.4	3.5	Full	500	0.0	0.0
Approach	252	3.0		0.124		4.7	LOSA	0.4	3,5				
East: Brian C	Coburn Road	l. J. Con	1 No.			-196 N. X							
Lane 1 ^d	769	3.0	959	0.803	100	21.1	LOS C	7.4	57.6	Full	500	0.0	0.0
Approach	769	3.0		0.803		21.1	LOS C	7.4	57.6				
North: Mer B	leue Road								VIII I				
Lane 1	117	3.0	795	0.147	100	6.0	LOS A	0.5	4.0	Full	500	0.0	0.0
Lane 2 ^d	117	3.0	795	0.147	100	6.0	LOS A	0.5	4.0	Full	500	0.0	0.0
Approach	234	3.0		0.147		6.0	LOS A	0.5	4.0				
Intersection	1255	3.0	12.14	0.803		15.0	LOS B	7.4	57.6				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

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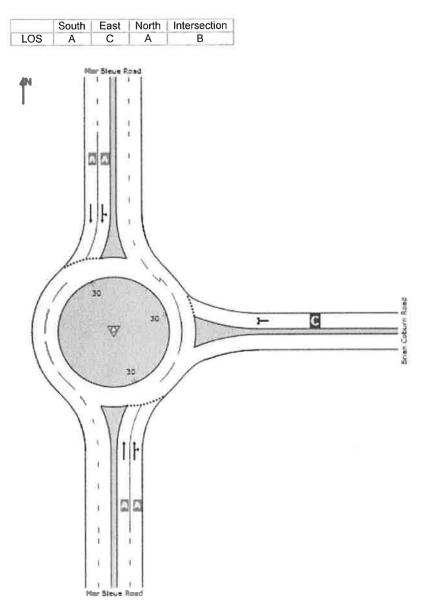
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LEVEL OF SERVICE

V Site: Mer Bleue and Brian Coburn Roundabout - 2013 - Existing - AM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	5	¢,		٦	1	7	ሻ	≜ t}		3	≜ †	
Traffic Volume (vph)	174	331	109	12	193	198	80	337	49	234	378	102
Future Volume (vph)	174	331	109	12	193	198	80	337	49	234	378	102
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	55.0		55.0	100.0		0.0	100.0		0.0
Storage Lanes	1		0	1	1.1	1	1		0	1		0
Taper Length (m)	20.0			20.0			20.0			20.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.963				0.850		0.981			0.968	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1718	0	1695	1784	1517	1695	3326	0	1695	3282	0
Flt Permitted	0.617			0.258	9 - 19 S		0.459			0.513		1.1
Satd. Flow (perm)	1101	1718	0	460	1784	1517	819	3326	0	915	3282	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22				208		24			50	100
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1433.8			622.5			205.7			310.4	
Travel Time (s)	1.1	86.0	1		37.4			12.3			18.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	183	348	115	13	203	208	84	355	52	246	398	107
Shared Lane Traffic (%)								000	02	210	000	107
Lane Group Flow (vph)	183	463	0	13	203	208	84	407	0	246	505	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	U	Perm	NA	v
Protected Phases		4			8			2		1 0111	6	5.1
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												-
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	31.4	31.4	_	31.4	31.4	31.4	29.0	29.0		29.0	29.0	
Total Split (s)	42.0	42.0		42.0	42.0	42.0	48.0	48.0		48.0	48.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%	46.7%	53.3%	53.3%		53.3%	53.3%	
Maximum Green (s)	35.6	35.6		35.6	35.6	35.6	42.0	42.0		42.0	42.0	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	2.7	2.7		2.7	2.7	2.7	2.3	2.3		2.3	2.3	1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4	6.0	6.0		6.0	6.0	
Lead/Lag										0.0	0.0	
Lead-Lag Optimize?	18 M 1											62
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	110	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	-	18.0	18.0	18.0	16.0	16.0		16.0	16.0	100
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)	26.1	26.1		26.1	26.1	26.1	42.3	42.3		42.3	42.3	
Actuated g/C Ratio	0.32	0.32		0.32	0.32	0.32	0.52	0.52		0.52	0.52	
v/c Ratio	0.52	0.81		0.02	0.35	0.33	0.20	0.32		0.51	0.29	1
Control Delay	27.3	35.8		19.3	22.1	4.3	14.1	11.4		19.4	11.3	and the second
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	27.3	35.8		19.3	22.1	4.3	14.1	11.4		19.4	11.3	
	27.0	00.0		10.0	<u> </u>	4.0	17.1	11.4		10.4	11.0	

Lanes, Volumes, Timings dhook

Synchro 9 Report Page 1

	٦	-	*	1	+		1	†	1	\$	Ļ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	С	D		В	С	А	В	В	Y	В	В	and the
Approach Delay		33.4			13.3			11.9			14.0	
Approach LOS		С	1		В			В			В	
Queue Length 50th (m)	22.4	61.4		1.4	23.4	0.0	6.5	15.7		23.3	19.2	
Queue Length 95th (m)	40.7	94.7		5.2	39.3	12.6	17.8	29.5		54.6	35.5	
Internal Link Dist (m)		1409.8			598.5			181.7			286.4	
Turn Bay Length (m)	40.0			55.0		55.0	100.0			100.0		1.22
Base Capacity (vph)	488	774		203	791	788	428	1751		478	1740	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.38	0.60		0.06	0.26	0.26	0.20	0.23		0.51	0.29	
Intersection Summary	1 - S- Ma			6,15,	4.5			Ring	s Palat	i Sur	NU M	
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 80	.9											
Natural Cycle: 65				1.11								
Control Type: Semi Act-Ur	ncoord											
Maximum v/c Ratio: 0.81												

Intersection Signal Delay: 18.8Intersection LOS: BIntersection Capacity Utilization 79.6%ICU Level of Service DAnalysis Period (min) 15ICU Level of Service D

Splits and Phases: 1: Tenth Line Road & Brian Coburn Boulevard

1 ø2	
48 s	42 5 42 5 42 5 42 5 42 5 42 5 42 5 42 5
Ø6	√ 28
48 5	42.5

7: Tenth Line Road & Navan Road Mer Bleue Expansion - Master Transportation Study

	۶	-	\mathbf{r}	4	+	•	1	†	1	1	ţ	~
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SET	SBR
Lane Configurations	٦	4		ሻ	1	1		4		_	र्भ	7
Traffic Volume (vph)	116	440	11	2	150	165	11	20	3	36	20	217
Future Volume (vph)	116	440	11	2	150	165	11	20	3	36	20	217
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	70.0		100.0	0.0		0.0	0.0		40.0
Storage Lanes	1		0	1		1	0		0	0	1	1
Taper Length (m)	20.0			20.0			20.0			20.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996		1100		0.850		0.989				0.850
Flt Protected	0.950	0.000	1.1	0.950				0.984	-		0.969	
Satd. Flow (prot)	1695	1777	0	1695	1784	1517	0	1736	0	0	1729	1517
Flt Permitted	0.657	1111		0.478	1101	TOTT		0.873			0.783	1011
Satd. Flow (perm)	1172	1777	0	853	1784	1517	0	1541	0	0	1397	1517
Right Turn on Red	1172	1111	Yes	000	1104	Yes	0	1041	Yes	U	1007	Yes
Satd. Flow (RTOR)		2	100			174	_	3	100			228
Link Speed (k/h)		60			60	1/ 4	2000	60			60	220
Link Distance (m)		1579.7			237.6			368.7			1615.8	
		94.8			14.3			22.1			96.9	
Travel Time (s) Peak Hour Factor	0.95	94.0 0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
			0.95	0.95		174		0.95				
Adj. Flow (vph)	122	463	12	2	158	174	12	21	3	38	21	228
Shared Lane Traffic (%)	400	ATE	0	0	450	474	0	20	0	0	50	000
Lane Group Flow (vph)	122	475	0	2	158	174	0	36	0	0	59	228
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4		0	8	0	0	2		0	6	^
Permitted Phases	4			8	0	8	2	0		6	0	6
Detector Phase	4	4		8	8	8	2	2		6	6	6
Switch Phase	10.0	10.0		10.0	40.0	10.0	40.0	40.0		40.0	40.0	10.0
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2	25.2	24.7	24.7		24.7	24.7	24.7
Total Split (s)	62.2	62.2		62.2	62.2	62.2	31.7	31.7		31.7	31.7	31.7
Total Split (%)	66.2%	66.2%		66.2%	66.2%	66.2%	33.8%	33.8%		33.8%	33.8%	33.8%
Maximum Green (s)	55.0	55.0		55.0	55.0	55.0	25.0	25.0		25.0	25.0	25.0
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7	_	3.7	3.7	3.7
All-Red Time (s)	3.5	3.5		3.5	3.5	3.5	3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	7.2	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	0
Act Effct Green (s)	56.7	56.7		56.7	56.7	56.7		10.6			10.6	10.6
Actuated g/C Ratio	0.70	0.70		0.70	0.70	0.70		0.13			0.13	0.13
v/c Ratio	0.15	0.38		0.00	0.13	0.16		0.18			0.32	0.58
Control Delay	4.9	6.3		4.0	4.5	1.1		30.8			36.4	11.1
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	160.14		0.0	0.0
Total Delay	4.9	6.3		4.0	4.5	1.1		30.8			36.4	11.1

Lanes, Volumes, Timings dhook

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Synchro 9 Report Page 1

7: Tenth Line Road & Navan Road Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	A	А		А	А	А		С	1000		D	В
Approach Delay		6.0			2.7			30.8			16.3	
Approach LOS		А			А			С			В	
Queue Length 50th (m)	5.1	24.3		0.1	6.6	0.0		4.5			8.2	0.0
Queue Length 95th (m)	11.8	43.7		0.7	13.7	5.3		12.6			18.9	18.3
Internal Link Dist (m)		1555.7			213.6			344.7			1591.8	
Turn Bay Length (m)	110.0			70.0		100.0						40.0
Base Capacity (vph)	818	1241		595	1245	1112		477			430	625
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	0.15	0.38		0.00	0.13	0.16		0.08			0.14	0.36
Intersection Summary	S * 6				10	57						
Area Type:	Other											
Cycle Length: 93.9												12
Actuated Cycle Length: 81	1.2											
Natural Cycle: 55												
Control Type: Semi Act-U	ncoord											
Maximum v/c Ratio: 0.58												

Intersection Capacity Utilization 59.7% Analysis Period (min) 15

Intersection Signal Delay: 8.2

Splits and Phases: 7: Tenth Line Road & Navan Road

Splits and Phases. 7. Ten	In Line Road & Navan Road	
1 Ø2		
31.7 s	62.2 s	
(\$ Ø6	✓ Ø8	
31.7s	62.2.8	

Intersection LOS: A

ICU Level of Service B

Intersection					0.1	n A ann	-	-		D. IIG	100	
ntersection Delay, s/veh	41.3	No. 1	- 1 - 0						1990 C 191			
Intersection LOS	E	1.00	1.1.1		1.1.1				1 M 10, 1			
				-								_
Movement	WBU	WBL	id"it Sr 7	WBR	NBU	1.0	NBT	NBR	SBU	SBL	SBT	
Traffic Vol, veh/h	0	86		193	0		276	329	0	304	220	
Future Vol, veh/h	0	86		193	0		276	329	0	304	220	
Peak Hour Factor	0.95	0.95		0.95	0.95		0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles, %	2	2		2	2		2	2	2	2	2	
Nvmt Flow	0	91		203	0		291	346	0	320	232	
Number of Lanes	0	1		1	0		1	0	0	0	1	
										1.		
Approach		WB				6. The second	NB		11/1	SB		7.
Opposing Approach							SB			NB		
Opposing Lanes		0					1			1		
Conflicting Approach Left		NB								WB		
Conflicting Lanes Left		1					0			2		
Conflicting Approach Right		SB					WB					
Conflicting Lanes Right		1					2			0		
HCM Control Delay		13.7					51.7			43.9		
HCM LOS		В					F			-		
		D					Г			E		
		Б								E		
		NBLn1	WBLn1	WBLn2	SBLn1	- 14 K			1 2			
_ane		126J	WBLn1 100%	WBLn2 0%	SBLn1 58%					E		
ane		NBLn1								E		
.ane /ol Left, % /ol Thru, %		NBLn1 0%	100%	0%	58%					E		
_ane /ol Left, % /ol Thru, % /ol Right, %		NBLn1 0% 46%	100% 0%	0% 0%	58% 42%					E		
.ane /ol Left, % /ol Thru, % /ol Right, % Sign Control		NBLn1 0% 46% 54%	100% 0% 0%	0% 0% 100%	58% 42% 0%							
Lane /ol Left, % /ol Thru, % /ol Right, % Sign Control Fraffic Vol by Lane		NBLn1 0% 46% 54% Stop	100% 0% 0% Stop	0% 0% 100% Stop	58% 42% 0% Stop							
Jane /ol Left, % /ol Thru, % /ol Right, % Sign Control Fraffic Vol by Lane _T Vol		NBLn1 0% 46% 54% Stop 605	100% 0% 0% Stop 86	0% 0% 100% Stop 193	58% 42% 0% Stop 524							
Jane Vol Left, % Vol Thru, % Vol Right, % Sign Control Fraffic Vol by Lane JT Vol Fhrough Vol		NBLn1 0% 46% 54% Stop 605 0	100% 0% 0% Stop 86 86	0% 0% 100% Stop 193 0	58% 42% 0% Stop 524 304							
Lane /ol Left, % /ol Thru, % /ol Right, % Sign Control Graffic Vol by Lane _T Vol Fhrough Vol RT Vol		NBLn1 0% 46% 54% Stop 605 0 276	100% 0% 0% Stop 86 86 86	0% 0% 100% Stop 193 0 0	58% 42% 0% Stop 524 304 220							
Lane Vol Left, % Vol Thru, % Vol Right, % Sign Control Traffic Vol by Lane LT Vol Through Vol RT Vol Lane Flow Rate		NBLn1 0% 46% 54% Stop 605 0 276 329	100% 0% Stop 86 86 0 0	0% 0% 100% Stop 193 0 0 193	58% 42% 0% Stop 524 304 220 0							
Lane Vol Left, % Vol Thru, % Vol Right, % Sign Control Traffic Vol by Lane LT Vol Through Vol RT Vol		NBLn1 0% 46% 54% Stop 605 0 276 329 637	100% 0% Stop 86 86 0 0 91	0% 0% 100% Stop 193 0 0 193 203	58% 42% 0% Stop 524 304 220 0 552							
Lane /ol Left, % /ol Thru, % /ol Right, % Sign Control Fraffic Vol by Lane LT Vol Fhrough Vol RT Vol Lane Flow Rate Geometry Grp Degree of Util (X)		NBLn1 0% 46% 54% Stop 605 0 276 329 637 2	100% 0% Stop 86 86 0 0 91 7	0% 0% 100% Stop 193 0 0 193 203 7	58% 42% 0% Stop 524 304 220 0 552 2							
Lane /ol Left, % /ol Right, % Sign Control Fraffic Vol by Lane .T Vol Fhrough Vol RT Vol .ane Flow Rate Geometry Grp Degree of Util (X) Departure Headway (Hd)		NBLn1 0% 46% 54% Stop 605 0 276 329 637 2 0.97 5.583	100% 0% Stop 86 86 0 0 91 7 0.205 8.145	0% 0% 100% Stop 193 0 0 193 203 7 0.39 6.909	58% 42% 0% Stop 524 304 220 0 552 2 0.917 6.091							
Jane /ol Left, % /ol Thru, % /ol Right, % Sign Control Fraffic Vol by Lane LT Vol Chrough Vol RT Vol Lane Flow Rate Geometry Grp Degree of Util (X) Departure Headway (Hd) Convergence, Y/N		NBLn1 0% 46% 54% Stop 605 0 276 329 637 2 637 2 0.97 5.583 Yes	100% 0% Stop 86 86 0 0 91 7 0.205 8.145 Yes	0% 0% 100% Stop 193 0 0 193 203 7 0.39 6.909 Yes	58% 42% 0% Stop 524 304 220 0 552 2 0.917 6.091 Yes							
Jane /ol Left, % /ol Thru, % /ol Right, % Sign Control Fraffic Vol by Lane JT Vol Chrough Vol RT Vol Lane Flow Rate Geometry Grp Degree of Util (X) Departure Headway (Hd) Convergence, Y/N Cap		NBLn1 0% 46% 54% Stop 605 0 276 329 637 2 637 2 0.97 5.583 Yes 656	100% 0% Stop 86 86 0 0 91 7 0.205 8.145 Yes 444	0% 0% 100% Stop 193 0 0 193 203 7 0.39 6.909 Yes 524	58% 42% 0% Stop 524 304 220 0 552 2 0.917 6.091 Yes 601							
Lane /ol Left, % /ol Thru, % /ol Right, % Sign Control Fraffic Vol by Lane LT Vol Fhrough Vol RT Vol Lane Flow Rate Geometry Grp Degree of Util (X) Departure Headway (Hd) Convergence, Y/N Cap Service Time		NBLn1 0% 46% 54% Stop 605 0 276 329 637 2 637 2 0.97 5.583 Yes 656 3.583	100% 0% Stop 86 86 0 0 91 7 0.205 8.145 Yes 444 5.845	0% 0% 100% Stop 193 0 0 193 203 7 0.39 6.909 Yes 524 4.609	58% 42% 0% Stop 524 304 220 0 552 2 0.917 6.091 Yes 601 4.091							
Lane /ol Left, % /ol Thru, % /ol Right, % Sign Control Traffic Vol by Lane .T Vol Through Vol RT Vol Lane Flow Rate Geometry Grp Degree of Util (X) Departure Headway (Hd) Convergence, Y/N Cap Service Time HCM Lane V/C Ratio		NBLn1 0% 46% 54% Stop 605 0 276 329 637 2 0.97 5.583 Yes 656 3.583 0.971	100% 0% Stop 86 86 0 0 91 7 0.205 8.145 Yes 444 5.845 0.205	0% 0% 100% Stop 193 0 0 193 203 7 0.39 6.909 Yes 524 4.609 0.387	58% 42% 0% Stop 524 304 220 0 552 2 0.917 6.091 Yes 601 4.091 0.918							
ane /ol Left, % /ol Thru, % /ol Right, % Sign Control Fraffic Vol by Lane .T Vol Fhrough Vol RT Vol Lane Flow Rate Geometry Grp Degree of Util (X) Departure Headway (Hd) Convergence, Y/N Cap Service Time		NBLn1 0% 46% 54% Stop 605 0 276 329 637 2 637 2 0.97 5.583 Yes 656 3.583	100% 0% Stop 86 86 0 0 91 7 0.205 8.145 Yes 444 5.845	0% 0% 100% Stop 193 0 0 193 203 7 0.39 6.909 Yes 524 4.609	58% 42% 0% Stop 524 304 220 0 552 2 0.917 6.091 Yes 601 4.091							

Intersection	E I V				3		NUCCO.			1516
Intersection Delay, s/veh	21									
Intersection LOS	С				1.1					
Movement	EBU	EBL		EBR	NEU	NBL	NBT	SBU	SBT	SBR
Traffic Vol, veh/h	0	512		15	0	7	101	0	150	143
Future Vol, veh/h	0	512		15	0	7	101	0	150	143
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2		2	2	2	2	2	2	2
Mvmt Flow	0	539		16	0	7	106	0	158	151
Number of Lanes	0	1		0	0	0	1	0	1	C
and the second second			1.19							
Approach	4 K R P	EB	1.11			NB			SB	
Opposing Approach						SB			NB	
Opposing Lanes		0				1			1	
Conflicting Approach Left		SB				EB				
Conflicting Lanes Left		1				1			0	
Conflicting Approach Right		NB							EB	
Conflicting Lanes Right		1				0			1	
HCM Control Delay		27.6				10.5			13.1	
HCM LOS		D				В			В	
					utu tu ti					
Lane		NBLn1	EBLn1	SBLn1	See. 1	a 24	- Exercit	1		2.7
Vol Left, %		6%	97%	0%			<u></u>			
Vol Thru, %		94%	0%	51%						
Vol Right, %		0%	3%	49%						
Sign Control		Stop	Stop	Stop						
Traffic Vol by Lane		108	527	293						
LT Vol		7	512	0						
Through Vol		101	0	150						
RT Vol		0	15	143						
Lane Flow Rate		114	555	308					1.1	
Geometry Grp		1	1	1						
Degree of Util (X)		0.191	0.817	0.465						
Departure Headway (Hd)		6.053	5.304	5.429						
Convergence, Y/N		Yes	Yes	Yes						
Сар		591	682	663						
Service Time		4.109	3.334	3.473						
HOMI VIO Datia		0 400	0.044	0 405						

13.1

B 2.5

0.193

10.5

В

0.7

0.814

27.6

D

8.6

HCM Lane V/C Ratio

HCM Control Delay

HCM Lane LOS

HCM 95th-tile Q

Intersection

Int Delay, s/veh

	10 10 10						
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Traffic Vol, veh/h	31	9	97	108	13	115	ST30 1170 3
Future Vol, veh/h	31	9	97	108	13	115	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	And Arrist	None	1	None	بواحد الماج	None	
Storage Length	0			-	: - :		
Veh in Median Storage, #	0	1.1.1.1	0			0	
Grade, %	0	-	0	-		0	
Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	33	9	102	114	14	121	

Major/Minor	Minor1		THE IT	Major1		Major2		
Conflicting Flow All	307	159		0	0	216	0	
Stage 1	159	1211			11.11-			
Stage 2	148	-						
Critical Hdwy	6.42	6.22				4.12		
Critical Hdwy Stg 1	5.42	-		-		: - :	-	
Critical Hdwy Stg 2	5.42			2015 20			-	
Follow-up Hdwy	3.518	3.318		-		2.218	-	
Pot Cap-1 Maneuver	685	886				1354		
Stage 1	870			5				
Stage 2	880						100	
Platoon blocked, %				-			-	
Mov Cap-1 Maneuver	677	886				1354		and the second second
Mov Cap-2 Maneuver	677	-		2	-	24	(a)	
Stage 1	870						1.141	
Stage 2	870			<u>1</u>	-	14		
	1114-							
Approach	WB	ov most sit		NB		SB		
HCM Control Delay, s	10.4		${\bf v} = {\bf v}^{*}$	0		0.8		
HCM LOS	В							
Minor Lane/Major Mvmt	NBT	NBRWBLh1	SBL	SBT	14			
Capacity (veh/h)		- 715	1354				3.4.2	Contraction of the
HCM Lane V/C Ratio	-	- 0.059	0.01	-				
HCM Control Delay (s)		- 10.4	7.7	0		S		
ICM Lana LOR		D	٨	٨				

A 0

А

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В

0.2

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HCM Lane LOS

HCM 95th %tile Q(veh)

Intersection

Int Delay, s/veh

				and the second second				- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10		_			
Movement	EBL	EBT	EBR	WBL	WBT	WBR.		NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	103	10	7	1	2	6		3	297	4	1	227	33
Future Vol, veh/h	103	10	7	1	2	6		3	297	4	1	227	33
Conflicting Peds, #/hr	0	0	0	0	0	0		0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	F	Free	Free	Free	Free	Free	Free
RT Channelized	112-1		None		1.5	None		1.5		None		-	None
Storage Length		-		-	-	-		27.1					
Veh in Median Storage, #	74	0			0			-	0		2. State 1.	0	
Grade, %		0	() - :	-	0	-		(=)	0	-	-	0	
Peak Hour Factor	95	95	95	95	95	95		95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2		2	2	2	2	2	2
Mvmt Flow	108	11	7	1	2	6		3	313	4	1	239	35

Major/Minor	Minor2	14 ga		Minor1	e e		Me	ijor 1			Major2	n"-"n	
Conflicting Flow All	583	581	256	588	597	315		274	0	0	317	0	0
Stage 1	258	258		321	321				-				-
Stage 2	325	323	(.)	267	276	195							
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	K = 1 + 1	4.12	1.81	1.9	4.12		
Critical Hdwy Stg 1	6.12	5.52		6.12	5.52	-		•	90		×		(# 5
Critical Hdwy Stg 2	6.12	5.52		6.12	5.52			-		-	-		
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2	.218	論	12	2.218	Ξ÷.	-
Pot Cap-1 Maneuver	424	425	783	421	416	725	1	289	1		1243		
Stage 1	747	694	۲	691	652	-			÷				17
Stage 2	687	650	1.1.5	738	682	100			1.00				1 84
Platoon blocked, %									•				
Mov Cap-1 Maneuver	417	423	783	408	414	725	1	289	-	•	1243	-	1.0-
Mov Cap-2 Maneuver	417	423	-	408	414	-		-	æ2	14	¥	1 11	1
Stage 1	745	693	112,74	689	650	1.1				•		1.1.1.	10
Stage 2	677	648	-	719	681	-		121	: a '/	12		-	14
Approach	EB	1 X II.		WB				NB	01.2		SB		46.
HCM Control Delay, s	(16.9			11.3				0.1			0		
HCM LOS	C			В									
		1						1.4					
Minor Lane/Major Mvmt	NBL	NBT	NBRE	BLn1WBLn1	SBL	SBT	SBR	1					
Capacity (veh/h)	1289	•	in 1 in	429 578	1243	1.000		No. 1.					

Capacity (ven/n)	1289		11.00	429	5/8	1243	1.000		
HCM Lane V/C Ratio	0.002	-	-	0.294	0.016	0.001	-		
HCM Control Delay (s)	7.8	0		16.9	11.3	7.9	0		
HCM Lane LOS	А	Α	-	С	В	A	A	722	
HCM 95th %tile Q(veh)	0	-	-	1.2	0.1	0	-		

Intersection

Int Delay, s/veh

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	103	452	146	68	128	45
Future Vol, veh/h	103	452	146	68	128	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None		None		None
Storage Length	-	-		-	0	2
Veh in Median Storage, #		0	0		0	1
Grade, %	邕	0	0	\sim	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	476	154	72	135	47

Major/Minor	Major1	100	1.1	N	Major2		Minor2		
Conflicting Flow All	225	0			(#)	0	882	189	
Stage 1	÷ .	-					189		
Stage 2	2	2			142	122	693		
Critical Hdwy	4.12						6.42	6.22	
Critical Hdwy Stg 1	÷.				÷.		5.42		
Critical Hdwy Stg 2		-					5.42	-	
Follow-up Hdwy	2.218	-					3.518	3.318	
Pot Cap-1 Maneuver	1344	•				-	317	853	
Stage 1	-				9 4 0	5 - 5	843	-	
Stage 2	÷.					-	496	1. S. 1. A	
Platoon blocked, %		-			142	<u></u>			
Mov Cap-1 Maneuver	1344					۰	282	853	
Mov Cap-2 Maneuver	÷.	÷			ι÷.	27	282		
Stage 1		10.					843		
Stage 2	π.				5 4 2	3 - 0	442	-	
Approach	EB		100		WB	19 20	SB		ΞF
HCM Control Delay, s	1.5				0		27		
HCM LOS		_					D		
				1.2					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR SBLn1	n st u	1000			
Capacity (veh/h)	1344		1. 18	- 341		1		1. 1. 1.	
HCM Lane V/C Ratio	0.081	-	0.571	- 0.534					
HCM Control Delay (s)	7.9	0		- 27					
HCM Lane LOS	А	А	196	- D					
LIGHT OF MUSIC OF TH									

3

HCM 95th %tile Q(veh)

0.3

LANE SUMMARY

♥ Site: Mer Bleue and Brian Coburn Roundabout - 2013 - Existing - PM

New Site Roundabout

Lane Use a				-	No.	10000000				and the second			al li a'
	Demand I Total veh/h	-lows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back o Veh	r Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Mer E	Bleue Road						1997		T. I.		and a second second second		
Lane 1	291	3.0	782	0.371	845	9.2	LOS A	1,6	12.3	Full	500	0.0	0.0
Lane 2 ^d	346	3.0	782	0.443	100	10.4	LOS B	2.1	16.3	Full	500	0.0	0.0
Approach	637	3.0		0.443		9.8	LOSA	2.1	16.3				
East: Brian C	Coburn Road	11.2											
Lane 1 ^d	294	3.0	888	0.331	100	7.7	LOS A	1.0	8.1	Full	500	0.0	0.0
Approach	294	3.0		0.331		7.7	LOS A	1.0	8.1				
North: Mer B	leue Road												
Lane 1 ^d	320	3.0	988	0.324	100	7.0	LOS A	1.5	11.3	Full	500	0.0	0.0
Lane 2	232	3.0	988	0.234	72 ⁵	5.9	LOS A	0.9	7.4	Full	500	0.0	0.0
Approach	552	3.0		0.324		6.5	LOS A	1.5	11.3				
Intersection	1482	3.0		0.443	1 - F.	8.2	LOSA	2.1	16.3				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1,

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program

d Dominant lane on roundabout approach

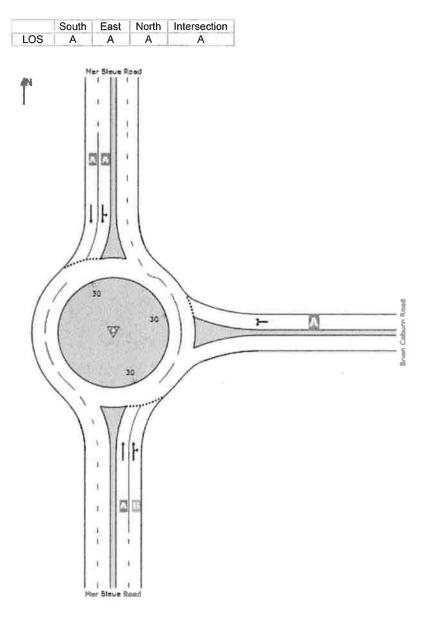
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LEVEL OF SERVICE

Site: Mer Bleue and Brian Coburn Roundabout - 2013 - Existing - PM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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Project: J:\34739-CumbServReport\5.7 Calculations\5.7.6 Roads (Trans)\SIDRA\Mer Bleue and Brian Coburn Roundabout\Mer Bleue Brian Coburn Roundabout - 2025-2031 - BGSG - Feb 17 2016.sip6

Future (2025) Background Traffic

(No Intersection Modifications)

1: Tenth Line Road & Brian Coburn Boulevard Future (2025) Background Traffic - No Mods Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WEL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ef 👘		٦	1	1	٦	<u></u> Φ₽		۲	41	
Traffic Volume (vph)	229	140	61	26	766	257	198	491	32	101	238	192
Future Volume (vph)	229	140	61	26	766	257	198	491	32	101	238	192
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	55.0		55.0	100.0		0.0	100.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	20.0			20.0			20.0			20.0		-
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.955				0.850		0.991			0.933	
Flt Protected	0.950			0.950			0.950			0.950		1.041
Satd. Flow (prot)	1695	1704	0	1695	1784	1517	1695	3360	0	1695	3163	0
Flt Permitted	0.062			0.626			0.220			0.446		
Satd. Flow (perm)	111	1704	0	1117	1784	1517	393	3360	0	796	3163	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31				129		5			137	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1433.8			622.5			183.3			310.4	
Travel Time (s)		86.0			37.4			11.0			18.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	241	147	64	27	806	271	208	517	34	106	251	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	241	211	0	27	806	271	208	551	0	106	453	0
Turn Type	pm+pt	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	_
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	7	4		8	8	8	5	2		6	6	$\mathbf{r} = \mathbf{r}$
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0	10.0	4.0	10.0		10.0	10.0	
Minimum Split (s)	10.4	31.4		31.4	31.4	31.4	10.0	29.0		29.0	29.0	
Total Split (s)	20.5	85.5		65.0	65.0	65.0	15.0	44.5		29.5	29.5	
Total Split (%)	15.8%	65.8%		50.0%	50.0%	50.0%	11.5%	34.2%		22.7%	22.7%	
Maximum Green (s)	14.1	79.1		58.6	58.6	58.6	9.0	38.5		23.5	23.5	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	2.7	2.7		2.7	2.7	2.7	2.3	2.3		2.3	2.3	111
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4	6.0	6.0		6.0	6.0	
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	_
Recall Mode	None	None		None	None	None	None	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		18.0		18.0	18.0	18.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0	0		0		0	0	
Act Effct Green (s)	79.1	79.1		58.6	58.6	58.6	38.5	38.5		23.5	23.5	
Actuated g/C Ratio	0.61	0.61		0.45	0.45	0.45	0.30	0.30		0.18	0.18	
v/c Ratio	1.01/	0.20		0.05	1.00/	0.36	1.01/	0.55		0.74	0.66	
Control Delay	97.0	10.1		20.6	68.2	13.2	105.9	40.6		80.5	39.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	11.0
Total Delay	97.0	10.1		20.6	68.2	13.2	105.9	40.6		80.5	39.4	
	0.10									00.0	50.1	

Lanes, Volumes, Timings dhook

Synchro 9 Report Page 1 1: Tenth Line Road & Brian Coburn Boulevard Future (2025) Background Traffic - No Mods Mer Bleue Expansion - Master Transportation Study AM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	В	15.3	С	E	В	F	D	-	F	D	
Approach Delay		56.5			53.6			58.5			47.2	
Approach LOS		E			D			E			D	
Queue Length 50th (m)	~48.0	19.1		3.8	~204.1	21.9	~43.3	62.0		26.0	40.1	
Queue Length 95th (m)	#101.8	30.9		9.5	#290.0	42.6	#80.2	80.2		#55.4	58.3	
Internal Link Dist (m)		1409.8			598.5			159.3			286.4	
Turn Bay Length (m)	40.0			55.0		55.0	100.0			100.0		
Base Capacity (vph)	239	1048		503	804	754	206	998		143	684	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.01	0.20		0.05	1.00	0.36	1.01	0.55		0.74	0.66	
Intersection Summary		100				il Section	1		11 31		e Vient	2.5
Area Type:	Other											
Cycle Length: 130												
Actuated Cycle Length: 130)											
Natural Cycle: 115												
Control Type: Semi Act-Une	coord											
Maximum v/c Ratio: 1.01												
Intersection Signal Delay: 5	54.1			li	ntersection	LOS: D						
Intersection Capacity Utiliza	ation 101.6	%		l l	CU Level of	of Service	G					
Analysis Period (min) 15												
 Volume exceeds capac 			ally infinit	e.								
Queue shown is maximu	um after two	o cycles.										
# 95th percentile volume	exceeds ca	pacity, qu	eue may	be longe	ег.							
Queue shown is maximu	um after two	o cycles.										

O PL DI	4.1	The set of		Datase	0.1	Devilence
Splits and Phases:		Tenth Line	RUad V	Brian	CODUIRD	Rollevard
opino ana masos.			T COUCH CL	Dirait	CODUIII	Douicvara

Tø2			
44.5 s		85.5 s	
1 Ø5	↓ Ø6	▶ 07	₩ Ø8
155	29.5 s	20.5 s	655

7: Tenth Line Road & Navan Road

Future (2025) Background Traffic - No Mods

Mer Bleue Expansion - Master Transportation Study

AM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	¢		ሻ	1	1		\$			र्च	1
Traffic Volume (vph)	24	165	4	1	498	162	10	8	3	77	11	122
Future Volume (vph)	24	165	4	1	498	162	10	8	3	77	11	122
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	70.0		100.0	0.0		0.0	0.0		40.0
Storage Lanes	1	1.1.2.	0	1		1	0		0	0		1
Taper Length (m)	20.0			20.0			20.0			20.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850		0.982				0.850
FIt Protected	0.950		121	0.950				0.976			0.958	
Satd. Flow (prot)	1695	1779	0	1695	1784	1517	0	1710	0	0	1709	1517
Flt Permitted	0.440			0.645				0.794			0.738	
Satd. Flow (perm)	785	1779	0	1151	1784	1517	0	1391	0	0	1317	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				171		3				128
Link Speed (k/h)		60			60			60			60	120
Link Distance (m)		1579.7			237.6			368.7			1615.8	
Travel Time (s)		94.8		-	14.3			22.1			96.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	174	4	1	524	171	11	8	3	81	12	128
Shared Lane Traffic (%)	LU				011				Ū	0.		120
Lane Group Flow (vph)	25	178	0	1	524	171	0	22	0	0	93	128
Turn Type	Perm	NA	0	Perm	NA	Perm	Perm	NA	Ŭ	Perm	NA	Perm
Protected Phases	T CHIII	4		T OIIII	8	1 onn	1 Onn	2		1 Ont	6	1 onn
Permitted Phases	4			8		8	2	-		6		6
Detector Phase	4	4		8	8	8	2	2		6	6	6
Switch Phase		-		U	Ū	Ū	-			Ū	v	
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2	25.2	24.7	24.7		24.7	24.7	24.7
Total Split (s)	35.0	35.0		35.0	35.0	35.0	25.0	25.0		25.0	25.0	25.0
Total Split (%)	58.3%	58.3%		58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	41.7%
Maximum Green (s)	27.8	27.8		27.8	27.8	27.8	18.3	18.3		18.3	18.3	18.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.5	3.5		3.5	3.5	3.5	3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	1.2	1.2		1.2	1.2	1.2		0.7			0.7	0.7
Lead-Lag Optimize?					1.00							-
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
	10.0	10.0		10.0	10.0	10.0	9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)	0.0	0.0		0.0	0.0	0.0	9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)				33.1	33.1	33.1	0		x 0	U		
Act Effct Green (s)	33.1	33.1						10.6			10.6	10.6
Actuated g/C Ratio	0.63	0.63		0.63	0.63	0.63	-	0.20			0.20	0.20
v/c Ratio	0.05	0.16		0.00	0.47	0.17		0.08			0.35	0.31
Control Delay	6.8	6.8		6.0	9.5	1.9	-	16.1			22.1	6.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	1	0.0	1 and 1 and 1		0.0	0.0
Total Delay	6.8	6.8		6.0	9.5	1.9	[16.1			22.1	6.5

Lanes, Volumes, Timings dhook

Synchro 9 Report Page 8

7: Tenth Line Road & Navan Road Fu Mer Bleue Expansion - Master Transportation Study

Future (2025) Background Traffic - No Mods

AM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	А	А	ZIN.	А	А	А		В			С	A
Approach Delay		6.8			7.6			16.1			13.1	
Approach LOS	instants"	А			А			В			В	
Queue Length 50th (m)	1.0	7.4		0.0	28.1	0.0		1.5			7.5	0.0
Queue Length 95th (m)	4.1	17.0		0.6	56.5	6,8	· · · · ·	5.9			17.8	10.1
Internal Link Dist (m)		1555.7			213.6			344.7			1591.8	
Turn Bay Length (m)	110.0			70.0		100.0	1000					40.0
Base Capacity (vph)	493	1119		724	1121	1017		486			458	611
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	0.05	0.16		0.00	0.47	0.17		0.05			0.20	0.21
Intersection Summary		a second	24243	91. S.		³⁰ X 1					100	1
Area Type:	Other											
Cycle Length: 60												

Cysic Longan. Co		
Actuated Cycle Length: 52.6		
Natural Cycle: 60		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.47		
Intersection Signal Delay: 8.7	Intersection LOS: A	
Intersection Capacity Utilization 61.5%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 7: Tenth Line Road & Navan Road

Ø2	-104
25 s	35.9
Ø6	
25 s	35 s

Intersection Delay, s/veh	16.3									
Intersection LOS	C	1.2							Y	
Movement	EBU	EBL		EBR	NBU	NBL	NBT	SBU	SBT	SBF
Traffic Vol, veh/h	0	270		4	0	22	231	0	117	389
Future Vol, veh/h	0	270		4	0	22	231	0	117	389
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2		2	2	2	2	2	2	2
Mvmt Flow	0	284		4	0	23	243	0	123	409
Number of Lanes	0	1		0	0	0	1	0	1	(
Approach		EB	AUX 21			NB			SB	1000
Opposing Approach						SB			NB	
Opposing Lanes		0				1			1	
Conflicting Approach Left		SB				EB				
Conflicting Lanes Left		1				1			0	
Conflicting Approach Right		NB							EB	
Conflicting Lanes Right		1				0			1	
HCM Control Delay		14.8				12.6			18.9	
HCM LOS		В				В			С	
Lane		NBLn1	EBLn1	SBLn1			2010000			
Vol Left, %		9%	99%	0%			and the second second		ALC: NOT THE OWNER.	
Vol Thru, %		9% 91%	99% 0%	23%						
Vol Right, %		0%	1%	77%						
Sign Control		Stop	Stop	Stop						
Traffic Vol by Lane		253	274	506						
LT Vol		233	270	0						
Through Vol		231	0	117				A REAL PROPERTY		
RT Vol		0	4	389						
Lane Flow Rate		266	288	533					1	
Geometry Grp		1	1	1						
Degree of Util (X)		0.414	0.487	0.712						
Departure Headway (Hd)		5.602	6.079	4.815						
Convergence, Y/N		Yes	Yes	Yes	87 N.T.					
Сар		642	591	751						
Service Time		3.653	4.124	2.858						
HCM Lane V/C Ratio		0.414	0.487	0.71						
HCM Control Delay		12.6	14.8	18.9						

B 2

B 2.7 C 6

HCM Lane LOS

HCM 95th-tile Q

Intersection	
Int Delay, s/veh	3.6

			No. 10 10 10 10				
Movement	WBL	WBR	NBT	NBR	SBL	SBT	7
Traffic Vol, veh/h	123	13	224	20	12	90	
Future Vol, veh/h	123	13	224	20	12	90	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized		None		None		None	
Storage Length	0	2		-	(*)	8 4 9	
Veh in Median Storage, #	0		0	-	- 1, i -	0	
Grade, %	0		0	-	-	0	
Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	129	14	236	21	13	95	

Majør/Minor	Minor1		1	Majo	ar1		Major2				
Conflicting Flow All	366	246			0	0	257	0			
Stage 1	246				14		240				
Stage 2	120	-			200	5 4 0		64 3			
Critical Hdwy	6.42	6.22			16	100	4.12	- E			
Critical Hdwy Stg 1	5.42	Ť			N.	1	-	۲			
Critical Hdwy Stg 2	5.42				12	1.000					
Follow-up Hdwy	3.518	3.318			ः जनः	3.00	2.218				
Pot Cap-1 Maneuver	634	793			1390	1105	1308	0.00			
Stage 1	795	-			:(•)) -	(m)	3 4 3			
Stage 2	905				- ke - I	240					
Platoon blocked, %					14	1961					
Mov Cap-1 Maneuver	628	793			- e	- 0 4	1308				
Mov Cap-2 Maneuver	628	8				<u>.</u>	()				
Stage 1	795	. Start a									
Stage 2	896	-				(32)		192			
						1					
Approach	WB	Sec. Sec.			NB		SB	1	i se co		100
HCM Control Delay, s	(12.2	A English	2.04		0	10.0	0.9				
HCM LOS	B	N									
1. S. M. 1. S. M.								3.11		1.1	
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		194					
Capacity (veh/h)		- 641	1308				100 M				
HCM Lane V/C Ratio		- 0.223	0.01	₩.							
HCM Control Delay (s)		- 12.2	7.8	0							

В

0.9

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HCM Lane LOS

HCM 95th %tile Q(veh)

Intersection Int Delay, s/veh

1.2

	111-11			al Property		111						
Movement	EBL	EBT	EBR	WBL	WBT	WER	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	24	4	6	10	4	6	2	201	1	2	224	105
Future Vol, veh/h	24	4	6	10	4	6	2	201	1	2	224	105
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	T 71-1		None	12127-	- 11	None		-	None
Storage Length	-		-	14			-	-		-	-	
Veh in Median Storage, #	1.1.1	0	1.1		0	-		0	-		0	
Grade, %		0	-	-	0	-	-	0		-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	4	6	11	4	6	2	212	1	2	236	111

Major/Minor	Minor2		Peth	Mi	nor1	3199	4 C - 1	ĥ	vlajor1			Major2	벨물	
Conflicting Flow All	517	512	291		517	567	212		346	0	0	213	0	0
Stage 1	295	295			216	216	10 3		141	120	1.8	11.1	¥	-
Stage 2	222	217	-		301	351	×.		1	1	i i i	÷	í.	÷
Critical Hdwy	7.12	6.52	6.22		7.12	6.52	6.22		4.12	1.00		4.12		+
Critical Hdwy Stg 1	6.12	5.52	-		6.12	5.52	-		۲	9 7 5				
Critical Hdwy Stg 2	6.12	5.52	1.1		6.12	5.52	-				8 at 19	1		-
Follow-up Hdwy	3.518	4.018	3.318	3	.518	4.018	3.318		2.218	(#))		2.218	×	
Pot Cap-1 Maneuver	469	465	748		469	433	828		1213	(#)		1357		-
Stage 1	713	669	-		786	724	-		~	5 8 3	4	2	2	-
Stage 2	780	723			708	632	- 12		121	1401				1
Platoon blocked, %											S.		Ē	- 5
Mov Cap-1 Maneuver	461	463	748		460	431	828		1213			1357		14
Mov Cap-2 Maneuver	461	463	-		460	431	-			3 9 2			•	-
Stage 1	712	668	-		784	723	1.1.4			:#5			1 . R. 1	-
Stage 2	768	722	-		696	631	-		•		*			-
	- 14													2.
Approach	EB			1.00	WB		di seta	253	NB	a ng S	215	SB		
HCM Control Delay, s	12.8				12.2				0.1			0		
HCM LOS	B)			В									
														21
Minor Lane/Major Mymt	NBL	NBT	NBRI	EBLn1WE	BLn1	SEL	SBT	SBR	, K. R			- X28		
Capacity (veh/h)	1213			495	523	1357		1.81		-				
HCM Lane V/C Ratio	0.002	-	-	0.072	0.04	0.002	-	370						
HCM Control Delay (s)	8	0		12.8	12.2	7.7	0							
HCM Lane LOS	A	А		В	В	A	Α							
HCM 95th %tile Q(veh)	0	× =,	-	0.2	0.1	0								

Intersection Int Delay, s/veh

	1.00				1.1		12.1	
Movement	EBL	EBT	W	BT	WBR	SBL	SBR	
Traffic Vol, veh/h	91	146		169	95	33	157	
Future Vol, veh/h	91	146	2	469	95	33	157	
Conflicting Peds, #/hr	0	0		0	0	0	0	
Sign Control	Free	Free	F	ree	Free	Stop	Stop	
RT Channelized	-	None		100	None	1. 1 - 1	None	
Storage Length	2	2		-	-	0	2	
Veh in Median Storage, #		0		0	-	0	1.1.1	
Grade, %	÷	0		0	-	0		
Peak Hour Factor	95	95		95	95	95	95	
Heavy Vehicles, %	2	2		2	2	2	2	
Mvmt Flow	96	154	4	494	100	35	165	

Major/Minor	Major1	X		1	Aajor2		Minor2		
Conflicting Flow All	594	0			3 6 0	0	889	544	
Stage 1	· ·				14	-	544	1986 - P. 199	
Stage 2	÷	2			14	1	345	-	
Critical Hdwy	4.12					×.	6.42	6.22	
Critical Hdwy Stg 1		-					5.42	-	
Critical Hdwy Stg 2		-			1.00		5.42		
Follow-up Hdwy	2.218	×			3 • 3		3.518	3.318	
Pot Cap-1 Maneuver	982	-					314	539	
Stage 1	-				(14 5		582	:#)(
Stage 2		-			1.0	-	717	144 V.	
Platoon blocked, %		÷			7 4	0 4 5			
Nov Cap-1 Maneuver	982	1.1			11.8		280	539	
Nov Cap-2 Maneuver		-				1972	280		
Stage 1						-	582		
Stage 2		ж			*		640	S#3	
			55						
Approach	EB	1		the state of the	WB		SB		
HCM Control Delay, s	3.5				0		18.5		
HCM LOS							(C)		
	1.00								
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR SBLn1					
Capacity (veh/h)	982	•		- 464					
HCM Lane V/C Ratio	0.098	-	-	- 0.431					
HCM Control Delay (s)	9.1	0		- 18.5					
HCM Lane LOS	А	А	×	- C					
HCM 95th %tile Q(veh)	0.3	1.0		- 2.1				1.1	

LANE SUMMARY

V Site: Mer Bleue and Brian Coburn Roundabout - 2025 - BG - AM - No Mods

New Site Roundabout

Lane Use a	nd Perfor	mance											
	Demand I Total veh/h	Flows HV %	Cap veh/h	Deg Satn v/c	Lane Util %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist m	Lane Config	Lane Length m	Cap Adj %	Prob Block %
South: Mer E	Bleue Road					_						~~~	
Lane 1	324	3.0	580	0.560	100	16.6	LOS C	2.9	23.0	Full	500	0.0	0.0
Lane 2 ^d	324	3.0	580	0.560	100	16.6	LOS C	2.9	23.0	Full	500	0.0	0.0
Approach	649	3.0		0.560		16.6	LOS C	2.9	23.0				
East: Brian (Coburn Road	4											
Lane 1 ^d	1488	3.0	659	2.258	100	586.1	LOS F	272.5	2123.0	Full	500	0.0	100.0
Approach	1488	3.0		2.258		586.1	LOS F	272.5	2123.0				
North: Mer E	leue Road												
Lane 1	269	3.0	670	0.402	100	10.9	LOS B	1.8	13.6	Full	500	0.0	0.0
Lane 2 ^d	269	3.0	670	0.402	100	10.9	LOS B	1.8	13.6	Full	500	0.0	0.0
Approach	539	3.0		0.402		10.9	LOS B	1.8	13.6				
West: Brian	Coburn Exte	ension											
Lane 1 ^d	489	3.0	750	0.652	100	16.6	LOS C	3.4	26.5	Full	500	0.0	0.0
Approach	489	3.0		0.652		16.6	LOS C	3.4	26.5				
Intersection	3165	3.0		2.258		283.4	LOS F	272.5	2123.0				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

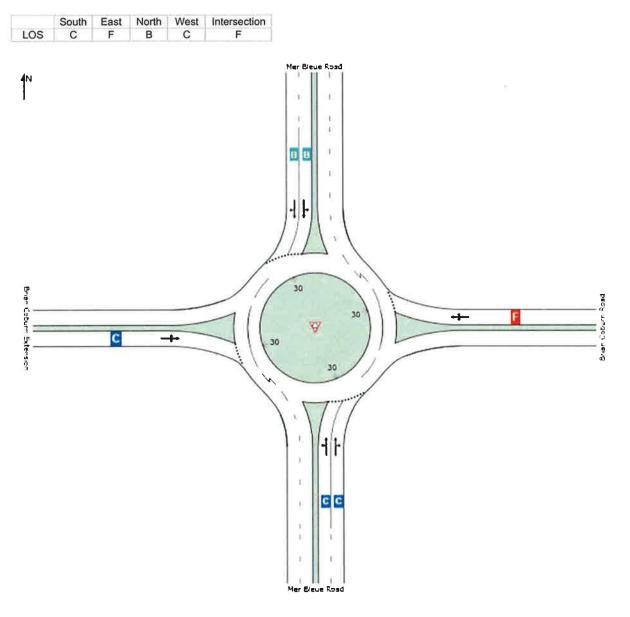
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LEVEL OF SERVICE

₩ Site: Mer Bleue and Brian Coburn Roundabout - 2025 - BG - AM - No Mods

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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Project: J:\34739-CumbServReport\5.7 Calculations\5.7.6 Roads (Trans)\Master Transportation Study (March 2016)\SIDRA\Mer Bleue and Brian Coburn Roundabout\Mer Bleue Brian Coburn Roundabout - 2025-2031 - BGSG - Feb 17 2016.sip6 1: Tenth Line Road & Brian Coburn Boulevard Future (2025) Background Traffic - No Mods Mer Bleue Expansion - Master Transportation Study PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WET	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	Þ		ň	1	7	٦	≜ î≽		٦	≜ î≽	
Traffic Volume (vph)	394	560	205	13	334	243	140	494	52	291	554	295
Future Volume (vph)	394	560	205	13	334	243	140	494	52	291	554	295
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	55.0		55.0	100.0		0.0	100.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	20.0			20.0			20.0			20.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.960				0.850		0.986			0.948	
FIt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1713	0	1695	1784	1517	1695	3343	0	1695	3214	0
FIt Permitted	0.197			0.182			0.154			0.162		
Satd. Flow (perm)	352	1713	0	325	1784	1517	275	3343	0	289	3214	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21				224		8			75	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1433.8			622.5			205.7			310.4	
Travel Time (s)		86.0			37.4			12.3			18.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	415	589	216	14	352	256	147	520	55	306	583	311
Shared Lane Traffic (%)					3							
Lane Group Flow (vph)	415	805	0	14	352	256	147	575	0	306	894	0
Turn Type	pm+pt	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	7	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0	10.0	4.0	10.0		4.0	10.0	
Minimum Split (s)	10.4	31.4		31.4	31.4	31.4	10.0	29.0		10.0	29.0	
Total Split (s)	32.0	72.0		40.0	40.0	40.0	15.0	31.0		27.0	43.0	
Total Split (%)	24.6%	55.4%		30.8%	30.8%	30.8%	11.5%	23.8%		20.8%	33.1%	
Maximum Green (s)	25.6	65.6		33.6	33.6	33.6	9.0	25.0		21.0	37.0	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	2.7	2.7		2.7	2.7	2.7	2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4	6.0	6.0		6.0	6.0	
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	_
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)		7.0		7.0	7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		18.0		18.0	18.0	18.0		16.0			16.0	
Pedestrian Calls (#/hr)		0		0	0	0		0			0	
Act Effct Green (s)	60.9	60.9		29.8	29.8	29.8	35.0	26.0		52.2	37.1	
Actuated g/C Ratio	0.49	0.49		0.24	0.24	0.24	0.28	0.21		0.42	0.30	
v/c Ratio	0.95	0.96		0.18	0.83	0.48	0.82	0.82		0.89	0.89	
Control Delay	61.0	52.7		44.5	63.1	10.7	64.3	58.9		57.9	51.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	61.0	52.7		44.5	63.1	10.7	64.3	58.9		57.9	51.5	

Lanes, Volumes, Timings dhook

1: Tenth Line Road & Brian Coburn Boulevard Future (2025) Background Traffic - No Mods Mer Bleue Expansion - Master Transportation Study PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WER	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	D		D	E	В	Е	Е	11000	E	D	1.0
Approach Delay		55.5			41.1			60.0			53.1	
Approach LOS		Е			D			Е			D	
Queue Length 50th (m)	74.9	182.0		2.8	83.6	6.2	24.5	75.3		58.1	109.0	
Queue Length 95th (m)	#136.5	#268.4		9.0	#120.1	29.2	#60.5	#105.8		#109.2	#147.6	
Internal Link Dist (m)		1409.8			598.5			181.7			286.4	
Turn Bay Length (m)	40.0			55.0		55.0	100.0			100.0		
Base Capacity (vph)	445	908		87	479	571	179	698		356	1003	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	and the second second
Reduced v/c Ratio	0.93	0.89		0.16	0.73	0.45	0.82	0.82		0.86	0.89	
Intersection Summary					See Vila	1		ile Trippi			1.2.2	
Area Type:	Other											
Cycle Length: 130												1
Actuated Cycle Length: 12	5.5											
Natural Cycle: 105												
Control Type: Semi Act-Un	lcoord											_
Maximum v/c Ratio: 0.96												
Intersection Signal Delay:					ntersectior							
Intersection Capacity Utiliz	ation 107.6	%			CU Level o	of Service	e G					
Analysis Period (min) 15												
# 95th percentile volume			eue may	be longe	er.							
Queue shown is maxim	um atter two	o cycles.										

Splits and Phases: 1: Tenth Line Road & Brian Coburn Boulevard



7: Tenth Line Road & Navan Road

Future (2025) Background Traffic - No Mods

Mer Bleue Expansion - Master Transportation Study

PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	f.		٦	1	7		4			र्स	7
Traffic Volume (vph)	162	567	12	2	261	197	12	22	3	66	22	262
Future Volume (vph)	162	567	12	2	261	197	12	22	3	66	22	262
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	70.0		100.0	0.0		0.0	0.0		40.0
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (m)	20.0			20.0			20.0			20.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850		0.990				0.850
Fit Protected	0.950			0.950				0.984			0.964	
Satd. Flow (prot)	1695	1779	0	1695	1784	1517	0	1738	0	0	1720	1517
FIt Permitted	0.590			0.325				0.876			0.754	
Satd. Flow (perm)	1053	1779	0	580	1784	1517	0	1547	0	0	1345	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				207		3				276
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1579.7			237.6			368.7			1615.8	
Travel Time (s)		94.8			14.3			22.1			96.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	171	597	13	2	275	207	13	23	3	69	23	276
Shared Lane Traffic (%)				_								
Lane Group Flow (vph)	171	610	0	2	275	207	0	39	0	0	92	276
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	100
Permitted Phases	4			8		8	2			6		6
Detector Phase	4	4		8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2	25.2	24.7	24.7		24.7	24.7	24.7
Total Split (s)	78.0	78.0		78.0	78.0	78.0	42.0	42.0		42.0	42.0	42.0
Total Split (%)	65.0%	65.0%		65.0%	65.0%	65.0%	35.0%	35.0%		35.0%	35.0%	35.0%
Maximum Green (s)	70.8	70.8		70.8	70.8	70.8	35.3	35.3		35.3	35.3	35.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.5	3.5		3.5	3.5	3.5	3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	7.2	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	0
Act Effct Green (s)	22.9	22.9		22.9	22.9	22.9		11.3			11.3	11.3
Actuated g/C Ratio	0.47	0.47		0.47	0.47	0.47		0.23			0.23	0.23
v/c Ratio	0.35	0.73		0.01	0.33	0.25		0.11			0.29	0.49
Control Delay	9.9	15.8		6.5	8.8	2.1		17.6			21.0	6.6
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	9.9	15.8		6.5	8.8	2.1		17.6			21.0	6.6
	0.0	10.0		0.0	0.0	<u> </u>		11.0			_ 1.0	0.0

Lanes, Volumes, Timings dhook

7: Tenth Line Road & Navan Road Fu Mer Bleue Expansion - Master Transportation Study

Future (2025) Background Traffic - No Mods

PM Peak Hour

	٨	+	*	4	-	*	•	1	1	* 🍾	ţ	~
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	Α	В		А	А	А	1. J. J. 1.	В			С	A
Approach Delay		14.5			6.0			17.6			10.2	
Approach LOS		В			Α			В			В	
Queue Length 50th (m)	7.8	35.0		0.1	12.3	0.0		2.3			6.3	0.0
Queue Length 95th (m)	20.3	74.1		0.9	27.6	7.4		10.1			20.4	16.1
Internal Link Dist (m)		1555.7			213.6			344.7			1591.8	
Turn Bay Length (m)	110.0			70.0		100.0						40.0
Base Capacity (vph)	1053	1779		580	1784	1517		1164			1011	1209
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	0.16	0.34		0.00	0.15	0.14		0.03			0.09	0.23
Intersection Summary		1.1	s r mà d		2 C 21	3295	100		1000	1 - L-	1.1.2	
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 48	.6											
Natural Cycle: 60												
Control Type: Semi Act-Un	ncoord											
Maximum v/c Ratio: 0.73												
Intersection Signal Delay:	11.1				itersection							
Intersection Capacity Utiliz	ation 68.7%			IC	CU Level	of Service	С					

Intersection Capacity Utilization 68.7% Analysis Period (min) 15

and Phases: 7: Tonth Line Road & Navan Road

Splits and Phases: 7: Tenth Li	ne Road & Navan Road	
42 s	78 5	
Ø6	Ø8	
42 s	78 5	

Intersection Delay, s/veh	54.8								
Intersection LOS	F	in the			a harres	and the second second			
Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Traffic Vol, veh/h	0	541	17	0	8	237	0	286	306
Future Vol, veh/h	0	541	17	0	8	237	0	286	306
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	569	18	0	8	249	0	301	322
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	64.1	17	61.6
HCMLOS	F	С	F
The second se			

Lane	NBLn1	EBLn1	SBLn1	
Vol Left, %	3%	97%	0%	
Vol Thru, %	97%	0%	48%	
Vol Right, %	0%	3%	52%	
Sign Control	Stop	Stop	Stop	
Traffic Vol by Lane	245	558	592	
LT Vol	8	541	0	
Through Vol	237	0	286	
RT Vol	0	17	306	
Lane Flow Rate	258	587	623	
Geometry Grp	1	1	1	
Degree of Util (X)	0.504	1	1	
Departure Headway (Hd)	7.038	6.584	6.099	
Convergence, Y/N	Yes	Yes	Yes	
Сар	516	552	598	
Service Time	5.038	4.609	4.123	
HCM Lane V/C Ratio	0.5	1.063	1.042	
HCM Control Delay	17	64.1	61.6	
HCM Lane LOS	C	F	F	
HCM 95th-tile Q	2.8	14.3	14.8	

Intersection

Int Delay, s/veh

					1.2016.00		
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Traffic Vol, veh/h	35	10	130	121	15	136	and the second sec
Future Vol, veh/h	35	10	130	121	15	136	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized		None	-	None		None	
Storage Length	0	-	-	÷.	5 •	A. :	
Veh in Median Storage, #	0		0	-		0	
Grade, %	0	<u>14</u>	0	4	N#:	0	
Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	37	11	137	127	16	143	

Major/Minor	Minor1		Majo	r1		Major2		
Conflicting Flow All	376	201		0	0	264	0	
Stage 1	201					10 m 1		
Stage 2	175	-		÷	*			
Critical Hdwy	6.42	6.22		+	1 H	4.12	24	
Critical Hdwy Stg 1	5.42	2		-	2	2	- 44	
Critical Hdwy Stg 2	5.42			E.		1 1 4	112	
Follow-up Hdwy	3.518	3.318		÷	E.	2.218		
Pot Cap-1 Maneuver	625	840			1	1300		
Stage 1	833	-				.		
Stage 2	855	1.1						
Platoon blocked, %				-			*	
Mov Cap-1 Maneuver	617	840		+		1300	•••	
Mov Cap-2 Maneuver	617	14		2	-	21	-	
Stage 1	833					2.1.2		
Stage 2	844			8	-	-	÷	
	631-11		1 N. J. P. N.					
Approach	WB.	100		VB		SB		
HCM Control Delay, s	(10.9)			0		0.8	10.1	
HCM LOS	В							
No VIN KING	-		8 - C - C - C					1. S. C. L. L.
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL SBT	Ĩ.		¹¹ -1-1-1	F act	
Capacity (veh/h)		- 656	1300 -	P	1.0		1151	

Capacity (veh/h)	-	- 6	56 1300	- (
HCM Lane V/C Ratio	+	- 0.0	72 0.012	- 2	
HCM Control Delay (s)		- 1	0.9 7.8	3 0	
HCM Lane LOS	:	æ.	B A	A	
HCM 95th %tile Q(veh)	- Index -	195	0.2 () -	

Intersection

Int Delay, s/veh

1 16 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		100										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NET	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	125	11	8	1	2	7	3	377	4	1	299	42
Future Vol, veh/h	125	11	8	1	2	7	3	377	4	1	299	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized		-	None		nn e	None	ing singe		None	12 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	-	None
Storage Length	×	-	-	-		-	-	-	-	-	-	
Veh in Median Storage, #		0	-	1	0	-	-	0	-		0	
Grade, %	-	0	2	-	0	- 1	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	132	12	8	1	2	7	3	397	4	1	315	44

Major/Minor	Minor2			Minor1		F	Maj	or 1	. I.		Major2		
Conflicting Flow All	749	746	337	754	766	399	3	359	0	0	401	0	0
Stage 1	339	339		405	405	-							+
Stage 2	410	407	4	349	361	-		(1 4)	-	(2)	3	2	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4	.12	-	24.7	4.12		
Critical Hdwy Stg 1	6.12	5.52	×.	6.12	5.52	-		2 8	×.	1	÷	÷.	
Critical Hdwy Stg 2	6.12	5.52		6.12	5.52	1.1.1			-	120		1	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.2	218	-	(R .)	2.218	-	7
Pot Cap-1 Maneuver	328	342	705	326	333	651	12	200	1.100		1158		-
Stage 1	676	640	×	622	598	-		1) 8 () # (:	:-		÷
Stage 2	619	597		667	626	11.174		1.00				- 14	-
Platoon blocked, %									9 4 8	9 4 2		4	-
Mov Cap-1 Maneuver	322	341	705	313	332	651	12	200		120	1158	-	-
Mov Cap-2 Maneuver	322	341	×	313	332			1		100	5		
Stage 1	674	639	9 1 a	620	596				1.10	-			
Stage 2	608	595		646	625	-				192	đ.		-
Approach	EB			WB				NB			SB		
HCM Control Delay, s	24.5	1		12.3				0.1			0		
HCM LOS	C			В		nP -							
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR	12.1		THE ST	2.12.20	11 - L	
Capacity (veh/h)	1200			333 501	1158	- 44	1.1			1.			
HCM Lane V/C Ratio	0.003	-	-	0.455 0.021	0.001	_	2						

oupdoily (voinin)	1200			000	001	1100			
HCM Lane V/C Ratio	0.003	-		0.455	0.021	0.001	-	÷.	
HCM Control Delay (s)	8	0	-	24.5	12.3	8.1	0		
HCM Lane LOS	A	А		С	В	А	A		
HCM 95th %tile Q(veh)	0	1.4		2.3	0.1	0	-		

Intersection

Int Delay, s/veh

Conflicting Peds, #/hr00000Sign ControlFreeFreeFreeStopStopRT Channelized-None-NoneStorage Length0-Veh in Median Storage, #-00Grade, %-0-0-		12.1						
Future Vol, veh/h 178 597 248 104 159 129 Conflicting Peds, #/hr 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 129 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 129 0 0 129 0 129 0 0 0 15 0 0 0 0 0 0 0 0 0 0 129	Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Conflicting Peds, #/hr00000Sign ControlFreeFreeFreeStopStopRT Channelized-None-NoneNoneStorage Length0Veh in Median Storage, #-00Grade, %-00-0-	Traffic Vol, veh/h	178	597	248	104	159	129	
Sign ControlFreeFreeFreeStopStopRT Channelized-None-NoneStorage Length0-Veh in Median Storage, #-0-0Grade, %-0-0	Future Vol, veh/h	178	597	248	104	159	129	
RT Channelized- None- None- NoneStorage Length 0-Veh in Median Storage, #00-Grade, %- 00-	Conflicting Peds, #/hr	0	0	0	0	0	0	
Storage Length - - - 0 - Veh in Median Storage, # - 0 0 - 0 - Grade, % - 0 0 - 0 - -	Sign Control	Free	Free	Free	Free	Stop	Stop	
Veh in Median Storage, # 0 0 - 0 - Grade, % - 0 0 - 0 -	RT Channelized	-	None		None	127	None	
Grade, % - 0 0 - 0 -	Storage Length	-	-		3 9 3	0	(1 47)	
	Veh in Median Storage, #		0	0	1.1	0		
Peak Hour Factor 95 95 95 95 95 95	Grade, %	÷	0	0	8	0	1	
	Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, % 2 2 2 2 2 2 2	Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow 187 628 261 109 167 136	Mvmt Flow	187	628	261	109	167	136	

Major/Minor	Major1	110	1	M	ajor2	4	Minor2			
Conflicting Flow All	371	0			246	0	1319	316		
Stage 1		-					316	÷		
Stage 2		-			- 44	(•)	1003	-		
Critical Hdwy	4.12	المع المعرجة			÷.		6.42	6.22		
Critical Hdwy Stg 1		-			-	0.52	5.42			
Critical Hdwy Stg 2		-				. <i>1</i> .	5.42			
Follow-up Hdwy	2.218	-			-	(c)	3.518	3.318		
Pot Cap-1 Maneuver	1188	1.1.1			•		173	724		
Stage 1	2	-			-	245	739	5 4 33		
Stage 2					1.14	-	355	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	2	
Platoon blocked, %					-	- 41				
Mov Cap-1 Maneuver	1188	11181					~ 131	724		
Mov Cap-2 Maneuver							~ 131			
Stage 1							739			
Stage 2		*			-		269			
			di de							
Approach	EB	- 3-1	N. 6-1		WB	de las	SB		torio a	£
HCM Control Delay, s	2				0		276.5			
HCM LOS							F			
				10 B						
Minor Lane/Major Mvmt	EBL	EBT	WET	WBR SBLn1		18				-1
Capacity (veh/h)	1188	-		- 207						
HCM Lane V/C Ratio	0.158	-		- 1.465						
HCM Control Delay (s)	8.6	0		- 276.5						
HCM Lane LOS	А	А		- F						
HCM 95th %tile Q(veh)	0.6		1.	- 18.2				1.0		
Notes		1.1				2.0				
~: Volume exceeds capacity	\$: De	lay exce	eeds 30	0s +: Comp	utation N	Vot Defi	ned *: All maj	or volume in pla	atoon	

LANE SUMMARY

😵 Site: Mer Bleue and Brian Coburn Roundabout - 2025 - BG - PM - No Mods

New Site Roundabout

Lane Use a	nd Perfor	mance	e										
	Demand F Total veh/h	Flows HV %	Cap veh/h	Deg. Satn v/c	Lane Util %	Average Delay sec	Level of Service	95% Back Veh	of Queue Dist m	Lane Config	Lane Length m	Cap Adj %	Prob. Block. %
South: Mer E	the second se			_								/0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Lane 1	435	3.0	436	0.998	100	73.8	LOS F	14.0	108.8	Full	500	0.0	0.0
Lane 2 ^d	435	3.0	436	0.998	100	73.8	LOS F	14.0	108.8	Full	500	0.0	0.0
Approach	870	3.0		0.998		73.8	LOS F	14.0	108.8				
East: Brian C	oburn Road	ł											
Lane 1 ^d	867	3.0	710	1.222	100	132.6	LOS F	60.4	470.9	Full	500	0.0	3.3
Approach	867	3.0		1.222		132.6	LOS F	60.4	470.9				
North: Mer B	leue Road												
Lane 1	599	3.0	637	0.941	100	47.8	LOS E	13.8	107.9	Full	500	0.0	0.0
Lane 2 ^d	599	3.0	637	0.941	100	47.8	LOS E	13.8	107.9	Full	500	0.0	0.0
Approach	1198	3.0		0.941		47.8	LOS E	13.8	107.9				
West: Brian	Coburn Exte	nsion											
Lane 1 ^d	912	3.0	472	1.933	100	447.6	LOS F	146.0	1138.0	Full	500	0.0	41.3
Approach	912	3.0		1.933		447.6	LOS F	146.0	1138.0				
Intersection	3847	3.0		1.933		167.6	LOSF	146.0	1138.0				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

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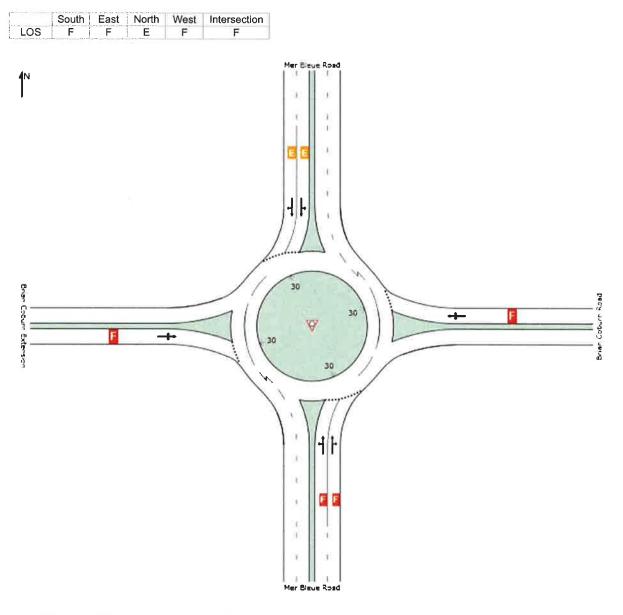
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LEVEL OF SERVICE

₩ Site: Mer Bleue and Brian Coburn Roundabout - 2025 - BG - PM - No Mods

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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Future (2025) Background Traffic

2: Tenth Line & Brian Coburn

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	^	7	٦	† †	1	ሻሻ	≜ †⊅		ሻሻ	**	7
Traffic Volume (vph)	229	140	61	26	766	257	198	491	32	101	238	192
Future Volume (vph)	229	140	61	26	766	257	198	491	32	101	238	192
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	115.0		80.0	40.0	1000	50.0	105.0	1000	0.0	100.0		65.0
Storage Lanes	2		1	10.0		1	2		0	2		1
Taper Length (m)	30.0			30.0			30.0		v	30.0		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Frt	0.51	0.00	0.850	1.00	0.00	0.850	0.51	0.991	0.00	0.01	0.00	0.850
Fit Protected	0.950		0.000	0.950		0.000	0.950	0.351		0.950		0.000
		2200	1517	1695	3390	1517	3288	3360	0	3288	3390	1517
Satd. Flow (prot)	3288	3390	1517		3390	1017		3300	0	0.950	3390	1317
FIt Permitted	0.950	0000	4547	0.659	0000	4547	0.950	2200	0		2200	4547
Satd. Flow (perm)	3288	3390	1517	1176	3390	1517	3288	3360	0	3288	3390	1517
Right Turn on Red			Yes			Yes		-	Yes			Yes
Satd. Flow (RTOR)			81			215		5				202
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1402.3			938.8			686.6			623.5	
Travel Time (s)		84.1			56.3			41.2			37.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	241	147	64	27	806	271	208	517	34	106	251	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	241	147	64	27	806	271	208	551	0	106	251	202
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases			4	8		8						6
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	13.3	35.0	35.0	35.0	35.0	35.0	13.3	35.0		13.3	35.0	35.0
Total Split (s)	23.0	72.0	72.0	49.0	49.0	49.0	21.0	43.0		15.0	37.0	37.0
Total Split (%)	17.7%	55.4%	55.4%	37.7%	37.7%	37.7%	16.2%	33.1%		11.5%	28.5%	28.5%
Maximum Green (s)	16.7	65.7	65.7	42.7	42.7	42.7	14.7	36.7		8.7	30.7	30.7
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2		2.2	2.2	2.2
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
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3
		0.5	0,5				Lead			Lead	Lag	Lag
Lead/Lag	Lead	0.00		Lag	Lag	Lag		Lag		Yes	Yes	
Lead-Lag Optimize?	Yes	0.0	2.0	Yes	Yes	Yes	Yes	Yes				Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Min	Min	None	Min		None	Min	Min
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		21.7	21.7	21.7	21.7	21.7		21.7			21.7	21.7
Pedestrian Calls (#/hr)	_	0	0	0	0	0		0			0	0
Act Effct Green (s)	13.1	52.2	52.2	32.6	32.6	32.6	11.9	23.3		8.2	19.5	19.5
Actuated g/C Ratio	0.13	0.51	0.51	0.32	0.32	0.32	0.12	0.23		0.08	0.19	0.19
v/c Ratio	0.58	0.09	0.08	0.07	0.75	0.43	0.55	0.72	6 C	0.41	0.39	0.45
Control Delay	51.0	13.9	2.3	27.4	37.3	9.5	51.8	43.6		54.9	40.3	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	51.0	13.9	2.3	27.4	37.3	9.5	51.8	43.6		54.9	40.3	9.1

Lanes, Volumes, Timings IBI Group

2: Tenth Line & Brian Coburn

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WEL	WBT	WBR	NBL	NBT	NBR	SBL	SET	SBR
LOS	D	В	Α	С	D	А	D	D		D	D	A
Approach Delay		32.0			30.2			45.8			31.8	
Approach LOS		С	- I.		С			D			С	174
Queue Length 50th (m)	22.1	7.1	0.0	3.5	70.3	7.4	19.1	49.6		9.7	21.6	0.0
Queue Length 95th (m)	39.1	13.6	4.4	10.5	104.7	28.6	35.1	75.7		20.7	37.3	17.8
Internal Link Dist (m)		1378.3			914.8			662.6			599.5	
Turn Bay Length (m)	115.0		80.0	40.0		50.0	105.0			100.0		65.0
Base Capacity (vph)	549	2229	1025	502	1448	771	483	1237		286	1041	605
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.44	0.07	0.06	0.05	0.56	0.35	0.43	0.45		0.37	0.24	0.33
Intersection Summary			1993 (A)		in the second	il and i		1.07	1 12	3.0		1-46
Area Type:	Other											

Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 1	03.1		
Natural Cycle: 100			
Control Type: Semi Act-U	Incoord		
Maximum v/c Ratio: 0.75			
Intersection Signal Delay:	: 34.9	Intersection LOS: C	
Intersection Capacity Utili	ization 69.8%	ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Tenth Line & Brian Coburn

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215	37 s	23.5	49.5

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Intersection

Int Delay, s/veh

								1.11					
Movement	EBL	EBT	EBR	WBL	WBT	WBR	118	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	24	4	6	10	4	6	314	2	201	1	2	224	105
Future Vol, veh/h	24	4	6	10	4	6		2	201	1	2	224	105
Conflicting Peds, #/hr	0	0	0	0	0	0		0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop		Free	Free	Free	Free	Free	Free
RT Channelized	1.1.30	-	None		5	None		1.14	-	None	S		None
Storage Length		-			-	÷			-	-	-	-	-
Veh in Median Storage, #		0			0				0			0	e norte
Grade, %	-	0	×		0	Ξ.			0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95		95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2		2	2	2	2	2	2
Mvmt Flow	25	4	6	11	4	6		2	212	1	2	236	111

Major/Minor	Minor2			Minor1			Major1		1-12	Major2	- 114	
Conflicting Flow All	517	512	291	517	567	212	346	0	0	213	0	0
Stage 1	295	295		216	216			1.00		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.9	-
Stage 2	222	217		301	351	-	(• 2			1	24	4
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	(*)		4.12	1	
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	3 1 0	140	-	-		
Critical Hdwy Stg 2	6.12	5.52	1.1	6.12	5.52	-				incal state	19.1	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218			2.218	-	
Pot Cap-1 Maneuver	469	465	748	469	433	828	1213			1357	110	
Stage 1	713	669		786	724	-				-		
Stage 2	780	723	1.00	708	632	1.00	-				-	-
Platoon blocked, %												-
Mov Cap-1 Maneuver	461	463	748	460	431	828	1213	-	- 141	1357		-
Mov Cap-2 Maneuver	461	463	-	460	431	-		121	242	2		
Stage 1	712	668	÷.	784	723	10.15				CALL STREET, ST		-
Stage 2	768	722	-	696	631	-	-	-		-		
Annroach	ED			WP	1.1.22.2		NIP			OD		-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	12.2	0.1	0
HCM LOS	В	В		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1W	/BLn1	SBL	SBT	SBR	
Capacity (veh/h)	1213		-	495	523	1357		240	
HCM Lane V/C Ratio	0.002	2	2	0.072	0.04	0.002	-	141	
HCM Control Delay (s)	8	0	-11.14	12.8	12.2	7.7	0		
HCM Lane LOS	А	А		В	В	А	А		
HCM 95th %tile Q(veh)	0	115-51		0.2	0.1	0	-		

7: Tenth Line & Navan /Navan Mer Bleue Expansion - Master Transportation Study

Future (2025) Background Traffic AM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	4		۲	1	1		4			र्स	7
Traffic Volume (vph)	24	165	4	1	498	162	10	8	3	77	11	122
Future Volume (vph)	24	165	4	1	498	162	10	8	3	77	11	122
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	120.0		0.0	65.0		40.0	0.0		0.0	0.0		30.0
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850		0.982				0.850
Fit Protected	0.950			0.950				0.976			0.958	
Satd. Flow (prot)	1695	1779	0	1695	1784	1517	0	1710	0	0	1709	1517
Flt Permitted	0.446			0.645				0.824			0.738	
Satd. Flow (perm)	796	1779	0	1151	1784	1517	0	1444	0	0	1317	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				171		3				128
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1757.1			855.5			456.3			1290.5	
Travel Time (s)		105.4			51.3			27.4			77.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	174	4	1	524	171	11	8	3	81	12	128
Shared Lane Traffic (%)						-						
Lane Group Flow (vph)	25	178	0	1	524	171	0	22	0	0	93	128
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	- 11 1
Permitted Phases	4			8		8	2			6		6
Detector Phase	4	4		8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2	25.2	24.7	24.7		24.7	24.7	24.7
Total Split (s)	81.0	81.0		81.0	81.0	81.0	39.0	39.0		39.0	39.0	39.0
Total Split (%)	67.5%	67.5%		67.5%	67.5%	67.5%	32.5%	32.5%		32.5%	32.5%	32.5%
Maximum Green (s)	73.8	73.8		73.8	73.8	73.8	32.3	32.3		32.3	32.3	32.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.5	3.5		3.5	3.5	3.5	3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	7.2	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag												
Lead-Lag Optimize?		1 40 .0				11.54						
Vehicle Extension (s)	3.0	3.0	_	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max	11	Max	Max	Max	None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	0
Act Effct Green (s)	76.7	76.7		76.7	76.7	76.7		13.0			13.0	13.0
Actuated g/C Ratio	0.74	0.74		0.74	0.74	0.74		0.13			0.13	0.13
v/c Ratio	0.04	0.14		0.00	0.40	0.45		0.12			0.56	0.42
Control Delay	4.6	4.5		4.0	6.4	1.1		35.9			55.0	11.5
Queue Delay	0.0	0.0	2.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	4.6	4.5		4.0	6.4	1.1		35.9			55.0	11.5

Lanes, Volumes, Timings IBI Group

7: Tenth Line & Navan /Navan

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WEL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	А	А	1. 19. 201	А	Α	А		D			D	В
Approach Delay		4.5			5.1			35.9			29.8	
Approach LOS		А			А			D			С	1944 - A
Queue Length 50th (m)	1.0	7.7		0.1	29.1	0.0		3.1			15.9	0.0
Queue Length 95th (m)	3.6	16.2		0.5	54.1	5.2		9.4			30.4	14.3
Internal Link Dist (m)		1733.1			831.5			432.3			1266.5	
Turn Bay Length (m)	120.0			65.0		40.0						30.0
Base Capacity (vph)	589	1316		851	1320	1167		452			411	561
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	0.04	0.14		0.00	0.40	0.15		0.05			0.23	0.23
Interception Qummary							Contra da	1000	10.55	100-	11 July 1	1

Intersection Summa				
Area Type:	Other			
Cycle Length: 120				
Actuated Cycle Leng	th: 103.7			
Natural Cycle: 60				
Control Type: Semi /	Act-Uncoord			
Maximum v/c Ratio:	0.56			
Intersection Signal D	elay: 10.4	Intersection LOS: B		
Intersection Capacity	Utilization 61.5%	ICU Level of Service B		
Analysis Period (min) 15			

Splits and Phases: 7: Tenth Line & Navan /Navan

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	COL	103	1	WBR	500	JOR 1
-	91	146	469	95	33	157
Traffic Volume (vph)	91	146	469	95 95	33	157
Future Volume (vph)	1800	140	1800	1800	1800	1800
Ideal Flow (vphpl)	40.0	1000	1000	40.0	40.0	20.0
Storage Length (m)	40.0			40.0	40.0	20.0
Storage Lanes	30.0				30.0	U
Taper Length (m)		1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00		1.00	
Frt	0.050			0.850	0.050	0.850
Fit Protected	0.950	4704	4704	4547	0.950	4547
Satd. Flow (prot)	1695	1784	1784	1517	1695	1517
Flt Permitted	0.460	4704	4704	4547	0.950	4547
Satd. Flow (perm)	821	1784	1784	1517	1695	1517
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				100		165
Link Speed (k/h)		60	60		50	
Link Distance (m)		1840.8	1757.1		403.0	
Travel Time (s)		110.4	105.4		29.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	96	154	494	100	35	165
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	154	494	100	35	165
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases	1 onn	4	8		6	
Permitted Phases	4		, in the second se	8		6
Detector Phase	4	4	8	8	6	6
Switch Phase	4	4	0	U	U	U
	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Initial (s)	10.0	10.0	10.0			
Minimum Split (s)	25.9	25.9	25.9	25.9	25.3	25.3
Total Split (s)	34.0	34.0	34.0	34.0	26.0	26.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	43.3%	43.3%
Maximum Green (s)	28.6	28.6	28.6	28.6	20.9	20.9
Yellow Time (s)	4.1	4.1	4.1	4.1	3.6	3.6
All-Red Time (s)	1.3	1.3	1.3	1.3	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.4	5.4	5.1	5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	9.2	9.2	9.2	9.2	9.2	9.2
	0	0	0	0	0.2	0
Pedestrian Calls (#/hr)			34.3		10.0	10.0
Act Effct Green (s)	34.3	34.3		34.3		
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.20	0.20
v/c Ratio	0.17	0.13	0.41	0.09	0.10	0.38
Control Delay	5.9	4.9	6.7	1.6	17.1	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.9	4.9	6.7	1.6	17.1	6.6

Lanes, Volumes, Timings IBI Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	A	A	A	A	В	A
Approach Delay		5.3	5.8		8.5	
Approach LOS		А	А		А	
Queue Length 50th (m)	3.1	4.8	19.3	0.0	2.3	0.0
Queue Length 95th (m)	8.0	10.0	34.5	3.6	7.3	10.4
Internal Link Dist (m)		1816.8	1733.1		379.0	
Turn Bay Length (m)	40.0			40.0	40.0	20.0
Base Capacity (vph)	556	1208	1208	1059	702	725
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.13	0.41	0.09	0.05	0.23

Intersection Summary		
Area Type:	Other	
Cycle Length: 60		
Actuated Cycle Lengt	h: 50.6	
Natural Cycle: 55		
Control Type: Semi A	ct-Uncoord	
Maximum v/c Ratio: 0	.41	
Intersection Signal De	elay: 6.2	Intersection LOS: A
Intersection Capacity	Utilization 56.0%	ICU Level of Service B
Analysis Period (min)	15	

Splits and Phases: 24: Navan & Mer Bleue

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	٦	1	1	7
Traffic Volume (vph)	270	4	22	231	117	389
Future Volume (vph)	270	4	22	231	117	389
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	90.0	40.0	40.0			40.0
Storage Lanes	2	0	1			1
Taper Length (m)	30.0		30.0			
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Fit Protected	0.950		0.950			
Satd. Flow (prot)	3288	1517	1695	1784	1784	1517
FIt Permitted	0.950		0.678			
Satd. Flow (perm)	3288	1517	1210	1784	1784	1517
Right Turn on Red	0100	Yes				Yes
Satd. Flow (RTOR)		4				409
Link Speed (k/h)	50	T		50	60	100
Link Distance (m)	994.9			1179.9	394.2	
				85.0	23.7	
Travel Time (s)	71.6	0.05	0.05			0.05
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	284	4	23	243	123	409
Shared Lane Traffic (%)	Sector 1			0.10	100	(WESSIO)
Lane Group Flow (vph)	284/	4	23	243	123	409
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	1.1	c The L	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	25.9	25.9	28.8	28.8
Total Split (s)	46.0	46.0	74.0	74.0	74.0	74.0
Total Split (%)	38.3%	38.3%	61.7%	61.7%	61.7%	61.7%
Maximum Green (s)	40.6	40.6	68.7	68.7	68.7	68.7
Yellow Time (s)	3.6	3.6	4.1	4.1	4.1	4.1
All-Red Time (s)	1.8	1.8	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
			5.3	5.3	5.3	5.3
Total Lost Time (s)	5.4	5.4	5.3	5.5	0.5	0.5
Lead/Lag						
Lead-Lag Optimize?				0.0		0.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.1	12.1	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	13.2	13.2	69.2	69.2	69.2	69.2
Actuated g/C Ratio	0.14	0.14	0.74	0.74	0.74	0.74
v/c Ratio	0.61/	0.02	0.03	0.18	0.09	0.33
Control Delay	43.2	21.8	3.8	4.2	3.8	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.2	21.8	3.8	4.2	3.8	1.2
	43.Z	21.0	3.0	4.2	5.0	1,2

Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	D	С	А	Α	A	А
Approach Delay	42.9			4.2	1.8	
Approach LOS	D			А	А	
Queue Length 50th (m)	22.8	0.0	0.8	9.8	4.6	0.0
Queue Length 95th (m)	34.2	2.6	2.9	18.9	10.1	6.6
Internal Link Dist (m)	970.9			1155.9	370.2	
Turn Bay Length (m)	90.0	40.0	40.0			40.0
Base Capacity (vph)	1434	664	898	1324	1324	1232
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.01	0.03	0.18	0.09	0.33

Area Type: Other		
Cycle Length: 120		
Actuated Cycle Length: 93.1		
Vatural Cycle: 65		
Control Type: Semi Act-Uncoord		
Aaximum v/c Ratio: 0.61		
ntersection Signal Delay: 13.3	Intersection LOS: B	
ntersection Capacity Utilization 42.6%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 26: Mer Bleue & Renaud

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33: Tenth Line & Harvest Valley

Mer Bleue Expansion - Master Transportation Study

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	۲	**	ř	ሻ	**
Traffic Volume (vph)	120	281	223	59	169	126
Future Volume (vph)	120	281	223	59	169	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0	0.0		40.0	40.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	30.0				30.0	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
FIt Protected	0.950	100			0.950	
Satd. Flow (prot)	1695	1517	3390	1517	1695	3390
Flt Permitted	0.950	1011	5000	1017	0.605	5000
Satd. Flow (perm)	1695	1517	3390	1517	1080	3390
	1090	Yes	5050	Yes	1000	0000
Right Turn on Red				62		
Satd. Flow (RTOR)	50	296	00	02		00
Link Speed (k/h)	50		60			60
Link Distance (m)	221.8		343.7			686.6
Travel Time (s)	16.0		20.6			41.2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	126	296	235	62	178	133
Shared Lane Traffic (%)		-			-	
Lane Group Flow (vph)	126	296	235	62	178	133
Turn Type	Perm	Perm	NA	Perm	Perm	NA
Protected Phases			2			6
Permitted Phases	8	8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase	Ű		_			
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
	34.8	34.8	28.6	28.6	28.6	28.6
Minimum Split (s)	56.0	56.0	64.0	64.0	64.0	64.0
Total Split (s)						
Total Split (%)	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%
Maximum Green (s)	50.1	50.1	58.4	58.4	58.4	58.4
Yellow Time (s)	3.6	3.6	4.1	4.1	4.1	4.1
All-Red Time (s)	2.3	2.3	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9	5.6	5.6	5.6	5.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	17.9	17.9	9.2	9.2	9.2	9.2
Pedestrian Calls (#/hr)	0	0	0.2	0.2	0.2	0
	14.7	14.7	93.8	93.8	93.8	93.8
Act Effct Green (s)						93.0 0.78
Actuated g/C Ratio	0.12	0.12	0.78	0.78	0.78	
v/c Ratio	0.61	0.67	0.09	0.05	0.21	0.05
Control Delay	61.9	13.0	3.2	0.8	4.6	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.9	13.0	3.2	0.8	4.6	3.4

Lanes, Volumes, Timings IBI Group

33: Tenth Line & Harvest Valley

Mer Bleue Expansion - Master Transportation Study

			1	1	1	4
Lane Group	WBL	WBR	NET	NBR	SBL	SBT
LOS	E	В	A	А	A	А
Approach Delay	27.6		2.7			4.1
Approach LOS	С		А			А
Queue Length 50th (m)	26.4	0.0	5.2	0.0	8.3	2.8
Queue Length 95th (m)	42.3	22.7	8.9	1.3	17.9	6.0
Internal Link Dist (m)	197.8		319.7			662.6
Turn Bay Length (m)	50.0			40.0	40.0	
Base Capacity (vph)	707	805	2650	1199	844	2650
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.37	0.09	0.05	0.21	0.05

Intersection Summary	2. 2. Mar 10 1 10 10	NIN TO BE SHOWN IN THE REAL PROPERTY AND A REAL PROPERTY A REAL PR	
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length:	120		
Offset: 72 (60%), Refere	nced to phase 2:NBT	and 6:SBTL, Start of Green	
Natural Cycle: 65			
Control Type: Actuated-0	Coordinated		
Maximum v/c Ratio: 0.67	7		
Intersection Signal Delay	/: 13.3	Intersection LOS: B	
Intersection Capacity Uti	lization 40.8%	ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 33: Tenth Line & Harvest Valley

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64s	~
🗴 Ø6 (R)	Ø8
645	56 s

35: Tenth Line & Avalon South

Mer Bleue Expansion - Master Transportation Study

Lane Group Well WER NET NER SB1 Lane Configurations 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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Storage Lanes 1 1 0 1 Taper Length (m) 30.0 30.0 30.0 Lane Util. Factor 1.00 1.00 0.95 0.95 1.00 0.95 Frt 0.850 0.998 0.950 0.950 53330 0 1695 3390 Flt Protected 0.950 0.950 0.608 3390 1517 3383 0 1085 3390 Right Turn on Red Yes Yes Yes Stad. Flow (perm) 1695 1517 3383 0 1085 3390 Right Turn on Red Yes Yes Yes Stad. Flow (perm) 11495 1517 3383 0 1085 3390 Link Distance (m) 213.4 714.8 3443.7 714.8 3443.7 Travel Time (s) 15.4 42.9 20.6 2 6 Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 Adj. Flow (vph) 11 69
Taper Length (m) 30.0 30.0 Lane Util. Factor 1.00 1.00 0.95 0.95 1.00 0.95 Frt 0.850 0.998 0.950 0.950 0.950 Satd. Flow (prot) 1695 1517 3383 0 1695 3390 Flt Permitted 0.950 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.608 0.60 0.60 0.60 0.60 0.60 0.60 Link Sizac (m) 7.14.8 343.7 7 7 7 744 7.14.8 343.7 7 7 7 8 2.41 Shared Lane Traffic (%) Lane Group Flow (vph) 11 69 2.27 3 18 2.41 7 7 18
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Total Split (s) 28.0 28.0 32.0 32.0 32.0 Total Split (%) 46.7% 46.7% 53.3% 53.3% 53.3% Maximum Green (s) 23.5 23.5 27.5 27.5 27.5 Yellow Time (s) 3.5 3.5 3.5 3.5 3.5 3.5 All-Red Time (s) 1.0 1.0 1.0 1.0 1.0 1.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 4.5 4.5 4.5 4.5 4.5 4.5 Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Recall Mode None None C-Max C-Max C-Max
Total Split (%) 46.7% 46.7% 53.3% 53.3% 53.3% Maximum Green (s) 23.5 23.5 27.5 27.5 27.5 Yellow Time (s) 3.5 3.5 3.5 3.5 3.5 3.5 All-Red Time (s) 1.0 1.0 1.0 1.0 1.0 1.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 4.5 4.5 4.5 4.5 4.5 4.5 Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Recall Mode None None C-Max C-Max C-Max C-Max
Maximum Green (s) 23.5 23.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5
Yellow Time (s) 3.5 3.5 3.5 3.5 3.5 All-Red Time (s) 1.0 1.0 1.0 1.0 1.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 4.5 4.5 4.5 4.5 4.5 Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 Recall Mode None None C-Max C-Max C-Max
All-Red Time (s) 1.0 1.0 1.0 1.0 1.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 4.5 4.5 4.5 4.5 4.5 Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 Recall Mode None None C-Max C-Max C-Max
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 4.5 4.5 4.5 4.5 4.5 Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 Recall Mode None None C-Max C-Max C-Max
Total Lost Time (s)4.54.54.54.5Lead/LagLead-Lag Optimize?Vehicle Extension (s)3.03.03.03.0Recall ModeNoneNoneC-MaxC-Max
Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode None None C-Max C-Max C-Max
Lead-Lag Optimize?Vehicle Extension (s)3.03.03.03.0Recall ModeNoneNoneC-MaxC-Max
Vehicle Extension (s)3.03.03.03.03.0Recall ModeNoneNoneC-MaxC-MaxC-Max
Recall Mode None None C-Max C-Max C-Max
V_{2} (k) V_{0} (k) V_{0} (k) V_{0} (k) V_{0} (k) V_{0} (k) V_{0}
Flash Dont Walk (s) 11.0 11.0 11.0 11.0
Pedestrian Calls (#/hr) 0 0 0 0 0
Act Effct Green (s) 10.0 10.0 48.6 48.6 48.6
Actuated g/C Ratio 0.17 0.17 0.81 0.81 0.81
v/c Ratio 0.04 0.22 0.08 0.02 0.09
Control Delay 21.5 8.7 2.6 1.6 1.2
Queue Delay 0.0 0.0 0.0 0.0 0.0
Total Delay 21.5 8.7 2.6 1.6 1.2

Lanes, Volumes, Timings IBI Group

35: Tenth Line & Avalon South

Mer Bleue Expansion - Master Transportation Study

	1	*	1	-	1	Ļ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	С	Α	A		Α	A
Approach Delay	10.5		2.6			1.3
Approach LOS	В		А			Α
Queue Length 50th (m)	1.0	0.0	3.2		0.2	1.7
Queue Length 95th (m)	4.2	8.1	5.6		0.7	2.4
Internal Link Dist (m)	189.4		690.8			319.7
Turn Bay Length (m)	20.0				20.0	
Base Capacity (vph)	663	636	2740		879	2746
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	0.02	0.11	0.08		0.02	0.09

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL	, Start of Green
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.22	
Intersection Signal Delay: 3.1	Intersection LOS: A
Intersection Capacity Utilization 30.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 35: Tenth Line & Avalon South



3.6

Intersection

Int Delay, s/veh

Movement	WBL	WBR	NBT	NBR	SBL	SBT		19 F. M.
Traffic Vol, veh/h	123	13	224	20	12	90	34.5	3. S. S.
Future Vol, veh/h	123	13	224	20	12	90		
Conflicting Peds, #/hr	0	0	0	0	0	0		
Sign Control	Stop	Stop	Free	Free	Free	Free		
RT Channelized		None	1 H 1 H 1 H 4	None	1.15	None		
Storage Length	0			-				
Veh in Median Storage, #	0		0	1 de 1		0		
Grade, %	0		0	-		0		
Peak Hour Factor	95	95	95	95	95	95		
Heavy Vehicles, %	2	2	2	2	2	2		
Mvmt Flow	129	14	236	21	13	95		

Major/Minor	Minor1		Major1		Major2	<u>a</u> thi i	onuw ne y	
Conflicting Flow All	366	246	0	0	257	0		
Stage 1	246	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.						
Stage 2	120	-	0 		1.	(H)		
Critical Hdwy	6.42	6.22		1 14	4.12	1		
Critical Hdwy Stg 1	5.42	-	(#)	1	(-)	-		
Critical Hdwy Stg 2	5.42			-		4		
Follow-up Hdwy	3.518	3.318	2 4	-	2.218	-		
Pot Cap-1 Maneuver	634	793		(*)	1308	-		
Stage 1	795							
Stage 2	905					-		
Platoon blocked, %) .					
Mov Cap-1 Maneuver	628	793			1308			
Mov Cap-2 Maneuver	628	-				-		
Stage 1	795				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Stage 2	896	Ĕ.	14	1				

Approach	WB	NB	SB	철생 것 것 같아. 것 ㅋㅋ
HCM Control Delay, s	12.2		0.9	
HCM LOS	В			

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)		- 641	1308	
HCM Lane V/C Ratio	4	- 0.223	0.01	-
HCM Control Delay (s)		- 12.2	7.8	0
HCM Lane LOS	÷.	- B	А	А
HCM 95th %tile Q(veh)	- 6 · ·	- 0.9	0	1000

LANE SUMMARY

♡ Site: Mer Bleue and Brian Coburn Roundabout - 2025 - BG - AM

New Site Roundabout

Lane Use ar	Demand f			Deg.	Lane	Average	Level of	95% Back o	f Oueue	Lane	Lane	Cap.	Prob.
	Total veh/h	HV %	Cap. veh/h	Satn v/c	Util.	Delay	Service	Veh	Dist	Config	Length	Adj.	Block.
South: Mer Bl	eue Road		1.1		1111			100				1912	8. T. T.
Lane 1	254	3.0	687	0.371	100	10.1	LOS B	1,3	9.8	Full	500	0.0	0.0
Lane 2 ^d	262	3.0	708	0.371	100	9.9	LOS A	1.2	9.3	Full	420	0.0	0.0
Lane 3	129	3.0	687	0.189	100	7.4	LOS A	0.5	4,1	Two Seg ⁹	50	0.0	0.0
Approach	646	3.0		0.371		9,5	LOS A	1,3	9.8				
East: Brian Co	burn Road	1						and a S					
Lane 1	432	3.0	638	0.677	100	20.0	LOS C	3.5	27.6	Full	500	0.0	0.0
Lane 2	432	3.0	638	0.677	100	20.0	LOS C	3.5	27.6	Full	500	0.0	0.0
Lane 3 ^d	604	3.0	661	0.913	100	41.7	LOS E	8.8	68.9	Two Seg ⁹	50	0.0	15.4
Approach	1468	3.0		0.913		28.9	LOS D	8.8	68.9				
North: Mer Ble	eue Road				13.7		1.017/12						
Lane 1	197	3.0	530	0.372	100	12.6	LOS B	1.2	9,5	Full	500	0,0	0.0
Lane 2 ^d	207	3.0	556	0.372	100	12.1	LOS B	1.2	9.1	Full	500	0.0	0.0
Lane 3	131	3.0	530	0.246	100	10.2	LOS B	0.7	5.4	Two Seg ⁹	50	0.0	0.0
Approach	535	3.0		0.372		11.8	LOS B	1,2	9.5				
West: Brian C	oburn Roa	d Exter	nsion	CAN				200. B					
Lane 1	219	3.0	645	0.340	100	10.1	LOS B	1.1	8.5	Full	500	0.0	0.0
Lane 2 ^d	227	3.0	668	0.340	100	9.8	LOS A	1.0	8.2	Full	500	0.0	0.0
Lane 3	27	3.0	645	0.042	100	6.0	LOS A	0.1	0.8	Two Seg ⁹	50	0.0	0.0
Approach	474	3.0		0.340		9.7	LOS A	1.1	8.5				
Intersection	3123	3.0		0.913		19.1	LOSC	8.8	68.9				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

- 9 All Movement Classes allocated to Segment 1 are also allocated to Segment 2. This Two-Segment Lane has been modelled as a full-length lane.
- d Dominant lane on roundabout approach

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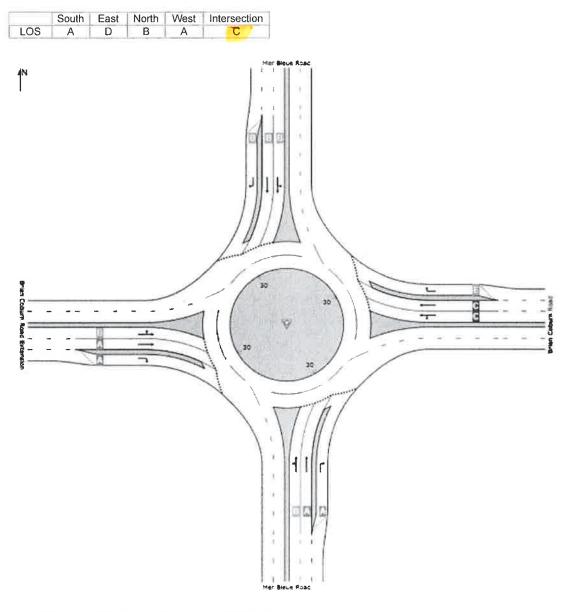
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LEVEL OF SERVICE

♥ Site: Mer Bleue and Brian Coburn Roundabout - 2025 - BG - AM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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2: Tenth Line & Brian Coburn

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NET	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	**	1	7	<u>†</u> †	7	ካካ	朴		ሻሻ	<u></u>	1
Traffic Volume (vph)	394	560	205	13	334	243	140	494	52	291	554	295
Future Volume (vph)	394	560	205	13	334	243	140	494	52	291	554	295
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	115.0		80.0	40.0		50.0	105.0		0.0	100.0	1000	65.0
Storage Lanes	2	1.0	1	1		1	2		0	2		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Frt			0.850			0.850	0.01	0.986	0,00	0.01	0.00	0.850
Flt Protected	0.950	1.00		0.950	100	01000	0.950	0.000		0.950		0.000
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	3288	3343	0	3288	3390	1517
Flt Permitted	0.950		TO TT	0.430	0000	TOTT	0.950	0010	Ŭ	0.950	0000	1011
Satd. Flow (perm)	3288	3390	1517	767	3390	1517	3288	3343	0	3288	3390	1517
Right Turn on Red			Yes			Yes	0200	0010	Yes	0200	0000	Yes
Satd. Flow (RTOR)			216			249		8	100			311
Link Speed (k/h)		60	210		60	210		60			60	511
Link Distance (m)		1402.3			938.8			686.6			623.5	
Travel Time (s)		84.1	1.1		56.3			41.2			37.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	415	589	216	14	352	256	147	520	55	306	583	311
Shared Lane Traffic (%)	110	000	210		002	200	147	020	00	000	000	011
Lane Group Flow (vph)	415	589	216	14	352	256	147	575	0	306	583	311
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Prot	NA	U	Prot	NA	Perm
Protected Phases	7	4	T QIIII	Tonn	8	1 Onn	5	2		1	6	I emi
Permitted Phases	,		4	8	Ű	8	U	2			U	6
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase				U	Ű	U	U	L			U	0
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	13.3	35.0	35.0	35.0	35.0	35.0	13.3	35.0		13.3	35.0	35.0
Total Split (s)	31.0	66.0	66.0	35.0	35.0	35.0	17.0	38.8		25.2	47.0	47.0
Total Split (%)	23.8%	50.8%	50.8%	26.9%	26.9%	26.9%	13.1%	29.8%		19.4%	36.2%	36.2%
Maximum Green (s)	24.7	59.7	59.7	28.7	28.7	28.7	10.7	32.5		18.9	40.7	40.7
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2		2.2	2.2	2.2
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
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3
Lead/Lag	Lead	0.0	0.0	Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Min	Min	None	Min		None	Min	Min
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	Home	7.0		None	7.0	7.0
Flash Dont Walk (s)		21.7	21.7	21.7	21.7	21.7		21.7			21.7	21.7
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	18.3	42.2	42.2	17.3	17.3	17.3	9.6	23.3		14.8	28.5	28.5
Actuated g/C Ratio	0.18	0.42	0.42	0.17	0.17	0.17	0.10	0.23		0.15	0.29	0.29
v/c Ratio	0.69	0.42	0.42	0.17	0.60	0.55	0.10	0.23		0.15	0.29	0.29
Control Delay	46.5	21.8	3.7	41.6	44.4	10.6	52.2	42.3		48.7	34.3	6.0
Queue Delay	40.0	0.0	0.0	0.0	0.0	0.0	0.0	42.3		40.7	0.0	0.0
Total Delay	46.5	21.8	3.7	41.6	44.4	10.6	52.2	42.3		48.7	34.3	
	-10.0	21.0	5.7	41.0	44.4	10.0	JZ.Z	42.3		40.7	34.3	6.0

Lanes, Volumes, Timings IBI Group

2: Tenth Line & Brian Coburn

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WET	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	С	А	D	D	В	D	D		D	С	A
Approach Delay		27.0			30.4			44.3			30.7	
Approach LOS		С			С			D			С	125
Queue Length 50th (m)	35.7	37.6	0.0	2.1	30.7	1.0	12.8	49.0		26.5	46.9	0.0
Queue Length 95th (m)	61.5	60.4	12.7	8.2	52.4	22.2	27.0	80.1		48.2	74.4	18.2
Internal Link Dist (m)		1378.3			914.8			662.6			599.5	
Turn Bay Length (m)	115.0		80.0	40.0		50.0	105.0			100.0		65.0
Base Capacity (vph)	845	2105	1024	228	1012	627	365	1135		646	1435	821
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.49	0.28	0.21	0.06	0.35	0.41	0.40	0.51		0.47	0.41	0.38

Area Type:OtherCycle Length: 130Actuated Cycle Length: 99.9Natural Cycle: 100Control Type: Semi Act-UncoordMaximum v/c Ratio: 0.73Intersection Signal Delay: 32.0Intersection Capacity Utilization 70.6%Analysis Period (min) 15

Intersection LOS: C ICU Level of Service C

Splits and Phases: 2: Tenth Line & Brian Coburn

Ø1	1 Ø2	-•04	
25.2 5	38.8 s	66 s	
1 Ø5	↓ Ø6	<u></u> <i>▶</i> _{Ø7}	Ø8
17 5	47 s	31s	35 s

4.2

Intersection

Int Delay, s/veh

			100000										100
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SE	BL	SBT	SBR
Traffic Vol, veh/h	125	11	8	1	2	7	3	377	4	100.0	1	299	42
Future Vol, veh/h	125	11	8	1	2	7	3	377	4		1	299	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0		0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Fre	e	Free	Free
RT Channelized			None		•	None	2 1 2 2		None		-	-	None
Storage Length		-	-	-	-	-	-	-	-			340	14
Veh in Median Storage, #		0	1.75.45		0	100	the start of the	0	-		-	0	-
Grade, %		0	-	-	0	-	-	0	-		-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	(95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2		2	2	2
Mvmt Flow	132	12	8	1	2	7	3	397	4		1	315	44

Major/Minor	Minor2			N	Ainor1	iki n			Major1			Major2		
Conflicting Flow All	749	746	337		754	766	399		359	0	0	401	0	0
Stage 1	339	339			405	405	-					1000	-	-
Stage 2	410	407	-		349	361	-		20 8 0	50 6 5		1 40	141	
Critical Hdwy	7.12	6.52	6.22		7.12	6.52	6.22		4.12		-	4.12	-	•
Critical Hdwy Stg 1	6.12	5.52	-		6.12	5.52	-		041	· •	-			
Critical Hdwy Stg 2	6.12	5.52			6.12	5.52					•	10 A		•
Follow-up Hdwy	3.518	4.018	3.318		3.518	4.018	3.318		2.218	ی		2.218		
Pot Cap-1 Maneuver	328	342	705		326	333	651		1200			1158		
Stage 1	676	640	-		622	598	-		19 4 3	(1)			-	
Stage 2	619	597	-		667	626			-					
Platoon blocked, %										2 4 5	 (a) 		94 C	12
Mov Cap-1 Maneuver	322	341	705		313	332	651		1200	-	•	1158	-	-
Mov Cap-2 Maneuver	322	341	¥		313	332	-		112	-				
Stage 1	674	639	-		620	596	20.00						1.8	-
Stage 2	608	595	-		646	625	-							
														٩ų
Approach	EB	2.3		225	WB			1470	NB.	1918 - J	a series	SB		
HCM Control Delay, s	24.5			1.	12.3	111		A Y	0.1		1	0	1.2	
HCM LOS	С				В									_
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1W	/BLn1	SBL	SBT	SBR			1.2	1 . 1 - 0	14.00	
Capacity (veh/h)	1200	-		333	501	1158			12.5		2.1	A DOMESTIC	10.00	
HCM Lane V/C Ratio	0.003	-		0.455	0.021	0.001								
HCM Control Delay (s)	8	0	- 3	24.5	12.3	8.1	0	1						-
HCM Lane LOS	A	А	÷	С	В	А	А	1.52						
HCM 95th %tile Q(veh)	0	-		2.3	0.1	0	1117							

7: Tenth Line & Navan /Navan

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٢	ef 👘		ሻ	1	7		4			स	1
Traffic Volume (vph)	162	567	12	2	261	197	12	22	3	66	22	262
Future Volume (vph)	162	567	12	2	261	197	12	22	3	66	22	262
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	120.0		0.0	65.0		40.0	0.0		0.0	0.0		30.0
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850		0.990				0.850
Flt Protected	0.950			0.950				0.984			0.964	81.24
Satd. Flow (prot)	1695	1779	0	1695	1784	1517	0	1738	0	0	1720	1517
Flt Permitted	0.590			0.325				0.876			0.754	1
Satd. Flow (perm)	1053	1779	0	580	1784	1517	0	1547	0	0	1345	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				207		3				276
Link Speed (k/h)	1. St. 1. Sale	60			60			60			60	
Link Distance (m)		1757.1			855.5			456.3			1290.5	
Travel Time (s)		105.4			51.3			27.4			77.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	171	597	13	2	275	207	13	23	3	69	23	276
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	610	0	2	275	207	0	39	0	0	92	276
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2		100	6	12.2
Permitted Phases	4			8		8	2			6		6
Detector Phase	4	4		8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2	25.2	24.7	24.7		24.7	24.7	24.7
Total Split (s)	78.0	78.0		78.0	78.0	78.0	42.0	42.0		42.0	42.0	42.0
Total Split (%)	65.0%	65.0%		65.0%	65.0%	65.0%	35.0%	35.0%		35.0%	35.0%	35.0%
Maximum Green (s)	70.8	70.8		70.8	70.8	70.8	35.3	35.3		35.3	35.3	35.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.5	3.5	Sec. 1	3.5	3.5	3.5	3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	7.2	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min	Min	None	None	181	None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	0.0
Act Effct Green (s)	22.9	22.9		22.9	22.9	22.9		11.3			11.3	11.3
Actuated g/C Ratio	0.47	0.47		0.47	0.47	0.47		0.23			0.23	0.23
v/c Ratio	0.35	0.73	1112-	0.01	0.33	0.25		0.20		1.15	0.29	0.23
Control Delay	9.9	15.8		6.5	8.8	2.1		17.6			21.0	6.6
Queue Delay	0.0	0.0	1	0.0	0.0	0.0	1.00	0.0	100000		0.0	0.0
Total Delay	9.9	15.8		6.5	8.8	2.1		17.6			21.0	6.6
	5.3	10.0		0.0	0.0	2.1		17.0			21.0	0.0

Lanes, Volumes, Timings IBI Group

7: Tenth Line & Navan /Navan

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	А	В	1.1.1.1	А	А	А	1.1	В	1.55		С	A
Approach Delay		14.5			6.0			17.6			10.2	
Approach LOS		В			А			В			В	
Queue Length 50th (m)	7.1	32.2		0.1	11.3	0.0		2.2			5.8	0.0
Queue Length 95th (m)	18.7	68.2		0.8	25.4	6.8		9.3			18.8	14.9
Internal Link Dist (m)		1733.1			831.5			432.3			1266.5	
Turn Bay Length (m)	120.0			65.0		40.0						30.0
Base Capacity (vph)	1053	1779		580	1784	1517		1164			1011	1209
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	0.16	0.34		0.00	0.15	0.14		0.03			0.09	0.23
Intersection Summary					- la des	1 10-200				The second	Ty-	
Area Type:	Other											
Cycle Length: 120												1
Actuated Cycle Length: 48	.6											
Natural Cycle: 60												
Control Type: Semi Act-Ur	ncoord											
Maximum v/c Ratio: 0.73												
Intersection Signal Delay:					tersection							
Intersection Capacity Utiliz	ation 68.7%			IC	CU Level of	of Service	C					

Splits and Phases: 7: Tenth Line & Navan /Navan

Analysis Period (min) 15

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24: Navan & Mer Bleue Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	WBT	WBR	SEL	SBR	818
Lane Configurations	٦	↑	+	7	ሻ	7	
Traffic Volume (vph)	178	597	248	104	159	129	
Future Volume (vph)	178	597	248	104	159	129	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Storage Length (m)	40.0			40.0	40.0	20.0	
Storage Lanes	1			1	1	0	177
Taper Length (m)	30.0				30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1100		0.850		0.850	
Fit Protected	0.950			0.000	0.950	0.000	
Satd. Flow (prot)	1695	1784	1784	1517	1695	1517	
Fit Permitted	0.598		1101		0.950	1011	
Satd. Flow (perm)	1067	1784	1784	1517	1695	1517	
Right Turn on Red	1007	1104	1104	Yes	1000	Yes	
Satd. Flow (RTOR)				109		136	
Link Speed (k/h)		60	60	109	50	130	
Link Distance (m)		1840.8	1757.1		403.0		
Travel Time (s)	0.05	110.4	105.4	0.05	29.0	0.05	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	187	628	261	109	167	136	
Shared Lane Traffic (%)	107	000	001	100	105	100	_
Lane Group Flow (vph)	187	628	261	109	167	136	
Turn Type	Perm	NA	NA	Perm	Prot	Perm	
Protected Phases	12-11-2	4	8		6		
Permitted Phases	4			8		6	
Detector Phase	4	4	8	8	6	6	
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	
Minimum Split (s)	25.9	25.9	25.9	25.9	25.3	25.3	
Total Split (s)	34.4	34.4	34.4	34.4	25.6	25.6	
Total Split (%)	57.3%	57.3%	57.3%	57.3%	42.7%	42.7%	
Maximum Green (s)	29.0	29.0	29.0	29.0	20.5	20.5	
Yellow Time (s)	4.1	4.1	4.1	4.1	3.6	3.6	
All-Red Time (s)	1.3	1.3	1.3	1.3	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.4	5.4	5.4	5.4	5.1	5.1	
Lead/Lag	0.1	Vir	0.7	0.7	Vii	0.1	
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min	Min	Min	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	
	9.2		9.2				
Flash Dont Walk (s)		9.2		9.2	9.2	9.2	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	
Act Effct Green (s)	25.1	25.1	25.1	25.1	9.8	9.8	
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.24	0.24	
v/c Ratio	0.29	0.58	0.24	0.11	0.42	0.29	
Control Delay	8.0	10.4	6.7	1.9	18.3	5.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.0	10.4	6.7	1.9	18.3	5.7	

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Lanes, Volumes, Timings IBI Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	А	В	А	Α	В	A
Approach Delay		9.8	5.3		12.6	
Approach LOS		Α	Α		В	
Queue Length 50th (m)	6.3	26.8	8.5	0.0	8.9	0.0
Queue Length 95th (m)	17.8	62.1	20.7	4.6	24.5	9.1
Internal Link Dist (m)		1816.8	1733.1		379.0	
Turn Bay Length (m)	40.0			40.0	40.0	20.0
Base Capacity (vph)	783	1309	1309	1142	879	852
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.48	0.20	0.10	0.19	0.16

Intersection Summary	
Area Type: Other	1
Cycle Length: 60	
Actuated Cycle Length: 41.3	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 5	51.2% ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 24: Navan & Mer Bleue

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Long Crown	CDI	EDD	NIDI	NIDT	ODT	ODD
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	٦	1	1	
Traffic Volume (vph)	541	17	8	237	286	306
Future Volume (vph)	541	17	8	237	286	306
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	40.0	40.0		-	40.0
Storage Lanes	2	0	1			1
Taper Length (m)	30.0	1.00	30.0	4.00	4.00	4.00
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3288	1517	1695	1784	1784	1517
Flt Permitted	0.950	1.1	0.567	10 10		1.1
Satd. Flow (perm)	3288	1517	1012	1784	1784	1517
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		18				322
Link Speed (k/h)	50			50	60	
Link Distance (m)	994.9			1179.9	394.2	
Travel Time (s)	71.6			85.0	23.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	569	18	8	249	301	322
Shared Lane Traffic (%)						
Lane Group Flow (vph)	569	18	8	249	301	322
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	I CIIII	T CHI	2	6	1 GIIII
Permitted Phases		4	2	2	0	6
Detector Phase	4	4	2	2	6	6
Contraction of the Contraction o	4	4	2	2	0	0
Switch Phase	5.0	5.0	40.0	40.0	10.0	40.0
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	25.9	25.9	28.8	28.8
Total Split (s)	57.0	57.0	63.0	63.0	63.0	63.0
Total Split (%)	47.5%	47.5%	52.5%	52.5%	52.5%	52.5%
Maximum Green (s)	51.6	51.6	57.7	57.7	57.7	57.7
Yellow Time (s)	3.6	3.6	4.1	4.1	4.1	4.1
All-Red Time (s)	1.8	1.8	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.3	5.3	5.3	5.3
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.1	12,1	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0	0.0	0.0	0	0
	20.5		57.8		57.8	57.8
Act Effct Green (s)		20.5		57.8		
Actuated g/C Ratio	0.23	0.23	0.65	0.65	0.65	0.65
v/c Ratio	0.75	0.05	0.01	0.22	0.26	0.29
Control Delay	38.6	11.6	6.9	7.6	7.9	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	11.6	6.9	7.6	7.9	1.7

Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
LOS	D	В	A	A	A	A	Castle at the A to a straight the
Approach Delay	37.8			7.5	4.7		
Approach LOS	D	1 2 3 4		А	А		
Queue Length 50th (m)	43.0	0.0	0.4	14.1	17.6	0.0	
Queue Length 95th (m)	58.5	4.6	2.1	28.5	34.6	8.8	
Internal Link Dist (m)	970.9			1155.9	370.2		
Turn Bay Length (m)	40.0	40.0	40.0			40.0	
Base Capacity (vph)	1909	888	657	1158	1158	1097	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.30	0.02	0.01	0.22	0.26	0.29	

Area Type: Other		
Cycle Length: 120		
Actuated Cycle Length: 89		
Vatural Cycle: 65		
Control Type: Semi Act-Uncoord		
/laximum v/c Ratio: 0.75		
ntersection Signal Delay: 18.4	Intersection LOS: B	
ntersection Capacity Utilization 41.1%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 26: Mer Bleue & Renaud

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33: Tenth Line & Harvest Valley Mer Bleue Expansion - Master Transportation Study

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ana Group	WBL	WBR	NIDT	NBR	SBL	SBT
Lane Group			NET			
Lane Configurations	7	7	^	7	٦	^
Traffic Volume (vph)	30	99	472	59	189	333
Future Volume (vph)	30	99	472	59	189	333
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0	0.0		40.0	40.0	
Storage Lanes	1	- 1		1	1	
Taper Length (m)	30.0				30.0	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1695	1517	3390	1517	1695	3390
Flt Permitted	0.950				0.470	
Satd. Flow (perm)	1695	1517	3390	1517	839	3390
Right Turn on Red		Yes		Yes		5000
Satd. Flow (RTOR)		104		62		-
Link Speed (k/h)	50	10-1	60	02		60
Link Distance (m)	221.8		343.7			686.6
Travel Time (s)	16.0	0.05	20.6	0.05	0.05	41.2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	104	497	62	199	351
Shared Lane Traffic (%)					-	
Lane Group Flow (vph)	32	104	497	62	199	351
Turn Type	Perm	Perm	NA	Perm	Perm	NA
Protected Phases			2			6
Permitted Phases	8	8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	34.8	34.8	28.6	28.6	28.6	28.6
Total Split (s)	40.0	40.0	80.0	80.0	80.0	80.0
	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%
Total Split (%)						
Maximum Green (s)	34.1	34.1	74.4	74.4	74.4	74.4
Yellow Time (s)	3.6	3.6	4.1	4.1	4.1	4.1
All-Red Time (s)	2.3	2.3	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9	5.6	5.6	5.6	5.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	17.9	17.9	9.2	9.2	9.2	9.2
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	10.3	10.3	98.2	98.2	98.2	98.2
	0.09	0.09	0.82	0.82	0.82	0.82
Actuated g/C Ratio						
v/c Ratio	0.22	0.46	0.18	0.05	0.29	0.13
Control Delay	54.9	16.7	2.5	0.6	3.8	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	16.7	2.5	0.6	3.8	2.3

Lanes, Volumes, Timings IBI Group

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	D	В	А	А	Α	А
Approach Delay	25.7		2.2			2.9
Approach LOS	С		А			А
Queue Length 50th (m)	6.6	0.0	9.2	0.0	7.9	6.2
Queue Length 95th (m)	15.7	15.1	12.7	1.8	14.9	9.4
Internal Link Dist (m)	197.8		319.7			662.6
Turn Bay Length (m)	50.0			40.0	40.0	
Base Capacity (vph)	481	505	2774	1252	686	2774
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.21	0.18	0.05	0.29	0.13
Construction of the second				_		

 Intersection Summary

 Area Type:
 Other

 Cycle Length: 120
 Actuated Cycle Length: 120

 Offset: 44 (37%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 65

 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.46

 Intersection Signal Delay: 5.1
 Intersection LOS: A

 Intersection Capacity Utilization 47.4%
 ICU Level of Service A

 Analysis Period (min) 15
 Service A

Splits and Phases: 33: Tenth Line & Harvest Valley

Ø2 (R)	
SO s	
Ø6 (R)	Ø8
	40 s

	4	×.	†	1	1	Ļ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	VVDL	WBR	1001 1001	TRUIN	ODL	^
Traffic Volume (vph)	5	37	T 🗗 494	10	68	TT 295
Future Volume (vph)	5	37	494	10	68	295
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0	0.0	1000	0.0	20.0	1000
Storage Lanes	20.0	0.0		0.0	20.0	
Taper Length (m)				U		
	30.0	1.00	0.05	0.05	30.0	0.05
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.050	0.850	0.997		0.050	
Fit Protected	0.950	1005	0010		0.950	
Satd. Flow (prot)	1526	1365	3042	0	1526	3051
Flt Permitted	0.950				0.455	
Satd. Flow (perm)	1526	1365	3042	0	731	3051
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		39	5			
Link Speed (k/h)	50		60			60
Link Distance (m)	213.4		714.8			343.7
Travel Time (s)	15.4		42.9			20.6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	39	520	11	72	311
Shared Lane Traffic (%)						VII
Lane Group Flow (vph)	5	39	531	0	72	311
Turn Type	Perm	Perm	NA	v	Perm	NA
Protected Phases		1 cm	2		r enn	6
Permitted Phases	8	8	2		G	U
Detector Phase	8	0 8	2		6 6	C
	ð	ð	2		0	6
Switch Phase	40.0	40.0	10.0	-	40.0	40.0
Minimum Initial (s)	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5
Total Split (s)	25.0	25.0	35.0		35.0	35.0
Total Split (%)	41.7%	41.7%	58.3%		58.3%	58.3%
Maximum Green (s)	20.5	20.5	30.5		30.5	30.5
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?	N					
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Min		C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)			52.4			
	10.0	10.0			52.4	52.4
Actuated g/C Ratio	0.17	0.17	0.87		0.87	0.87
v/c Ratio	0.02	0.15	0.20		0.11	0.12
Control Delay	21.2	9.9	2.2		2.3	1.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	21.2	9.9	2.2		2.3	1.6

Lanes, Volumes, Timings IBI Group

			Ť	-	1	1
Lane Group	WEL	WBR	NBT	NBR	SBL	SBT
LOS	C	A		TAFAU	A	
Approach Delay	11.2	A	A 2.2		A	A 1.7
Approach LOS	B	12112-01	Ζ.Ζ			1.7 A
Queue Length 50th (m)	0.4	0.0	0.0		0.0	0.0
Queue Length 95th (m)	2.6	6.1	12.9		3.7	5.9
Internal Link Dist (m)	189.4	0.1	690.8		0.7	319.7
Turn Bay Length (m)	20.0		000.0		20.0	010.1
Base Capacity (vph)	521	492	2657		638	2664
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	0.01	0.08	0.20		0.11	0.12

Splits and Phases: 35: Tenth Line & Avalon South



1.4

Intersection

Int Delay, s/veh

	ne de tracele.					The second second second second
WBL	WBR	NBT	NBR	SBL	SBT	the second second
35	10	130	121	15	136	
35	10	130	121	15	136	
0	0	0	0	0	0	a an
Stop	Stop	Free	Free	Free	Free	
	None		None		None	
0	-	-	3 9 3			
0		0	LLL ve		0	
0		0	۰		0	
95	95	95	95	95	95	
2	2	2	2	2	2	
37	11	137	127	16	143	
	35 35 0 Stop - 0 0 0 95 2	35 10 35 10 0 0 Stop Stop - None 0 - 0 - 0 - 0 - 0 - 95 95 2 2	35 10 130 35 10 130 0 0 0 Stop Stop Free - None - 0 - - 0 - 0 0 - 0 0 - 0 0 - 0 0 - 0 95 95 95 2 2 2	35 10 130 121 35 10 130 121 0 0 0 0 Stop Stop Free Free - None - None 0 - - - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 95 95 95 95 2 2 2 2 2	35 10 130 121 15 35 10 130 121 15 0 0 0 0 0 Stop Stop Free Free Free - None - - - 0 - 0 - - - 0 - 0 - - - 0 - 0 - - - 0 - 0 - - - 0 - 0 - - - 95 95 95 95 95 2 2 2 2 2 2 2 2	35 10 130 121 15 136 35 10 130 121 15 136 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Stop Stop Free Free Free Free Free - None - None - None 0 - 0 - - 0 0 - 0 - - 0 0 - 0 - - 0 0 - 0 - - 0 95 95 95 95 95 95 2 2 2 2 2 2 2

Major/Minor	Minor1	1.1.1	Majo	or1	3 25 10	Major2	127	STREET, STREET,	
Conflicting Flow All	376	201		0	0	264	0		
Stage 1	201			-		-	-		
Stage 2	175						-		
Critical Hdwy	6.42	6.22		1.00	-	4.12	-		
Critical Hdwy Stg 1	5.42	-			5.005		140		
Critical Hdwy Stg 2	5.42			240			-		
Follow-up Hdwy	3.518	3.318		5 4 (1	2.218	-		
Pot Cap-1 Maneuver	625	840		1		1300			
Stage 1	833								
Stage 2	855	11-1-11-1 (m)		-	-	والمتحاج والمتحاج والمحاجم والمحاجم والمحاجم والمحاج و	-		
Platoon blocked, %							();		
Mov Cap-1 Maneuver	617	840		-	-	1300	-		
Mov Cap-2 Maneuver	617				5 4 5	2 4 3	141		
Stage 1	833				-		-		
Stage 2	844	72:		-	-				
Approach	WB			NB	4.20	SB		ويحجز المصابعة	
HCM Control Delay, s	10.9		and the second	0		0.8	100	10 D D	
HCM LOS	В								
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL SBT				bar 2		
Capacity (veh/h)		- 656	1300 -					1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Capacity (veh/h)		- 656	1300	-	
HCM Lane V/C Ratio		- 0.072	0.012	-	
HCM Control Delay (s)		- 10.9	7.8	0	
HCM Lane LOS	1	- B	A	А	
HCM 95th %tile Q(veh)		- 0.2	0	3	

LANE SUMMARY

♥ Site: Mer Bleue and Brian Coburn Roundabout - 2025 - BG - PM

New Site Roundabout

Lane Use an	and the second se	Concern a name)		Bo II					And the second second	. La la com		
	Demand F Total veh/h	Flows HV %	Cap. veh/h	Deg Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back o Veh	f Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Mer Ble					11321					1	18 6-1 1		
Lane 1	238	3.0	411	0.579	100	23.0	LOS C	2.2	16.9	Full	500	0.0	0.0
Lane 2	238	3.0	411	0.579	100	23.0	LOS C	2.2	16.9	Full	420	0.0	0.0
Lane 3 ^d	393	3.0	439	0.894	100	51.1	LOS F	5.9	46.0	Two Seg ⁹	50	0.0	2.6
Approach	868	3.0		0.894		35.7	LOS E	5.9	46.0				
East: Brian Co	burn Roác	1-0-1					14	the state of the s	9. A.A.A.A				
Lane 1	281	3.0	632	0.444	100	12.4	LOS B	1.6	12.8	Full	500	0.0	0.0
Lane 2	281	3.0	632	0.444	100	12.4	LOS B	1.6	12.8	Full	500	0.0	0.0
Lane 3 ^d	294	3.0	1626	0.181	100	0.0	LOSA	0.0	0.0	Two Seg ⁹	50	0.0	0.0
Approach	855	3.0		0.444		8.1	LOSA	1.6	12.8				
North: Mer Ble	ue Road	1,153					1.15- 10	i na si					
Lane 1	500	3.0	682	0.733	100	22.0	LOS C	4,5	34.8	Full	500	0.0	0.0
Lane 2 ^d	516	3.0	703	0.733	100	21.5	LOS C	4.3	33.5	Full	500	0.0	0.0
Lane 3	177	3.0	682	0.259	100	8.4	LOS A	0,8	6.0	Two Seg ⁹	50	0.0	0.0
Approach	1193	3.0		0,733		19.8	LOS C	4.5	34.8				
West: Brian Co	obum Roa	d Exter	nsion				14 al 14 al	an the free	1000	N. 80 P			
Lane 1	390	3.0	433	0.900	100	52.5	LOS F	6.3	49.4	Full	500	0.0	0.0
Lane 2 ^d	415	3.0	461	0.900	100	50.3	LOS F	6.2	48.6	Full	500	0.0	0.0
Lane 3	79	3.0	433	0.182	100	11.1	LOS B	0.5	3.8	Two Seg ⁹	50	0.0	0.0
Approach	883	3.0		0.900		47.8	LOS E	6.3	49.4				
Intersection	3799	3.0		0.900		27.3	LOSD	6.3	49.4				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

9 All Movement Classes allocated to Segment 1 are also allocated to Segment 2. This Two-Segment Lane has been modelled as a full-length lane.

d Dominant lane on roundabout approach

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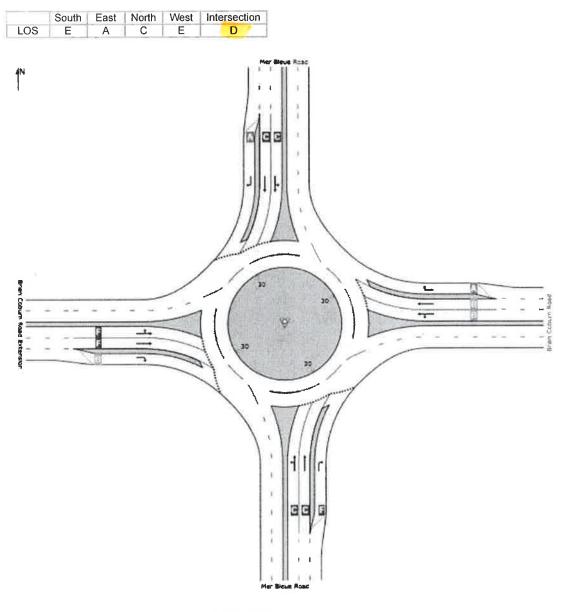
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LEVEL OF SERVICE

♥ Site: Mer Bleue and Brian Coburn Roundabout - 2025 - BG - PM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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Future (2031) Background Traffic

2: Tenth Line & Brian Coburn

Mer Bleue Expansion - Master Transportation Study

Traffic Volume (vph) 252 148 63 27 808 269 206 508 34 106 2	↑ 1 ⁄ 9 216
Lane Configurations <u>가기 수수 7 가기 수다 가기 수다 가기</u> 수 Traffic Volume (vph) 252 148 63 27 808 269 206 508 34 106 2	↑ 1 9 216
Traffic Volume (vph) 252 148 63 27 808 269 206 508 34 106 2	9 216
Future Volume (vph) 252 148 63 27 808 269 206 508 34 106 2	9 216
Ideal Flow (vphpl) 1800 1800 1800 1800 1800 1800 1800 180	
Storage Length (m) 115.0 80.0 40.0 50.0 105.0 0.0 100.0	65.0
Storage Lanes 2 1 1 1 1 2 0 2	1
Taper Length (m) 30.0 30.0 30.0 30.0	
Lane Util. Factor 0.97 0.95 1.00 1.00 0.95 1.00 0.97 0.95 0.95 0.97 0.	5 1.00
Frt 0.850 0.850 0.991	0.850
Flt Protected 0.950 0.950 0.950 0.950	
Satd. Flow (prot) 3288 3390 1517 1695 3390 1517 3288 3360 0 3288 33	0 1517
Flt Permitted 0.950 0.653 0.950 0.950	
Satd. Flow (perm) 3288 3390 1517 1165 3390 1517 3288 3360 0 3288 33	0 1517
Right Turn on Red Yes Yes Yes Yes	Yes
Satd. Flow (RTOR) 86 224 6	227
	60
Link Distance (m) 1402.3 938.8 686.6 62	.5
Travel Time (s) 84.1 56.3 41.2 3	.4
Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95	0.95
Adj. Flow (vph) 265 156 66 28 851 283 217 535 36 112 2	2 227
Shared Lane Traffic (%)	
Lane Group Flow (vph) 265 156 66 28 851 283 217 571 0 112 2	2 227
Turn Type Prot NA Perm Perm NA Perm Prot NA Prot	A Perm
Protected Phases 7 4 8 5 2 1	6
Permitted Phases 4 8 8	6
Detector Phase 7 4 4 8 8 8 5 2 1	6 6
Switch Phase	
Minimum Initial (s) 5.0 10.0 10.0 10.0 10.0 10.0 5.0 10.0 5.0 1	.0 10.0
Minimum Split (s) 13.3 35.0 35.0 35.0 35.0 35.0 13.3 35.0 13.3 35.0	.0 35.0
Total Split (s) 21.0 66.0 66.0 45.0 45.0 45.0 19.0 40.4 14.9 3	.3 36.3
Total Split (%) 17.3% 54.4% 54.4% 37.1% 37.1% 37.1% 15.7% 33.3% 12.3% 29.	% 29.9%
Maximum Green (s) 14.7 59.7 59.7 38.7 38.7 38.7 12.7 34.1 8.6 3	.0 30.0
Yellow Time (s) 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1	.1 4.1
All-Red Time (s) 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.	.2 2.2
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
Total Lost Time (s) 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3	.3 6.3
Lead/Lag Lead Lead Lag Lag Lead Lag Lead L	ig Lag
Lead-Lag Optimize? Yes	es Yes
Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	.0 3.0
Recall Mode None Min Min Min Min Min None Min None M	in Min
Walk Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0	.0 7.0
Flash Dont Walk (s) 21.7 21.7 21.7 21.7 21.7 21.7 21.7 2	.7 21.7
Pedestrian Calls (#/hr) 0 0 0 0 0 0	0 0
Act Effct Green (s) 12.9 52.2 52.2 32.8 32.8 32.8 11.4 23.6 8.1 2	2 20.2
Actuated g/C Ratio 0.12 0.51 0.51 0.32 0.32 0.32 0.11 0.23 0.08 0.	
v/c Ratio 0.64 0.09 0.08 0.08 0.79 0.45 0.60 0.74 0.44 0.	
Control Delay 52.9 14.1 2.1 27.3 38.8 9.6 53.6 43.7 54.8 3	
	.0 0.0
Total Delay 52.9 14.1 2.1 27.3 38.8 9.6 53.6 43.7 54.8 39	

Lanes, Volumes, Timings IBI Group

2: Tenth Line & Brian Coburn

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	B	A	C	D	A	D	D	NEIN	D	D	A
Approach Delay	U	33.6	~	U	31.4	~	U	46.4		U	30.5	~
Approach LOS		C	1.1		C			D			C	1.72
Queue Length 50th (m)	25.5	7.7	0.0	3.7	77.4	8.0	20.9	54.1		10.9	23.7	0.0
Queue Length 95th (m)	41.4	14.4	4.2	10.5	109.3	29.5	35.3	73.8		20.7	35.9	17.8
Internal Link Dist (m)		1378.3			914.8			662.6			599.5	
Turn Bay Length (m)	115.0		80.0	40.0	1.1	50.0	105.0			100.0		65.0
Base Capacity (vph)	479	2007	933	446	1301	720	414	1140		280	1008	610
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.55	0.08	0.07	0.06	0.65	0.39	0.52	0.50		0.40	0.26	0.37
Intersection Summary					Same 3					121	Transfer of	
Area Type:	Other										_	
Cycle Length: 121.3												
Actuated Cycle Length: 10	03.2											

Natural Cycle: 100 Control Type: Semi Act-Uncoord Maximum v/c Ratio: 0.79 Intersection Signal Delay: 35.5 Intersection Capacity Utilization 72.3% Analysis Period (min) 15

Intersection LOS: D ICU Level of Service C

Splits and Phases: 2: Tenth Line & Brian Coburn

01	1 ø₂		
14.9 5	40.4 s	66 s	
▲ Ø5	Ø6	≯ _{∅7}	← ∅8
19 s	36.3 s	215	45 s

1.2

Intersection

Int Delay, s/veh

A CONTRACTOR OF		2.1	7.00										
Movement	EBL	EBT	EBR	V	VBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	25	5	6		10	5	6	2	210	1	2	234	110
Future Vol, veh/h	25	5	6		10	5	6	2	210	1	2	234	110
Conflicting Peds, #/hr	0	0	0		0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	S	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	1.1		None		3.	-	None	-		None	10.0		None
Storage Length	-	-	-		3.03				-	-	-	-	
Veh in Median Storage, #	- 11	0	-		-	0			0	10 1		0	-
Grade, %	-	0	-		3000	0	-	(#))	0		*	0	-
Peak Hour Factor	95	95	95		95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2		2	2	2	2	2	2	2	2	2
Mvmt Flow	26	5	6		11	5	6	2	221	1	2	246	116

Major/Minor	Minor2			Minor1	ht n		Major1	n ann a		Major2	1.7	42
Conflicting Flow All	540	534	304	540	592	222	362	0	0	222	0	0
Stage 1	308	308	E	226	226	1.1.2				-		-
Stage 2	232	226		314	366	:**	(*)	(e)		×		
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12			4.12	1.8	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	5.005	3 4 9	5465	14	-	×	×
Critical Hdwy Stg 2	6.12	5.52		6.12	5.52	-			1 (H)			-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	(#)	÷.	2.218	÷.	4
Pot Cap-1 Maneuver	453	452	736	453	419	818	1197			1347	1	į.
Stage 1	702	660	-	777	717	(R)	250	17 0	.			
Stage 2	771	717	1	697	623	-		11.25			•	
Platoon blocked, %								()	.		-	7
Mov Cap-1 Maneuver	444	450	736	444	417	818	1197			1347		
Mov Cap-2 Maneuver	444	450	-	444	417	-	: - :	9 4 9	540	-	-	*
Stage 1	701	659	15.4	775	716			-	-			-
Stage 2	758	716	-	684	622	-	÷	<u>i</u>	÷		3	<u></u>
Approach	EB	196.3		WB			NB	<u>е</u> ., "Ц		SB		
HCM Control Delay, s	13.2			12.5			0.1			0		
HCM LOS	В			В								

Minor Lane/Major Mvmt	NBL	NBT	NBRE	BLn1\	VBLn1	SBL	SBT	SBR	
Capacity (veh/h)	1197		al e	476	502	1347	1.000	1.94	
HCM Lane V/C Ratio	0.002	-	<u>a</u> :	0.08	0.044	0.002	-	8 4 0	
HCM Control Delay (s)	8	0	4	13.2	12.5	7.7	0	02	
HCM Lane LOS	A	А		В	В	А	A	3 6	
HCM 95th %tile Q(veh)	0	-		0.3	0.1	0	110	070	

7: Tenth Line & Navan /Navan Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	þ		7	1	7		\$			ર્સ	7
Traffic Volume (vph)	25	188	5	1	535	170	11	8	4	81	12	126
Future Volume (vph)	25	188	5	1	535	170	11	8	4	81	12	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	120.0	1000	0.0	65.0		40.0	0.0	1000	0.0	0.0	1000	30.0
Storage Lanes	1		0.0	1		10.0	0		0	0		1
Taper Length (m)	30.0		Ŭ	30.0			30.0		Ū	30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.996	1.00	1.00	1.00	0.850	1.00	0.977	1.00	1.00	1.00	0.850
Fit Protected	0.950	0.000		0.950		0.000		0.976			0.958	0.000
Satd. Flow (prot)	1695	1777	0	1695	1784	1517	0	1701	0	0	1709	1517
Fit Permitted	0.422	1111	U	0.630	1704	1017	U	0.821	U	0	0.737	1011
Satd. Flow (perm)	753	1777	0	1124	1784	1517	0	1431	0	0	1315	1517
Right Turn on Red	100	1111	Yes	1127	1704	Yes	U	1-01	Yes	U	1010	Yes
Satd. Flow (RTOR)		2	163			166		4	103			133
		60			60	100		60			60	155
Link Speed (k/h)		1757.1			855.5			456.3			1290.5	
Link Distance (m)		105.4			51.3			27.4			77.4	and the second
Travel Time (s)	0.05	0.95	0.05	0.05	0.95	0.05	0.05	0.95	0.05	0.95	0.95	0.95
Peak Hour Factor	0.95		0.95 5	0.95 1		0.95	0.95 12	0.95	0.95 4	0.95	0.95	
Adj. Flow (vph)	26	198	Э		563	179	12	ð	4	80	13	133
Shared Lane Traffic (%)	00	000	0		500	470	0	04	0	0	00	400
Lane Group Flow (vph)	26	203	0	1	563	179	0	24	0	0	98	133
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Detector Phase	4	4		8	8	8	2	2		6	6	6
Switch Phase	-75.00											
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2	25.2	24.7	24.7		24.7	24.7	24.7
Total Split (s)	81.0	81.0		81.0	81.0	81.0	39.0	39.0		39.0	39.0	39.0
Total Split (%)	67.5%	67.5%		67.5%	67.5%	67.5%	32.5%	32.5%		32.5%	32.5%	32.5%
Maximum Green (s)	73.8	73.8		73.8	73.8	73.8	32.3	32.3		32.3	32.3	32.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.5	3.5		3.5	3.5	3.5	3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	7.2	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag												_
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	0
Act Effct Green (s)	76.8	76.8		76.8	76.8	76.8		13.4			13.4	13.4
Actuated g/C Ratio	0.74	0.74		0.74	0.74	0.74		0.13			0.13	0.13
v/c Ratio	0.05	0.15		0.00	0.43	0.15		0.13			0.58	0.43
Control Delay	4.8	4.8		5.0	6.9	1.3		34.9			55.5	11.3
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		A DI NI	0.0	0.0
Total Delay	4.8	4.8		5.0	6.9	1.3		34.9			55.5	11.3
	1.0			0.0	0.0						00.0	

Lanes, Volumes, Timings IBI Group

7: Tenth Line & Navan /Navan

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	А	А		Α	А	А	13.77	С		211.0	E	В
Approach Delay		4.8			5.5			34.9			30.1	
Approach LOS		А			А			С			С	
Queue Length 50th (m)	1.1	9.1		0.1	33.0	0.5		3.2			16.8	0.0
Queue Length 95th (m)	3.9	19.0		0.5	61.2	6.1		9.9			31.9	14.5
Internal Link Dist (m)		1733.1			831.5			432.3			1266.5	
Turn Bay Length (m)	120.0			65.0		40.0						30.0
Base Capacity (vph)	555	1310		828	1315	1162		447			409	563
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	0.05	0.15		0.00	0.43	0.15		0.05			0.24	0.24

Area Type: Other		
Cycle Length: 120		
Actuated Cycle Length: 104.1		
Natural Cycle: 60		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.58		
ntersection Signal Delay: 10.6	Intersection LOS: B	
ntersection Capacity Utilization 63.6%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 7: Tenth Line & Navan /Navan

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24: Navan & Mer Bleue Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	ሻ	1	1	7	1	7
Traffic Volume (vph)	92	165	503	99	35	164
Future Volume (vph)	92	165	503	99	35	164
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0			40.0	40.0	20.0
Storage Lanes	1			1	1	0
Taper Length (m)	30.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Fit Protected	0.950	199			0.950	
Satd. Flow (prot)	1695	1784	1784	1517	1695	1517
Fit Permitted	0.435	1104	1107	1011	0.950	1017
Satd. Flow (perm)	776	1784	1784	1517	1695	1517
	110	1704	1704		1090	
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				104	= 2	173
Link Speed (k/h)		60	60		50	
Link Distance (m)		1840.8	1757.1		403.0	
Travel Time (s)		110.4	105.4		29.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	97	174	529	104	37	173
Shared Lane Traffic (%)						
Lane Group Flow (vph)	97	174	529	104	37	173
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases	7 Unit	4	8	. viin	6	
Permitted Phases	4	7	U	8	v	6
Detector Phase	4	4	8	8	6	6
Switch Phase	4	4	0	0	0	U
And the second se	40.0	10.0	10.0	10.0	10.0	10.0
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	25.9	25.9	25.9	25.9	25.3	25.3
Total Split (s)	34.0	34.0	34.0	34.0	26.0	26.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	43.3%	43.3%
Maximum Green (s)	28.6	28.6	28.6	28.6	20.9	20.9
Yellow Time (s)	4.1	4.1	4.1	4.1	3.6	3.6
All-Red Time (s)	1.3	1.3	1.3	1.3	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.4	5.4	5.1	5.1
Lead/Lag	0.4	0,4	.т	0.7	0.1	0.1
Lead-Lag Optimize?						
	2.0	20	20	2.0	20	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	9.2	9.2	9.2	9.2	9.2	9.2
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	34.0	34.0	34.0	34.0	10.0	10.0
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.20	0.20
v/c Ratio	0.19	0.14	0.44	0.10	0.11	0.39
Control Delay	6.0	5.0	7.0	1.5	17.1	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.0	5.0	7.0	1.5	17.1	6.6
	0.0	5.0	1.0	0.1	17.1	0.0

Lanes, Volumes, Timings IBI Group

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LOS A A A A B A Approach Delay 5.3 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 8.5 6.1 7.1 7.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 <
Approach LOS A A A Queue Length 50th (m) 3.1 5.5 21.3 0.0 2.4 0.0 Queue Length 95th (m) 8.3 11.2 38.0 3.7 7.7 10.7 Internal Link Dist (m) 1816.8 1733.1 379.0 379.0
Queue Length 50th (m) 3.1 5.5 21.3 0.0 2.4 0.0 Queue Length 95th (m) 8.3 11.2 38.0 3.7 7.7 10.7 Internal Link Dist (m) 1816.8 1733.1 379.0
Queue Length 95th (m) 8.3 11.2 38.0 3.7 7.7 10.7 Internal Link Dist (m) 1816.8 1733.1 379.0
Internal Link Dist (m) 1816.8 1733.1 379.0
Turn Bay Length (m) 40.0 40.0 20.0
Base Capacity (vph) 524 1205 1205 1058 705 732
Starvation Cap Reductn 0 0 0 0 0 0
Spillback Cap Reductn 0 0 0 0 0 0
Storage Cap Reductn 0 0 0 0 0 0
Reduced v/c Ratio 0.19 0.14 0.44 0.10 0.05 0.24

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 50.3	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.44	
ntersection Signal Delay: 6.4	Intersection LOS: A
ntersection Capacity Utilization 57.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 24: Navan & Mer Bleue

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ካካ	1	٦	1	140	124
Traffic Volume (vph)	316	5	24	262	140	434
Future Volume (vph)	316	5	24	262	140	434
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	90.0	40.0	40.0			40.0
Storage Lanes	2	0	1			1
Taper Length (m)	<u>30</u> .0		30.0			
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
FIt Protected	0.950		0.950			
Satd. Flow (prot)	3288	1517	1695	1784	1784	1517
Flt Permitted	0.950		0.663			
Satd. Flow (perm)	3288	1517	1183	1784	1784	1517
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		5				457
Link Speed (k/h)	50			50	60	
Link Distance (m)	994.9			1179.9	394.2	
Travel Time (s)	71.6			85.0	23.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	333	0.95	25	276	147	457
Shared Lane Traffic (%)	000	J	20	210	147/	-107
	333	5	25	276	147	457
Lane Group Flow (vph)				NA	NA	Perm
Turn Type	Prot	Perm	Perm			Peim
Protected Phases	4	4	0	2	6	0
Permitted Phases		4	2		•	6
Detector Phase	4	4	2	2	6	6
Switch Phase	_	_				
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	25.9	25.9	28.8	28.8
Total Split (s)	46.0	46.0	74.0	74.0	74.0	74.0
Total Split (%)	38.3%	38.3%	61.7%	61.7%	61.7%	61.7%
Maximum Green (s)	40.6	40.6	68.7	68.7	68.7	68.7
Yellow Time (s)	3.6	3.6	4.1	4.1	4.1	4.1
All-Red Time (s)	1.8	1.8	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.3	5.3	5.3	5.3
Lead/Lag	0.1	0.1	0.0	0.0		0.0
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
					7.0	7.0
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Dont Walk (s)	12.1	12.1	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	14.7	14.7	68.8	68.8	68.8	68.8
Actuated g/C Ratio	0.16	0.16	0.73	0.73	0.73	0.73
v/c Ratio	0.65	0.02	0.03	0.21	0.11	0.37
Control Delay	43.6	20.2	4.2	4.8	4.4	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	20.2	4.2	4.8	4.4	1.4

Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	i di san de interneti di totori
LOS	D	C	A	A	A	A	
Approach Delay	43.2	Ū		4.8	2.1		
Approach LOS	D			A	A	1000	
Queue Length 50th (m)	27.2	0.0	1.0	12.3	6.1	0.0	
Queue Length 95th (m)	39.7	2.8	3.3	23.4	12.8	7.4	a she had to be the state of the
Internal Link Dist (m)	970.9			1155.9	370.2		
Turn Bay Length (m)	90.0	40.0	40.0			40.0	
Base Capacity (vph)	1418	657	863	1302	1302	1230	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.23	0.01	0.03	0.21	0.11	0.37	

Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 94.2	
latural Cycle: 65	
Control Type: Semi Act-Uncoord	
Aaximum v/c Ratio: 0.65	
ntersection Signal Delay: 13.9	Intersection LOS: B
ntersection Capacity Utilization 45.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 26: Mer Bleue & Renaud

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33: Tenth Line & Harvest Valley

Mer Bleue Expansion - Master Transportation Study

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	100
Lane Configurations	7	7	† †	7	1	††	
Traffic Volume (vph)	120	281	250	59	169	140	
Future Volume (vph)	120	281	250	59	169	140	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Storage Length (m)	50.0	0.0		40.0	40.0		
Storage Lanes	1	1		1	1		
Taper Length (m)	30.0				30.0		
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.850		0.850			
Flt Protected	0.950		1944 - C	1.1	0.950		
Satd. Flow (prot)	1695	1517	3390	1517	1695	3390	
Flt Permitted	0.950				0.589		
Satd. Flow (perm)	1695	1517	3390	1517	1051	3390	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		296		62			
Link Speed (k/h)	50		60			60	
Link Distance (m)	221.8		343.7			686.6	
Travel Time (s)	16.0		20.6			41.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	126	296	263	62	178	147	
Shared Lane Traffic (%)		200	200				
Lane Group Flow (vph)	126	296	263	62	178	147	
Turn Type	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	T GIIII	r enn	2	I CIIII	1 Cilli	6	
Permitted Phases	8	8	2	2	6	U	
Detector Phase	8	8	2	2	6	6	
Switch Phase	0	U	2	2	U	U	
	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		
Minimum Split (s)	34.8	34.8	28.6	28.6	28.6	28.6	
Total Split (s)	55.0	55.0	65.0	65.0	65.0	65.0	
Total Split (%)	45.8%	45.8%	54.2%	54.2%	54.2%	54.2%	
Maximum Green (s)	49.1	49.1	59.4	59.4	59.4	59.4	
Yellow Time (s)	3.6	3.6	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.3	2.3	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.6	5.6	5.6	5.6	
Lead/Lag							
Lead-Lag Optimize?		1.1				142.47	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	17.9	17.9	9.2	9.2	9.2	9.2	
Pedestrian Calls (#/hr)	0	0	0	0	0.2	0	
Act Effct Green (s)	14.7	14.7	93.8	93.8	93.8	93.8	
	0.12	0.12	0.78	0.78	0.78	0.78	
Actuated g/C Ratio					0.78		
v/c Ratio	0.61	0.67	0.10	0.05		0.06	
Control Delay	61.9	13.0	3.2	0.8	4.6	3.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	61.9	13.0	3.2	0.8	4.6	3.4	

Lanes, Volumes, Timings IBI Group

33: Tenth Line & Harvest Valley

Mer Bleue Expansion - Master Transportation Study

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WBL	WBR	NBT	NBR	SBL	SET	
E	В	А	А	А	Α	
27.6		2.7			4.1	
С		A	10 C		А	
26.4	0.0	5.8	0.0	8.3	3.1	
42.3	22.7	9.4	1.3	18.0	6.5	
197.8		319.7			662.6	
50.0			40.0	40.0		
693	795	2650	1199	821	2650	
0	0	0	0	0	0	
0	0	0	0	0	0	
0	0	0	0	0	0	and the second state of th
0.18	0.37	0.10	0.05	0.22	0.06	
	E 27.6 C 26.4 42.3 197.8 50.0 693 0 0 0 0	E B 27.6 C 26.4 0.0 42.3 22.7 197.8 50.0 693 795 0 0 0 0 0 0 0 0 0 0	E B A 27.6 2.7 C A 26.4 0.0 5.8 42.3 22.7 9.4 197.8 319.7 50.0 0 693 795 2650 0 0 0 0 0 0 0 0 0 0 0 0	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Area Type:

Cycle Length: 120 Actuated Cycle Length: 120

Offset: 72 (60%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Other

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67 Intersection Signal Delay: 12.9

Intersection Capacity Utilization 40.8% Analysis Period (min) 15

Intersection LOS: B ICU Level of Service A

Splits and Phases: 33: Tenth Line & Harvest Valley

Ø2 (R)	
65 s	
Ø6 (R)	Ø8
65 <i>5</i>	55 s

35: Tenth Line & Avalon South

Mer Bleue Expansion - Master Transportation Study

	4	•	t	~	1	Ļ
Lana Group	W/D1	MPD	NOT	NED	CDI	COT
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	أ	7	†		17	††
Traffic Volume (vph)	10	66	243	3	17	243
Future Volume (vph)	10	66	243	3	17	243
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0	0.0		0.0	20.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	30.0				30.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.998			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1695	1517	3383	0	1695	3390
Flt Permitted	0.950			- 15	0.592	
Satd. Flow (perm)	1695	1517	3383	0	1056	3390
Right Turn on Red	1000	Yes	0000	Yes	1000	0000
		69	2	165		
Satd. Flow (RTOR)	50	09	60			60
Link Speed (k/h)				ير الحدي		60
Link Distance (m)	213.4		714.8			343.7
Travel Time (s)	15.4		42.9			20.6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	69	256	3	18	256
Shared Lane Traffic (%)		-				
Lane Group Flow (vph)	11	69	259	0	18	256
Turn Type	Perm	Perm	NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5
	22.5	22.5	32.0		32.0	32.0
Total Split (s)						
Total Split (%)	46.7%	46.7%	53.3%		53.3%	53.3%
Maximum Green (s)	23.5	23.5	27.5		27.5	27.5
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
		0	0			0
Pedestrian Calls (#/hr)	0				0	
Act Effct Green (s)	10.0	10.0	48.6		48.6	48.6
Actuated g/C Ratio	0.17	0.17	0.81		0.81	0.81
v/c Ratio	0.04	0.22	0.09		0.02	0.09
Control Delay	21.5	8.7	2.6		1.6	1.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	21.5	8.7	2.6		1.6	1.3

Lanes, Volumes, Timings IBI Group

35: Tenth Line & Avalon South

Mer Bleue Expansion - Master Transportation Study

	4		1	~	1	Ļ	
Lane Group	WBL	WBR	NBT	NBR	SEL	SBT	i) Litvétin se
LOS	С	А	Α	111	А	Α	Transfer and the
Approach Delay	10.5		2.6			1.3	
Approach LOS	В		А			А	
Queue Length 50th (m)	1.0	0.0	3.6		0.3	1.9	
Queue Length 95th (m)	4.2	8.1	6.3		0.7	2.7	
Internal Link Dist (m)	189.4		690.8			319.7	
Turn Bay Length (m)	20.0				20.0		
Base Capacity (vph)	663	636	2740		855	2746	
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	0.02	0.11	0.09		0.02	0.09	
Intersection Summary	an ^T rock wood		~1, ⁻ 2	8,50	1999 - A.		

Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced	to phase 2:NBT and 6:SBTI	L, Start of Green	
Natural Cycle: 45			
Control Type: Actuated-Coo	ordinated		
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 3	B.1	Intersection LOS: A	
Intersection Capacity Utiliza	ation 30.7%	ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 35: Tenth Line & Avalon South

Ø2 (R)		
32.5		
Ø6 (R)	Ø8	
32.s	28 5	

3.8

Intersection Int Delay, s/veh

WBL WBR NBT NBR SBL SBT Movement Traffic Vol, veh/h 94 14 231 21 13 130 94 Future Vol, veh/h 130 14 231 21 13 0 Conflicting Peds, #/hr 0 0 0 0 0 Sign Control Free Free Stop Stop Free Free **RT** Channelized None None -None --Storage Length 0 . -. -. Veh in Median Storage, # 0 . 0 . 0 • Grade, % 0 0 0 ---95 95 95 95 95 Peak Hour Factor 95 2 2 2 2 2 2 Heavy Vehicles, % 22 99 Mymt Flow 137 15 243 14

Major/Minor	Minor1			Majo	or1	- 11 C	Major2	÷.,	
Conflicting Flow All	380	254			0	0	265	0	
Stage 1	254				-	1.0	*	1.	
Stage 2	126	7			-	-	•		
Critical Hdwy	6.42	6.22			-	1.0	4.12	-1	
Critical Hdwy Stg 1	5.42	Ħ			-	œ			
Critical Hdwy Stg 2	5.42				-				
Follow-up Hdwy	3.518	3.318			*	(#	2.218		
Pot Cap-1 Maneuver	622	785					1299	12	2007 (<u>1</u>
Stage 1	788	2			-	141			
Stage 2	900				-		1.1.1.1		
Platoon blocked, %					1.0	5		•	
Mov Cap-1 Maneuver	615	785				() e (1299		
Mov Cap-2 Maneuver	615				•		(.		
Stage 1	788	. · · ·			-	•			
Stage 2	890	-			÷		8 8 5		
Approach	WB	- 1. A T			NB	See.	SB	172.2	
HCM Control Delay, s	12.5				0		0.9		
HCM LOS	В								
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		2 martin		1757	
Capacity (veh/h)		- 628	1299						
HCM Lane V/C Ratio		- 0.241	0.011	-					
HCM Control Delay (s)	() () () () () () () () () ()	- 12.5	7.8	0					
HCM Lane LOS	-	- B	А	A					
HCM 95th %tile Q(veh)	- 115, -1	- 0.9	0						

LANE SUMMARY

♥ Site: Mer Bleue and Brian Coburn Roundabout - 2031 - BG - AM

New Site Roundabout

	Demand F		Con	Deg.	Lane	Average	Level of	95% Back o	and the state of the	Lane	Lane	Cap.	Prob.
	Total veh/h	HV %	Cap. veh/h	Satn v/c	Util. %	Delay sec	Service	Veh	Dist m	Config	Length	Adj. %	Black. %
South: Mer Ble					2		S R CHILD	0.000.000		1.67.52	0.25		1000
Lane 1	289	3.0	657	0.440	100	11.9	LOS B	1.6	12.7	Full	500	0.0	0.0
Lane 2 ^d	299	3.0	680	0.440	100	11.6	LOS B	1.6	12.2	Full	420	0.0	0.0
Lane 3	149	3.0	657	0.227	52 ⁵	8.2	LOS A	0.7	5.1	Two Seg ⁹	50	0.0	0.0
Approach	738	3.0		0.440		11.0	LOS B	1.6	12.7				
East: Brian Co	burn Road						1.1.1						
Lane 1	460	3.0	585	0.787	100	29.1	LOS D	4.9	37.9	Full	500	0.0	0.0
Lane 2	460	3.0	585	0.787	100	29.1	LOS D	4.9	37.9	Full	500	0,0	0.0
Lane 3 ^d	632	3.0	610	1.036	100	72.1	LOS F	19.5	152.3	Two Seg ⁹	50	0.0	100.0
Approach	1552	3.0		1.036		46.6	LOS E	19.5	152.3				
North: Mer Ble	ue Road							- 6 M12	- 19				
Lane 1	219	3.0	508	0.431	100	14.5	LOS B	1.5	11.6	Full	500	0.0	0.0
Lane 2 ^d	231	3.0	534	0.431	100	13.9	LOS B	1.4	11.2	Full	500	0.0	0.0
Lane 3	161	3.0	508	0.317	74 ⁵	11.9	LOS B	1.0	7.5	Two Seg ⁹	50	0.0	0.0
Approach	611	3.0		0.431		13.6	LOS B	1.5	11.6				
West: Brian Co	bum Roa	d Exter	nsion		1.1.1			1,9,9,0	ALC: NO	THE DESCRIPTION OF	101 128		
Lane 1	224	3.0	606	0.370	84 ⁵	11.2	LOS B	1.2	9.6	Full	500	0.0	0.0
Lane 2 ^d	277	3.0	631	0.439	100	12.3	LOS B	1.5	11.9	Full	500	0.0	0.0
Lane 3	27	3.0	606	0.045	10 ⁵	6.4	LOSA	0.1	0.9	Two Seg ⁹	50	0.0	0.0
Approach	528	3.0		0.439		11.5	LOS B	1.5	11.9				
Intersection	3428	3.0	i a NE.	1.036		27.7	LOS D	19.5	152.3				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program

- 9 All Movement Classes allocated to Segment 1 are also allocated to Segment 2. This Two-Segment Lane has been modelled as a full-length lane.
- d Dominant lane on roundabout approach

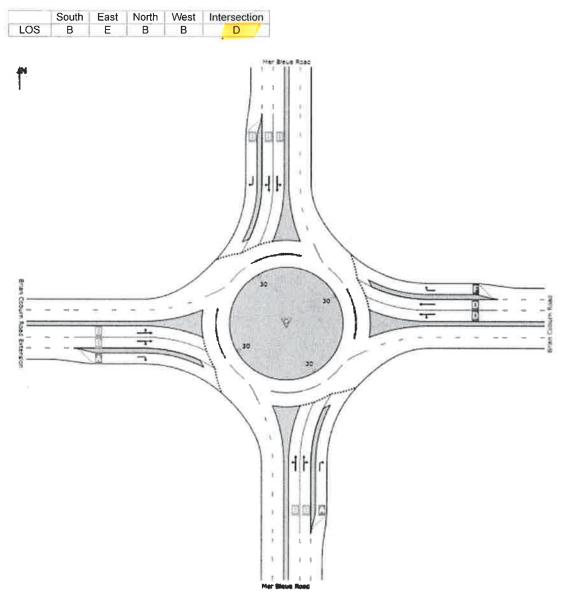
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LEVEL OF SERVICE

Site: Mer Bleue and Brian Coburn Roundabout - 2031 - BG - AM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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2: Tenth Line & Brian Coburn

Mer Bleue Expansion - Master Transportation Study

	٨	-	\mathbf{r}	4	+	•	•	†	1	1	Ļ	~
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	^	1	3	^	1	ካካ	≜î ≽		ኘሻ	^	1
Traffic Volume (vph)	434	597	213	14	353	254	146	513	54	304	575	325
Future Volume (vph)	434	597	213	14	353	254	146	513	54	304	575	325
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	115.0		80.0	40.0		50.0	105.0		0.0	100.0		65.0
Storage Lanes	2		1	1		1	2		0	2		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Frt			0.850			0.850		0.986				0.850
Flt Protected	0.950		0.000	0.950			0.950	0,000		0.950		0,000
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	3288	3343	0	3288	3390	1517
Flt Permitted	0.950	0000	Terr	0.414	0000	1011	0.950	0010		0.950	0000	1011
Satd. Flow (perm)	3288	3390	1517	739	3390	1517	3288	3343	0	3288	3390	1517
Right Turn on Red	0200	0000	Yes	100	0000	Yes	0200	0040	Yes	0200	0000	Yes
Satd. Flow (RTOR)			224			238		8	100			342
Link Speed (k/h)		60	247		60	200		60			60	042
Link Distance (m)		1402.3			938.8			686.6			623.5	
Travel Time (s)		84.1			56.3			41.2			37.4	Contract of
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
	457	628	224	0.95	372	267	154	540	0.95	320	605	342
Adj. Flow (vph)	407	020	224	10	312	207	104	040	57	320	600	342
Shared Lane Traffic (%)	457	000	004	45	070	007	454	07	0	000	005	240
Lane Group Flow (vph)	457	628	224	15	372	267	154	597	0	320	605	342
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4	4	0	8	0	5	2		1	6	0
Permitted Phases	~		4	8	0	8	-	0			0	6
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase	= 0	40.0	10.0	40.0	40.0	10.0	5.0	40.0		5.0	10.0	10.0
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	13.3	35.0	35.0	35.0	35.0	35.0	13.3	35.0		13.3	35.0	35.0
Total Split (s)	31.0	66.0	66.0	35.0	35.0	35.0	17.6	39.0		25.0	46.4	46.4
Total Split (%)	23.8%	50.8%	50.8%	26.9%	26.9%	26.9%	13.5%	30.0%		19.2%	35.7%	35.7%
Maximum Green (s)	24.7	59.7	59.7	28.7	28.7	28.7	11.3	32.7		18.7	40.1	40.1
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2		2.2	2.2	2.2
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
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Min	Min	None	Min		None	Min	Min
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		21.7	21.7	21.7	21.7	21.7		21.7			21.7	21.7
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	19.8	44.7	44.7	18.5	18.5	18.5	9.9	24.6		15.4	30.0	30.0
Actuated g/C Ratio	0.19	0.43	0.43	0.18	0.18	0.18	0.09	0.24		0.15	0.29	0.29
v/c Ratio	0.73	0.43	0.29	0.12	0.62	0.58	0.49	0.75		0.66	0.62	0.50
Control Delay	49.3	22.5	3.7	42.5	46.0	13.3	54.3	44.3		51.4	36.0	6.1
	49.0	22.0	0.7	74.0	10.0	10.0						
Queue Delay	49.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0

Lanes, Volumes, Timings IBI Group

2: Tenth Line & Brian Coburn

Mer Bleue Expansion - Master Transportation Study

	≯	-	\mathbf{r}	1	-		1	1	1	1	Ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	С	А	D	D	В	D	D		D	D	A
Approach Delay		28.6			32.6			46.4			31.8	
Approach LOS		С			С			D			С	1.1
Queue Length 50th (m)	41.8	42.6	0.0	2.4	34.5	4.6	14.3	54.2		29.5	51.6	0.0
Queue Length 95th (m)	68.5	64.6	12.8	8.7	55.3	28.4	28.1	84.0		50.8	78.8	19.5
Internal Link Dist (m)		1378.3			914.8			662.6			599.5	
Turn Bay Length (m)	115.0		80.0	40.0		50.0	105.0			100.0		65.0
Base Capacity (vph)	806	2008	990	210	965	602	368	1090		610	1349	809
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.57	0.31	0.23	0.07	0.39	0.44	0.42	0.55		0.52	0.45	0.42
Intersection Summary		W 201	- de 2	1.17	A. S.		Contract of		1.1			
Area Type:	Other											
Cycle Length: 130												
Actuated Cycle Length: 1	04.3											
Natural Ovala: 110												

 Natural Cycle: 110

 Control Type: Semi Act-Uncoord

 Maximum v/c Ratio: 0.75

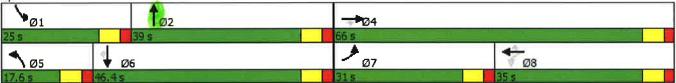
 Intersection Signal Delay: 33.7

 Intersection Capacity Utilization 72.7%

 ICU Level of Service C

 Analysis Period (min) 15

Splits and Phases: 2: Tenth Line & Brian Coburn



4.7

Intersection

Int Delay, s/veh

										150 Mars		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	132	12	8	1	2	7	4	394	5	1	313	44
Future Vol, veh/h	132	12	8	1	2	7	4	394	5	1	313	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	14 A 17 A	•	None	1.24		None	5		None	- 1 H H	-	None
Storage Length	ė			•	-	-	-	-			-	-
Veh in Median Storage, #		0		See 1	0	-	ha dhi e	0			0	
Grade, %		0	-		0	-	-	0		-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	139	13	8	1	2	7	4	415	5	1	329	46

Major/Minor	Minor2		Musa	Minor1			Major1	94 F	1.5	Major2		
Conflicting Flow All	786	783	353	791	804	417	376	0	0	420	0	0
Stage 1	355	355	-	426	426				and the second	1.1.1.1.1.1	1.12	-
Stage 2	431	428	-	365	378	-	/ * .	3 7 3	(-))	-		
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-) :		-	-	2	-
Critical Hdwy Stg 2	6.12	5.52		6.12	5.52		1	-	1.41	1.1		2
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	100	141	2.218	-	-
Pot Cap-1 Maneuver	310	325	691	307	316	636	1182			1139		-
Stage 1	662	630	-	606	586	-	10	-				-
Stage 2	603	585		654	615	1.1		4			1.1	-
Platoon blocked, %								19 5				-
Mov Cap-1 Maneuver	304	323	691	293	314	636	1182			1139	1.1	-
Mov Cap-2 Maneuver	304	323	-	293	314	-	·•·:	340	14	-		-
Stage 1	659	629	- N	604	584	84 <u>4</u> 7		-	- A		12	÷
Stage 2	591	583	-	632	614	-	5 4 0	550	-	2	÷	
							ALC: NO.					

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.7	12.7	0.1	0
HCM LOS	D	В		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	VBLn1	SBL	SBT	SBR	Sat
Capacity (veh/h)	1182	10.00		315	481	1139			19.3
HCM Lane V/C Ratio	0.004	(e)) -	0.508	0.022	0.001	-		
HCM Control Delay (s)	8.1	0	-	27.7	12.7	8.2	0	(4)	
HCM Lane LOS	A	A		D	В	А	А	a	
HCM 95th %tile Q(veh)	0	7.5	4	2.7	0.1	0	-	۲	

7: Tenth Line & Navan /Navan Mer Bleue Expansion - Master Transportation Study

Future (2031) Background Traffic PM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	Þ		٦	1	*		4			र्स	1
Traffic Volume (vph)	169	613	13	2	292	207	13	24	4	68	24	275
Future Volume (vph)	169	613	13	2	292	207	13	24	4	68	24	275
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	120.0		0.0	65.0		40.0	0.0		0.0	0.0		30.0
Storage Lanes	1_0.0	100	0	1		1	0		0	0		1
Taper Length (m)	30.0			30.0			30.0		_	30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1100	0.997				0.850		0.987				0.850
Flt Protected	0.950			0.950				0.984			0.964	
Satd. Flow (prot)	1695	1779	0	1695	1784	1517	0	1733	0	0	1720	1517
FIt Permitted	0.573	n hite	100	0.293				0.877			0.754	1.0
Satd. Flow (perm)	1022	1779	0	523	1784	1517	0	1545	0	0	1345	1517
Right Turn on Red			Yes			Yes	-	1.2.2	Yes			Yes
Satd. Flow (RTOR)		2				218		4				289
Link Speed (k/h)		60			60	3 2 1		60			60	and a state
Link Distance (m)		1757.1			855.5			456.3			1290.5	
Travel Time (s)		105.4			51.3			27.4			77.4	- 14 B
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	178	645	14	2	307	218	14	25	4	72	25	289
Shared Lane Traffic (%)		010		_		2.0						
Lane Group Flow (vph)	178	659	0	2	307	218	0	43	0	0	97	289
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	_	Perm	NA	Perm
Protected Phases	- 19 19	4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Detector Phase	4	4	1.1	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	1.54	10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2	25.2	24.7	24.7		24.7	24.7	24.7
Total Split (s)	78.0	78.0		78.0	78.0	78.0	42.0	42.0		42.0	42.0	42.0
Total Split (%)	65.0%	65.0%		65.0%	65.0%	65.0%	35.0%	35.0%		35.0%	35.0%	35.0%
Maximum Green (s)	70.8	70.8		70.8	70.8	70.8	35.3	35.3		35.3	35.3	35.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.5	3.5		3.5	3.5	3.5	3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	7.2	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag												
Lead-Lag Optimize?		1.57			1.1							
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	0
Act Effct Green (s)	25.8	25.8		25.8	25.8	25.8		11.7	-0-1-s	100	11.7	11.7
Actuated g/C Ratio	0.50	0.50		0.50	0.50	0.50		0.22			0.22	0.22
v/c Ratio	0.35	0.75		0.01	0.35	0.25	1.1	0.12			0.32	0.51
Control Delay	9.9	16.2		6.5	8.9	2.0		18.9			23.0	7.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	9.9	16.2		6.5	8.9	2.0		18.9			23.0	7.0
. etai beidy	0.0	1012		0.0	0.0	2.0		10.0			20.0	1.0

Lanes, Volumes, Timings IBI Group

7: Tenth Line & Navan /Navan

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	А	В	12.2	Α	А	А		В			С	A
Approach Delay		14.8			6.0			18.9			11.0	
Approach LOS		В			Α			В			В	
Queue Length 50th (m)	7.5	36.4		0.1	12.9	0.0		2.5			6.5	0.0
Queue Length 95th (m)	20.3	79.3		0.8	29.5	7.0		10.6			21.3	15.9
Internal Link Dist (m)		1733.1			831.5			432.3			1266.5	
Turn Bay Length (m)	120.0			65.0		40.0						30.0
Base Capacity (vph)	1018	1772		521	1777	1512		1094			952	1158
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	0.17	0.37		0.00	0.17	0.14		0.04			0.10	0.25

Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 52	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 11.5	Intersection LOS: B
Intersection Capacity Utilization 71.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 7: Tenth Line & Navan /Navan

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Lane Group	EBL	EBT	WBT	WBR	SBL	SER
Lane Configurations	105	^	970	109	167	-
Traffic Volume (vph)	185	643	278	108	167	132
Future Volume (vph)	185	643	278	108	167	132
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0			40.0	40.0	20.0
Storage Lanes	1			1	1	0
Taper Length (m)	30.0	4.00	4.00	4.00	30.0	4.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Fit Protected	0.950	4701	470.1	4 5 4 5	0.950	4545
Satd. Flow (prot)	1695	1784	1784	1517	1695	1517
Fit Permitted	0.581				0.950	4 - 1 -
Satd. Flow (perm)	1037	1784	1784	1517	1695	1517
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				114		139
Link Speed (k/h)		60	60		50	
Link Distance (m)		1840.8	1757.1		403.0	
Travel Time (s)		110.4	105.4		29.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	195	677	293	114	176	139
Shared Lane Traffic (%)						
Lane Group Flow (vph)	195	677	293	114	176	139
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8	11116	6	
Permitted Phases	4			8	v	6
Detector Phase	4	4	8	8	6	6
Switch Phase	т	7	v	U	v	v
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
	25.9	25.9	25.9	25.9	25.3	25.3
Minimum Split (s)	34.4	34.4	34.4	34.4	25.6	25.6
Total Split (s)					42.7%	
Total Split (%)	57.3%	57.3%	57.3%	57.3%		42.7%
Maximum Green (s)	29.0	29.0	29.0	29.0	20.5	20.5
Yellow Time (s)	4.1	4.1	4.1	4.1	3.6	3.6
All-Red Time (s)	1.3	1.3	1.3	1.3	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.4	5.4	5.1	5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	9.2	9.2	9.2	9.2	9.2	9.2
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	25.4	25.4	25.4	25.4	10.3	10.3
Actuated g/C Ratio	0.55	0.55	0.55	0.55	0.22	0.22
v/c Ratio	0.34	0.69	0.30	0.13	0.47	0.31
Control Delay	8.6	12.9	7.2	2.0	20.4	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
	8.6		7.2	2.0	20.4	5.9
Total Delay	0.0	12.9	1.2	2.0	20.4	5.9

Lanes, Volumes, Timings IBI Group

OS A pproach Delay 1 pproach LOS ueueu Length 50th (m) 6.9 3 ueueu Length 95th (m) 19.4 7 iternal Link Dist (m) 181 urn Bay Length (m) 40.0 ase Capacity (vph) 658 1	EBT WBT B A 11.9 5.7 B A 31.5 10.1 71.9 24.0	A A .7 A .1 0.0	SBL C 14.0 B 10.8 25.6	SBR A 0.0	
Approach Delay1Approach LOSQueue Length 50th (m)6.93Queue Length 95th (m)19.47Internal Link Dist (m)181Turn Bay Length (m)40.0Base Capacity (vph)6581	11.9 5.7 B A 31.5 10.1	.7 A .1 0.0	14.0 B 10.8	0.0	
Approach LOSQueue Length 50th (m)6.9Queue Length 95th (m)19.4Internal Link Dist (m)181Turn Bay Length (m)40.0Base Capacity (vph)658	B A 31.5 10.1	A .1 0.0	B 10.8		
Queue Length 50th (m)6.93Queue Length 95th (m)19.47Internal Link Dist (m)181Turn Bay Length (m)40.0Base Capacity (vph)6581	31.5 10.1	.1 0.0	10.8		
Queue Length 95th (m)19.47Internal Link Dist (m)181Turn Bay Length (m)40.0Base Capacity (vph)658					
Internal Link Dist (m)181Turn Bay Length (m)40.0Base Capacity (vph)6581	719 240	.0 4.8	25.6	0.4	
Turn Bay Length (m)40.0Base Capacity (vph)658	11.0 27.0		20.0	9.1	
Base Capacity (vph) 658 1	816.8 1733.1	.1	379.0		
,,,,,		40.0	40.0	20.0	
Starvation Can Reductn 0	1133 1133	33 1005	761	758	
	0 0	0 0	0	0	
Spillback Cap Reductn 0	0 0	0 0	0	0	
Storage Cap Reductn 0	0 0	0 0	0	0	
Reduced v/c Ratio 0.30 0	0 0	26 0.11	0.23	0.18	

Intersection Summary		 The second state		And the	
Area Type:	Other				
Cycle Length: 60					
Actuated Cycle Length: 46	6.4				
Natural Cycle: 60					
Control Type: Semi Act-U	ncoord				
Maximum v/c Ratio: 0.69					
Intersection Signal Delay:		Intersection LOS:	В		
Intersection Capacity Utiliz	zation 54.2%	ICU Level of Servi	ice A		
Analysis Period (min) 15					

Splits and Phases: 24: Navan & Mer Bleue

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	٦	1	1	7
Traffic Volume (vph)	609	18	8	273	327	370
Future Volume (vph)	609	18	8	273	327	370
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	40.0	40.0			40.0
Storage Lanes	2	0	1			1
Taper Length (m)	30.0		30.0			
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Fit Protected	0.950	1.0163	0.950			
Satd. Flow (prot)	3288	1517	1695	1784	1784	1517
Flt Permitted	0.950	1011	0.528			
Satd. Flow (perm)	3288	1517	942	1784	1784	1517
	5200	Yes	342	1704	1704	Yes
Right Turn on Red						
Satd. Flow (RTOR)	50	19		50	00	389
Link Speed (k/h)	50			50	60	
Link Distance (m)	994.9			1179.9	394.2	
Travel Time (s)	71.6			85.0	23.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	641	19	8	287	344	389
Shared Lane Traffic (%)	54.0					
Lane Group Flow (vph)	641	19	8	287	344	389
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	25.9	25.9	28.8	28.8
and the second se	56.0	56.0	64.0	64.0	64.0	64.0
Total Split (s)	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%
Total Split (%)				58.7	58.7	58.7
Maximum Green (s)	50.6	50.6	58.7			
Yellow Time (s)	3.6	3.6	4.1	4.1	4.1	4.1
All-Red Time (s)	1.8	1.8	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.3	5.3	5.3	5.3
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.1	12.1	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	23.3	23.3	58.9	58.9	58.9	58.9
Actuated g/C Ratio	0.25	0.25	0.63	0.63	0.63	0.63
v/c Ratio	0.78	0.25	0.03	0.03	0.00	0.35
Control Delay	39.4	11.1	7.9	8.9	9.3	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	11.1	7.9	8.9	9.3	1.9

Lanes, Volumes, Timings IBI Group

26: Mer Bleue & Renaud Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	D	В	Α	А	Α	А
Approach Delay	38.6			8.8	5.4	
Approach LOS	D			А	А	
Queue Length 50th (m)	50.6	0.0	0.4	18.4	22.9	0.0
Queue Length 95th (m)	67.4	4.7	2.3	36.1	43.9	10.3
Internal Link Dist (m)	970.9			1155.9	370.2	
Turn Bay Length (m)	40.0	40.0	40.0			40.0
Base Capacity (vph)	1795	837	597	1130	1130	1103
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.02	0.01	0.25	0.30	0.35

Intersection Summary		
Area Type: Other		
Cycle Length: 120		
Actuated Cycle Length: 92.9		
Natural Cycle: 65		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.78		
Intersection Signal Delay: 19.0	Intersection LOS: B	
Intersection Capacity Utilization 45.4%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 26: Mer Bleue & Renaud

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33: Tenth Line & Harvest Valley

Mer Bleue Expansion - Master Transportation Study

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	**	1	ሻ	**
Traffic Volume (vph)	30	99	500	59	189	362
Future Volume (vph)	30	99	500	59	189	362
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0	0.0		40.0	40.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	30.0				30.0	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1695	1517	3390	1517	1695	3390
Flt Permitted	0.950			4.	0.457	
Satd. Flow (perm)	1695	1517	3390	1517	815	3390
Right Turn on Red	1000	Yes	0000	Yes	510	0000
Satd. Flow (RTOR)		104		62		
Link Speed (k/h)	50	104	60	02		60
	221.8		343.7			686.6
Link Distance (m)						
Travel Time (s)	16.0	0.05	20.6	0.05	0.05	41.2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	104	526	62	199	381
Shared Lane Traffic (%)		-	1		and the second	
Lane Group Flow (vph)	32	104		62	199	381
Turn Type	Perm	Perm	NA	Perm	Perm	NA
Protected Phases			2			6
Permitted Phases	8	8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	34.8	34.8	28.6	28.6	28.6	28.6
Total Split (s)	40.0	40.0	80.0	80.0	80.0	80.0
Total Split (%)	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%
Maximum Green (s)	34.1	34.1	74.4	74.4	74.4	74.4
Yellow Time (s)	3.6	3.6	4.1	4.1	4.1	4.1
	2.3	2.3	1.5	1.5	1.5	1.5
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)						
Total Lost Time (s)	5.9	5.9	5.6	5.6	5.6	5.6
Lead/Lag						
Lead-Lag Optimize?	1314					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	17.9	17.9	9.2	9.2	9.2	9.2
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	10.3	10.3	98.2	98.2	98.2	98.2
Actuated g/C Ratio	0.09	0.09	0.82	0.82	0.82	0.82
v/c Ratio	0.22	0.46	0.19	0.05	0.30	0.14
Control Delay	54.9	16.7	2.5	0.6	4.0	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
	54.9	16.7	2.5	0.6	4.0	2.4
Total Delay	04.9	10.7	2.0	0.0	4.0	2.4

Lanes, Volumes, Timings IBI Group

33: Tenth Line & Harvest Valley

Mer Bleue Expansion - Master Transportation Study

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
LOS	D	В	А	А	А	А	
Approach Delay	25.7		2.3			2.9	
Approach LOS	С		Α			Α	
Queue Length 50th (m)	6.6	0.0	9.8	0.0	8.0	6.8	
Queue Length 95th (m)	15.7	15.1	13.6	1.8	15.2	10.2	
Internal Link Dist (m)	197.8		319.7			662.6	
Turn Bay Length (m)	50.0			40.0	40.0		
Base Capacity (vph)	481	505	2774	1252	666	2774	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.07	0.21	0.19	0.05	0.30	0.14	

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Intersection Summary

Area Type: Cycle Length: 120

Actuated Cycle Length: 120

Offset: 44 (37%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Other

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46 Intersection Signal Delay: 5.0 Intersection Capacity Utilization 48.2% Analysis Period (min) 15

Intersection LOS: A ICU Level of Service A

Splits and Phases: 33: Tenth Line & Harvest Valley

Ø2 (R)	
80 s	
Ø6 (R)	Ø8
S0 s	40 s

35: Tenth Line & Avalon South

Mer Bleue Expansion - Master Transportation Study

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Long Group	1/01	WPD	NIPT	MPD	CDI	COT
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	<u> </u>	7	^	40	ň	**
Traffic Volume (vph)	5	37	522	10	68	324
Future Volume (vph)	5	37	522	10	68	324
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0	0.0		0.0	20.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	30.0				30.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.997			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1526	1365	3042	0	1526	3051
Flt Permitted	0.950				0.442	
Satd. Flow (perm)	1526	1365	3042	0	710	3051
Right Turn on Red	1020	Yes		Yes		
Satd. Flow (RTOR)		39	5	,00		
Link Speed (k/h)	50	00	60			60
	213.4		714.8			343.7
Link Distance (m)						20.6
Travel Time (s)	15.4	0.05	42.9	0.05	0.05	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	39	549	11	72	341
Shared Lane Traffic (%)		in the second	and the second			
Lane Group Flow (vph)	5	39	560	0	72	341
Turn Type	Perm	Perm	NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8	8			6	
Detector Phase	8	8	2		6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5
Total Split (s)	25.0	25.0	35.0		35.0	35.0
Total Split (%)	41.7%	41.7%	58.3%		58.3%	58.3%
	20.5	20.5	30.5		30.5	30.5
Maximum Green (s)	20.5	20.5	30.5		30.5	30.5
Yellow Time (s)						
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Min		C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	10.0	10.0	52.4		52.4	52.4
Actuated g/C Ratio	0.17	0.17	0.87		0.87	0.87
		0.15	0.21		0.07	0.07
v/c Ratio	0.02					
Control Delay	21.2	9.9	2.2	Contrast.	2.3	1.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	21.2	9.9	2.2		2.3	1.6

Lanes, Volumes, Timings IBI Group

35: Tenth Line & Avalon South

Mer Bleue Expansion - Master Transportation Study

	4		1	1	\$	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SET
LOS	С	А	A		А	А
Approach Delay	11.2		2.2			1.7
Approach LOS	В		Α			А
Queue Length 50th (m)	0.4	0.0	0.0		0.0	0.0
Queue Length 95th (m)	2.6	6.1	13.7		3.8	6.5
Internal Link Dist (m)	189.4		690.8			319.7
Turn Bay Length (m)	20.0				20.0	
Base Capacity (vph)	521	492	2657		620	2664
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	0.01	0.08	0.21		0.12	0.13
Intersection Summary		<u>, 15 A</u>	<u>a ina c</u>	17,00	1. 2 ¹	1102-11
Aroa Tupo:	CRD					

Area Type: CBD Cycle Length: 60 Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 45 Control Type: Actuated-Coordinated

Analysis Period (min) 15

Maximum v/c Ratio: 0.21 Intersection Signal Delay: 2.4 Intersection Capacity Utilization 45.2%

Intersection LOS: A ICU Level of Service A

Splits and Phases: 35: Tenth Line & Avalon South

Ø2 (R)	
35 s Ø6 (R)	Ø8
355	25 5

Intersection Int Delay, s/veh

have not as the first	a second by						
Movement	WBL	WBR	NBT	NBR	SBL.	SBT	
Traffic Vol, veh/h	37	11	135	127	15	143	
Future Vol, veh/h	37	11	135	127	15	143	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	1.1.2	None		None		None	
Storage Length	0	19 6	-	-	3 2 1	12	
Veh in Median Storage, #	0		0	•		0	
Grade, %	0	2.5	0			0	
Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	39	12	142	134	16	151	

Major/Minor	Minor1		No.	Major1		Major2	850	
Conflicting Flow All	391	209		0	0	276	0	
Stage 1	209	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.				-	-	
Stage 2	182	-		.	1	•		
Critical Hdwy	6.42	6.22		the set		4.12		
Critical Hdwy Stg 1	5.42	-				195		
Critical Hdwy Stg 2	5.42	1		1				
Follow-up Hdwy	3.518	3.318		3 1 -1	:+:	2.218		
Pot Cap-1 Maneuver	613	831			- 10 C	1287	-	
Stage 1	826	-			: 1		.	
Stage 2	849				14		-	
Platoon blocked, %					(*		1	
Mov Cap-1 Maneuver	604	831		- 1	-	1287		
Mov Cap-2 Maneuver	604					2.53		
Stage 1	826							
Stage 2	837	<u>1</u>		-		a 🗮 🗉		
Approach	WB	A		NB		SB	1.840	
HCM Control Delay, s	11.1			0		0.7		والمراجع والمحصوف فالمستعد
HCM LOS	В							
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL SI	ЗT	8 a.k			
O and a the (and h /h)		044	4007	And the second second				

MURCH FOURIER AND MURLIN	1144	TADATTDLAT	OUL		
Capacity (veh/h)		- 644	1287		
HCM Lane V/C Ratio		- 0.078	0.012	-	
HCM Control Delay (s)	1.5	- 11.1	7.8	0	
HCM Lane LOS	-	- B	A	A	
HCM 95th %tile Q(veh)		- 0.3	0	•	

LANE SUMMARY

♡ Site: Mer Bleue and Brian Coburn Roundabout - 2031 - BG - PM

New Site Roundabout

	Demand I			Deg.	Lane	Average	Level of	95% Back o		Lane	Lane	Cap.	Prob.
	Total veh/h	HV	Cap.	Satn	Util.	Delay	Service	Veh	Dist	Config	Length	Adj.	Block
South: Mer Bl		%	veh/h	v/c	%	sec		Statistical sectors.	m		m	%	%
Lane 1	274	3.0	406	0.675	100	28.8	LOS D	2.8	22.0	Full	500	0.0	0.0
Lane 2	274	3.0	406	0.675	100	28.8	LOS D	2.8	22.0	Full	420	0.0	0.0
Lane 3 ^d	444	3.0	434	1.024	100	80.8	LOS F	13.3	103.4	Two Seg ⁹	50	0.0	34.4
Approach	993	3.0		1.024		52.1	LOS F	13,3	103,4				
East: Brian Co	burn Road					1							010.5
Lane 1	301	3,0	589	0.510	100	14.9	LOS B	2.0	15.7	Full	500	0.0	0.0
Lane 2	301	3.0	589	0.510	100	14.9	LOS B	2.0	15.7	Full	500	0.0	0.0
Lane 3 ^d	305	3.0	614	0.497	100	14.0	LOS B	1.9	14.5	Two Seg ⁹	50	0.0	0.0
Approach	906	3.0		0.510		14.6	LOS B	2.0	15.7				
North: Mer Ble	eue Road				18							No-Sec.	
Lane 1	558	3.0	661	0.844	100	32.0	LOS D	6.7	52.0	Full	500	0.0	0.0
Lane 2 ^d	577	3.0	683	0.844	100	31.3	LOS D	6.4	50.2	Full	500	0.0	0.0
Lane 3	222	3.0	661	0.336	100	9.9	LOS A	1-1	8.4	Two Seg ⁹	50	0.0	0.0
Approach	1357	3.0		0.844		28.1	LOS D	6.7	52.0				
West: Brian C	obum Roa	d Exter	nsion	6.85		1	A PLACE			din Saily			100
Lane 1	418	3.0	387	1.079	100	101.6	LOS F	17.7	137.7	Full	500	0.0	0.0
Lane 2 ^d	448	3.0	415	1.079	100	98.8	LOS F	18.3	142.7	Full	500	0.0	0.0
Lane 3	80	3.0	387	0.206	100	12.7	LOS B	0.5	4.3	Two Seg ⁹	50	0.0	0.0
Approach	946	3.0		1.079		92.8	LOS F	18.3	142.7				
Intersection	4202	3.0		1.079		45.4	LOSE	18.3	142.7				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

- 9 All Movement Classes allocated to Segment 1 are also allocated to Segment 2. This Two-Segment Lane has been modelled as a full-length lane.
- d Dominant lane on roundabout approach

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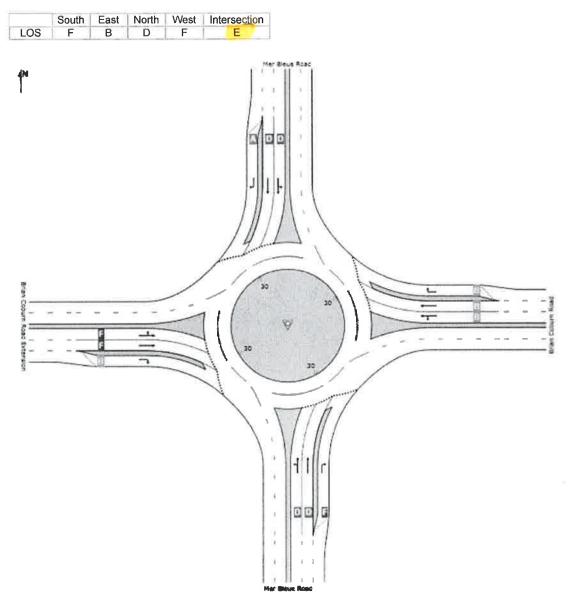
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LEVEL OF SERVICE

Site: Mer Bleue and Brian Coburn Roundabout - 2031 - BG - PM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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Future (2025) Total Traffic

2: Tenth Line & Brian Coburn

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	^	1	ň	^	1	ኘኘ	≜ †⊅		ኘኘ	<u></u>	1
Traffic Volume (vph)	229	140	75	26	766	257	249	572	32	101	252	192
Future Volume (vph)	229	140	75	26	766	257	249	572	32	101	252	192
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	115.0		80.0	40.0		50.0	105.0		0.0	100.0		65.0
Storage Lanes	2		1	1		1	2		0	2		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Frt			0.850			0.850	0.01	0.992		0.07	0100	0.850
Flt Protected	0.950		01000	0.950		0.000	0.950	0.002		0.950		0.000
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	3288	3363	0	3288	3390	1517
Flt Permitted	0.950	0000	Tom	0.659	0000	1011	0.950	0000	Ŭ	0.950	0000	1011
Satd. Flow (perm)	3288	3390	1517	1176	3390	1517	3288	3363	0	3288	3390	1517
Right Turn on Red	0200	0000	Yes	1170	0000	Yes	0200	0000	Yes	5200	0000	Yes
Satd. Flow (RTOR)			133			210		4	163			202
Link Speed (k/h)		60	155		60	210		60			60	202
Link Distance (m)		1402.3			938.8			686.6			623.5	
Travel Time (s)		84.1			56.3			41.2				
	0.05		0.05	0.05		0.05	0.05		0.05	0.05	37.4	0.05
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	241	147	79	27	806	271	262	602	34	106	265	202
Shared Lane Traffic (%)	and a	4.47	70	07	000	074	000	000		100	0.0.5	
Lane Group Flow (vph)	241	147	79	27	806	271	262	636	0	106	265	202
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4			8		5	2	11.1.2	1	6	
Permitted Phases		_	4	8		8						6
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	13.3	35.0	35.0	35.0	35.0	35.0	13.3	35.0		13.3	35.0	35.0
Total Split (s)	22.1	69.1	69.1	47.0	47.0	47.0	23.0	45.9		15.0	37.9	37.9
Total Split (%)	17.0%	53.2%	53.2%	36.2%	36.2%	36.2%	17.7%	35.3%		11.5%	29.2%	29.2%
Maximum Green (s)	15.8	62.8	62.8	40.7	40.7	40.7	16.7	39.6		8.7	31.6	31.6
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2		2.2	2.2	2.2
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
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Min	Min	None	Min		None	Min	Min
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0		110110	7.0	7.0
Flash Dont Walk (s)		21.7	21.7	21.7	21.7	21.7		21.7			21.7	21.7
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	13.1	52.4	52.4	32.9	32.9	32.9	13.7	26.8		8.2	21.2	21.2
Actuated g/C Ratio	0.12	0.49	0.49	0.31	0.31	0.31	0.13	0.25		- 0.08	0.20	0.20
v/c Ratio	0.60	0.49	0.49	0.07	0.31	0.31	0.13	0.25		0.08		
					_						0.39	0.44
Control Delay	53.7	15.4	0.5	29.2	40.1	10.6	53.3	43.7		57.0	40.7	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	53.7	15.4	0.5	29.2	40.1	10.6	53.3	43.7		57.0	40.7	8.7

Lanes, Volumes, Timings IBI Group

2: Tenth Line & Brian Coburn

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SET	SBR
LOS	D	В	А	С	D	В	D	D	Tel a	Е	D	A
Approach Delay		32.6			32.6			46.5			32.4	
Approach LOS		С	1011 111		С			D			С	11111
Queue Length 50th (m)	23.2	7.6	0.0	3.7	74.2	8.5	25.2	60.3		10.3	23.8	0.0
Queue Length 95th (m)	39.8	14.5	0.9	10.9	108.5	30.8	42.8	85.8		20.9	38.9	17.4
Internal Link Dist (m)		1378.3			914.8			662.6			599.5	
Turn Bay Length (m)	115.0	1 1 1 1 1	80.0	40.0		50.0	105.0			100.0		65.0
Base Capacity (vph)	500	2051	970	461	1329	722	529	1285		275	1032	602
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.48	0.07	0.08	0.06	0.61	0.38	0.50	0.49		0.39	0.26	0.34
Intersection Summary			R. P		. un li a	$p \ll \epsilon$		1997	1000			
Area Type:	Other											
Cycle Length: 130												
Actuated Cycle Length: 10	6.8											
Natural Cycle: 100												
Control Type: Semi Act-Ur	ncoord											
Maximum v/c Ratio: 0.77												
Intersection Signal Delay:	36.7			In	itersection	LOS: D						
Intersection Capacity Utiliz	ation 72.2%			IC	CU Level of	of Service	C					

Splits and Phases: 2: Tenth Line & Brian Coburn

Analysis Period (min) 15

ØI	¶ø₂		
15 s	45.9 s	69.1s	
N Ø5	Ø6	<i>▶</i> _{Ø7}	* 08
235	37.9.5	22.15	47.5

Intersection

Int Delay, s/veh

Movement	EBL	EBT	EBR	WBL	WET	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	69	4	31	10	4	6	44	220	1	2	228	128
Future Vol, veh/h	69	4	31	10	4	6	44	220	1	2	228	128
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	1.00	- 1-	None		:-	None			None	1.1	1.1	None
Storage Length	-	-	-	1	-	240	-	-	-	2	<u> </u>	2
Veh in Median Storage, #	-	0		12.0	0		1.1	0	-		0	
Grade, %	-	0	-	14) 14)	0		-	0	-		0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	4	33	11	4	6	46	232	1	2	240	135

Major/Minor	Minor2			Minor1	1912-1		Major1		The set of	Major2		
Conflicting Flow All	642	637	307	655	704	232	375	0	0	233	0	0
Stage 1	312	312	1.00 -	325	325	-			190			- 4
Stage 2	330	325	-	330	379	-	-	-	-		÷	
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	100	4.12		-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-			270	-		-
Critical Hdwy Stg 2	6.12	5.52		6.12	5.52	hi e		-		1.2		
Follow-up Hdwy	<u>3.</u> 518	4.018	3.318	3.518	4.018	3.318	2.218			2.218		-
Pot Cap-1 Maneuver	387	395	733	379	361	807	1183		in' air-	1335		20
Stage 1	699	658	-	687	649	-	1	19 12	-	2	¥.	-
Stage 2	683	649	1	683	615					-		
Platoon blocked, %								4	- 21			-
Mov Cap-1 Maneuver	367	376	733	346	344	807	1183	-		1335		
Mov Cap-2 Maneuver	367	376	-	346	344	-					*	
Stage 1	668	657		656	620							1
Stage 2	643	620	-	647	614		(• .)		-			-
												1
Approach	EB			WB			NB		100	SB	1.	
HCM Control Delay, s	16.1	6		14.1			1.4	1.5	1.1	0	1.1	
HCM LOS	С			В								_
1. Marca I. and 10. Marca 1. M. A. 199	1.100	A 18928			00	ODT	0.55	1.0				Πŋ

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1V	/BLn1	SEL	SBT	SBR	
Capacity (veh/h)	1183			432	417	1335	-		States and the second states in some states and
HCM Lane V/C Ratio	0.039	-		0.253	0.05	0.002	-		
HCM Control Delay (s)	8.2	0	-	16.1	14.1	7.7	0		
HCM Lane LOS	А	А		С	В	A	А		
HCM 95th %tile Q(veh)	0.1	-		1	0.2	0	-	1.00	

Traffic Vol, veh/h 0 69 4 31 0 10 4 6 0 44 220 Future Vol, veh/h 0 69 4 31 0 10 4 6 0 44 220	Intersection		T T	<u>, 1968</u>			11° i a	ivin i				- 10 11	
Traffic Vol, veh/h 0 69 4 31 0 10 4 6 0 44 220 Future Vol, veh/h 0 69 4 31 0 10 4 6 0 44 220 Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95			1.24	46	<u>y</u> nur				711	Le M			
Future Vol, veh/h 0 69 4 31 0 10 4 6 0 44 220 Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95	Movement	EBU	EBL	EBT	EBR	WEU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Future Vol, veh/h 0 69 4 31 0 10 4 6 0 44 220 Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95	Traffic Vol, veh/h	0	69	4	31	0	10	4	6	0	44	220	1
Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.9	Future Vol, veh/h	0	69	4	31	0	10		6	0		220	1
Heavy Vehicles, % 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 <th2< th=""></th2<>		0.95	0.95	0.95	0.95	0.95	0.95		0.95	0.95	0.95		0.95
Mvmit Flow 0 73 4 33 0 11 4 6 0 46 232 Number of Lanes 0 0 1 0 0 0 1 0 0 0 1 Approach EB WB EB SB Opposing Approach Left SB NB EB Conflicting Approach Left SB NB Conflicting Approach Left 1 1 1 Conflicting Approach Left SB NB EB SB Conflicting Approach Right NB SB WB Conflicting Approach Right 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 <td>Heavy Vehicles, %</td> <td>2</td>	Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Number of Lanes 0 0 1 0 0 1 0 0 1 0 0 1 Approach WB EB SB Opposing Lanes 1 1 1 1 Conflicting Approach Left SB NB EB SB Opposing Lanes Left 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1<		0	73	4	33	0	11	4	6	0	46	232	1
Opposing Approach WB EB SB Opposing Lanes 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Number of Lanes	0	0	1	0	0	0	1		0	0	1	0
Opposing Approach WB EB SB Opposing Lanes 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Annrosch	N COLUMN	ER				WB				NID		
Opposing Lanes 1 1 1 1 Conflicting Approach Left SB NB EB Conflicting Lanes Left 1 1 1 1 1 Conflicting Lanes Right NB SB WB Conflicting Lanes Right 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		and in such that					and the second se			Contraction of the	and states	No.	
Conflicting Approach Left SB NB EB Conflicting Lanes Left 1 1 1 Conflicting Lanes Right NB SB WB Conflicting Lanes Right 1 1 1 HCM Control Delay 9.5 8.8 10.5 HCM LOS A A B Lene NBLn1 EBLn1 WBLn1 SELn1 Vol Left, % 17% 66% 50% 1% Vol Vol Thru, % 83% 4% 20% 64% Vol Vol Right, % 0% 30% 36% Sign Control Stop Stop Stop Stop Stop Traffic Vol by Lane 265 104 20 358 IT Vol It 1 1 1 1 Degree of Util (X) 0.366 0.163 0.032 0.46 Degree of Util (X) 0.366 0.163 0.032 0.46 Degree of Util (X) 0.366 0.163 0.032 0.46 Degree of Util (X) <td></td> <td>11K.</td>													11K.
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Conflicting Approach Right NB SB WB Conflicting Lanes Right 1 1 1 1 HCM Control Delay 9.5 8.8 10.5 HCM LOS A A B Lane NBLn1 EBLn1 WBLn1 SBLn1 Vol Left, % 17% 66% 50% 1% Vol Left, % 17% 66% 50% 1% Vol Left, % 0% 30% 36% Sign Control Vol Right, % 0% 30% 36% Sign Control Stop Traffic Vol by Lane 265 104 20 358 1 LT Vol 44 69 10 2 1 1 Through Vol 220 4 4 228 1 1 RT Vol 1 31 6 128 1 1 Lane Flow Rate 279 109 21 377 1 1 1 1 1			0D 1										
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Lane NBLn1 EBLn1 WBLn1 SBLn1 Vol Left, % 17% 66% 50% 1% Vol Thru, % 83% 4% 20% 64% Vol Right, % 0% 30% 36% Sign Control Stop Stop Stop Sign Control Stop Stop Stop Stop Traffic Vol by Lane 265 104 20 358 LT Vol 44 69 10 2 Through Vol 220 4 4 228 RT Vol 1 31 6 128 Lane Flow Rate 279 109 21 377 Geometry Grp 1 1 1 1 1 1 1 Departure Headway (Hd) 4.719 5.359 5.486 4.392 Convergence, Y/N Yes Yes Yes Cap 759 665 646 818 Service Time 2.768 3.434 3.577 2.436 HCM Lane U/C Ratio 0.368 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>													
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Vol Right, % 0% 30% 30% 36% Sign Control Stop Stop Stop Stop Traffic Vol by Lane 265 104 20 358 LT Vol 44 69 10 2 Through Vol 220 4 4 228 RT Vol 1 31 6 128 Lane Flow Rate 279 109 21 377 Geometry Grp 1 1 1 1 Degree of Util (X) 0.366 0.163 0.032 0.46 Departure Headway (Hd) 4.719 5.359 5.486 4.392 Convergence, Y/N Yes Yes Yes Cap 759 665 646 818 Service Time 2.768 3.434 3.577 2.436 HCM Lane V/C Ratio 0.368 0.164 0.033 0.461 HCM Lane LOS B A A B													
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Geometry Grp 1 1 1 1 Degree of Util (X) 0.366 0.163 0.032 0.46 Departure Headway (Hd) 4.719 5.359 5.486 4.392 Convergence, Y/N Yes Yes Yes Cap 759 665 646 818 Service Time 2.768 3.434 3.577 2.436 HCM Lane V/C Ratio 0.368 0.164 0.033 0.461 HCM Control Delay 10.5 9.5 8.8 11.2 HCM Lane LOS B A A B													
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HCM Control Delay 10.5 9.5 8.8 11.2 HCM Lane LOS B A B													
HCM Lane LOS B A A B	HCM Lane V/C Ratio												
				9.5	8.8								
HCM 95th-tile Q 1.7 0.6 0.1 2.4													
	HCM 95th-tile Q		1.7	0.6	0.1	2.4							

Intersection Delay, s/veh						
Intersection LOS						
Movement	SBU	SBL	SBT	SBR	18 - S	
Traffic Vol, veh/h	0	2	228	128	13.20	
Future Vol, veh/h	0	2	228	128		
Peak Hour Factor	0.95	0.95	0.95	0.95		
Heavy Vehicles, %	2	2	2	2		
Mvmt Flow	0	2	240	135		
Number of Lanes	0	0	1	0		
		Sector				
Approach	T V S	SB		. ⁷		2
Opposing Approach		NB			aladie 1	
Opposing Lanes		1				
Conflicting Approach Left		WB		100		
Conflicting Lanes Left		1				
Conflicting Approach Right		EB				
Conflicting Lanes Right		1				
HCM Control Delay		11.2				
HCM LOS		В				
The second s						

7: Tenth Line & Navan /Navan Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	þ		٦	1	1		ф .			ર્સ	7
Traffic Volume (vph)	31	165	4	1	498	200	10	8	3	93	11	141
Future Volume (vph)	31	165	4	1	498	200	10	8	3	93	11	141
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	120.0		0.0	65.0		40.0	0.0		0.0	0.0		30.0
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850		0.982				0.850
Flt Protected	0.950		1.8.1.2	0.950				0.976			0.957	
Satd. Flow (prot)	1695	1779	0	1695	1784	1517	0	1710	0	0	1708	1517
Fit Permitted	0.443	1110	, in the second s	0.645				0.826	Ū		0.733	1011
Satd. Flow (perm)	790	1779	0	1151	1784	1517	0	1447	0	0	1308	1517
Right Turn on Red	100	me	Yes		mer	Yes			Yes	Ū	1000	Yes
Satd. Flow (RTOR)		2	100			211		3	100			148
Link Speed (k/h)		60		144	60			60			60	110
Link Distance (m)		1757.1			855.5			456.3			1290.5	
Travel Time (s)		105.4			51.3			27.4			77.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	174	4	0.00	524	211	11	8	3	98	12	148
Shared Lane Traffic (%)	00	114	T		024	211		U	v	00	16	140
Lane Group Flow (vph)	33	178	0	1	524	211	0	22	0	0	110	148
Turn Type	Perm	NA	U	Perm	NA	Perm	Perm	NA	U	Perm	NA	Perm
Protected Phases	renn	4		Fenn	8	r enn	Feilli	2		Feim	6	Feim
Permitted Phases	4	4		8	U	8	2	2		6	0	6
Detector Phase	4	4		8	8	8	2	2		6	6	6
Switch Phase	T	т		U	U	0	4	4		0	0	U
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2	25.2	24.7	24.7		24.7	24.7	24.7
Total Split (s)	81.0	81.0		81.0	81.0	81.0	39.0	39.0		39.0	39.0	39.0
Total Split (%)	67.5%	67.5%		67.5%	67.5%	67.5%	32.5%	32.5%		32.5%	32.5%	32.5%
Maximum Green (s)	73.8	73.8		73.8	73.8	73.8	32.378	32.378		32.3	32.3	32.3 %
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	32.3	3.7		32.3	32.3	32.3
All-Red Time (s)	3.5	3.5		3.5	3.5	3.5	3.0	3.0		3.0	3.0	3.0
	0.0	0.0		0.0	0.0	0.0	5.0	0.0		5.0	0.0	0.0
Lost Time Adjust (s) Total Lost Time (s)	7.2	7.2		7.2	7.2	7.2		6.7			6.7	6.7
	1.2	1.2		1.2	1.2	1.2		0.7			0.7	0.7
Lead/Lag								-				-
Lead-Lag Optimize?	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Vehicle Extension (s)												
Recall Mode	Max	Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	0
Act Effct Green (s)	75.9	75.9		75.9	75.9	75.9		14.3			14.3	14.3
Actuated g/C Ratio	0.73	0.73		0.73	0.73	0.73		0.14			0.14	0.14
v/c Ratio	0.06	0.14		0.00	0.40	0.18		0.11			0.61	0.44
Control Delay	5.2	5.0		5.0	7.0	1.1		35.0			56.5	10.8
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	5.2	5.0		5.0	7.0	1.1		35.0			56.5	10.8

Lanes, Volumes, Timings IBI Group

7: Tenth Line & Navan /Navan Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	А	А	and the second	А	А	А	1. 11-31	С	- 1.15	2	Е	В
Approach Delay		5.0			5.3			35.0			30.3	
Approach LOS	1, 1, 1, 1	А			А			С			С	1914
Queue Length 50th (m)	1.5	8.2		0.1	31.1	0.0		3.1			19.1	0.0
Queue Length 95th (m)	4.8	17.6		0.6	58.4	6.1		9.4	1000		35.1	15.2
Internal Link Dist (m)		1733.1			831.5			432.3			1266.5	
Turn Bay Length (m)	120.0			65.0		40.0						30.0
Base Capacity (vph)	575	1297		839	1300	1163		451			406	573
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	0.06	0.14		0.00	0.40	0.18		0.05			0.27	0.26
Intersection Summary	1	1.0		S		14.2	والمتحكم والما		- X -			

Area Type:	Other				
Cycle Length: 120					
Actuated Cycle Lengt	n: 104.1				
Natural Cycle: 60					
Control Type: Semi A	ct-Uncoord				
Maximum v/c Ratio: 0	.61				
Intersection Signal De	lay: 11.1	Intersection	LOS: B		
Intersection Capacity	Utilization 62.4%	ICU Level of	of Service B		
Analysis Period (min)	15				

Splits and Phases: 7: Tenth Line & Navan /Navan

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24: Navan & Mer Bleue

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	5	4	1	7		7
Traffic Volume (vph)	113	T 153	T 488	95	33	233
	113	153	400	95 95	33	233
Future Volume (vph)						
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0			40.0	40.0	20.0
Storage Lanes	1			1	1	0
Taper Length (m)	30.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	_	0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1695	1784	1784	1517	1695	1517
FIt Permitted	0.429				0.950	
Satd. Flow (perm)	765	1784	1784	1517	1695	1517
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				100		245
Link Speed (k/h)		60	60	100	50	2-TV
		1840.8	1757.1		403.0	
Link Distance (m)					29.0	
Travel Time (s)	0.05	110.4	105.4	0.05		0.05
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	119	161	514	100	35	245
Shared Lane Traffic (%)						-
Lane Group Flow (vph)	119	161	514	100	35	245
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Detector Phase	4	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	25.9	25.9	25.9	25.9	25.3	25.3
					26.0	26.0
Total Split (s)	34.0	34.0	34.0	34.0		
Total Split (%)	56.7%	56.7%	56.7%	56.7%	43.3%	43.3%
Maximum Green (s)	28.6	28.6	28.6	28.6	20.9	20.9
Yellow Time (s)	4.1	4.1	4.1	4.1	3.6	3.6
All-Red Time (s)	1.3	1.3	1.3	1.3	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.4	5.4	5.1	5.1
Lead/Lag						
Lead-Lag Optimize?			100			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	None	None
	7.0	7.0	7.0	7.0	7.0	7.0
Walk Time (s)						
Flash Dont Walk (s)	9.2	9.2	9.2	9.2	9.2	9.2
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	31.4	31.4	31.4	31.4	10.4	10.4
Actuated g/C Ratio	0.60	0.60	0.60	0.60	0.20	0.20
v/c Ratio	0.26	0.15	0.48	0.11	0.10	0.49
Control Delay	7.1	5.3	8.0	1.7	16.7	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	5.3	8.0	1.7	16.7	6.8
	1.1	0.0	0.0	1.7	10.1	0.0

Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	А	А	А	А	В	А
Approach Delay		6.1	7.0		8.0	
Approach LOS		А	А		А	
Queue Length 50th (m)	4.0	5.0	20.3	0.0	2.3	0.0
Queue Length 95th (m)	10.9	11.2	39.3	3.8	7.2	12.5
Internal Link Dist (m)		1816.8	1733.1		379.0	
Turn Bay Length (m)	40.0			40.0	40.0	20.0
Base Capacity (vph)	458	1070	1070	950	683	757
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.15	0.48	0.11	0.05	0.32

ntersection Summary Area Type:	Other			
Cycle Length: 60				
Actuated Cycle Length: 52.4	4			
Vatural Cycle: 55				
Control Type: Semi Act-Unc	coord			
Aaximum v/c Ratio: 0.49				
ntersection Signal Delay: 7	.0	Intersection LOS: A		
ntersection Capacity Utiliza	ation 57.0%	ICU Level of Service B		
Analysis Period (min) 15				

Splits and Phases: 24: Navan & Mer Bleue

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Marca Marcana	1000	T.	3	ACCUMUMP.	T	Average .
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	٦	1	1	1
Traffic Volume (vph)	278	26	69	376	151	403
Future Volume (vph)	278	26	69	376	151	403
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	90.0	40.0	40.0			40.0
Storage Lanes	2	0	1			1
Taper Length (m)	30.0		30.0			
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Fit Protected	0.950		0.950			
Satd. Flow (prot)	3288	1517	1695	1784	1784	1517
Fit Permitted	0.950		0.656		1.5	
Satd. Flow (perm)	3288	1517	1171	1784	1784	1517
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		27				424
Link Speed (k/h)	50			50	60	
Link Distance (m)	994.9			521.8	394.2	
Travel Time (s)	71.6			37.6	23.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
	293	0.95	0.95	396	159	424
Adj. Flow (vph)	293	21	13	290	109	424
Shared Lane Traffic (%)	000	07	70	000	450	and 1
Lane Group Flow (vph)	293 /	27	73	396	159	424 /
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	10.0	-	2	6	-
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	25.9	25.9	28.8	28.8
Total Split (s)	46.0	46.0	74.0	74.0	74.0	74.0
Total Split (%)	38.3%	38.3%	61.7%	61.7%	61.7%	61.7%
Maximum Green (s)	40.6	40.6	68.7	68.7	68.7	68.7
Yellow Time (s)	3.6	3.6	4.1	4.1	4.1	4.1
All-Red Time (s)	1.8	1.8	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.3	5.3	5.3	5.3
Lead/Lag	V.T	0.7	0.0	0.0	0.0	0.0
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.1	12.1	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	13.5	13.5	69.1	69.1	69.1	69.1
Actuated g/C Ratio	0.14	0.14	0.74	0.74	0.74	0.74
v/c Ratio	0.62	0.11	0.08	0.30	0.12	0.34
Control Delay	43.2	14.0	4.1	5.0	4.0	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.2	14.0	4.1	5.0	4.0	1.2

Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
LOS	D	В	A	А	А	Α	a charge to a fact on the second s
Approach Delay	40.8			4.9	2.0		
Approach LOS	D			А	А		
Queue Length 50th (m)	23.6	0.0	2.8	18.1	6.2	0.0	
Queue Length 95th (m)	35.3	6.5	6.9	32.7	12.8	6.8	
Internal Link Dist (m)	970.9			497.8	370.2		
Turn Bay Length (m)	90.0	40.0	40.0			40.0	
Base Capacity (vph)	1431	675	866	1320	1320	1233	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.20	0.04	0.08	0.30	0.12	0.34	

Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 93.3	
latural Cycle: 65	
Control Type: Semi Act-Uncoord	
Aaximum v/c Ratio: 0.62	
tersection Signal Delay: 12.0	Intersection LOS: B
tersection Capacity Utilization 43.5%	ICU Level of Service A
nalysis Period (min) 15	

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Intersection

Int Delay, s/veh

	1.1.1	<u>us Su</u> i				
Movement	WEL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	44	143	303	21	42	135
Future Vol, veh/h	44	143	303	21	42	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	1.00	None		None	110-1-11-11	None
Storage Length	-	-) . .	400	400	-
Veh in Median Storage, #	0		0	-		0
Grade, %	0		0	5 4 6	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	151	319	22	44	142

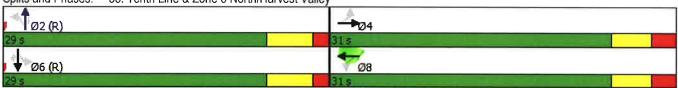
Major/Minor	Minor1		Major1	i istan i	Major2	100	
Conflicting Flow All	550	319	0	0	319	0	
Stage 1	319	11				and the	
Stage 2	231	0		-	141	-	
Critical Hdwy	6.42	6.22	-		4.12		
Critical Hdwy Stg 1	5.42	1	5 2 7	1	-	÷	
Critical Hdwy Stg 2	5.42					ц, т	
Follow-up Hdwy	3.518	3.318			2.218		
Pot Cap-1 Maneuver	496	722			1241		
Stage 1	737	3 7 2		3 9 5	(+):		
Stage 2	807		in a line sec		14 Million	1.4	
Platoon blocked, %			765	14 8		4	
Mov Cap-1 Maneuver	478	722	110 100 100	-	1241		
Mov Cap-2 Maneuver	478		(<u>4</u> 1	4			
Stage 1	737						
Stage 2	778				-		
Approach	WB		NB		SB		
HCM Control Delay, s	13		0		1.9		the state of the second
HCM LOS	В				A CONTRACT		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	1.10		645	1241		
HCM Lane V/C Ratio		-	0.305	0.036	4	
HCM Control Delay (s)	1. 10.		13	8	in Sen	where the second s
HCM Lane LOS			В	А		
HCM 95th %tile Q(veh)		11 182	1.3	0.1		and the second

End Study EB EB VBL VVER VER VBL VB		≯	-	\mathbf{r}	4	+	•	1	1	1	1	Ŧ	4
Lane Configurations Tar Totalic Volume (vph) 52 10 10 120 10 281 10 319 59 169 146 15 Indire Volume (vph) 52 10 100 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 400 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph) 52 10 10 120 10 120 10 130 180 180 180 180 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800	Lane Configurations	٦	ţ,		7	ţ,		ň	**	1	ሻ	^	7
Fulure vipin 52 10 10 120 10 281 10 318 59 169 146 15 Ideal Flow (vphi) 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800				10			281						
Ideal Flow (php) 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1801 1801 1801													
Storage Lengin (m) 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 <td></td>													
Storage Lanes 1 0 1 0 1 0 1 1 1 Taper Length (m) 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 1517 80.0 33.0 1517 80.0 33.0 1517 80.0 33.0 1517 80.0 33.0 1517 80.0 33.0 1517 80.0 33.0 1517 80.0 33.0 1517 80.0 33.0 1517 80.0 33.0 1517 <td></td> <td>the second s</td>													the second s
Taper Length (m) 30.0 30.0 30.0 30.0 30.0 Lane Uili Factor 1.00 1.00 1.00 1.00 1.00 0.95 1.00 0.95 1.00 0.95 0.850 0.850 0.850 0.850 0.850 0.850 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.549 0.549 0.549 0.549 0.549 0.549 0.549 0.549 0.549 0.550 0.550 0.550 0.55 0.55 0.55 0.55 0.55 0.95 0.55 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95						5.111							
Lame Util. Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 0.95 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0.850 0		30.0						30.0					
Frt 0.925 0.855 0.850 0.850 0.850 Flt Protected 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95			1.00	1.00		1.00	1.00		0.95	1.00		0.95	1.00
Fit Protected 0.950 0.950 0.950 0.950 0.950 0.950 Satd. Flow (prot) 1695 1650 0 1695 1526 0 1695 3390 1517 1695 3390 1517 Satd. Flow (perm) 707 1650 0 1326 1526 0 1167 3390 1517 980 3390 1517 Right Turn on Red Yes Yes Yes Yes Yes 531 Link Distance (m) 2019 221.8 343.7 686.6 60 114.5 Travel Time (s) 14.5 16.0 20.6 9.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95													
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Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0													
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Vehicle Extension (s)3.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.0													
Recall ModeNoneNoneNoneC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-MinC-Min<								20 - T I					
Walk Time (s)7.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.07.0<													
Flash Dont Walk (s)17.917.917.917.99.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.29.2 <td></td> <td>C-Min</td>													C-Min
Pedestrian Calls (#/hr) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0													
Act Effct Green (s)12.512.512.512.536.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.036.0	Flash Dont Walk (s)	17.9	17.9		17.9	17.9		9.2	9.2	9.2	9.2	9.2	9.2
Actuated g/C Ratio 0.21 0.21 0.21 0.21 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 <td>Pedestrian Calls (#/hr)</td> <td>0</td> <td>0</td> <td></td> <td>0</td> <td>0</td> <td></td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td>	Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
v/c Ratio 0.37 0.06 0.45 0.56 0.02 0.17 0.07 0.30 0.08 0.02 Control Delay 26.8 12.6 25.4 7.2 5.3 5.2 1.6 8.7 5.9 0.3 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Act Effct Green (s)	12.5	12.5		12.5	12.5		36.0	36.0	36.0	36.0	36.0	36.0
v/c Ratio 0.37 0.06 0.45 0.56 0.02 0.17 0.07 0.30 0.08 0.02 Control Delay 26.8 12.6 25.4 7.2 5.3 5.2 1.6 8.7 5.9 0.3 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.60	0.60	0.60	0.60	0.60	
Control Delay 26.8 12.6 25.4 7.2 5.3 5.2 1.6 8.7 5.9 0.3 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		0.37	0.06		0.45	0.56		0.02	0.17	0.07	0.30	0.08	
Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Control Delay												
	Total Delay	26.8	12.6		25.4	7.2		5.3	5.2	1.6	8.7	5.9	0.3

Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	С	В	N. ON	С	А	9 . C. P.	А	А	Α	A	А	A
Approach Delay		22.7			12.5			4.6			7.1	_
Approach LOS		С	5 - A K		В			А			А	
Queue Length 50th (m)	5.0	0.9		11.7	0.9		0.3	5.5	0.0	7.0	2.7	0.0
Queue Length 95th (m)	11.7	4.6		20.9	14.5		1.8	11.2	2.5	20.8	7.3	0.3
Internal Link Dist (m)		177.9			197.8			319.7			662.6	
Turn Bay Length (m)	40.0			40.0			40.0		40.0	40.0		40.0
Base Capacity (vph)	295	696		554	810		699	2031	933	587	2031	930
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.03		0.23	0.38		0.02	0.17	0.07	0.30	0.08	0.02
Intersection Summary			A HA	1	12.4		а С. н.		anes ve	-aral		il.
Area Type:	Other											
Cycle Length: 60												
Actuated Cycle Length: 60												
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	6:SBTL,	Start of	Green							
Natural Cycle: 55												
Control Type: Actuated-Coc	rdinated											
Maximum v/c Ratio: 0.56												
Intersection Signal Delay: 9.	.1			In	tersection	LOS: A						
Intersection Capacity Utiliza	tion 65.6%			IC	U Level o	of Service	С					
Analysis Period (min) 15												
Splits and Phases: 33: Te	enth Line &	Zone 3 No	orth/Harve	est Valle	¥.							



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Lane Group EBL EBT	EBR	WBL	WIET	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		٦	Þ		ሻ	1		ሻ	^	7
Traffic Volume (vph) 38 10	15	10	10	66	6	274	3	17	240	9
Future Volume (vph) 38 10	15	10	10	66	6	274	3	17	240	9
Ideal Flow (vphpl) 1800 1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m) 20.0	0.0	20.0		0.0	20.0	1000	0.0	20.0	1000	20.0
Storage Lanes 1	0	1		0	1		0	1		1
Taper Length (m) 30.0		30.0			30.0		, e	30.0		
Lane Util. Factor 1.00 1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt 0.911			0.871		1100	0.998	0100	1.00	0.00	0.850
Flt Protected 0.950		0.950			0.950	0.000		0.950		0.000
Satd. Flow (prot) 1695 1626	0	1695	1554	0	1695	3383	0	1695	3390	1517
Flt Permitted 0.705	Ū	0.740	1001	, in the second s	0.595	0000	Ū	0.574	0000	1011
Satd. Flow (perm) 1258 1626	0	1320	1554	0	1062	3383	0	1024	3390	1517
Right Turn on Red	Yes	1010	1001	Yes		0000	Yes	TOLI	0000	Yes
Satd. Flow (RTOR) 16	100		69			2	100			27
Link Speed (k/h) 50			50			60			60	21
Link Distance (m) 211.4			213.4			714.8			343.7	
Travel Time (s) 15.2			15.4			42.9			20.6	24.00
Peak Hour Factor 0.95 0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph) 40 11	16	11	11	69	6	288	3	18	253	9.00
Shared Lane Traffic (%)	10			00	0	200	Ŭ	10	200	J
Lane Group Flow (vph) 40 27	0	11	80	0	6	291	0	18	253	9
Turn Type Perm NA	Ŭ	Perm	NA	Ū	Perm	NA	U	Perm	NA	Perm
Protected Phases 4		1 Unit	8		T OIIII	2		1 onin	6	1 onn
Permitted Phases 4		8			2	_		6	U.S.	6
Detector Phase 4 4		8	8		2	2		6	6	6
Switch Phase						_				
Minimum Initial (s) 10.0 10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s) 22.5 22.5		22.5	22.5		22.5	22.5		22.5	22.5	22.5
Total Split (s) 28.0 28.0		28.0	28.0		32.0	32.0		32.0	32.0	32.0
Total Split (%) 46.7% 46.7%		46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	53.3%
Maximum Green (s) 23.5 23.5		23.5	23.5		27.5	27.5		27.5	27.5	27.5
Yellow Time (s) 3.5 3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s) 1.0 1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s) 0.0 0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s) 4.5 4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
Lead/Lag										
Lead-Lag Optimize?										
Vehicle Extension (s) 3.0 3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode None None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s) 7.0 7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s) 11.0 11.0		11.0	11.0		11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr) 0 0		0	0		0	0		0	0	0
Act Effct Green (s) 10.0 10.0		10.0	10.0		48.6	48.6		48.6	48.6	48.6
Actuated g/C Ratio 0.17 0.17		0.17	0.17		0.81	0.81		0.81	0.81	0.81
v/c Ratio 0.19 0.09		0.05	0.25/		0.01	0.11		0.02	0.09	0.01
Control Delay 24.1 14.8		21.7	10.4		3.2	2.7		2.3	2.2	0.4
Queue Delay 0.0 0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay 24.1 14.8		21.7	10.4		3.2	2.7		2.3	2.2	0.4

Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	С	В	i e con	С	В	100	А	А	111 12	А	А	A
Approach Delay		20.4			11.8			2.7			2.1	
Approach LOS		С			В			А			А	
Queue Length 50th (m)	3.5	0.9		1.0	1.0		0.2	4.2		0.8	7.0	0.2
Queue Length 95th (m)	10.2	6.1		4.3	9.7		0.9	7.0		0.9	3.0	m0.1
Internal Link Dist (m)		187.4			189.4			690.8			319.7	
Turn Bay Length (m)	20.0			20.0			20.0			20.0		20.0
Base Capacity (vph)	492	646		517	650		859	2739		829	2744	1233
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.08	0.04		0.02	0.12		0.01	0.11		0.02	0.09	0.01
Intersection Summary		n e vij		n'z 'z s	1.2.2.5	144			10,753		TT S	
Area Type:	Other											
Cycle Length: 60												
Actuated Cycle Length: 60												
Offset: 0 (0%), Referenced	I to phase 2:	NBTL and	6:SBTL,	Start of	Green							
Natural Cycle: 45												
Control Type: Actuated-Co	ordinated											
Maximum v/c Ratio: 0.25												
Intersection Signal Delay:					tersection							
Intersection Capacity Utiliz	ation 36.3%			IC	CU Level o	of Service	А					
Analysis Period (min) 15												
m Volume for 95th perce	ntile queue i	s metered	l by upstr	eam sign	al.							

Splits and Phases: 35: Tenth Line & Zone 3 South/Avalon South

Ø2 (R)	
32 s	28 s
🖌 🖉 Ø6 (R)	<i>₩</i> 28
32 s	28 s

Intersection

Int Delay, s/veh

		1996 (110 B) - 1							- 2 m
Movement	WBL	WBR	NBT	NBR	SBL	SBT			A 47
Traffic Vol, veh/h	30	20	222	2	20	273	Sandle Lands	1.1.1	
Future Vol, veh/h	30	20	222	2	20	273			
Conflicting Peds, #/hr	0	0	0	0	0	0			
Sign Control	Stop	Stop	Free	Free	Free	Free			
RT Channelized		None		None	2.1.2.2.2.2	None			
Storage Length	0	-			-	:*)			
Veh in Median Storage, #	0	sign de la	0		91	0			
Grade, %	0		0	<u> </u>	-	0			
Peak Hour Factor	95	95	95	95	95	95			
Heavy Vehicles, %	2	2	2	2	2	2			
Mvmt Flow	32	21	234	2	21	287			

Major/Minor	Minor1			Major1		Major2	II 334 - 2				
Conflicting Flow All	564	235		0	0	236	0		_		
Stage 1	235	100 - 10 - 10		-	1.	1.1					
Stage 2	329	-		×		3 6 5	() #)				
Critical Hdwy	6.42	6.22		÷	1.4	4.12	14				
Critical Hdwy Stg 1	5.42	. <u>#</u>		2	22		145				
Critical Hdwy Stg 2	5.42										
Follow-up Hdwy	3.518	3.318		5	-	2.218					
Pot Cap-1 Maneuver	487	804		1.0		1331					
Stage 1	804	-			Ħ.	5					
Stage 2	729			t na stà	1.0		-				
Platoon blocked, %				н	÷		9				
Mov Cap-1 Maneuver	478	804			11.0	1331					
Mov Cap-2 Maneuver	478	÷		2	2	2	12				
Stage 1	804			1.1			1				
Stage 2	715			T		π	-				
. 7 - 1 h S											
Approach	WB			NB		SB		HY I	i i per	2 nit	A.S.
HCM Control Delay, s	11.9			0	-	0.5		1.5			
HCM LOS	В										
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL SBT	25.0				n de	alter of	1.68	3
Capacity (veh/h)		- 571	1331 -	100		162.00	1. A.		1.1.5		
HCM Lane V/C Ratio		- 0.092	0.016 -								
HCM Control Delay (s)		- 11.9	7.7 0								

В

0.3

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А

0

А

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HCM Lane LOS

HCM 95th %tile Q(veh)

Intersection

Int Delay, s/veh

Plothing the second									و وندار در ا
Movement	WBL	WBR	NBT	NBR	SBL	SBT	indir-		Sec. Mark
Traffic Vol, veh/h	161	59	249	32	20	135	1.00	1.3.4	
Future Vol, veh/h	161	59	249	32	20	135			
Conflicting Peds, #/hr	0	0	0	0	0	0			
Sign Control	Stop	Stop	Free	Free	Free	Free			
RT Channelized	-	None	States and the second	None		None			
Storage Length	0	1941	-		-	-			
Veh in Median Storage, #	0	7.213 (*1.24)	0	(4)		0			
Grade, %	0	-	0	-	-	0			
Peak Hour Factor	95	95	95	95	95	95			
Heavy Vehicles, %	2	2	2	2	2	2			
Mvmt Flow	169	62	262	34	21	142			

Major/Minor	Minor1		Major1	13	Major2		
Conflicting Flow All	463	279	0	0	296	0	
Stage 1	279		1000	-	and the second		
Stage 2	184	(•	Ý	1917	9 4 0.	2	
Critical Hdwy	6.42	6.22	-	- 14 J	4.12	-	
Critical Hdwy Stg 1	5.42	19 A A A A A A A A A A A A A A A A A A A	-	-	<u>a</u> (i.	
Critical Hdwy Stg 2	5.42		100			3	
Follow-up Hdwy	3.518	3.318	5 7 4	3 7 5	2.218		
Pot Cap-1 Maneuver	557	760	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	-	1265		
Stage 1	768	(1 4)	(*)		9 9 7	180	
Stage 2	848			-		•	
Platoon blocked, %				-		18 C	
Mov Cap-1 Maneuver	547	760		-	1265		
Mov Cap-2 Maneuver	547	1	(<u>*</u>	-	93	5 2 7	
Stage 1	768						
Stage 2	833			5 7 5		120	
		S. 19, - 198					
Approach	WB		NB	121,111	SB		and the state of the second state.
HCM Control Delay, s	15		0	1	1		the second s
HCM LOS	С						
Minor Lane/Major Mvmt	NBT	NBRWBLn1 SBL	SBT	20	No. of the local division of the local divis		
Capacity (veh/h)		- 591 1265					
HCM Lane V/C Ratio	E.	- 0.392 0.017	-				
HCM Control Delay (s)		- 15 7.9	0				

С

1.9

А

0.1

А

-

π.

-

5

*

HCM Lane LOS

HCM 95th %tile Q(veh)

Intersection

Int Delay, s/veh

Movement	EBL	EBR	NBL	NBT	SBT	SBR	1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	
Traffic Vol, veh/h	19	10	3	246	255	4	and the second second	
Future Vol, veh/h	19	10	3	246	255	4		
Conflicting Peds, #/hr	0	0	0	0	0	0		
Sign Control	Stop	Stop	Free	Free	Free	Free		
RT Channelized		None	Sec. 2.4	None	A second second second	None		
Storage Length	0	(#)	400	-	-	400		
Veh in Median Storage, #	0			0	0			
Grade, %	0	1.2	-	0	0	-		
Peak Hour Factor	95	95	95	95	95	95		
Heavy Vehicles, %	2	2	2	2	2	2		
Mvmt Flow	20	11	3	259	268	4		

Major/Minor	Minor2	1.11	Major1			Major2	2.54	
Conflicting Flow All	533	268	268	0		5.50 1	0	
Stage 1	268	1.1.1.1.1.1.1.1	0.000	-			-	
Stage 2	265	-	(*)	-		343	(# .);	
Critical Hdwy	6.42	6.22	4.12	-			444	
Critical Hdwy Stg 1	5.42	-	1	04		<u>(*</u>)	<u>446</u> 00	
Critical Hdwy Stg 2	5.42	10.00						
Follow-up Hdwy	3.518	3.318	2.218	0.5		-50	20	
Pot Cap-1 Maneuver	507	771	1296				1993	
Stage 1	777		39 8 0	: (*)			())	
Stage 2	779	- 11 1 - 1 - H	file in the	-			-	
Platoon blocked, %				1.4		1	5 4 3);	
Mov Cap-1 Maneuver	506	771	1296	1.1				
Mov Cap-2 Maneuver	506	<u>11</u>	144	12		(#)	4	
Stage 1	777						۲	
Stage 2	777	E .	15	. 75		80	171	
Approach	EB		NB	- 21		SB		
HCM Control Delay, s	11.6		0.1			0		
HCM LOS	В							
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT SBR		A STATE OF			
Capacity (veh/h)	1296	- 574						
HCM Lane V/C Ratio	0.002	- 0.053	8 8					
HCM Control Delay (s)	7.8	- 11.6						
HCM Lane LOS	А	- B						
HCM 95th %tile Q(veh)	0	- 0.2						

LANE SUMMARY

♡ Site: Mer Bleue and Brian Coburn Roundabout - 2025 - BGSG - AM

New Site Roundabout

Lane Use an	d Perform	nance	•		und Wi			Alla Stores		s ite i s		<u>n ñ</u>	
	Demand F Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back o Veh	f Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Mer Bl			an concinua			000	service source				150000		
Lane 1	344	3.0	678	0.507	100	13.2	LOS B	2.1	16.3	Full	500	0.0	0.0
Lane 2 ^d	355	3.0	700	0.507	100	12.8	LOS B	2.0	15.6	Full	420	0.0	0,0
Lane 3	132	3.0	678	0.194	100	7.5	LOS A	0.5	4.3	Two Seg ⁹	50	0.0	0.0
Approach	831	3.0		0.507		12.1	LOS B	2.1	16.3				
East: Brian Co	burn Road	1					17 N 1 - 1		in Maril				
Lane 1	460	3.0	556	0.827	100	34.3	LOS D	5.5	42.6	Full	500	0.0	0.0
Lane 2	460	3.0	556	0.827	100	34.3	LOS D	5.5	42.6	Full	500	0.0	0.0
Lane 3 ^d	604	3.0	582	1.038	100	74.2	LOS F	19.0	147.9	Two Seg ⁹	50	0.0	100.0
Approach	1524	3.0		1.038		50.1	LOS F	19.0	147.9				
North: Mer Ble	eue Road												
Lane 1	202	3.0	476	0.423	100	15.1	LOS C	1.4	11.1	Full	500	0.0	0.0
Lane 2 ^d	213	3.0	504	0.423	100	14.4	LOS B	1.4	10.7	Full	500	0.0	0.0
Lane 3	131	3.0	476	0.274	100	11.8	LOS B	0.8	6.2	Two Seg ⁹	50	0.0	0.0
Approach	545	3.0		0,423		14.0	LOS B	1.4	11.1				
West: Brian C	obum Roa	d Exter	nsion			e ne de	98 V F 1 3		19 - S	2	11.2.5	1.21	
Lane 1	227	3.0	639	0.355	100	10.5	LOS B	1.2	9.1	Full	500	0.0	0.0
Lane 2 ^d	235	3.0	662	0.355	100	10.2	LOS B	1.1	8.7	Full	500	0.0	0.0
Lane 3	53	3.0	639	0.082	100	6.5	LOS A	0.2	1.7	Two Seg ⁹	50	0.0	0.0
Approach	515	3.0		0.355		9.9	LOS A	1.2	9.1				
Intersection	3415	3.0		1.038		29.1	LOS D	19.0	147.9				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

All Movement Classes allocated to Segment 1 are also allocated to Segment 2. This Two-Segment Lane has been modelled as a full-length 9 lane.

d Dominant lane on roundabout approach

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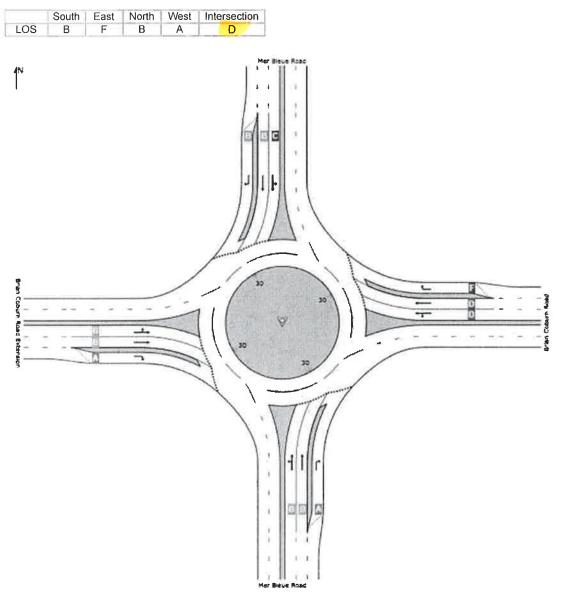
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LEVEL OF SERVICE

♥ Site: Mer Bleue and Brian Coburn Roundabout - 2025 - BGSG - AM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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LANE SUMMARY

V Site: Gerry Lalonde & Collector Road - 2025 BGSG - AM

New Site Roundabout

Roundabout

Lane Use ar	nd Perfor	mance											
	Demand I Total	HV	Cap	Deg. Satn	Lane Util	Average Delay	Level of Service	95% Back of Veh	Queue Dist	Lane Config	Lane Length	Cap. Adj.	Prob. Block
- MOL 19-1-1-	veh/h	%	veh/h	v/c	%	Sec	de la constante de		m		m	%	%
South: Gerry	Lalonde												
Lane 1 [°]	75	3.0	989	0.076	100	4.3	LOS A	0.3	2.0	Full	500	0.0	0.0
Approach	75	3.0		0.076		4.3	LOS A	0.3	2.0				
East: Collecto	r Road												
Lane 1 ^d	188	3.0	984	0.191	100	5.5	LOS A	0.7	5,8	Full	500	0.0	0.0
Approach	188	3.0		0.191		5.5	LOS A	0.7	5.8				
North: Gerry I	alonde												
Lane 1 ^d	135	3.0	958	0.141	100	5.1	LOS A	0.5	4.0	Full	500	0.0	0.0
Approach	135	3.0		0.141		5.1	LOS A	0.5	4.0				
West: Collect	or Road												
Lane 1 ^d	67	3.0	1028	0.066	100	4.1	LOS A	0.2	1.8	Full	500	0.0	0.0
Approach	67	3.0		0.066		4.1	LOS A	0.2	1.8				
Intersection	465	3.0		0.191		5.0	LOSA	0.7	5.8				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

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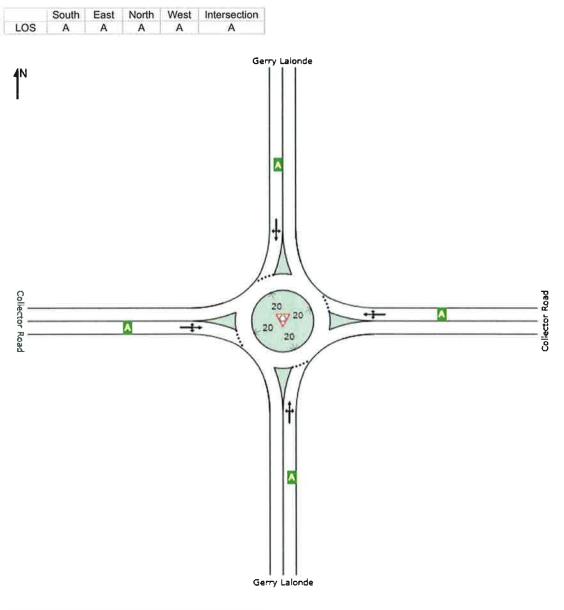
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LEVEL OF SERVICE

♥ Site: Gerry Lalonde & Collector Road - 2025 BGSG - AM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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LANE SUMMARY

♥ Site: Wall Rd & Collector Road - 2025 BGSG - AM

New Site Roundabout

Lane Use a	nd Perfor	mance											
	Demand F Total veh/h	lows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Gerry	Lalonde												
Lane 1 ^d	96	3.0	998	0.096	100	4.5	LOS A	0.3	2.7	Full	500	0.0	0.0
Approach	96	3.0		0.096		4.5	LOS A	0.3	2.7				
East: Collect	or Road												
Lane 1 ^d	185	3.0	1013	0.183	100	5.3	LOS A	0.7	5.5	Full	500	0.0	0.0
Approach	185	3.0		0.183		5.3	LOS A	0.7	5.5				
North: Gerry	Lalonde												
Lane 1 ^d	58	3.0	943	0.061	100	4.4	LOS A	0.2	1.6	Full	500	0.0	0.0
Approach	58	3.0		0.061		4.4	LOS A	0.2	1.6				
West: Collect	tor Road												
Lane 1 ^d	68	3.0	1035	0.066	100	4.1	LOS A	0.2	1.8	Full	500	0.0	0.0
Approach	68	3.0		0.066		4.1	LOS A	0.2	1.8				
Intersection	407	3.0		0.183		4.7	LOSA	0.7	5.5				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

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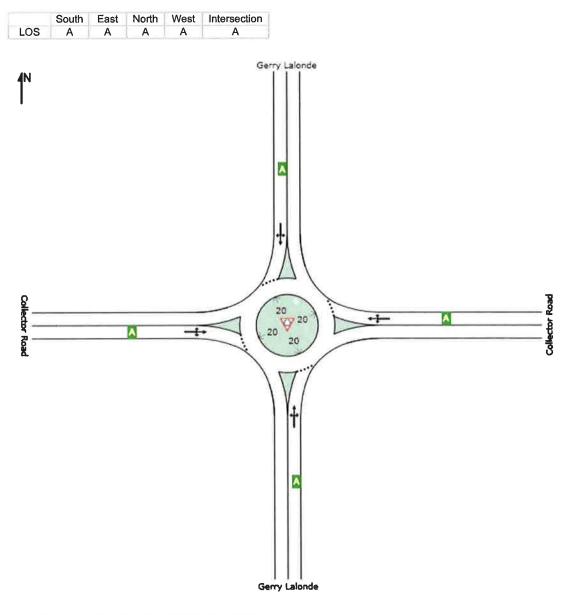
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LEVEL OF SERVICE

W Site: Wall Rd & Collector Road - 2025 BGSG - AM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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2: Tenth Line & Brian Coburn Mer Bleue Expansion - Master Transportation Study

Future (2025) Total Traffic PM Peak Hour

	۶	-	¥	4	-	*	1	1	۴	1	Ļ	~
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	^	1	ሻ	† †	7	ሻሻ	≜ ₽		ሻሻ	^	1
Traffic Volume (vph)	394	560	258	13	334	243	169	551	52	291	676	295
Future Volume (vph)	394	560	258	13	334	243	169	551	52	291	676	295
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	115.0		80.0	40.0		50.0	105.0	1000	0.0	100.0	1000	65.0
Storage Lanes	2		1	1	192 (1	2		0	2		1
Taper Length (m)	30.0	_		30.0			30.0			30.0		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Frt			0.850			0.850		0.987		4.01	0.00	0.850
Fit Protected	0.950			0.950			0.950			0.950		01000
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	3288	3346	0	3288	3390	1517
FIt Permitted	0.950			0.430			0.950			0.950		
Satd. Flow (perm)	3288	3390	1517	767	3390	1517	3288	3346	0	3288	3390	1517
Right Turn on Red			Yes			Yes			Yes	0100		Yes
Satd. Flow (RTOR)			272			240		7				311
Link Speed (k/h)		60			60			60			60	011
Link Distance (m)		1402.3			938.8			686.6			623.5	
Travel Time (s)		84.1			56.3			41.2			37.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	415	589	272	14	352	256	178	580	55	306	712	311
Shared Lane Traffic (%)												011
Lane Group Flow (vph)	415	589	272	14	352	256	178	635	0	306	712	311
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Prot	NA	Ū	Prot	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases			4	8		8		-				6
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase								_				
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	13.3	35.0	35.0	35.0	35.0	35.0	13.3	35.0		13.3	35.0	35.0
Total Split (s)	30.6	65.6	65.6	35.0	35.0	35.0	18.5	39.2		25.2	45.9	45.9
Total Split (%)	23.5%	50.5%	50.5%	26.9%	26.9%	26.9%	14.2%	30.2%		19.4%	35.3%	35.3%
Maximum Green (s)	24.3	59.3	59.3	28.7	28.7	28.7	12.2	32.9		18.9	39.6	39.6
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1	2.2	2.2	2.2
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
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	1.1.1		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Min	Min	None	Min		None	Min	Min
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	110110	7.0		Hono	7.0	7.0
Flash Dont Walk (s)		21.7	21.7	21.7	21.7	21.7		21.7			21.7	21.7
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	18.5	42.6	42.6	17.5	17.5	17.5	10.6	25.8		15.0	30.1	30.1
Actuated g/C Ratio	0.18	0.41	0.41	0.17	0.17	0.17	0.10	0.25		0.15	0.29	0.29
v/c Ratio	0.70	0.42	0.35	0.11	0.61	0.56	0.53	0.75		0.64	0.72	0.20
Control Delay	48.4	23.0	3.8	42.5	46.0	12.0	53.3	42.9		50.4	38.0	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.4	23.0	3.8	42.5	46.0	12.0	53.3	42.9		50.4	38.0	6.0
	10,-1	20.0	0.0	12.0	10,0	12.0	00.0	-12.0			00.0	0.0

Lanes, Volumes, Timings IBI Group

2: Tenth Line & Brian Coburn Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	С	А	D	D	В	D	D	1.12	D	D	A
Approach Delay		27.2			31.9			45.2			33.4	
Approach LOS		С			С			D			С	
Queue Length 50th (m)	37.4	40.0	0.0	2.2	32.1	2.5	16.2	56.2		27.7	61.6	0.0
Queue Length 95th (m)	61.8	60.7	13.9	8.2	52.4	24.5	31.4	89.1		48.2	94.4	18.5
Internal Link Dist (m)		1378.3			914.8			662.6			599.5	
Turn Bay Length (m)	115.0		80.0	40.0		50.0	105.0	le la come	12.5	100.0		65.0
Base Capacity (vph)	803	2023	1015	221	979	608	403	1112		625	1351	791
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.52	0.29	0.27	0.06	0.36	0.42	0.44	0.57		0.49	0.53	0.39
Intersection Summary	in de Shi	121				Si wi	1250	e w si				
Area Type:	Other											
Cycle Length: 130												
Actuated Cycle Length: 102	2.9											
Natural Cycle: 100												1.11
Control Type: Semi Act-Un	coord											
Maximum v/c Ratio: 0.75												
Intersection Signal Delay: 3	33.6			Ir	tersection	n LOS: C						
Intersection Capacity Utilization	ation 72.3%			IC	CU Level o	of Service	C					

Analysis Period (min) 15

Splits and Phases: 2: Tenth Line & Brian Coburn

Ø1	1 02	- •04	
25.2 5	39.2 s	65.6 s	
\$ Ø5	↓ Ø6	<i>▶</i> ₀₇	Ø8
18.5 5	45.9 s	30.6 s	35 s

Intersection

Int Delay, s/veh

	10.00											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NER	SBL	SBT	SBR
Traffic Vol, veh/h	152	11	21	1	2	7	23	388	- 4	1	324	94
Future Vol, veh/h	152	11	21	1	2	7	23	388	4	1	324	94
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized		•	None	11-12-12-24		None		-	None		-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #		0		1.00	0			0	-		0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	160	12	22	1	2	7	24	408	4	1	341	99

Major/Minor	Minor2			Minor1	51 Y	1. S	A	1ajor1		1112	Major2		
Conflicting Flow All	857	854	391	868	901	411		440	0	0	413	0	0
Stage 1	393	393	- 11 -	459	459	-		10	-	1.1.	100		
Stage 2	464	461	-	409	442	-		4				a.	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22		4.12	14	1	4.12		
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52				٠	۰			-
Critical Hdwy Stg 2	6.12	5.52		6.12	5.52							e en	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318		2.218	3 .		2.218	-	-
Pot Cap-1 Maneuver	277	296	658	273	278	641		1120	•	1.00	1146		-
Stage 1	632	606	-	582	566			340	3 2 3	5 6 5	a .	-2	
Stage 2	578	565		619	576			1.04		-		1	
Platoon blocked, %									•				-
Mov Cap-1 Maneuver	266	287	658	250	270	641		1120		1	1146		-
Mov Cap-2 Maneuver	266	287	Ē	250	270	-				1953		-	
Stage 1	614	605	-	566	550	1.00						-	-
Stage 2	553	549	×.	586	575			8 4 0					
					4.85								
Approach	EB	17.12	a de la	WB	200	14.		NB			SB		
HCM Control Delay, s	40.1			13.2				0.5			0		- 61
HCM LOS	E			В									
Minor Lane/Major Mvmt	NBL	NBT	NBRI	EBLn1WBLn1	SBL	SBT	SBR	46 Z		X III X			
Capacity (veh/h)	1120	-		287 448	1146		- (÷			37.5		0	1
HCM Lane V/C Ratio	0.022	-		0.675 0.023	0.001	4 .	.						
HCM Control Delay (s)	8.3	0		40.1 13.2	8.1	0	1.00						
HCM Lane LOS	А	A	ŧ	E B	А	А	0 # :						_
HCM 95th %tile Q(veh)	0.1			4.5 0.1	0		0.55						-

Intersection		a second a		Sherry?	SU-32			11 12	285	1002.04		
Intersection Delay, s/veh	15.7	1										
Intersection LOS	С	Sec. 1		2.1. 2.4		V 10 1 1				1111		
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	152	11	21	0	1	2	7	0	23	388	4
Future Vol, veh/h	0	152	11	21	0	1	2	7	0	23	388	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	160	12	22	0	1	2	7	0	24	408	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0
			12		10,000							
Approach	192 10.1	EB	Sec. Ye		424	WB				NB	1.20	t tier
Opposing Approach		WB				EB				SB		
Opposing Lanes		1				1				1		
Conflicting Approach Left		SB				NB				EB		
Conflicting Lanes Left		1				1				1		
Conflicting Approach Right		NB				SB				WB		
Conflicting Lanes Right		1				1				1		
HCM Control Delay		12.4				9.4				16.8		1. 1.
HCM LOS		В				А				С		
Lane		NBLn1	EBLn1	WBLn1	SBLn1	-1154-3	-	128.17				
Vol Left, %		6%	83%	10%	0%		-		Sec. 15	1 A A		
Vol Thru, %		93%	6%	20%	77%							
Vol Right, %		1%	440/	700/								
Sign Control			11%	70%	22%							
Traffic Vol by Lane		Stop	Stop	70% Stop	22% Stop	J.A.						
LT Vol		Stop	Stop	Stop	Stop							
LT Vol Through Vol		Stop 415	Stop 184	Stop 10	Stop 419							
		Stop 415 23	Stop 184 152	Stop 10 1	Stop 419 1							
Through Vol		Stop 415 23 388	Stop 184 152 11	Stop 10 1 2	Stop 419 1 324							
Through Vol RT Vol		Stop 415 23 388 4	Stop 184 152 11 21	Stop 10 1 2 7	Stop 419 1 324 94							
Through Vol RT Vol Lane Flow Rate		Stop 415 23 388 4 437	Stop 184 152 11 21 194	Stop 10 1 2 7 11	Stop 419 1 324 94 441							
Through Vol RT Vol Lane Flow Rate Geometry Grp		Stop 415 23 388 4 437 1	Stop 184 152 11 21 194 1	Stop 10 1 2 7 11 1	Stop 419 1 324 94 441 1							
Through Vol RT Vol Lane Flow Rate Geometry Grp Degree of Util (X)		Stop 415 23 388 4 437 1 0.631	Stop 184 152 11 21 194 1 0.334	Stop 10 1 2 7 11 1 0.018	Stop 419 1 324 94 441 1 0.621							
Through Vol RT Vol Lane Flow Rate Geometry Grp Degree of Util (X) Departure Headway (Hd)		Stop 415 23 388 4 437 1 0.631 5.202	Stop 184 152 11 21 194 1 0.334 6.2	Stop 10 1 2 7 11 1 0.018 6.221	Stop 419 1 324 94 441 1 0.621 5.071							
Through Vol RT Vol Lane Flow Rate Geometry Grp Degree of Util (X) Departure Headway (Hd) Convergence, Y/N		Stop 415 23 388 4 437 1 0.631 5.202 Yes	Stop 184 152 11 21 194 1 0.334 6.2 Yes	Stop 10 1 2 7 11 1 0.018 6.221 Yes	Stop 419 1 324 94 441 1 0.621 5.071 Yes							
Through Vol RT Vol Lane Flow Rate Geometry Grp Degree of Util (X) Departure Headway (Hd) Convergence, Y/N Cap		Stop 415 23 388 4 437 1 0.631 5.202 Yes 695	Stop 184 152 11 21 194 1 0.334 6.2 Yes 579	Stop 10 1 2 7 11 1 0.018 6.221 Yes 572	Stop 419 1 324 94 441 1 0.621 5.071 Yes 710							
Through Vol RT Vol Lane Flow Rate Geometry Grp Degree of Util (X) Departure Headway (Hd) Convergence, Y/N Cap Service Time		Stop 415 23 388 4 437 1 0.631 5.202 Yes 695 3.242	Stop 184 152 11 21 194 1 0.334 6.2 Yes 579 4.249	Stop 10 1 2 7 11 1 0.018 6.221 Yes 572 4.294	Stop 419 1 324 94 441 1 0.621 5.071 Yes 710 3.11							
Through Vol RT Vol Lane Flow Rate Geometry Grp Degree of Util (X) Departure Headway (Hd) Convergence, Y/N Cap Service Time HCM Lane V/C Ratio		Stop 415 23 388 4 437 1 0.631 5.202 Yes 695 3.242 0.629	Stop 184 152 11 21 194 1 0.334 6.2 Yes 579 4.249 0.335	Stop 10 1 2 7 11 1 0.018 6.221 Yes 572 4.294 0.019	Stop 419 1 324 94 441 1 0.621 5.071 Yes 710 3.11 0.621							

Intersection Delay, s/veh						
Intersection LOS		S HAR			이 영화 영화	
Movement	SBU	SBL	SBT	SBR		diam'r
Traffic Vol, veh/h	0	1	324	94	6	1000
Future Vol, veh/h	0	1	324	94		
Peak Hour Factor	0.95	0.95	0.95	0.95	1012	
Heavy Vehicles, %	2	2	2	2		
Mvmt Flow	0	1	341	99		
Number of Lanes	0	0	1	0		
					and the second	
Approach		SB				
Opposing Approach		NB		1.2.2	100000	2 I I I I I I I
Opposing Lanes		1				
Conflicting Approach Left		WB				1.000
Conflicting Lanes Left		1				
Conflicting Approach Right		EB				
Conflicting Lanes Right		1				
HCM Control Delay		16.1				
TOW CONTON DEIAY						
HCM LOS		С				

7: Tenth Line & Navan /Navan Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SER
Lane Configurations	7	f)		٦	1	1		4			र्स	7
Traffic Volume (vph)	181	567	12	2	261	206	12	22	3	74	22	274
Future Volume (vph)	181	567	12	2	261	206	12	22	3	74	22	274
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	120.0		0.0	65.0		40.0	0.0		0.0	0.0		30.0
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850		0.990				0.850
Fit Protected	0.950			0.950		sh 🕺 –		0.984			0.963	
Satd. Flow (prot)	1695	1779	0	1695	1784	1517	0	1738	0	0	1718	1517
Fit Permitted	0.590			0.326				0.875			0.749	
Satd. Flow (perm)	1053	1779	0	582	1784	1517	0	1546	0	0	1336	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				217		3				288
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1757.1			855.5			456.3			1290.5	
Travel Time (s)		105.4			51.3			27.4			77.4	100
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	191	597	13	2	275	217	13	23	3	78	23	288
Shared Lane Traffic (%)												
Lane Group Flow (vph)	191	610	0	2	275	217	0	39	0	0	101	288
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	100
Permitted Phases	4			8		8	2			6		6
Detector Phase	4	4		8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2	25.2	24.7	24.7		24.7	24.7	24.7
Total Split (s)	78.0	78.0		78.0	78.0	78.0	42.0	42.0		42.0	42.0	42.0
Total Split (%)	65.0%	65.0%		65.0%	65.0%	65.0%	35.0%	35.0%		35.0%	35.0%	35.0%
Maximum Green (s)	70.8	70.8	TS/II K	70.8	70.8	70.8	35.3	35.3		35.3	35.3	35.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.5	3.5		3.5	3.5	3.5	3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	7.2	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	<u>3</u> .0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	0
Act Effct Green (s)	23.6	23.6		23.6	23.6	23.6		11.6			11.6	11.6
Actuated g/C Ratio	0.48	0.48		0.48	0.48	0.48		0.23			0.23	0.23
v/c Ratio	0.38	0.72		0.01	0.32	0.26		0.11			0.32	0.50
Control Delay	10.6	15.7		6.5	8.9	2.2		17.7			21.6	6.6
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	10.6	15.7		6.5	8.9	2.2		17.7			21.6	6.6

Lanes, Volumes, Timings IBI Group

7: Tenth Line & Navan /Navan Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	В	В	19 A.	А	А	А		В		1	С	A
Approach Delay		14.5			5.9			17.7			10.5	
Approach LOS		В			А			В			В	
Queue Length 50th (m)	8.1	32.2		0.1	11.3	0.0		2.2			6.5	0.0
Queue Length 95th (m)	21.6	70.4		0.8	26.3	7.1		9.4			20.7	15.2
Internal Link Dist (m)		1733.1			831.5			432.3			1266.5	
Turn Bay Length (m)	120.0			65.0		40.0						30.0
Base Capacity (vph)	1053	1779		582	1784	1517		1192			1030	1235
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	0.18	0.34		0.00	0.15	0.14		0.03			0.10	0.23
Intersection Summary	ार्ग्स 🖂	e ne "				8.511.83		a aitan	S 2			
Area Tumar	Other											

Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 4	9.6		
Natural Cycle: 60			
Control Type: Semi Act-L	Jncoord		
Maximum v/c Ratio: 0.72			
Intersection Signal Delay	: 11.2	Intersection LOS: B	
Intersection Capacity Util	ization 69.9%	ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 7: Tenth Line & Navan /Navan

Ø2		
42 s	78 s	
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42 s	المرتقع كريتي المتعادرة وتستقصص موجرة واستعرار ومرمو تتحوين والأراط المتعادية	

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	3	1	4	7	3	7
Traffic Volume (vph)	254	T 616	T 259	104	159	172
	254	616	259	104	159	172
Future Volume (vph)						
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0			40.0	40.0	20.0
Storage Lanes	1			1	1	0
Taper Length (m)	30.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
FIt Protected	0.950				0.950	
Satd. Flow (prot)	1695	1784	1784	1517	1695	1517
FIt Permitted	0.591				0.950	
Satd. Flow (perm)	1055	1784	1784	1517	1695	1517
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				109		181
Link Speed (k/h)		60	60	100	50	101
Link Distance (m)		1840.8	1757.1		403.0	
		1040.0	105.4		29.0	
Travel Time (s)	0.05			0.05		0.05
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	267	648	273	109	167	181
Shared Lane Traffic (%)		-				
Lane Group Flow (vph)	267	648	273	109	167	181
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Detector Phase	4	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	25.9	25.9	25.9	25.9	25.3	25.3
Total Split (s)	34.4	34.4	34.4	34.4	25.6	25.6
	57.3%	57.3%	57.3%	57.3%	42.7%	42.7%
Total Split (%)						
Maximum Green (s)	29.0	29.0	29.0	29.0	20.5	20.5
Yellow Time (s)	4.1	4.1	4.1	4.1	3.6	3.6
All-Red Time (s)	1.3	1.3	1.3	1.3	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.4	5.4	5.1	5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	9.2	9.2	9.2	9.2	9.2	9.2
Pedestrian Calls (#/hr)	0	0	0	0.2	0	0.2
Act Effct Green (s)	24.1	24.1	24.1	24.1	9.9	9.9
	0.54	0.54	0.54	0.54	0.22	0.22
Actuated g/C Ratio						
v/c Ratio	0.47	0.67	0.28	0.13	0.45	0.38
Control Delay	10.3	12.3	7.0	2.0	19.6	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	12.3	7.0	2.0	19.6	5.9

Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	В	В	А	А	В	А
Approach Delay		11.7	5.6		12.5	
Approach LOS		В	A		В	
Queue Length 50th (m)	10.0	28.6	9.1	0.0	9.6	0.0
Queue Length 95th (m)	27.5	65.3	21.7	4.6	24.5	10.5
Internal Link Dist (m)		1816.8	1733.1		379.0	
Turn Bay Length (m)	40.0			40.0	40.0	20.0
Base Capacity (vph)	697	1178	1178	1039	791	805
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.55	0,23	0.10	0.21	0.22

Intersection Summary		
Area Type: Other		
Cycle Length: 60		
Actuated Cycle Length: 44.8		
Natural Cycle: 60		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.67		
Intersection Signal Delay: 10.5	Intersection LOS: B	
Intersection Capacity Utilization 52.3%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 24: Navan & Mer Bleue

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Lane Group	EBL	EBR	NBL	NBT	SBT	SER
			NoL.			
Lane Configurations	ሻሻ 555	69	40	T 327	T 456	314
Traffic Volume (vph)	555		40			314
Future Volume (vph)	555	69		327	456	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	40.0	40.0			40.0
Storage Lanes	2	0	1			1
Taper Length (m)	30.0		30.0		1.00	1.00
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3288	1517	1695	1784	1784	1517
FIt Permitted	0.950		0.438			
Satd. Flow (perm)	3288	1517	782	1784	1784	1517
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		73				307
Link Speed (k/h)	50			50	60	
Link Distance (m)	994.9			521.8	394.2	
Travel Time (s)	71.6			37.6	23.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
	584	73	42	344	480	331
Adj. Flow (vph)	004	13	42	344	400	331
Shared Lane Traffic (%)	70/	70	40	044	100	004
Lane Group Flow (vph)	584 /	73	42	344	480	331
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2	_		6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	25.9	25.9	28.8	28.8
Total Split (s)	49.0	49.0	71.0	71.0	71.0	71.0
Total Split (%)	40.8%	40.8%	59.2%	59.2%	59.2%	59.2%
Maximum Green (s)	43.6	43.6	65.7	65.7	65.7	65.7
Yellow Time (s)	3.6	3.6	4.1	4.1	4.1	4.1
All-Red Time (s)	1.8	1.8	1.2	1.2	1.2	1.2
	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)						
Total Lost Time (s)	5.4	5.4	5.3	5.3	5.3	5.3
Lead/Lag						
Lead-Lag Optimize?		11.00				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.1	12.1	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	22.9	22.9	65.9	65.9	65.9	65.9
Actuated g/C Ratio	0.23	0.23	0.66	0.66	0.66	0.66
v/c Ratio	0.77	0.18	0.08	0.29	0.41	0.30
Control Delay	43.2	8.2	7.7	8.5	9.7	2.0
						0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	43.2	8.2	7.7	8.5	9.7	2.0

Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	1. 111. 12
LOS	D	A	A	A	Α	A	
Approach Delay	39.3			8.4	6.6		
Approach LOS	D			А	А		
Queue Length 50th (m)	50.1	0.0	2.4	22.6	34.8	1.3	
Queue Length 95th (m)	66.7	9.6	7.2	43.0	64.1	11.0	
Internal Link Dist (m)	970.9			497.8	370.2		
Turn Bay Length (m)	40.0	40.0	40.0			40.0	
Base Capacity (vph)	1444	707	517	1180	1180	1107	
Starvation Cap Reductn	0	0	0	0	0	0	1.1.1.1.1.1.1.1.1
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.40	0.10	0.08	0.29	0.41	0.30	

Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 99.5	
Vatural Cycle: 65	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.77	
ntersection Signal Delay: 18.6	Intersection LOS: B
ntersection Capacity Utilization 60.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 26: Mer Bleue & Renaud

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Intersection

Int Delay, s/veh

Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Traffic Vol, veh/h	24	88	279	41	161	365	the state of the second se
Future Vol, veh/h	24	88	279	41	161	365	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized		None	and a Shale Je	None	12.51	None	
Storage Length	-	-		400	400	-	
Veh in Median Storage, #	0	· · · ·	0		-	0	
Grade, %	0	-	0	-	(-)	0	
Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	25	93	294	43	169	384	

1017 294 723 6.42 5.42	294 - 6.22		h. Li	0	0	294	0			
723 6.42 5.42	6.22			*	-1	10 C				
6.42 5.42	- 6.22									
5.42	6.22			200		2 - 01	-			
					-	4.12	-			
E 10				6 2 0			-			
5.42	111 1				۲		- 60			
3.518	3.318					2.218				
263	745			12	556	1268	-			
756										
481							1-0			
				2 9 3	(#)		19 11			
228	745				- 14	1268	-			
228	1.			14			24			
756					۲					
417	1.			1						
WB		a ya		NB	THE R	SB	140	and the second		
14.4	1	in a state	100	0		2.5	10.00	1. 1. 1		
	1									
1	1									
NBT	NBRWBLn1	SBL	SBT		125		e nu	S In the second	r Aller S	
- 2	- 501	1268	-						. "-11->	1.0
2	- 0.235	0.134	2 4							
	5.42 3.518 263 756 481 228 228 756 417 WB 14.4 B	5.42 - 5.42 - 3.518 3.318 263 745 756 - 481 - 228 745 228 - 756 - 417 - WB 14.4 - B NBT NBRWBLn1 - 501	5.42 - 5.42 - 3.518 3.318 263 745 756 - 481 - 228 745 228 - 756 - 417 - WB 14.4 B NBT NBRWBLn1 SBL	5.42 - 5.42 - 3.518 3.318 263 745 756 - 481 - 228 745 756 - 756 - 756 - 756 - 756 - 417 - WB 14.4 - B - NBT NBRWBLn1 SBL SBT - 501 1268	5.42 - - 5.42 - - 3.518 3.318 - 263 745 - 756 - - 481 - - 228 745 - 228 - - 756 - - 756 - - 756 - - 756 - - 756 - - 756 - - 756 - - WB NB 0 B - 0 NBT NBRWBLN1 SBL SBT - 501 1268	5.42 - - - 5.42 - - - 3.518 3.318 - - 263 745 - - 756 - - - 481 - - - 228 745 - - 228 - - - 756 - - - 756 - - - 756 - - - 756 - - - WB NB - - MB 0 - - NBT NBRWBLn1 SBL SBT - - 501 1268 -	5.42 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	5.42 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	5.42 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	5.42 - - - - 3.518 3.318 - 2.218 - 263 745 - 1268 - 756 - - - - 481 - - - - 228 745 - 1268 - 228 745 - 1268 - 228 745 - 1268 - 228 745 - 1268 - 756 - - - - 756 - - - - 756 - - - - 417 - - - - 8 0 2.5 - - 8 - - - - NBT NBRWBLn1 SB SBT - - - 501 1268 -

HCM Lane LOS		В	А	1.5		
HCM 95th %tile Q(veh)	•	0.9	0.5	-		

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HCM Control Delay (s)

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	3	4		7	f,		7	† †	7	ሻ	<u>††</u>	7
Traffic Volume (vph)	31	10	10	30	10	99	10	534	59	189	457	55
Future Volume (vph)	31	10	10	30	10	99	10	534	59	189	457	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		40.0	40.0		40.0	40.0		40.0	40.0		40.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.925			0.864				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		1.1
Satd. Flow (prot)	1695	1650	0	1695	1542	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.582			0.743			0.477			0.441		
Satd. Flow (perm)	1038	1650	0	1326	1542	0	851	3390	1517	787	3390	1517
Right Turn on Red			Yes			Yes		1.1	Yes			Yes
Satd. Flow (RTOR)		11			104				62			58
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		201.9			221.8			343.7			686.6	
Travel Time (s)		14.5			16.0			20.6			41.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	33	11	11	32	11	104	11	562	62	199	481	58
Shared Lane Traffic (%)		1.0										
Lane Group Flow (vph)	33	22	0	32	115	0	11	562	62	199	481	58
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	34.8	34.8		34.8	34.8		28.6	28.6	28.6	28.6	28.6	28.6
Total Split (s)	39.0	39.0		39.0	39.0		81.0	81.0	81.0	81.0	81.0	81.0
Total Split (%)	32.5%	32.5%		32.5%	32.5%		67.5%	67.5%	67.5%	67.5%	67.5%	67.5%
Maximum Green (s)	33.1	33.1		33.1	33.1		75.4	75.4	75.4	75.4	75.4	75.4
Yellow Time (s)	3.6	3.6		3.6	3.6		4.1	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	2.3	2.3		2.3	2.3		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9		5.9	5.9		5.6	5.6	5.6	5.6	5.6	5.6
Lead/Lag												
Lead-Lag Optimize?			- 11				15. 21				1.1.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	17.9	17.9		17.9	17.9		9.2	9.2	9.2	9.2	9.2	9.2
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	10.6	10.6		10.6	10.6		97.9	97.9	97.9	97.9	97.9	97.9
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.82	0.82	0.82	0.82	0.82	0.82
v/c Ratio	0.36	0.14		0.28	0.50	1111	0.02	0.20	0.05	0.31	0.17	0.05
Control Delay	62.8	34.6		57.1	20.0		2.2	2.5	0.5	4.2	2.6	0.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.8	34.6		57.1	20.0		2.2	2.5	0.5	4.2	2.6	0.7

Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	С	10.1	E	В		А	А	А	А	А	A
Approach Delay		51.5			28.0			2.3			2.9	
Approach LOS		D			С			А			А	
Queue Length 50th (m)	6.9	2.2		6.6	2.3		0.3	10.0	0.0	8.0	8.8	0.0
Queue Length 95th (m)	16.4	9.5		15.7	18.2		1.3	14.6	1.7	16.5	13.7	2.1
Internal Link Dist (m)		177.9			197.8			319.7			662.6	
Turn Bay Length (m)	40.0			40.0			40.0		40.0	40.0		40.0
Base Capacity (vph)	286	463		365	500		694	2766	1249	641	2766	1248
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.05		0.09	0.23		0.02	0.20	0.05	0.31	0.17	0.05
Intersection Summary	212		1 1 2		- 1 M I		<u>s</u> pirs		îm"	1 2 1		n-court
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 12	20											
Offset: 44 (37%), Reference	ced to phase	2:NBTL a	and 6:SBT	L, Start	of Green							
Natural Cycle: 65												
Control Type: Actuated-Co	oordinated											
Maximum v/c Ratio: 0.50												
Intersection Signal Delay:					tersection							
Intersection Capacity Utiliz	zation 49.4%			IC	U Level o	of Service	А					
Analysis Period (min) 15												
Splits and Phases: 33:	Tenth Line &	Zone 3 N	orth/Harv	est Valle	v							

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Lane Gongurations FBI EBR VMEI VMER MER MER MER MER MER MER SER		۶	-	\mathbf{r}	1	-	*	1	1	1	1	Ļ	4
Traffic Volume (vph) 27 10 4 5 10 37 3 529 10 68 368 51 Ideal Flow (vph) 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 <td< td=""><td>Lane Group</td><td>EBL</td><td>EBT</td><td>EBR</td><td>WBL</td><td>WBT</td><td>WBR</td><td>NBL</td><td>NBT</td><td>NBR</td><td>SBL</td><td>SBT</td><td>SBR</td></td<>	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph) 27 10 4 5 10 37 3 529 10 68 368 51 Ideal Flow (vph) 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 <td< td=""><td>Lane Configurations</td><td>ሻ</td><td>4</td><td></td><td>ή</td><td>Þ</td><td></td><td>٦</td><td>↑î→</td><td></td><td>٦</td><td>^</td><td>1</td></td<>	Lane Configurations	ሻ	4		ή	Þ		٦	↑ î→		٦	^	1
Future volume (vph) 27 10 4 5 10 37 3 529 10 68 368 51 ideal Flow (vph) 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800				4			37			10			51
Ideal Flow (pnp) 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800		27		4	5	10	37		529	10			
Storage Length (m) 20.0 0.0 20.0 20.0 20.0 20.0 20.0 Storage Lanes 1 0 1 0 1 0 1 1 1 Taper Length (m) 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 <t< td=""><td></td><td></td><td></td><td>1800</td><td>1800</td><td>1800</td><td>1800</td><td>1800</td><td>1800</td><td></td><td></td><td></td><td></td></t<>				1800	1800	1800	1800	1800	1800				
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Taper Langth (m) 30.0 30.0 30.0 30.0 30.0 30.0 Lane UIII Factor 1.00 1.00 1.00 1.00 1.00 1.00 0.95 0.95 1.00 0.95 1.00 0.95 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95													
Lame Util. Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 0.95 1.00 0.95 0.95 1.00 0.95 0.950 0.950 FIF Protected 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.950 0.850 Stat. Flow (perm) 1153 1542 0 1201 1418 0 840 3042 0 1705 3051 1365 Stat. Flow (perm) 1163 1542 0 1201 1418 0 840 3042 0 705 3051 1365 Stat. Flow (perm) 1163 152 154 42.9 20.6 117 1183 111 139 3 557 11 72 387 54 Link Distance (m) 211.4 2 154 42.9 20.6 20.5 146 72 387 54 11072 387 54	-	30.0			30.0			30.0		1041	30.0		
Frt 0.960 0.883 0.997 0.950 0.950 Flt Protected 0.950 0.950 0.950 0.950 0.950 Stat. Flow (prot) 1526 1526 1418 0 1526 3042 0 1526 3051 1365 Flt Permited 0.724 0.748 0.523 0.439 1365 Satd. Flow (perm) 1163 1542 0 1201 1418 0.840 3042 0 705 3051 1365 Satd. Flow (prot) 163 50 750 60 60 60 50 1418 343.7 Travel Time (s) 15.2 15.4 42.9 20.6 5 54 54 54 54 54 54 54 54 54 54 54 54 54 54 54 54 54 54 54 54 54 54 54 54 54 55 11<72			1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95		0.95	1.00
Fit Protected 0.950 0.950 0.950 0.950 Satd. Flow (prot) 1526 1542 0 1526 1418 0 1526 3042 0 1526 3051 1365 Righ Turn on Red Yes Yes Yes Yes Yes Yes Yes Satd. Flow (RTOR) 4 39 5 .54 .54 .54 .54 .55 .54 Link Distance (m) 211.4 213.4 .714.8 .343.7 .343.7 .55 .54 Adj. Flow (ph) 28 15 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95	Frt		0.960			0.883							
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Satd. Flow (perm) 1163 1542 0 1201 1418 0 840 3042 0 705 3051 1365 Right Turn on Red Yes Y					0.748								
Right Tum on Red Yes Yes Yes Yes Yes Satd. Flow (RTOR) 4 39 5 54 Link Speed (kh) 50 50 60 60 Link Distance (m) 211.4 213.4 714.8 343.7 Travel Time (s) 15.2 15.4 42.9 20.6 Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95<			1542	0	1201	1418	0		3042	0		3051	1365
Satd. Flow (RTOR) 4 39 5 54 Link Speed (k/h) 50 50 60 60 Link Distance (m) 211.4 213.4 714.8 343.7 Travel Time (s) 15.2 15.4 42.9 20.6 Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 <td></td> <td></td> <td></td> <td>Yes</td> <td></td> <td></td> <td>Yes</td> <td></td> <td></td> <td>Yes</td> <td></td> <td></td> <td></td>				Yes			Yes			Yes			
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Total Split (s)25.025.025.025.035.035.035.035.035.035.035.0Total Split (%)41.7%41.7%41.7%41.7%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%58.3%		22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	22.5
Total Split (%)41.7%41.7%41.7%41.7%58.3%58.3%58.3%58.3%58.3%58.3%Maximum Green (s)20.520.520.520.530.530.530.530.530.530.5Yellow Time (s)3.53.53.53.53.53.53.53.53.53.53.5All-Red Time (s)1.01.01.01.01.01.01.01.01.01.0Lost Time Adjust (s)0.00.00.00.00.00.00.00.00.0Total Lost Time (s)4.54.54.54.54.54.54.54.5Lead/LagLead-Lag Optimize?		25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	35.0
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Yellow Time (s) 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5		20.5	20.5		20.5	20.5		30.5	30.5		30.5	30.5	
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Total Lost Time (s)4.54.54.54.54.54.54.54.54.54.5Lead/Lag Lead-Lag Optimize?Vehicle Extension (s)3.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.03.0 <td></td>													
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Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 <													
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Recall ModeNoneNoneNoneC-MinC-MinC-MinC-MinC-MinWalk Time (s)7.07.07.07.07.07.07.07.07.0Flash Dont Walk (s)11.011.011.011.011.011.011.011.011.011.0Pedestrian Calls (#/hr)000000000Act Effet Green (s)10.010.010.010.048.648.648.648.6Actuated g/C Ratio0.170.170.170.170.810.810.810.81v/c Ratio0.150.060.030.190.000.230.130.160.05Control Delay23.519.221.412.23.03.03.02.30.7Queue Delay0.00.00.00.00.00.00.00.00.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Walk Time (s)7.07.07.07.07.07.07.07.0Flash Dont Walk (s)11.011.011.011.011.011.011.011.011.011.0Pedestrian Calls (#/hr)000000000Act Effct Green (s)10.010.010.010.048.648.648.648.648.6Actuated g/C Ratio0.170.170.170.170.810.810.810.810.81v/c Ratio0.150.060.030.190.000.230.130.160.05Control Delay23.519.221.412.23.03.03.02.30.7Queue Delay0.00.00.00.00.00.00.00.00.0													
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Pedestrian Calls (#/hr) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0													
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v/c Ratio 0.15 0.06 0.03 0.19 0.00 0.23 0.13 0.16 0.05 Control Delay 23.5 19.2 21.4 12.2 3.0 3.0 3.0 2.3 0.7 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0													
Control Delay 23.5 19.2 21.4 12.2 3.0 3.0 2.3 0.7 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0													
Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
	-												
	Total Delay	23.5	19.2		21.4	12.2		3.0	3.0		3.0	2.3	0.7

Lanes, Volumes, Timings IBI Group Synchro 9 Report Page 1

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	С	В	-	С	В	23.57	А	Α	1-10	Α	А	A
Approach Delay		22.0			13.0			3.0			2.2	
Approach LOS		С			В			A			А	84 - 14 - 14 - 14 - 14 - 14 - 14 - 14 -
Queue Length 50th (m)	2.5	1.0		0.4	1.0		0.1	9.2		1.9	5.4	0.0
Queue Length 95th (m)	7.9	4.8		2.6	7.9		0.6	14.0		3.8	7.3	1.2
Internal Link Dist (m)		187.4			189.4			690.8			319.7	
Turn Bay Length (m)	20.0			20.0			20.0			20.0		20,0
Base Capacity (vph)	397	529		410	510		680	2465		571	2471	1115
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.07	0.03		0.01	0.10		0.00	0.23		0.13	0.16	0.05
Intersection Summary												
/1	CBD											
Cycle Length: 60												
Actuated Cycle Length: 60												
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	6:SBTL,	Start of	Green							
Natural Cycle: 45												
Control Type: Actuated-Coc	ordinated											
Maximum v/c Ratio: 0.23												
Intersection Signal Delay: 3	.8			İn	tersection	LOS: A						
Intersection Capacity Utiliza	tion 45.5%			IC	U Level o	of Service	A					
Analysis Period (min) 15												

Splits and Phases: 35: Tenth Line & Zone 3 South/Avalon South

1 102 (R)	
35 s	25 s
Ø6 (R)	Ø8
35 s	25's

Intersection

Int Delay, s/veh

				5.6.1.1			
Movement	WBL	WBR	NBT	NBR	SBL	SBT	i sinding basses of
Traffic Vol, veh/h	56	34	178	159	65	167	
Future Vol, veh/h	56	34	178	159	65	167	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	199 B	None		None	1.1.1	None	
Storage Length	0						
Veh in Median Storage, #	0		0		N 100 -	0	
Grade, %	0	-	0	-	(*)	0	
Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	59	36	187	167	68	176	

			Majo	21		Major2			
584	271			0	0	355	0		
271	3 T 2 H 1 H								
313	-			10 9 -1	5 0 2				
6.42	6.22			•	100	4.12			
5.42				28	V#5		360		
5.42				1.		11 A.	-		
3.518	3.318			18	1/25	2.218			
474	768			-6	1	1204	8		
775					0.7	-	(*)		
741									
					(#i				
444	768			-		1204			
444	÷			-	141	i n :			
775	- 10 A				1				
694				-		147			
WB			1	NB		SB.	1.7	hid is the second	
13.3				0		2.3			
В									
NBT	NBRWBLn1	SEL	SBT		31-13			in the little	
	- 528	1204							
2	- 0.179	0.057	-						
1	- 13.3	8.2	0						
i i	- B	А	А						
	271 313 6.42 5.42 5.42 3.518 474 775 741 444 444 444 775 694 WB 13.3 B NBT	271 - 313 - 6.42 6.22 5.42 - 5.42 - 3.518 3.318 474 768 775 - 741 - 444 768 444 768 444 - 775 - 694 - WB 13.3 B NBT NBRWBLn1 - 528 - 0.179 - 13.3	271 - 313 - 6.42 6.22 5.42 - 5.42 - 3.518 3.318 474 768 775 - 741 - 444 768 444 768 444 768 444 - 775 - 694 - 13.3 B NBT NBRWELN1 SEL 18 1204 - 528 1204 - 0.179 0.057 - 13.3 8.2	271 - 313 - 6.42 6.22 5.42 - 5.42 - 3.518 3.318 474 768 775 - 741 - 444 768 444 768 775 - 694 - 13.3 B WB USE MBRWBLN1 SEL SET - 528 1204 - 0.179 0.057 - - 13.3 8.2	271 - - 313 - - 6.42 6.22 - 5.42 - - 5.42 - - 3.518 3.318 - 474 768 - 775 - - 741 - - 444 768 - 444 768 - 775 - - 694 - - 694 - - 13.3 0 0 B - - 13.3 0 0 B - - - 528 1204 - - 0.179 0.057 - - 13.3 8.2	271 - - - 313 - - - 6.42 6.22 - - 5.42 - - - 5.42 - - - 3.518 3.318 - - 3.518 3.318 - - 775 - - - 741 - - - 444 768 - - 741 - - - 444 768 - - 775 - - - 694 - - - 8 - - - 13.3 0 - - B - - - * - 528 1204 - - - 528 1204 - - - 13.3 8.2 0	271 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	271 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

0.2

0.6

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HCM 95th %tile Q(veh)

Intersection

Int Delay, s/veh

Movement	WBL	WBR	NBT	NBR	SBL	SBT	15 V A.	-
Traffic Vol, veh/h	20	20	369	30	20	341	 5.7 (1) 	
Future Vol, veh/h	20	20	369	30	20	341		
Conflicting Peds, #/hr	0	0	0	0	0	0		
Sign Control	Stop	Stop	Free	Free	Free	Free		
RT Channelized	-	None		None		None		
Storage Length	0	14	-	-	-	-		
Veh in Median Storage, #	0		0	-		0		
Grade, %	0	-	0	-	-	0		
Peak Hour Factor	95	95	95	95	95	95		
Heavy Vehicles, %	2	2	2	2	2	2		
	21	21	388	32	21	359		
Mvmt Flow	21	21	388	32	21	359		

Major/Minor	Minor1		Major1	1. svii	Major2			
Conflicting Flow All	805	404	0	0	420	0		_
Stage 1	404				7	1.10		
Stage 2	401			÷.		-		
Critical Hdwy	6.42	6.22			4.12			
Critical Hdwy Stg 1	5.42					-		
Critical Hdwy Stg 2	5.42					10-01		
Follow-up Hdwy	3.518	3.318	-	*	2.218	-		
Pot Cap-1 Maneuver	352	647			1139			
Stage 1	674	14	-	-	22	14		
Stage 2	676	19-19-20-0				14		
Platoon blocked, %				÷		-		
Mov Cap-1 Maneuver	344	647			1139			
Mov Cap-2 Maneuver	344	-		-	-	-		
Stage 1	674		1000	-				
Stage 2	660		-	-	-			
Approach	WB		NB	2.1.3	SB			
HCM Control Delay, s	13.8		0		0.5			
HCM LOS	В							

Minor Lane/Major Mvmt	NBT	NBRW	BLn1	SBL	SBT	
Capacity (veh/h)	-	-	449	1139		
HCM Lane V/C Ratio		9 0 0	0.094	0.018	-	
HCM Control Delay (s)		-	13.8	8.2	0	
HCM Lane LOS			В	А	A	
HCM 95th %tile Q(veh)	*	1	0.3	0.1	•	

Intersection

Int Delay, s/veh

in the spectrum is							
Movement	EBL	EBR	NBL	NBT	SBT	SBR	S. S. Markes
Traffic Vol, veh/h	12	6	9	404	322	25	
Future Vol, veh/h	12	6	9	404	322	25	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized		None		None	ALL PROPERTY AND A 1991	None	
Storage Length	0		400		-	400	
Veh in Median Storage, #	0			0	0	1.12	
Grade, %	0		-	0	0	-	
Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	13	6	9	425	339	26	

Major/Minor	Minor2		Major1	14	Major2		
Conflicting Flow All	783	339	339	0	-	0	
Stage 1	339				TANK CONTRACTOR	1.0	
Stage 2	444			-		S M i	
Critical Hdwy	6.42	6.22	4.12			-	
Critical Hdwy Stg 1	5.42	-				1040	
Critical Hdwy Stg 2	5.42	-		-	Carlos and the second second	14	
Follow-up Hdwy	3.518	3.318	2.218	4	-	0	
Pot Cap-1 Maneuver	362	703	1220				
Stage 1	722	÷.			-	7.54	
Stage 2	646	1.00				1.71	
Platoon blocked, %		×					
Mov Cap-1 Maneuver	359	703	1220	-	and the second	e	
Mov Cap-2 Maneuver	359	(a)	-	-		-	
Stage 1	722		-		1		
Stage 2	641		1	4	-	12	
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -							

Approach	EB	NB	SB	
HCM Control Delay, s	13.8	0.2	0	
HCM LOS	В			

Minor Lane/Major Mvmt	NBL	NBT EB	Ln1	SBT	SBR
Capacity (veh/h)	1220		429		
HCM Lane V/C Ratio	0.008	- 0.	044	14 (
HCM Control Delay (s)	8		13.8	-	-
HCM Lane LOS	А	1940 1940	В	12	2
HCM 95th %tile Q(veh)	0	100	0.1	÷.,	

LANE SUMMARY

Site: Mer Bleue and Brian Coburn Roundabout - 2025 - BGSG - PM

New Site Roundabout

20 [PILE]	Demand F			Deg.	Lane	Average	Level of	95% Back o	the second se	Lane	Lane	Cap.	Prob.
	Total	HV	Cap.	Satn	Uill.	Delay	Service	Veh	Dist	Config	Length	Adj.	Block
South: Mer Ble	veh/h	%	veh/h	v/c	%	sec		THE REAL PROPERTY OF	m	and contracts	m	%	%
Lane 1	288	3.0	407	0.709	100	31.2	LOS D	3.1	24.2	Full	420	0.0	0.0
Lane 2	288	3.0	407	0.709	100	31.2	LOS D	3.1	24.2	Full	420	0.0	0.0
Lane 3 ^d	396	3.0	435	0.910	100	54.3	LOS F	6.3	49.5	Two Seg ⁹	50	0.0	4.7
Approach	973	3.0		0.910		40.6	LOS E	6.3	49.5				
East: Brian Co	burn Road	100											
Lane 1	292	3.0	591	0.495	100	14.4	LOS B	1.9	14.9	Fuli	500	0.0	0.0
Lane 2 ^d	305	3.0	616	0.495	100	13.9	LOS B	1.8	14.4	Full	500	0.0	0.0
Lane 3	294	3.0	591	0.497	100	14.5	LOS B	1.9	15.0	Two Seg ⁹	50	0.0	0.0
Approach	891	3.0		0.497		14.2	LOS B	1.9	15.0				
North: Mer Ble	ue Road										4.0.10		o fi Fi
Lane 1	556	3.0	639	0.869	100	36.0	LOS E	7.3	56.6	Full	500	0.0	0.0
Lane 2 ^d	576	3.0	662	0.869	100	35.1	LOS E	7.0	54.8	Full	500	0.0	0,0
Lane 3	177	3.0	639	0.277	100	9.2	LOS A	0.8	6,4	Two Seg ⁹	50	0.0	0.0
Approach	1308	3.0		0.869		32.0	LOS D	7.3	56.6				
West: Brian Co	bum Road	d Exter	nsion	12111	2/5	19 Y 1	- 02 T 101 X						
Lane 1	415	3.0	395	1.052	100	92.6	LOS F	15,3	119.0	Full	500	0.0	0.0
Lane 2 ^d	445	3.0	423	1.052	100	89.8	LOS F	15.7	122.3	Full	500	0.0	0.0
Lane 3	165	3.0	395	0.419	100	17.6	LOS C	1.3	10.4	Two Seg ⁹	50	0.0	0.0
Approach	1025	3.0		1.052		79.3	LOS F	15.7	122.3				
Intersection	4197	3.0		1.052		41.8	LOSE	15.7	122.3				

Level of Service (LOS) Method: Delay & v/c (HCM 2010)

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

- 9 All Movement Classes allocated to Segment 1 are also allocated to Segment 2. This Two-Segment Lane has been modelled as a full-length lane.
- d Dominant lane on roundabout approach

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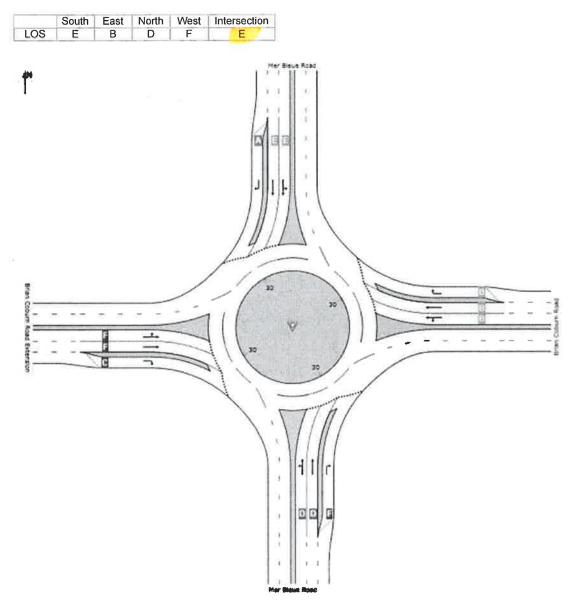
Project: J:\34739-CumbServReport\5.7 Calculations\5.7.6 Roads (Trans)\Master Transportation Study (March 2016)\SIDRA\Mer Bleue and Brian Coburn Roundabout\Mer Bleue Brian Coburn Roundabout - 2025-2031 - BGSG - March 15 2016.sip6

LEVEL OF SERVICE

V Site: Mer Bleue and Brian Coburn Roundabout - 2025 - BGSG - PM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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LANE SUMMARY

Site: Gerry Lalonde & Collector Road - 2025 BGSG - PM

New Site Roundabout

Lane Use a	nd Perfori	mance											
1 - Frank 1	Demand F		Cap.	Deg.	Lane	Average	Level of	95% Back of		Lane	Lane	Cap.	Prob
	Total veh/h	HV %	veh/h	Satn v/c	Util %	Delay sec	Service	Veh	Dist m	Config	Length m	Adj. %	Block. %
South: Gerry	Lalonde												
Lane 1 ^d	48	3.0	896	0.054	100	4.5	LOS A	0.2	1.4	Full	500	0.0	0.0
Approach	48	3.0		0.054		4.5	LOS A	0.2	1.4				
East: Collecto	or Road												
Lane 1 ^d	94	3.0	972	0.096	100	4.6	LOS A	0.3	2.7	Full	500	0.0	0.0
Approach	94	3.0		0.096		4.6	LOSA	0.3	2.7				
North: Gerry	alonde												
Lane 1 ^d	82	3.0	995	0.083	100	4.4	LOS A	0.3	2.3	Full	500	0.0	0.0
Approach	82	3.0		0.083		4.4	LOS A	0.3	2.3				
West: Collect	or Road												
Lane 1 ^d	220	3.0	1049	0.210	100	5.4	LOS A	0.8	6.6	Full	500	0.0	0.0
Approach	220	3.0		0.210		5.4	LOS A	0.8	6.6				
Intersection	444	3.0		0.210		4.9	LOSA	0.8	6.6				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

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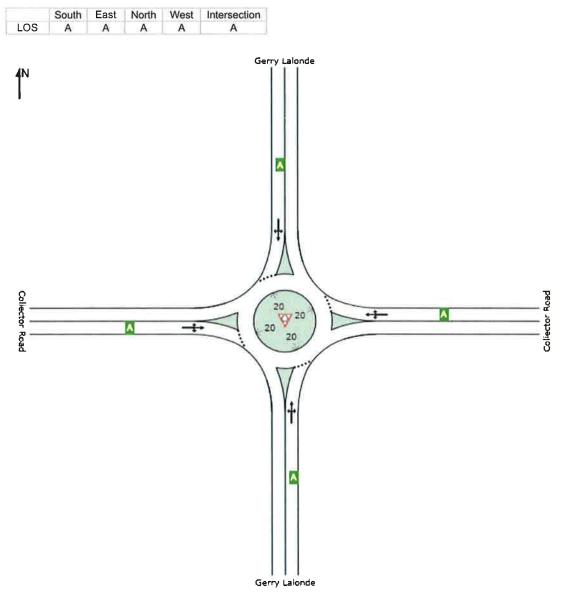
Organisation: IBI GROUP | Processed: Wednesday, February 17, 2016 11:21:31 AM Project: J:\34739-CumbServReport\5.7 Calculations\5.7.6 Roads (Trans)\SIDRA\Gerry Lalonde and Collector Road Roundabout\Gerry Lalonde and Collector Road - 2025 2031 BGSG - Feb 17 2016.sip6

LEVEL OF SERVICE

₩ Site: Gerry Lalonde & Collector Road - 2025 BGSG - PM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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LANE SUMMARY

Site: Wall Rd & Collector Road - 2025 BGSG - PM

New Site Roundabout

Lane Use a	nd Perfor	mance											
	Demand F Total	ΗV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Veh	Dist	Lane Config	Lane Length	Cap Adj.	Prob. Block.
South: Gerry	veh/h Lalonde	%	veh/h	v/c	%	Sec			m	-	m	%	%
Lane 1 ^d	60	3.0	905	0.066	100	4.6	LOS A	0.2	1.8	Full	500	0.0	0.0
Approach	60	3.0		0.066		4.6	LOS A	0.2	1.8				
East: Collecto	or Road												
Lane 1 ^d	126	3.0	1039	0.122	100	4.6	LOS A	0.4	3.5	Full	500	0.0	0.0
Approach	126	3.0		0.122		4.6	LOS A	0.4	3.5				
North: Gerry	Lalonde												
Lane 1 ^d	60	3.0	971	0.062	100	4.3	LOS A	0.2	1.6	Full	500	0.0	0.0
Approach	60	3.0		0.062		4.3	LOS A	0.2	1.6				
West: Collect	or Road												
Lane 1 ^d	187	3.0	1000	0.187	100	5.4	LOSA	0.7	5.7	Full	500	0.0	0.0
Approach	187	3.0		0.187		5.4	LOS A	0.7	5.7				
Intersection	434	3.0		0.187		4.9	LOSA	0.7	5.7				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

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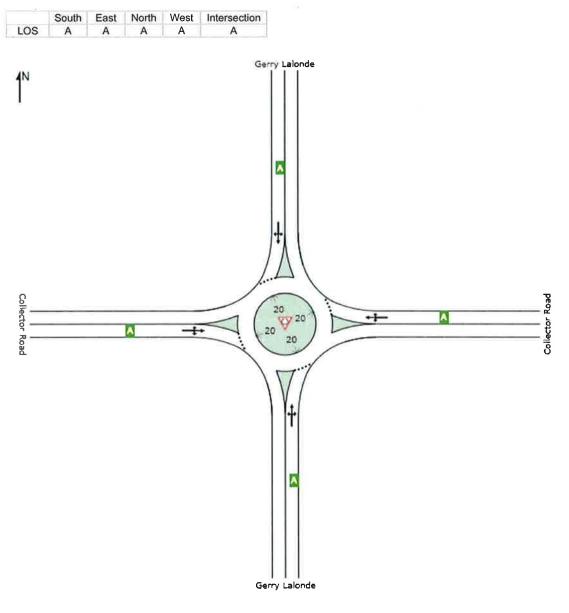
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LEVEL OF SERVICE

W Site: Wall Rd & Collector Road - 2025 BGSG - PM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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2: Tenth Line & Brian Coburn Mer Bleue Expansion - Master Transportation Study

Future (2031) Total Traffic AM Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	^	1	ή	^	7	ሻሻ	朴		ካካ	<u>^</u>	7
Traffic Volume (vph)	252	148	92	27	808	269	308	670	34	106	277	216
Future Volume (vph)	252	148	92	27	808	269	308	670	34	106	277	216
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	115.0		80.0	40.0		50.0	105.0		0.0	100.0		65.0
Storage Lanes	2	2.16	1	1		1	2		0	2		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Frt			0.850			0.850		0.993				0.850
FIt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	3288	3366	0	3288	3390	1517
Flt Permitted	0.950	151.07		0.653			0.950			0.950		
Satd. Flow (perm)	3288	3390	1517	1165	3390	1517	3288	3366	0	3288	3390	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			200		4				227
Link Speed (k/h)		60			60			60			60	1.75
Link Distance (m)		1402.3			938.8			686.6			623.5	
Travel Time (s)		84.1			56.3			41.2			37.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	265	156	97	28	851	283	324	705	36	112	292	227
Shared Lane Traffic (%)												
Lane Group Flow (vph)	265	156	97	28	851	283	324	741	0	112	292	227
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases			4	8		8						6
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												-
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	13.3	35.0	35.0	35.0	35.0	35.0	13.3	35.0		13.3	35.0	35.0
Total Split (s)	20.0	63.0	63.0	43.0	43.0	43.0	22.0	44.9		13.4	36.3	36.3
Total Split (%)	16.5%	51.9%	51.9%	35.4%	35.4%	35.4%	18.1%	37.0%		11.0%	29.9%	29.9%
Maximum Green (s)	13.7	56.7	56.7	36.7	36.7	36.7	15.7	38.6		7.1	30.0	30.0
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2		2.2	2.2	2.2
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
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	1.1.1	6.3	6.3	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Min	Min	None	Min		None	Min	Min
Walk Time (s)	Tiono	7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		21.7	21.7	21.7	21.7	21.7		21.7			21.7	21.7
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	12.6	52.1	52.1	33.0	33.0	33.0	14.5	30.2		7.1	22.7	22.7
Actuated g/C Ratio	0.12	0.48	0.48	0.30	0.30	0.30	0.13	0.28		0.07	0.21	0.21
v/c Ratio	0.69	0.10	0.12	0.08	0.82		0.74	0.79		0.53	0.41	0.46
Control Delay	58.1	16.3	1.2	29.6	43.5	12.8	57.8	43.2		61.6	39.7	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	58.1	16.3	1.2	29.6	43.5	12.8	57.8	43.2		61.6	39.7	8.0
	00.1	10.0	1.4	20.0	-0.0	12.0	01.0	70.4		01.0	00.1	0.0

Lanes, Volumes, Timings IBI Group

2: Tenth Line & Brian Coburn Mer Bleue Expansion - Master Transportation Study

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EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
E	В	А	С	D	В	E	D	70	E	D	A
	34.9			35.7			47.6			32.2	
	С			D			D			С	
27.3	8.5	0.0	4.0	83.0	12.2	33.2	74.1		11.7	27.8	0.0
42.4	15.5	2.8	11.0	114.2	36.3	#52.7	94.1		21.3	39.7	17.6
	1378.3			914.8		and the second s	662.6			599.5	
115.0		80.0	40.0		50.0	105.0			100.0		65.0
421	1799	872	400	1164	652	483	1219		218	952	589
0	0	0	0	0	0	0	0		0	0	0
0	0	0	0	0	0	0	0		0	0	0
0	0	0	0	0	0	0	0		0	0	0
0.63	0.09	0.11	0.07	0.73	0.43	0.67	0.61		0.51	0.31	0.39
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Other											
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n after two	cycles.										
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40.0 50.0 105.0 421 1799 872 400 1164 652 483 1219 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>E B A C D B E D E 34.9 35.7 47.6 D D D D D D D D D D D D D 27.3 8.5 0.0 4.0 83.0 12.2 33.2 74.1 11.7 42.4 15.5 2.8 11.0 114.2 36.3 #52.7 94.1 21.3 1378.3 914.8 662.6 100.0 421 1799 872 400 1164 652 483 1219 218 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0<td>E B A C D B E D E D 34.9 35.7 47.6 32.2 C D D C C D C C D C C D C C C D C C C C C C D C C C C C C D C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C <</td></td></t<></td>	E B A C D B E D 34.9 35.7 47.6 D D D D D D D D D D D D D D D D D D 27.3 8.5 0.0 4.0 83.0 12.2 33.2 74.1 142.4 15.5 2.8 11.0 114.2 36.3 #52.7 94.1 662.6 115.0 80.0 40.0 50.0 105.0 662.6 115.0 11.0 114.8 662.6 115.0 11.0 10.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 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94.1 94.8 662.6 115.0 80.0 40.0 50.0 105.0 421 1799 872 400 1164 652 483 1219 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	E B A C D B E D E 34.9 35.7 47.6 D D D D D D D D D D D D D 27.3 8.5 0.0 4.0 83.0 12.2 33.2 74.1 11.7 42.4 15.5 2.8 11.0 114.2 36.3 #52.7 94.1 21.3 1378.3 914.8 662.6 100.0 421 1799 872 400 1164 652 483 1219 218 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td>E B A C D B E D E D 34.9 35.7 47.6 32.2 C D D C C D C C D C C D C C C D C C C C C C D C C C C C C D C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C <</td>	E B A C D B E D E D 34.9 35.7 47.6 32.2 C D D C C D C C D C C D C C C D C C C C C C D C C C C C C D C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C <

Splits and Phases: 2: Tenth Line & Brian Coburn

	1 ø2		
13.4 s 4	4,9 5	63 s	
1 Ø5	Ø6	₽ ₀₇	€7 _{Ø8}
22 s	36.3 5	20 s	43 s

Intersection

Int Delay, s/veh

NBT 248 248 0	1 0		2 241 2 241	SBR 155 155
248 0	1 0		2 241	1. Sec. 19.
0	0	1 - Di		155
Erec) ()	0
-ree	Free	Fre	e Free	Free
1000	None		-	None
	-			-
. 0	1.1.1		- 0	-
0	-		- 0	-
95	95	9	5 95	95
2	2		2 2	2
261	1		2 254	163
	0 0 95	- None - 0 - - 2 2 2	- None - 0 - - 0 - 5 95 95 95 2 2 2	- None 0 - 0 0 - 0 0 - 0 0 - 0 0 - 0 0 - 0 0 - 2 2 2 2 2

Majer/Minor	Minor2	1.0	3174	Minor1			١	Major1		- 1 - A	Major2		
Conflicting Flow All	785	780	335	813	862	262		417	0	0	262	0	0
Stage 1	339	339		441	441			1.1		-		-	-
Stage 2	446	441	-	372	421	-		\ .	840	9 4 0	343		-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22		4.12	141		4.12	1.6410	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-		1	1		÷.	8	ji ji
Critical Hdwy Stg 2	6.12	5.52	1.25	6.12	5.52								
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318		2.218		٠	2.218		
Pot Cap-1 Maneuver	310	327	707	297	293	777		1142			1302	1 20	
Stage 1	676	640	-	595	577	-			3 . -5	:•:	2.00		
Stage 2	591	577	-	648	589				//-			1 40 1	- 18
Platoon blocked, %									(*)	2 4 2			-
Mov Cap-1 Maneuver	281	297	707	250	266	777		1142	-	120	1302		-
Mov Cap-2 Maneuver	281	297	-	250	266	÷.		-	19	÷.	<u>.</u>		
Stage 1	614	639		541	524	÷.			1	1.5			-
Stage 2	528	524	-	588	588			-	386	354		:••	-
Approach	EB	10		WB	14	in the s		NB			SB		
HCM Control Delay, s	26.5			17.2				2.1			0		
HCM LOS	D			C									
													i i
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR	de la	11.44		البالج الجانكر		
Capacity (veh/h)	1142			348 316	1302			1.1	10.1	18.1	1.1		12
HCM Lane V/C Ratio	0.078	-	3	0.532 0.07	0.002	-							
HCM Control Delay (s)	8.4	0		26.5 17.2	7.8	0							
HCM Lane LOS	A	A		DC	А	А							
HCM 95th %tile Q(veh)	0.3		- 1 e	3 0.2	0								

Intersection	ni par 1	i ca 🖞	194-14							Call a	57.00	
Intersection Delay, s/veh	13											
Intersection LOS	В											
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	115	5	56	0	10	5	6	0	85	248	1
Future Vol, veh/h	0	115	5	56	0	10	5	6	0	85	248	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	121	5	59	0	11	5	6	0	89	261	1
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0
Approach	1000	EB			-	WB				NB		
Opposing Approach		WB		-		EB				SB		
Opposing Lanes		1				1				1		200
Conflicting Approach Left		SB				NB				EB		
Conflicting Lanes Left		1				1				1		
Conflicting Approach Right		NB				SB				WB		-
Conflicting Lanes Right		1				1				1		
HCM Control Delay		11.3				9.4				13.3		2
HCM LOS		В				A				10.0 B		
Lane	1 219	NBLn1	EBLn1	WBLn1	SBLn1		100 82	Anat	-			en i
Vol Left, %		25%	65%	48%	1%	1	1000				200	
Vol Thru, %		74%	3%	24%	61%							
Vol Right, %		0%	32%	29%	39%							
Sign Control		Stop	Stop	Stop	Stop							
Traffic Vol by Lane		334	176	21	398							
LT Vol		85	115	10	2							
Through Vol		248	5	5	241							
RT Vol		1	56	.6	155							
Lane Flow Rate		352	185	22	419							
Geometry Grp		1	1	1	1							
Degree of Util (X)		0.504	0.298	0.038	0.55							
Departure Headway (Hd)		5.162	5.789	6.166	4.849							
Convergence, Y/N		Yes	Yes	Yes	Yes							
Сар		700	622	581	750							
Service Time		3.179	3.807	4.196	2.849							
HCM Lane V/C Ratio		0.503	0.297	0.038	0.559							
HCM Control Delay		13.3	11.3	9.4	13.6							
HCM Lane LOS		В	В	А	В							
HCM 95th-tile Q		2.9	1.2	0.1	3.4							

Intersection Delay, s/veh									
Intersection LOS								1-1 ⁻¹ - 6	1 - 1 - 2 - 1 - 1 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5
Movement	SEU	SBL	SBT	SBR		1		100	1000
Traffic Vol, veh/h	0	2	241	155					
Future Vol, veh/h	0	2	241	155					
Peak Hour Factor	0.95	0.95	0.95	0.95					
Heavy Vehicles, %	2	2	2	2					
Mvmt Flow	0	2	254	163					
Number of Lanes	0	0	1	0					
									1
Approach	1.44	SB					×		
Opposing Approach		NB		181	1.01				-
Opposing Lanes		1							
Conflicting Approach Left		WB							
Conflicting Lanes Left		1							
Conflicting Approach Right		EB							
Conflicting Lanes Right		1							
HCM Control Delay		13.6							
HCM LOS		В							

7: Tenth Line & Navan /Navan Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WER	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	Þ		٦	↑	7		4			स्	7
Traffic Volume (vph)	38	186	5	1	535	246	11	8	4	112	12	165
Future Volume (vph)	38	186	5	1	535	246	11	8	4	112	12	165
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	120.0		0.0	65.0		40.0	0.0		0.0	0.0		30.0
Storage Lanes	1_010		0	1		1	0		0	0		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.996	1.00	1.00	1100	0.850	1100	0.977		1.00		0.850
Fit Protected	0.950	0.000		0.950		0.000		0.976			0.957	
Satd. Flow (prot)	1695	1777	0	1695	1784	1517	0	1701	0	0	1708	1517
Flt Permitted	0.415	1111	U	0.632	1704	1011	U	0.824	0	Ŭ	0.730	1011
Satd. Flow (perm)	740	1777	0	1128	1784	1517	0	1436	0	0	1303	1517
Right Turn on Red	140	1111	Yes	1120	1704	Yes	U	1400	Yes	0	1000	Yes
Satd. Flow (RTOR)		2	103			241		4	103			174
Link Speed (k/h)		60			60	241		60			60	174
		1757.1			855.5			456.3			1290.5	
Link Distance (m)		105.4			51.3			27.4			77.4	
Travel Time (s)	0.05		0.05	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Peak Hour Factor	0.95	0.95	0.95							118	13	174
Adj. Flow (vph)	40	196	5	1	563	259	12	8	4	110	15	174
Shared Lane Traffic (%)	10	004	0		500	050	0	04	0	0	404	474
Lane Group Flow (vph)	40	201	0	1	563	259	0	24	0	0	131	174
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	بالمدين ولم	4			8		-	2			6	-
Permitted Phases	4			8		8	2			6		6
Detector Phase	4	4		8	8	8	2	2		6	6	6
Switch Phase								12.2				10.0
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2	25.2	24.7	24.7		24.7	24.7	24.7
Total Split (s)	81.0	81.0		81.0	81.0	81.0	39.0	39.0		39.0	39.0	39.0
Total Split (%)	67.5%	67.5%		67.5%	67.5%	67.5%	32.5%	32.5%		32.5%	32.5%	32.5%
Maximum Green (s)	73.8	73.8		73.8	73.8	73.8	32.3	32.3	1.000	32.3	32.3	32.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.5	3.5		3.5	3.5	3.5	3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	7.2	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	0
Act Effct Green (s)	74.7	74.7		74.7	74.7	74.7		15.8			15.8	15.8
Actuated g/C Ratio	0.72	0.72		0.72	0.72	0.72		0.15			0.15	0.15
v/c Ratio	0.08	0.16		0.00	0.44	0.22		0.11		1000	0.67	0.46
Control Delay	5.9	5.7		6.0	8.1	1.5		33.3			58.2	9.9
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	1.11.2		0.0	0.0
Total Delay	5.9	5.7		6.0	8.1	1.5		33.3			58.2	9.9
Total Dolay	0.0	0.1		0.0		1.0		00.0	_		00.2	0.0

Lanes, Volumes, Timings IBI Group

7: Tenth Line & Navan /Navan

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	А	А		А	А	А		С			E	A
Approach Delay		5.7			6.0			33.3			30.6	
Approach LOS		Α			А			С			С	
Queue Length 50th (m)	1.9	10.3		0.1	37.5	0.8		3.2			23.1	0.0
Queue Length 95th (m)	6.1	21.5		0.5	70.2	8.4		9.8			40.7	15.9
Internal Link Dist (m)		1733.1			831.5			432.3			1266.5	
Turn Bay Length (m)	120.0			65.0		40.0						30.0
Base Capacity (vph)	529	1272		807	1276	1154		447			403	589
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	0.08	0.16		0.00	0.44	0.22		0.05			0.33	0.30
Intersection Summary			m = 20	12 Y -	The set of	the state		n 25	with the	7. SS		nd We
Area Tuno:	Othor											

Area Type:	Other				
Cycle Length: 120					
Actuated Cycle Length	o: 104.4				
Natural Cycle: 60					
Control Type: Semi Ac	t-Uncoord				
Maximum v/c Ratio: 0.	67				
Intersection Signal Del	lay: 11.8	Interse	ection LOS: B		
Intersection Capacity L	Jtilization 66.0%	ICU Le	evel of Service C		
Analysis Period (min)	15				

Splits and Phases: 7: Tenth Line & Navan /Navan

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39.s	815

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
	<u>دە</u> د ۲	1	1	WDIX 1	T	OBIT
Lane Configurations			T 542	r 99	35	315
Traffic Volume (vph)	137	178				
Future Volume (vph)	137	178	542	99	35	315
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0			40.0	40.0	20.0
Storage Lanes	1			1	1	0
Taper Length (m)	30.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1695	1784	1784	1517	1695	1517
Flt Permitted	0.374				0.950	
Satd. Flow (perm)	667	1784	1784	1517	1695	1517
Right Turn on Red			1	Yes		Yes
Satd. Flow (RTOR)				104		228
Link Speed (k/h)		60	60	10-7	50	220
Link Distance (m)		1840.8	1757.1		403.0	
		110.4	105.4		29.0	
Travel Time (s)	0.05			0.05		0.95
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	144	187	571	104	37	332
Shared Lane Traffic (%)		407		404	07	000
Lane Group Flow (vph)	144	187	571	104	37	332
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Detector Phase	4	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	25.9	25.9	25.9	25.9	25.3	25.3
Total Split (s)	34.0	34.0	34.0	34.0	26.0	26.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	43.3%	43.3%
Maximum Green (s)	28.6	28.6	28.6	28.6	20.9	20.9
Yellow Time (s)	4.1	4.1	4.1	4.1	3.6	3.6
		4.1	1.3	1.3	1.5	1.5
All-Red Time (s)	1.3					
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.4	5.4	5.1	5.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	9.2	9.2	9.2	9.2	9.2	9.2
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	29.5	29.5	29.5	29.5	11.8	11.8
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.23	0.23
v/c Ratio	0.38	0.18	0.56	0.11	0.10	0.64
Control Delay	10.9	6.7	10.5	2.2	15.5	12.1
	0.0		0.0	0.0	0.0	0.0
Queue Delay		0.0				
Total Delay	10.9	6.7	10.5	2.2	15.5	12.1

Lanes, Volumes, Timings IBI Group

24: Navan & Mer Bleue Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS	В	А	В	А	В	В
Approach Delay		8.5	9.2		12.5	
Approach LOS		А	Α		В	
Queue Length 50th (m)	5.2	5.9	23.7	0.0	2.4	7.2
Queue Length 95th (m)	19.5	17.2	61.1	5.1	7.2	23.9
Internal Link Dist (m)		1816.8	1733.1		379.0	
Turn Bay Length (m)	40.0			40.0	40.0	20.0
Base Capacity (vph)	379	1014	1014	907	686	749
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.18	0.56	0.11	0.05	0.44
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Intersection Summary	131 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10 1 1 1 1 1 1 1 1	the size in the	- Production	<u> </u>	A	Carl Th	
Area Type: O	ther							
Cycle Length: 60								
Actuated Cycle Length: 51.8								
Natural Cycle: 60								
Control Type: Semi Act-Unco	ord							
Maximum v/c Ratio: 0.64								
Intersection Signal Delay: 9.9		In	tersection LOS: A					
Intersection Capacity Utilization	on 60.0%	IC	U Level of Service	В				
Analysis Period (min) 15								

Splits and Phases: 24: Navan & Mer Bleue

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	-	THE REAL PROPERTY.	A USI	LIDT	0.000	000
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ካካ	1	7	1	4	7
Traffic Volume (vph)	332	48	118	552	208	463
Future Volume (vph)	332	48	118	552	208	463
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	90.0	40.0	40.0			40.0
Storage Lanes	2	0	1			1
Taper Length (m)	30.0		30.0			
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
FIt Protected	0.950		0.950			
Satd. Flow (prot)	3288	1517	1695	1784	1784	1517
FIt Permitted	0.950		0.621			
Satd. Flow (perm)	3288	1517	1108	1784	1784	1517
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		51				487
Link Speed (k/h)	50			50	60	
Link Distance (m)	994.9			521.8	394.2	
Travel Time (s)	71.6			37.6	23.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	349	51	124	581	219	487
Shared Lane Traffic (%)	UTU	01	127	001	210	101
Lane Group Flow (vph)	349	51	124	581	219	487
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	Feim	renn	2	6	1 CIIII
Permitted Phases	4	4	2	2	0	6
And the second se	4	4	2	2	0	6
Detector Phase	4	4	2	2	6	0
Switch Phase			10.0	10.0	40.0	10.0
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	25.9	25.9	28.8	28.8
Total Split (s)	42.0	42.0	78.0	78.0	78.0	78.0
Total Split (%)	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%
Maximum Green (s)	36.6	36.6	72.7	72.7	72.7	72.7
Yellow Time (s)	3.6	3.6	4.1	4.1	4.1	4.1
All-Red Time (s)	1.8	1.8	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.3	5.3	5.3	5.3
Lead/Lag						
Lead-Lag Optimize?			0			1.1
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.1	12.1	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	15.6	15.6	72.7	72.7	72.7	72.7
Actuated g/C Ratio	0.16	0.16	0.73	0.73	0.73	0.73
v/c Ratio	0.67	0.18	0.15	0.44	0.17	0.39
Control Delay	46.1	11.7	4.9	6.9	4.7	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	11.7	4.9	6.9	4.7	1.4

Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	D	В	А	A	А	А
Approach Delay	41.8			6.5	2.4	
Approach LOS	D			А	А	
Queue Length 50th (m)	30.3	0.0	5.6	34.2	9.9	0.0
Queue Length 95th (m)	43.2	8.9	12.4	60.3	19.4	7.7
Internal Link Dist (m)	970.9		-	497.8	370.2	
Turn Bay Length (m)	90.0	40.0	40.0			40.0
Base Capacity (vph)	1215	592	813	1309	1309	1243
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.09	0.15	0.44	0.17	0.39
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Area Type: Other		
Cycle Length: 120		
Actuated Cycle Length: 99.1		
Natural Cycle: 65		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.67		
ntersection Signal Delay: 12.7	Intersection LOS: B	
ntersection Capacity Utilization 49.6%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 26: Mer Bleue & Renaud

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Intersection

Int Delay, s/veh

Movement	WBL	WBR	NBT	NBR	SBL	SET
Traffic Vol, veh/h	87	285	385	41	83	173
Future Vol, veh/h	87	285	385	41	83	173
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	10 1 10 1	None	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	None	a series a	None
Storage Length	-	-		400	400	-
Veh in Median Storage, #	0		0	11 x ÷	ante da la -	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	300	405	43	87	182

Major/Minor	Minor1		an Later	Majo	r1	1000	Major2		THE MARKEN STRAKE
Conflicting Flow All	762	405			0	0	405	0	
Stage 1	405				-				
Stage 2	357	-			-		1.00		
Critical Hdwy	6.42	6.22			-		4.12		
Critical Hdwy Stg 1	5.42	-						-	
Critical Hdwy Stg 2	5.42						W. LLCY MA	-	
Follow-up Hdwy	3.518	3.318				-	2.218	-	
Pot Cap-1 Maneuver	373	646			4	- E.	1154		
Stage 1	673				•	÷.	÷.	-	
Stage 2	708					-			
Platoon blocked, %									
Nov Cap-1 Maneuver	345	646					1154	•	
Mov Cap-2 Maneuver	345				-	5 4 0	(a)	-	
Stage 1	673				÷.,	-		1.477	and the second second
Stage 2	655	9 6					14 - C	-	
Approach	WB	la più sui a	Ast 1	N	IB		SB		
HCM Control Delay, s	27.7		-		0		2.7	- A -	State of the state of the state of the
HCM LOS	D	1							
13704 "19 10 10	and the second	et a part de				11.1			
/inor Lane/Major Mymt	NBT	NBRWBLn1	SBL	SBT				TV B	
Capacity (veh/h)		- 537	1154	100		1.1	1. A	1.216	
ICM Lane V/C Ratio		- 0.729	0.076	3 . -5					
HCM Control Delay (s)		- 27.7	8.4	1 . W					A CONTRACTOR OF A CONTRACTOR A
HCM Lane LOS	346	- D	А	191					

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HCM 95th %tile Q(veh)

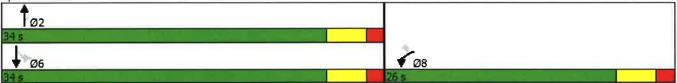
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	7	7	1	1	٦	1
Traffic Volume (vph)	87	285	385	41	83	173
Future Volume (vph)	87	285	385	41	83	173
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	40.0		40.0	40.0	
Storage Lanes	1	0		1	1	ante i s
Taper Length (m)	30.0	_			30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1695	1517	1784	1517	1695	1784
FIt Permitted	0.950			1.1.1	0.516	
Satd. Flow (perm)	1695	1517	1784	1517	921	1784
Right Turn on Red		Yes		Yes	12.14	
Satd. Flow (RTOR)		300		43		
Link Speed (k/h)	50	000	50			50
Link Distance (m)	353.9		417.0			521.8
Travel Time (s)	25.5		30.0			37.6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
	0.95		405	43	0.95	182
Adj. Flow (vph)	92	300	405	43	0/	102
Shared Lane Traffic (%)	~~	000	Inn	10	07	400
Lane Group Flow (vph)	92	300	405	43	87	182
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2	12141		6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	24.5	24.5	23.2	23.2	23.2	23.2
Total Split (s)	26.0	26.0	34.0	34.0	34.0	34.0
Total Split (%)	43.3%	43.3%	56.7%	56.7%	56.7%	56.7%
Maximum Green (s)	20.6	20.6	28.8	28.8	28.8	28.8
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.8	1.8	1.6	1.6	1.6	1.6
	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)						
Total Lost Time (s)	5.4	5.4	5.2	5.2	5.2	5.2
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.1	12.1	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	8.1	8.1	14.1	14.1	14.1	14.1
Actuated g/C Ratio	0.24	0.24	0.43	0.43	0.43	0.43
v/c Ratio	0.22	0.50	0.53	0.06	0.22	0.24
Control Delay	12.1	5.4	10.2	2.8	7.9	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
			10.2	2.8	7.9	
Total Delay	12.1	5.4	10.2	2.0	1.9	7.2

Lanes, Volumes, Timings IBI Group

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	В	А	В	А	А	А
Approach Delay	7.0		9.5			7.4
Approach LOS	Α		А			А
Queue Length 50th (m)	3.1	0.0	11.9	0.0	2.2	4.6
Queue Length 95th (m)	11.9	11.6	31.6	2.9	8.4	13.7
Internal Link Dist (m)	329.9		393.0			497.8
Turn Bay Length (m)	40.0	40.0		40.0	40.0	
Base Capacity (vph)	1080	1075	1573	1342	812	1573
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.28	0.26	0.03	0.11	0.12
Indiana series and a series with a series of	No. IA	10.000				_

Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 33	.1		
Natural Cycle: 50			
Control Type: Semi Act-Ur	ncoord		
Maximum v/c Ratio: 0.53			
Intersection Signal Delay:	8.1	Intersection LOS: A	
Intersection Capacity Utiliz	ation 48.8%	ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 28: Mer Bleue & Collector



33: Tenth Line & Zone 3 North/Harvest Valley Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WET	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	4		ή	Þ		٦	††	1	ሻ	**	7
Traffic Volume (vph)	104	10	10	120	10	281	10	442	59	169	181	30
Future Volume (vph)	104	10	10	120	10	281	10	442	59	169	181	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		40.0	40.0		40.0	40.0		40.0	40.0		40.0
Storage Lanes	1		0	1	1.012	0	1		1	1		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.925			0.855				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1650	0	1695	1526	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.407			0.743			0.632			0.485		n fa stal
Satd. Flow (perm)	726	1650	0	1326	1526	0	1128	3390	1517	865	3390	1517
Right Turn on Red		1000	Yes	1		Yes			Yes			Yes
Satd. Flow (RTOR)		11			233				62			53
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		201.9			221.8			343.7			686.6	
Travel Time (s)		14.5			16.0			20.6			41.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	109	11	11	126	11	296	11	465	62	178	191	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109/	22	0	126	307	0	11	465	62	178	/ 191	32
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	30.8	30.8		30.8	30.8		21.8	21.8	21.8	21.8	21.8	21.8
Total Split (s)	30.8	30.8		30.8	30.8		29.2	29.2	29.2	29.2	29.2	29.2
Total Split (%)	51.3%	51.3%		51.3%	51.3%		48.7%	48.7%	48.7%	48.7%	48.7%	48.7%
Maximum Green (s)	24.9	24.9		24.9	24.9		23.6	23.6	23.6	23.6	23.6	23.6
Yellow Time (s)	3.6	3.6		3.6	3.6		4.1	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	2.3	2.3		2.3	2.3		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9		5.9	5.9		5.6	5.6	5.6	5.6	5.6	5.6
Lead/Lag												
Lead-Lag Optimize?	1.0			100								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	17.9	17.9		17.9	17.9		9.2	9.2	9.2	9.2	9.2	9.2
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	13.0	13.0		13.0	13.0		35.5	35.5	35.5	35.5	35.5	35.5
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.59	0.59	0.59	0.59	0.59	0.59
v/c Ratio	0.69/	0.06		0.44	0.60		0.02	0.23	0.07	0.35	0.10	0.03
Control Delay	43.6	12.2		24.3	10.8		5.4	5.5	1.4	10.0	6.3	1.6
Queue Delay	0.0	0.0	,	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	12.2		24.3	10.8		5.4	5.5	1.4	10.0	6.3	1.6
. Star Bondy	.0.0						0.1	0.0			0.0	

Lanes, Volumes, Timings IBI Group

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Lane Group	ESL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	В	W.P.	С	В	21-5	Α	А	А	А	Α	A
Approach Delay		38.4			14.7			5.0			7.5	
Approach LOS		D			В			А			А	
Queue Length 50th (m)	10.5	0.9		11.4	6.3		0.3	8.0	0.0	7.7	3.6	0.0
Queue Length 95th (m)	21.6	4.5		20.5	20.6		1.8	13.2	2.0	22.9	8.9	2.0
Internal Link Dist (m)		177.9			197.8			319.7			662.6	
Turn Bay Length (m)	40.0			40.0			40.0		40.0	40.0		40.0
Base Capacity (vph)	301	691		550	769		666	2003	921	511	2003	918
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.03		0.23	0.40		0.02	0.23	0.07	0.35	0.10	0.03
Intersection Summary		Albert Sil		al.		- 9	5.90					
	Other											
Cycle Length: 60												
Actuated Cycle Length: 60												
Offset: 0 (0%), Referenced t	o phase 2:	NBTL and	I 6:SBTL,	Start of	Green							
Natural Cycle: 60												
Control Type: Actuated-Coo	rdinated											
Maximum v/c Ratio: 0.69												
Intersection Signal Delay: 11					tersection l							
Intersection Capacity Utilization	tion 69.2%			IC	CU Level of	Service	С					
Analysis Period (min) 15									1.1.1.1.1.1.1.1			
Splits and Phases: 33: Te	nth Line &	Zone 3 N	orth/Harv	est Valle	y							1



35: Tenth Line & Zone 3 South/Avalon South Mer Bleue Expansion - Master Transportation Study

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Lane Group	ESL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ľ	4		٦	ef -		٦	∱1 ≱	_	٦	**	1
Traffic Volume (vph)	76	10	29	10	10	66	12	359	3	17	266	18
Future Volume (vph)	76	10	29	10	10	66	12	359	3	17	266	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	20.0		0.0	20.0		0.0	20.0		20.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.889			0.871			0.999				0.850
Flt Protected	0.950			0.950			0.950			0.950	10.00	16.15
Satd. Flow (prot)	1695	1586	0	1695	1554	0	1695	3387	0	1695	3390	1517
Flt Permitted	0.705			0.730			0.580			0.526		
Satd. Flow (perm)	1258	1586	0	1303	1554	0	1035	3387	0	939	3390	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			69			2				27
Link Speed (k/h)		50			50			60			60	1 2 2
Link Distance (m)		211.4			213.4			714.8			343.7	
Travel Time (s)		15.2			15.4			42.9			20.6	1.00
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	11	31	11	11	69	13	378	3	18	280	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	42	0	11	80	0	13	381	0	18	280	19
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	22.5
Total Split (s)	28.0	28.0		28.0	28.0		32.0	32.0		32.0	32.0	32.0
Total Split (%)	46.7%	46.7%		46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	53.3%
Maximum Green (s)	23.5	23.5		23.5	23.5		27.5	27.5		27.5	27.5	27.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												1.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	10.8	10.8		10.8	10.8		44.0	44.0		44.0	44.0	44.0
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.73	0.73		0.73	0.73	0.73
v/c Ratio	0.35 /	0.13		0.05	0.24		0.02	0.15		0.03	0.11	0.02
Control Delay	25.9	11.3		20.0	9.4		3.9	3.7		2.6	2.9	0.02
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	25.9	11.3		20.0	9.4		3.9	3.7		2.6	2.9	0.0
	20.9	11.0		20.0	0.4		0.9	0.1		2.0	2.3	0.7

Lanes, Volumes, Timings IBI Group

	۶	-	\mathbf{i}	4	-	۰.	1	†	1	1	Ļ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	С	В	Sec. 1	В	А	1	А	А		A	A	A
Approach Delay		20.9			10.6			3.7			2.7	
Approach LOS		С			В			А			А	
Queue Length 50th (m)	7.3	1.0		1.0	1.0		0.3	5.6		0.5	6.2	0.0
Queue Length 95th (m)	16.1	6.8		3.9	9.0		1.8	11.3		1.2	4.4	0.3
Internal Link Dist (m)		187.4		and the second second	189.4			690.8			319.7	
Turn Bay Length (m)	20.0			20.0			20.0			20.0		20.0
Base Capacity (vph)	492	640		510	650		758	2482		688	2483	1118
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.16	0.07		0.02	0.12		0.02	0.15		0.03	0.11	0.02
Intersection Summary		The last		50 - 20 - 10 - 10 - 10 - 10 - 10 - 10 - 1		199	1	2		and the second		
Area Type:	Other											
Cycle Length: 60												
Actuated Cycle Length: 60												
Offset: 0 (0%), Referenced t	to phase 2:	NBTL and	6:SBTL,	Start of (Green							
Natural Cycle: 45												
Control Type: Actuated-Coo	rdinated											
Maximum v/c Ratio: 0.35												
Intersection Signal Delay: 6.	.3				tersection							
Intersection Capacity Utiliza	tion 36.3%			IC	U Level o	of Service	А					
Analysis Period (min) 15												
Splits and Phases: 35: Te	enth Line &	Zone 3 So	outh/Aval	on South		-						

Ø2 (R)		
32 s	28.5	
Ø6 (R)	★ Ø8	
32 s	28 s	

Intersection

Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Traffic Vol, veh/h	205	105	281	44	28	184	
Future Vol, veh/h	205	105	281	44	28	184	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized		None	21 1 1 1 2	None	-	None	
Storage Length	0	(#)			940	(e)	
Veh in Median Storage, #	0		0	1.		0	
Grade, %	0	14	0	-	(2)	0	
Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	216	111	296	46	29	194	

Major/Minor	Minor1	CONTRACTOR OF	Maj	ori	~ > °	Major2		
Conflicting Flow All	572	319		0	0	342	0	
Stage 1	319	الخالية		-		1.1	(41)	
Stage 2	253	i e		843		<u>نې</u>	3 2 3	
Critical Hdwy	6.42	6.22		141		4.12	-	
Critical Hdwy Stg 1	5.42				•		•	
Critical Hdwy Stg 2	5.42	e in the second		-			÷.,	
Follow-up Hdwy	3.518	3.318			-	2.218		
Pot Cap-1 Maneuver	482	722				1217		
Stage 1	737	-			_0 = (
Stage 2	789			14	1.14		-	
Platoon blocked, %				200	:e:		323	
Mov Cap-1 Maneuver	469	722		14	1.00	1217	-	
Mov Cap-2 Maneuver	469	÷		105			1	
Stage 1	737			100	-	1.1	÷	
Stage 2	768			1071			(=);	
Approach	WB			NB		SB		1.1
HCM Control Delay, s	21.9		3.01	0		1.1	100	
HCM LOS	С							
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL SBT	S na			12.3	110 1
Capacity (veh/h)	-	- 532 1	217 -					
HCM Lane V/C Ratio		- 0.613 0	024 -					

HCM Lane V/C Ratio	- 0.61	3 0.024	-		
HCM Control Delay (s)	- 21.9	8	0		
HCM Lane LOS	- (C A	А		
HCM 95th %tile Q(veh)	 - 4.	0.1	-		

Intersection

Movement	WBL	WBR	NBT	NBR	SBL	SBT	
raffic Vol, veh/h	30	20	264	20	20	364	100
uture Vol, veh/h	30	20	264	20	20	364	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized		None		None		None	
torage Length	0		-	-		-	
eh in Median Storage, #	0		0	1 (1		0	
Grade, %	0	3	0	-	-	0	
Peak Hour Factor	95	95	95	95	95	95	
leavy Vehicles, %	2	2	2	2	2	2	
Vivmt Flow	32	21	278	21	21	383	

Major/Minor	Minor1		Major1	14	Major2		· · · · · · · · · · · · · · · · · · ·
Conflicting Flow All	713	288	0	0	299	0	
Stage 1	288			2	10.00	i ve	
Stage 2	425	-	¥	÷	12		
Critical Hdwy	6.42	6.22		-	4.12		
Critical Hdwy Stg 1	5.42		5				
Critical Hdwy Stg 2	5.42						
Follow-up Hdwy	3.518	3.318	-	-	2.218		
Pot Cap-1 Maneuver	398	751		-	1262	1.4	
Stage 1	761	1	÷	-	-	200	
Stage 2	659	2 JUN 4			10 (L. 12)	14	
Platoon blocked, %			9	4		19E	
Mov Cap-1 Maneuver	390	751			1262		
Mov Cap-2 Maneuver	390	-			-	138-2	
Stage 1	761			-	1. 1. 1.	3.82	
Stage 2	645	-			-	((#)	
Approach	WB		NB		SB	533	

Approach	VVB	NB	SB	
HCM Control Delay, s	<mark>13.4</mark>	0	0.4	
HCM LOS	В			

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		- 483	1262		
HCM Lane V/C Ratio		- 0.109	0.017	-	
HCM Control Delay (s)		- 13.4	7.9	0	
HCM Lane LOS		- B	А	А	
HCM 95th %tile Q(veh)		- 0.4	0.1		

Intersection

lovement	EBL	EBR	NBL	NBT	SBT	SBR	
raffic Vol, veh/h	38	20	6	297	290	7	
uture Vol, veh/h	38	20	6	297	290	7	
onflicting Peds, #/hr	0	0	0	0	0	0	
ign Control	Stop	Stop	Free	Free	Free	Free	
T Channelized	192.00	None	-	None		None	
torage Length	0	-	400	-		400	
eh in Median Storage, #	0			0	0	-	
rade, %	0	-	-	0	0	200	
eak Hour Factor	95	95	95	95	95	95	
eavy Vehicles, %	2	2	2	2	2	2	
Ivmt Flow	40	21	6	313	305	7	

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	630	305	305	0	()	0	
Stage 1	305	•					
Stage 2	325	*	-	-			
Critical Hdwy	6.42	6.22	4.12	•		1.141	
Critical Hdwy Stg 1	5.42	8	÷	10	19 A A A A A A A A A A A A A A A A A A A	190	
Critical Hdwy Stg 2	5.42					2	
Follow-up Hdwy	3.518	3.318	2.218				
Pot Cap-1 Maneuver	446	735	1256	10.1		194	
Stage 1	748		4 1) :	
Stage 2	732			-	and the second second		
Platoon blocked, %				×		190	
Mov Cap-1 Maneuver	444	735	1256				
Mov Cap-2 Maneuver	444		¥	-	1	121	
Stage 1	748						
Stage 2	729			₩.			
Approach	EB		NB	L-van	SB	A 14 1	
HCM Control Delay, s	12.9		0.2		0		
HCM LOS	В						
Street and a street							
Minor Lane/Major Mymt	NBL	NBT EBLn1	SBT SBR			a de la	
Capacity (veh/h)	1256	- 514					
HCM Lane V/C Ratio	0.005	- 0.119	¥ 8				
HCM Control Delay (s)	7.9	- 12.9	1				
HCM Lane LOS	А	- B					
HCM 95th %tile Q(veh)	0	- 0.4					

LANE SUMMARY

♥ Site: Mer Bleue and Brian Coburn Roundabout - 2031 - BGSG - AM

New Site Roundabout

	Demand I	lows	195 18	Deg.	Lane	Average	Level of	95% Back o	f Queue	Lane	Lane	Cap.	Prob.
	Total	HV	Cap.	Satn	Util.	Delay	Service	Veh	Dist	Config	Length	Adj.	Block.
South: Mer Bl	veh/h	%	veh/h	v/c	%	Sec		STREET, STREET	m	and a contract	m	%	%
	468	3.0	642	0.729	100	22.8	LOS C	4.2	22.0	-	500	0.0	0.0
Lane 1 Lane 2 ^d				-					33.0	Full	500	0.0	0.0
	485	3.0	665	0.729	100	22.2	LOSC	4.1	31.8	Full	420	0.0	0.0
Lane 3	153	3.0	642	0.238	100	8.5	LOS A	0.7	5.3	Two Seg ⁹	50	0.0	0.0
Approach	1106	3.0		0.729		20.6	LOS C	4.2	33.0				
East: Brian Co	burn Road	1				1940 113							
Lane 1	516	3.0	442	1.168	100	126.5	LOS F	30.9	240.5	Full	500	0.0	0.0
Lane 2	516	3.0	442	1.168	100	126.5	LOS F	30.9	240.5	Full	500	0.0	0.0
Lane 3 ^d	632	3.0	469	1.346	100	194.0	LOS F	57.9	451.2	Two Seg ⁹	50	0.0	100.0
Approach	1663	3.0		1.346		152.1	LOS F	57,9	451.2				
North: Mer Ble	ue Road				100510								12.4
Lane 1	229	3.0	460	0.498	100	17.8	LOS C	1.8	13.9	Full	500	0.0	0.0
Lane 2 ^d	243	3.0	487	0.498	100	17.0	LOS C	1.7	13.5	Full	500	0.0	0.0
Lane 3	161	3.0	460	0.350	100	13.7	LOS B	1.1	8:5	Two Seg ⁹	50	0.0	0.0
Approach	633	3.0		0.498		16.5	LOS C	1.8	13.9				
West: Brian C	obum Roa	d Exter	nsion		teriz da			The Wo					
Lane 1	261	3.0	615	0.424	100	12.2	LOS B	1.5	11.8	Full	500	0.0	0.0
Lane 2 ^d	271	3.0	640	0.424	100	11.8	LOS B	1.5	11.3	Full	500	0.0	0.0
Lane 3	78	3.0	615	0.127	100	7.3	LOS A	0.3	2.6	Two Seg ⁹	50	0.0	0.0
Approach	609	3.0		0.424		11.4	LOS B	1.5	11.8				
Intersection	4012	3.0		1.346		73.1	LOS F	57.9	451.2				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010,

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

- 9 All Movement Classes allocated to Segment 1 are also allocated to Segment 2. This Two-Segment Lane has been modelled as a full-length lane.
- d Dominant lane on roundabout approach

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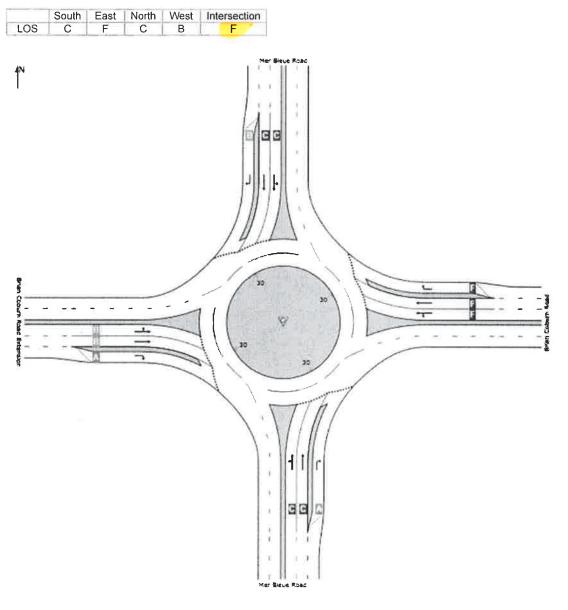
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LEVEL OF SERVICE

♥ Site: Mer Bleue and Brian Coburn Roundabout - 2031 - BGSG - AM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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LANE SUMMARY

₩ Site: Gerry Lalonde & Collector Road - 2031 BGSG - AM

New Site Roundabout

Lane Use a	nd Perfor	mance											
	Demand F Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist m	Lane Config	Lane Length	Cap. Adj. %	Prob. Block. %
South: Gerry		70	ven/n	V/C	70	560				A Property lies	m	70	70
Lane 1 ^d	75	3.0	989	0.076	100	4.3	LOS A	0.3	2.0	Full	500	0.0	0.0
Approach	75	3.0		0.076		4.3	LOS A	0.3	2.0				
East: Collecto	or Road												
Lane 1 ^d	188	3.0	9 84	0.191	100	5.5	LOS A	0.7	5.8	Full	500	0.0	0.0
Approach	188	3.0		0.191		5.5	LOS A	0.7	5.8				
North: Gerry	Lalonde												
Lane 1 ^d	135	3.0	958	0.141	100	5.1	LOS A	0.5	4.0	Full	500	0.0	0.0
Approach	135	3.0		0.141		5.1	LOS A	0.5	4.0				
West: Collect	or Road												
Lane 1 ^d	67	3.0	1028	0.066	100	4.1	LOS A	0.2	1.8	Full	500	0.0	0.0
Approach	67	3.0		0.066		4.1	LOS A	0.2	1.8				
Intersection	465	3.0		0.191		5.0	LOSA	0.7	5.8				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

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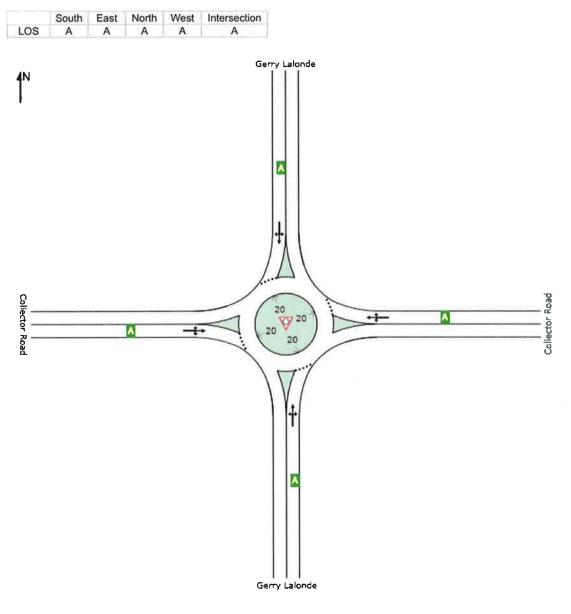
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LEVEL OF SERVICE

₩ Site: Gerry Lalonde & Collector Road - 2031 BGSG - AM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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LANE SUMMARY

₩ Site: Wall Rd & Collector Road - 2031 BGSG - AM

New Site Roundabout

Lane Use a	nd Perfor	mance	e										
	Demand I Total	lows= HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Veh	Queue Dist	Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	%	veh/h	v/c	%	sec			m	Goning	m	%	%
South: Gerry	Lalonde												
Lane 1 ^d	96	3.0	998	0.096	100	4.5	LOS A	0.3	2.7	Full	500	0.0	0.0
Approach	96	3.0		0.096		4.5	LOS A	0.3	2.7				
East: Collect	or Road												
Lane 1 ^d	185	3.0	1013	0.183	100	5.3	LOS A	0.7	5.5	Full	500	0.0	0.0
Approach	185	3.0		0.183		5.3	LOS A	0.7	5.5				
North: Gerry	Lalonde												
Lane 1 ^d	58	3.0	943	0.061	100	4.4	LOSA	0.2	1.6	Full	500	0.0	0.0
Approach	58	3.0		0.061		4.4	LOSA	0.2	1.6				
West: Collec	tor Road												
Lane 1 ^d	68	3.0	1035	0.066	100	4.1	LOS A	0.2	1.8	Full	500	0.0	0.0
Approach	68	3.0		0.066		4.1	LOS A	0.2	1.8				
Intersection	407	3.0		0.183		4.7	LOS A	0.7	5.5				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

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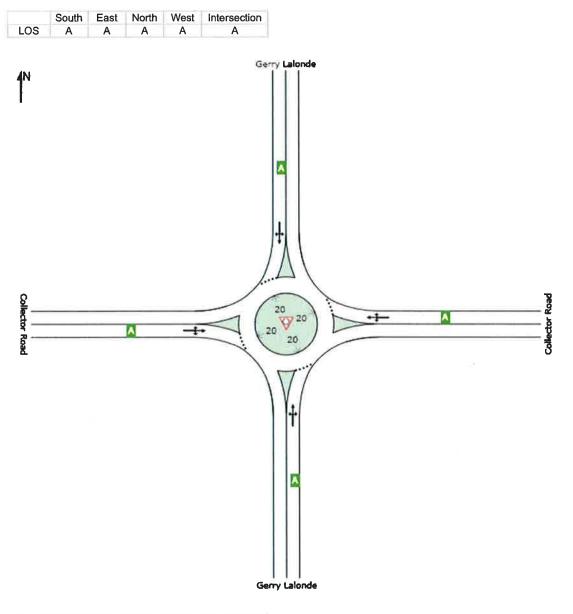
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LEVEL OF SERVICE

₩ Site: Wall Rd & Collector Road - 2031 BGSG - AM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 6.1 | Copyright © 2000-2015 Akcelik and Associates Pty Ltd | sldrasolutions.com Organisation: IBI GROUP | Processed: Wednesday, February 17, 2016 11:31:19 AM Project: J:\34739-CumbServReport\5.7 Calculations\5.7.6 Roads (Trans)\SIDRA\Wall Road and Collector Road Roundabout\Wall Rd and Collector Rd - 2025 2031 BGSG - Feb 17 2016.sip6

2: Tenth Line & Brian Coburn

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WEL	WET	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ካካ	^	7	ή	<u>†</u> †	7	ሻሻ	≜ t≽		ሻሻ	† †	7
Traffic Volume (vph)	434	597	318	14	353	254	205	628	54	304	820	325
Future Volume (vph)	434	597	318	14	353	254	205	628	54	304	820	325
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	115.0	1000	80.0	40.0		50.0	105.0		0.0	100.0	1000	65.0
Storage Lanes	2		1	1		1	2		0	2		1
Taper Length (m)	30.0		•	30.0			30.0			30.0		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00
Frt	0101		0.850			0.850		0.988		0.01		0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	3288	3350	0	3288	3390	1517
Fit Permitted	0.950			0.414			0.950			0.950		
Satd. Flow (perm)	3288	3390	1517	739	3390	1517	3288	3350	0	3288	3390	1517
Right Turn on Red	0100		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			285			214		7	100			316
Link Speed (k/h)		60	200		60			60			60	010
Link Distance (m)		1402.3			938.8			686.6			623.5	
Travel Time (s)		84.1			56.3			41.2			37.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	457	628	335	15	372	267	216	661	57	320	863	342
Shared Lane Traffic (%)	101	020	000	10	012	201	210	001	01	020	000	UIL
Lane Group Flow (vph)	457	628	335	15	372	267	216	718	0	320	863	342
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Prot	NA	U	Prot	NA	Perm
Protected Phases	7	4	1 onn	1 onn	8	1 onn	5	2		1	6	1 onn
Permitted Phases			4	8	Ũ	8		-			· ·	6
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase								_				
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	13.3	35.0	35.0	35.0	35.0	35.0	13.3	35.0		13.3	35.0	35.0
Total Split (s)	29.0	64.0	64.0	35.0	35.0	35.0	18.0	43.0		23.0	48.0	48.0
Total Split (%)	22.3%	49.2%	49.2%	26.9%	26.9%	26.9%	13.8%	33.1%		17.7%	36.9%	36.9%
Maximum Green (s)	22.7	57.7	57.7	28.7	28.7	28.7	11.7	36.7		16.7	41.7	41.7
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2		2.2	2.2	2.2
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
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3
Lead/Lag	Lead	0.0	0.0	Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Min	Min	None	Min		None	Min	Min
Walk Time (s)	None	7.0	7.0	7.0	7.0	7.0	None	7.0		None	7.0	7.0
Flash Dont Walk (s)		21.7	21.7	21.7	21.7	21.7		21.7			21.7	21.7
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	20.0	45.4	45.4	19.0	19.0	19.0	11.1	31.7		15.1	35.7	35.7
Actuated g/C Ratio	0.18	0.41	0.41	0.17	0.17	0.17	0.10	0.28		0.14	0.32	0.32
v/c Ratio	0.18	0.41	0.41	0.17	0.65	0.17	0.10	0.28		0.14	0.80	0.32
Control Delay	55.1	25.6	6.3	44.2	49.7	17.3	61.2	42.6	A CONTRACTOR OF	58.0	41.6	7.2
	0.0	25.6	0.0	44.2	49.7	0.0	0.0	42.6		0.0	41.6	
Queue Delay												0.0
Total Delay	55.1	25.6	6.3	44.2	49.7	17.3	61.2	42.6		58.0	41.6	7.2

Lanes, Volumes, Timings IBI Group

2: Tenth Line & Brian Coburn

Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	С	А	D	D	В	Е	D	1.1.1	E	D	A
Approach Delay		30.5			36.4			46.9			37.3	
Approach LOS		С			D			D			D	
Queue Length 50th (m)	46.9	49.5	6.3	2.7	38.9	9.7	22.8	71.3		33.2	85.3	3.7
Queue Length 95th (m)	69.9	66.7	24.7	8.7	55.3	34.7	#39.5	99.4		51.8	117.4	25.2
Internal Link Dist (m)		1378.3			914.8			662.6			599.5	101
Turn Bay Length (m)	115.0		80.0	40.0		50.0	105.0			100.0		65.0
Base Capacity (vph)	683	1790	935	194	890	556	352	1130		502	1294	774
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.67	0.35	0.36	0.08	0.42	0.48	0.61	0.64		0.64	0.67	0.44
Intersection Summary	10.74 JU 1.	- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10			2	i na le		129	N.		8	Second
Area Type:	Other											
Cycle Length: 130												
Actuated Cycle Length: 11	11.5											
Natural Cycle: 110												2.0
Control Type: Semi Act-U	ncoord											
Maximum v/c Ratio: 0.80												
Intersection Signal Delay:	37.0			In	tersection	LOS: D						
Intersection Capacity Utili	zation 76.9%			IC	CU Level of	of Service	e D					
Analysis Period (min) 15												
# 95th percentile volume	e exceeds ca	pacity, qu	eue may	be longe	r							

Queue shown is maximum after two cycles.

Splits and Phases: 2: Tenth Line & Brian Coburn

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23 s	A3 s	64s	
1 Ø5	🤹 ø6	▶ @7	Ø8
18 5	48 s	29 🤿	35 s

23

Intersection

										1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	185	12	35	1	2	7	44	417	5	- 1	363	148
Future Vol, veh/h	185	12	35	1	2	7	44	417	5	1	363	148
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized		-	None		-	None			None			None
Storage Length	2	-	:=:		-	-			-	2	-	-
Veh in Median Storage, #	1111	0	-		0	- 1	1 N N	0	-		0	- 105-
Grade, %	۲	0	-	-	0	-	-	0	â	×.	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mymt Flow	195	13	37	1	2	7	46	439	5	1	382	156

Major/Minor	Minor2		199	Minor1			Major1	1.00	1913 I	Major2		
Conflicting Flow All	1001	999	460	1021	1074	442	538	0	0	444	0	0
Stage 1	462	462	-	534	534	$1, \dots, \infty$	-	- W.		11.1.1.		1.1-
Stage 2	539	537	0 <u>4</u> 4	487	540		а. С	540	14	2	4	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12			4.12		1.3-
Critical Hdwy Stg 1	6.12	5.52	0.5	6.12	5.52			(R o)	1	8		÷
Critical Hdwy Stg 2	6.12	5.52	1.1.1.1	6.12	5.52				11-			-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	(-)		2.218		
Pot Cap-1 Maneuver	222	243	601	215	220	615	1030	- 11 et		1116	+	
Stage 1	580	565		530	524	(#)		: = \\	-	-	÷	-
Stage 2	527	523	1 1	562	521	-		-				-
Platoon blocked, %								240	5 2 . v		2	-
Mov Cap-1 Maneuver	208	228	601	185	207	615	1030			1116		-
Mov Cap-2 Maneuver	208	228	-	185	207	-	15.					-
Stage 1	546	564	1	499	493							-
Stage 2	488	492	-	515	520	-		s .);	1 7 7	æ		-
Approach	EB			WB			NB		- m.	SB		
HCM Control Delay, s	118.9			14.8	100		0.8			0	125	
HCM LOS	F			В								
	Tookar II.	8.1.2							125 11 -			
Minor Lane/Major Mymt	NBL	NBT	NBR E	EBLn1WBLn1	SBL	SBT	SBR					

Minor Lane/Major Mymt	NBL	NBI	NER	EBLO IN	WELDI	SBL	SEL	SEK	
Capacity (veh/h)	1030	ŝ		232	378	1116	1	-	
HCM Lane V/C Ratio	0.045	-	-	1.053	0.028	0.001	-	-	
HCM Control Delay (s)	8.7	0		118.9	14.8	8.2	0	-	
HCM Lane LOS	А	А	-	F	В	A	А		
HCM 95th %tile Q(veh)	0.1			10.4	0.1	0	- 11		

Yes

638

3.709

0.77

25.1

D

7.1

Yes

540

4.712

0.452

15.1

С

2.3

Yes

505

5.134

0.022

10.3

В

0.1

Intersection			227			11		ille al-	la int	5.5	12121	
Intersection Delay, s/veh	24.1											
Intersection LOS	С	18.5						1.1.1				
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WET	WBR	NBU	NBL	NBT	NBI
Traffic Vol, veh/h	0	185	12	35	0	1	2	7	0	44	417	
Future Vol, veh/h	0	185	12	35	0	1	2	7	0	44	417	!
Peak Hour Factor	0,95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.9
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	195	13	37	0	1	2	7	0	46	439	1.11
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	(
Approach		EB			n 93 Jin	WB	1, 201 2		0.11	NB	100	Signile
Opposing Approach		WB	100			EB	, Surg		1 11	SB		
Opposing Lanes		1				1				1		
Conflicting Approach Left		SB				NB				EB		
Conflicting Lanes Left		1				1				1		
Conflicting Approach Right		NB				SB				WB		
Conflicting Lanes Right		1				1				1		
HCM Control Delay		15.1				10.3				25.1		
HCM LOS		С				В				D		
Lane	1000	NBLn1	EBLn1	WBLn1	SBLn1	Month	1,00	7 Y	18 per		1500	9
Vol Left, %		9%	80%	10%	0%					1.1.2		
Vol Thru, %		89%	5%	20%	71%							
Vol Right, %		1%	15%	70%	29%							
Sign Control		Stop	Stop	Stop	Stop							
Traffic Vol by Lane		466	232	10	512							
LT Vol		44	185	1	1							
Through Vol		417	12	2	363							
RT Vol		5	35	7	148							
Lane Flow Rate		491	244	11	539							
Geometry Grp		1	1	1	1							
Degree of Util (X)		0.768	0.449	0.021	0.809							
Departure Headway (Hd)		5.634	6.623	7.134	5.404							
O VINI		11	11	14	11							

Yes

663

3.477

0.813

27.5

D

8.3

Convergence, Y/N

HCM Lane V/C Ratio

HCM Control Delay

HCM Lane LOS

HCM 95th-tile Q

Service Time

Сар

Kanada		_				_				_	_
Intersection			1.23		n Sart - II		S man	100 17	- 71 - I.	101 <u>- 1</u> 00	
Intersection Delay, s/veh											
Intersection LOS		1 100	191						31.81		
Movement	SBU	SBL	SBT	SBR		1.21					
Traffic Vol, veh/h	0	1	363	148	1 - 1 - 1 - 1	100		the lat	1 10	1999	
Future Vol, veh/h	0	1	363	148							
Peak Hour Factor	0.95	0.95	0.95	0.95							
Heavy Vehicles, %	2	2	2	2							
Mymt Flow	0	1	382	156							
Number of Lanes	0	0	1	0							
								11.7	0.0		
Approach	n - I i	SB		al and			21-1			Asses !	
Opposing Approach		NB	10.5					1.1			
Opposing Lanes		1									
Conflicting Approach Left		WB									
Conflicting Lanes Left		1									
Conflicting Approach Right		EB									
Conflicting Lanes Right		1									
HCM Control Delay		27.5	147-2-					and the second			2004
HCM LOS		D									
							ILCO-	-		21.55 8.4	
Lane								-	-		

7: Tenth Line & Navan /Navan Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WIBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	¢,		٦	1	7		\$			र्स	7
Traffic Volume (vph)	208	613	13	2	292	225	13	24	4	84	24	298
Future Volume (vph)	208	613	13	2	292	225	13	24	4	84	24	298
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	120.0		0.0	65.0		40.0	0.0		0.0	0.0		30.0
Storage Lanes	1		0	1		1	0		0	0	1.0	1
Taper Length (m)	30.0			30.0			30.0		_	30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850		0.987				0.850
Flt Protected	0.950			0.950				0.984			0.963	
Satd. Flow (prot)	1695	1779	0	1695	1784	1517	0	1733	0	0	1718	1517
Flt Permitted	0.573			0.292				0.876			0.745	
Satd. Flow (perm)	1022	1779	0	521	1784	1517	0	1543	0	0	1329	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				237		4				314
Link Speed (k/h)		60			60			60			60	1.1.1
Link Distance (m)		1757.1			855.5			456.3			1290.5	
Travel Time (s)		105.4			51.3			27.4			77.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	219	645	14	2	307	237	14	25	4	88	25	314
Shared Lane Traffic (%)												
Lane Group Flow (vph)	219	659	0	2	307	237	0	43	0	0	113	314
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Detector Phase	4	4		8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2	25.2	24.7	24.7		24.7	24.7	24.7
Total Split (s)	78.0	78.0		78.0	78.0	78.0	42.0	42.0		42.0	42.0	42.0
Total Split (%)	65.0%	65.0%		65.0%	65.0%	65.0%	35.0%	35.0%		35.0%	35.0%	35.0%
Maximum Green (s)	70.8	70.8		70.8	70.8	70.8	35.3	35.3		35.3	35.3	35.3
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.5	3.5		3.5	3.5	3.5	3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	7.2	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	9.0	9.0		9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	0
Act Effct Green (s)	27.1	27.1		27.1	27.1	27.1		12.4			12.4	12.4
Actuated g/C Ratio	0.50	0.50		0.50	0.50	0.50		0.23			0.23	0.23
v/c Ratio	0.43	0.74		0.01	0.34	0.27		0.12			0.37	0.53
Control Delay	11.4	16.3		7.0	9.1	2.0		19.4			24.5	6.9
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	11.4	16.3		7.0	9.1	2.0		19.4			24.5	6.9

Lanes, Volumes, Timings IBI Group

7: Tenth Line & Navan /Navan Mer Bleue Expansion - Master Transportation Study

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	В	В		Α	А	А		В			C	A
Approach Delay		15.1			6.0			19.4			11.6	
Approach LOS		В			А			В			В	
Queue Length 50th (m)	10.0	37.5		0.1	13.4	0.0		2.6			8.2	0.0
Queue Length 95th (m)	27.2	84.4		0.9	31.4	7.5		10.8			25.0	16.7
Internal Link Dist (m)		1733.1			831.5	-		432.3			1266.5	
Turn Bay Length (m)	120.0			65.0		40.0						30.0
Base Capacity (vph)	1008	1755		514	1759	1499		1060			912	1139
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	0.22	0.38		0.00	0.17	0,16		0.04			0.12	0.28
Intersection Summary	- Termin	a stal p			5422	4 I.)	Ashr -	1.	a 191			
· -	011											

Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Leng	1th: 54.1		
Natural Cycle: 60			
Control Type: Semi	Act-Uncoord		
Maximum v/c Ratio:	0.74		
Intersection Signal D	elay: 11.8	Intersection LOS: B	
Intersection Capacity	Utilization 73.7%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 7: Tenth Line & Navan /Navan

Ø2	
42.s	
Ø6	Ø8
42 \$	78.5

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		1	1	1	۲	7	
Traffic Volume (vph)	337	682	301	108	167	218	
Future Volume (vph)	337	682	301	108	167	218	
	1800	1800	1800	1800	1800	1800	
Ideal Flow (vphpl)		1000	1000	40.0	40.0	20.0	
Storage Length (m)	40.0						
Storage Lanes	1			1	1	0	
Taper Length (m)	30.0				30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1695	1784	1784	1517	1695	1517	
FIt Permitted	0.568				0.950		
Satd. Flow (perm)	1013	1784	1784	1517	1695	1517	
Right Turn on Red	1010	1101		Yes	,	Yes	
•				114		229	
Satd. Flow (RTOR)		60	60	(14	50	223	
Link Speed (k/h)		60	60		50		
Link Distance (m)		1840.8	1757.1		403.0		
Travel Time (s)		110.4	105.4		29.0	1.10	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	355	718	317	114	176	229	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	355	718	317	114	176	229	
Turn Type	Perm	NA	NA	Perm	Prot	Perm	
Protected Phases	T Offit	4	8		6		
Permitted Phases	4	-	0	8	v	6	
and and the second state of the	4	4	8	8	6	6	
Detector Phase	4	4	0	0	0	0	
Switch Phase			10.0	40.0		E 0	
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	
Minimum Split (s)	25.9	25.9	25.9	25.9	25.3	25.3	
Total Split (s)	34.4	34.4	34.4	34.4	25.6	25.6	
Total Split (%)	57.3%	57.3%	57.3%	57.3%	42.7%	42.7%	
Maximum Green (s)	29.0	29.0	29.0	29.0	20.5	20.5	
Yellow Time (s)	4.1	4.1	4.1	4.1	3.6	3.6	
All-Red Time (s)	1.3	1.3	1.3	1.3	1.5	1.5	
	0.0	0.0	0.0	0.0	0.0	0.0	
Lost Time Adjust (s)							
Total Lost Time (s)	5.4	5.4	5.4	5.4	5.1	5.1	
Lead/Lag					_		
Lead-Lag Optimize?	21.0						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min	Min	Min	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.2	9.2	9.2	9.2	9.2	9.2	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	
Act Effct Green (s)	25.0	25.0	25.0	25.0	10.2	10.2	
		0.54	0.54	0.54	0.22	0.22	
Actuated g/C Ratio	0.54 0.64	and the second se					
v/c Ratio	0.64	0.74	0.33	0.13	0.47	0.44	
Control Dolow						L- 1 1	
Control Delay	14.9	14.7	7.3	2.0	20.8	6.0	
Queue Delay Total Delay		14.7 0.0 14.7	7.3 0.0 7.3	0.0 2.0	20.8 0.0 20.8	0.0 6.0	

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Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBT	WBT	WBR	SEL	SBR	a dina dan kasar di marka sebagai ka
LOS	В	В	А	А	С	Α	
Approach Delay		14.8	5.9		12.5		
Approach LOS		В	А		В		
Queue Length 50th (m)	15.8	34.7	11.1	0.0	12.0	0.0	
Queue Length 95th (m)	#45.5	#82.9	26.1	4.8	25.6	11.7	
Internal Link Dist (m)		1816.8	1733.1		379.0		
Turn Bay Length (m)	40.0			40.0	40.0	20.0	
Base Capacity (vph)	654	1151	1151	1020	773	816	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.54	0.62	0.28	0.11	0.23	0.28	
Intersection Summary		1 100		13.24	1.15	2 10-0 1	

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Intersection Summary				100 C 100
Area Type:	Other			
Cycle Length: 60				1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.
Actuated Cycle Length: 4	46			
Natural Cycle: 60				
Control Type: Semi Act-L	Uncoord			
Maximum v/c Ratio: 0.74				S
Intersection Signal Delay		Intersection LOS: B		
Intersection Capacity Util	lization 59.4%	ICU Level of Service B		
Analysis Period (min) 15				
	ne exceeds capacity, queue may be	longer.		
Queue shown is maxi	imum after two cycles.			

Splits and Phases: 24: Navan & Mer Bleue

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25.6 s	34.4 s

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	٦	1	1	7
Traffic Volume (vph)	637	123	72	454	668	387
Future Volume (vph)	637	123	72	454	668	387
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	40.0	40.0			40.0
Storage Lanes	2	0	1			1
Taper Length (m)	30.0		30.0			
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3288	1517	1695	1784	1784	1517
Flt Permitted	0.950	1011	0.290			1011
Satd. Flow (perm)	3288	1517	517	1784	1784	1517
	J200	Yes	517	1704	1704	Yes
Right Turn on Red					0.012	
Satd. Flow (RTOR)	50	129		50	00	290
Link Speed (k/h)	50			50	60	
Link Distance (m)	994.9			521.8	394.2	
Travel Time (s)	71.6		0	37.6	23.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	671	129	76	478	703	407
Shared Lane Traffic (%)						
Lane Group Flow (vph)	671	129	76	478	703	407
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	25.9	25.9	28.8	28.8
	43.0	43.0	77.0	77.0	77.0	77.0
Total Split (s)						64.2%
Total Split (%)	35.8%	35.8%	64.2%	64.2%	64.2%	
Maximum Green (s)	37.6	37.6	71.7	71.7	71.7	71.7
Yellow Time (s)	3.6	3.6	4.1	4.1	4.1	4.1
All-Red Time (s)	1.8	1.8	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.3	5.3	5.3	5.3
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.1	12.1	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	28.0	28.0	71.9	71.9	71.9	71.9
	0.25	0.25	0.65	0.65	0.65	0.65
Actuated g/C Ratio					CONTRACTOR OF THE OWNER OWNE	
v/c Ratio	0.81	0.27	0.23	0.41	0.61	0.37
Control Delay	46.8	6.8	11.6	11.5	15.1	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	6.8	11.6	11.5	15.1	3.9

Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	D	А	В	В	В	A
Approach Delay	40.3			11.5	11.0	
Approach LOS	D			В	В	
Queue Length 50th (m)	64.5	0.0	5.7	41.8	74.2	8.1
Queue Length 95th (m)	83.0	12.6	15.6	75.2	131.7	24.9
Internal Link Dist (m)	970.9			497.8	370.2	
Turn Bay Length (m)	40.0	40.0	40.0			40.0
Base Capacity (vph)	1120	602	335	1159	1159	1087
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.21	0.23	0.41	0.61	0.37

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 110.7	
Natural Cycle: 75	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 20.6	Intersection LOS: C
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 26: Mer Bleue & Renaud

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Intersection

						1211	1. S. S. S. S. M.
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Traffic Vol, veh/h	47	176	350	81	321	470	100.00
Future Vol, veh/h	47	176	350	81	321	470	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	210 a 1	None	1. 1. 1. 1. 1.	None		None	
Storage Length	-	2	-	400	400	-	
Veh in Median Storage, #	0		0	-		0	
Grade, %	0		0	-	-	0	
Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	49	185	368	85	338	495	

Major/Minor	Miner1	22.5	Major1	# 16 m	Major2		
Conflicting Flow All	1539	368	0	0	368	0	
Stage 1	368	100	12 7 10 10			0.0	
Stage 2	1171	-	-				
Critical Hdwy	6.42	6.22	11 State 1	1	4.12		
Critical Hdwy Stg 1	5.42			#			
Critical Hdwy Stg 2	5.42	FIFEL AC YO	1000	-			
Follow-up Hdwy	3.518	3.318		*	2.218		
Pot Cap-1 Maneuver	127	677	1.00	1 + 1	1191		
Stage 1	700	4		÷	-	1.	
Stage 2	295	ter i nën se	27.1			14	
Platoon blocked, %						6	
Mov Cap-1 Maneuver	91	677		•	1191		
Mov Cap-2 Maneuver	91						
Stage 1	700	Sec. 1	1				
Stage 2	211	*	*	*		348	
and the second se	THE R. LEWIS CO.						Allowed and the second s

Approach	WB		Contraction of the	1.00	NB	SB	
HCM Control Delay, s	55.9				0	3.7	
HCM LOS	F						
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT			
Capacity (veh/h)		- 287	1191				
HCM Lane V/C Ratio	(m)	- 0.818	0.284				

HCM Lane V/C Ratio	(- 0)	- 0).818	0.284		
HCM Control Delay (s)	1	1.	55.9	9.2	1.0	
HCM Lane LOS	3 4 3	2	F	А	Ξ.	
HCM 95th %tile Q(veh)		1140	6.7	1.2	n er l	

	1		†	1	1	Ļ
Long Croup	MOL	MIDD	NOT	NBR	SBL	SBT
Lane Group	WBL	WBR	NBT			
Lane Configurations	٦	170	1	7	204	470
Traffic Volume (vph)	47	176	350	81	321	470
Future Volume (vph)	47	176	350	81	321	470
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0	40.0	_	40.0	40.0	
Storage Lanes	1	0		1	1	
Taper Length (m)	30.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950	and the second			0.950	
Satd. Flow (prot)	1695	1517	1784	1517	1695	1784
FIt Permitted	0.950		1580		0.542	
Satd. Flow (perm)	1695	1517	1784	1517	967	1784
Right Turn on Red		Yes	-	Yes		
Satd. Flow (RTOR)		185		85		
Link Speed (k/h)	50	100	50	50		50
Link Distance (m)	353.9		417.0			521.8
Travel Time (s)	25.5		30.0			37.6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
	0.95 49		368	0.95	338	495
Adj. Flow (vph)	49	185	200	00	330	490
Shared Lane Traffic (%)	10	405	000	05	1000	405
Lane Group Flow (vph)	49	185	368	85	338	495
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2		1.00	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	24.5	24.5	23.2	23.2	23.2	23.2
Total Split (s)	24.5	24.5	35.5	35.5	35.5	35.5
Total Split (%)	40.8%	40.8%	59.2%	59.2%	59.2%	59.2%
Maximum Green (s)	19.1	19.1	30.3	30.3	30.3	30.3
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.8	1.8	1.6	1.6	1.6	1.6
	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)			5.2	5.2	5.2	5.2
Total Lost Time (s)	5.4	5.4	5.2	5.2	0.Z	J.Z
Lead/Lag						
Lead-Lag Optimize?	d Blank	124				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.1	12.1	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	7.9	7.9	27.5	27.5	27.5	27.5
Actuated g/C Ratio	0.19	0.19	0.66	0.66	0.66	0.66
v/c Ratio	0.15	0.42	0.31	0.08	0.53	0.42
Control Delay	17.8	7.2	5.5	1.5	9.7	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.8	7.2	5.5	1.5	9.7	6.4
TUIAI Deidy	17.0	1.Z	0.0	1.0	J.I	0.4

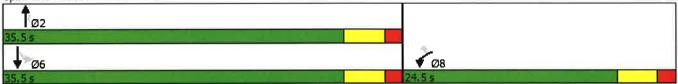
Lanes, Volumes, Timings IBI Group

28: Mer Bleue & Collector Mer Bleue Expansion - Master Transportation Study

	4		1	1	1	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	В	А	А	А	Α	А
Approach Delay	9.4		4.8			7.8
Approach LOS	А		Α			Α
Queue Length 50th (m)	2.7	0.0	10.5	0.0	11.7	15.5
Queue Length 95th (m)	9.6	11.4	24.3	3.3	34.5	35.3
Internal Link Dist (m)	329.9		393.0			497.8
Turn Bay Length (m)	40.0	40.0		40.0	40.0	
Base Capacity (vph)	813	823	1341	1161	727	1341
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.22	0.27	0.07	0.46	0.37
Intersection Summary		ALC: NO				

Area Type: Other Cycle Length: 60 Actuated Cycle Length: 41.4 Natural Cycle: 60 Control Type: Semi Act-Uncoord Maximum v/c Ratio: 0.53 Intersection LOS: A Intersection Capacity Utilization 57.2% ICU Level of Service B Analysis Period (min) 15

Splits and Phases: 28: Mer Bleue & Collector



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	ţ.		٢	ţ,		٦	<u>^</u>	7	٦	**	7
Traffic Volume (vph)	62	10	10	30	10	99	10	623	59	189	611	109
Future Volume (vph)	62	10	10	30	10	99	10	623	59	189	611	109
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		40.0	40.0		40.0	40.0		40.0	40.0		40.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.925			0.864				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1650	0	1695	1542	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.605			0.743			0.408			0.402		nau f
Satd. Flow (perm)	1080	1650	0	1326	1542	0	728	3390	1517	717	3390	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			104				62			115
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		201.9			221.8			343.7			686.6	
Travel Time (s)		14.5			16.0			20.6			41.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	11	11	32	11	104	11	656	62	199	643	115
Shared Lane Traffic (%)										the second s		
Lane Group Flow (vph)	65	22	0	32	115	0	11	656	62	199	643	115
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	34.8	34.8		34.8	34.8		28.6	28.6	28.6	28.6	28.6	28.6
Total Split (s)	38.0	38.0		38.0	38.0		82.0	82.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%	68.3%	68.3%	68.3%	68.3%
Maximum Green (s)	32.1	32.1		32.1	32.1		76.4	76.4	76.4	76.4	76.4	76.4
Yellow Time (s)	3.6	3.6		3.6	3.6		4.1	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	2.3	2.3		2.3	2.3		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9		5.9	5.9		5.6	5.6	5.6	5.6	5.6	5.6
Lead/Lag												
Lead-Lag Optimize?												1.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	17.9	17.9		17.9	17.9		9.2	9.2	9.2	9.2	9.2	9.2
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	12.6	12.6		12.6	12.6		95.9	95.9	95.9	95.9	95.9	95.9
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.80	0.80	0.80	0.80	0.80	0.80
v/c Ratio	0.57	0.12		0.23	0.45		0.02	0.24	0.05	0.35	0.24	0.09
Control Delay	70.0	31.6		51.9	17.1		2.8	2.9	0.6	5.7	3.4	0.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.0	31.6		51.9	17.1		2.8	2.9	0.6	5.7	3.4	0.8

Lanes, Volumes, Timings IBI Group

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	Е	С	1.1.1.1.1	D	В		А	А	Α	Α	Α	A
Approach Delay		60.3			24.7			2.7			3.6	
Approach LOS		E			С			А			А	
Queue Length 50th (m)	13.7	2.2		6.5	2.2		0.3	12.9	0.0	9.3	14.0	0.0
Queue Length 95th (m)	26.3	9.1		14.9	17.3		1.4	18,1	1.1	22.1	23.8	3.6
Internal Link Dist (m)		177.9			197.8			319.7			662.6	
Turn Bay Length (m)	40.0			40.0			40.0		40.0	40.0		40.0
Base Capacity (vph)	288	449		354	488		581	2707	1224	572	2707	1234
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.05		0.09	0.24		0.02	0.24	0.05	0.35	0.24	0.09
Intersection Summary		11.1				4.11	1. J.	115	1.4.3	115		121
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 12												
Offset: 44 (37%), Reference	ced to phase	2:NBTL a	and 6:SBTL	, Start o	of Green							
Natural Cycle: 70												
Control Type: Actuated-Co	ordinated											
Maximum v/c Ratio: 0.57												
Intersection Signal Delay:					tersection	the second s						
Intersection Capacity Utiliz	ation 53.8%			IC	U Level o	of Service	А					
Analysis Period (min) 15												

Splits and Phases: 33: Tenth Line & Zone 3 North/Harvest Valley

Ø2 (R)	
82 s	38 s
Ø6 (R)	Ø8
82 s	38.5

	۶	-	\mathbf{F}	<	+	•	•	t	1	1	Ŧ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NBT	NBR	SBL.	SBT	SBR
Lane Configurations	7	4		٦	- î÷		ή	↑ ĵ≽		٦	**	1
Traffic Volume (vph)	53	10	7	5	10	37	6	592	10	68	471	102
Future Volume (vph)	53	10	7	5	10	37	6	592	10	68	471	102
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	20.0		0.0	20.0		0.0	20.0		20.0
Storage Lanes	1	1000	0	1		0	1		0	1		1
Taper Length (m)	30.0			30.0			30.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.942			0.883			0.997				0.850
Fit Protected	0.950	1		0.950			0.950	-201 (A)		0.950		
Satd. Flow (prot)	1526	1513	0	1526	1418	0	1526	3042	0	1526	3051	1365
Flt Permitted	0.724			0.746			0.470			0.411		
Satd. Flow (perm)	1163	1513	0	1198	1418	0	755	3042	0	660	3051	1365
Right Turn on Red			Yes	1		Yes			Yes			Yes
Satd. Flow (RTOR)		7			39			4				107
Link Speed (k/h)		50			50			60		A STREET	60	
Link Distance (m)	and the second second	211.4			213.4			714.8			343.7	
Travel Time (s)		15.2			15.4			42.9			20.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	11	7	5	11	39	6	623	11	72	496	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	18	0	5	50	0	6	634	0	72	496	107
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	22.5
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	58.3%
Maximum Green (s)	20.5	20.5		20.5	20.5		30.5	30.5		30.5	30.5	30.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	10.4	10.4		10.4	10.4		48.2	48.2		48.2	48.2	48.2
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.80	0.80		0.80	0.80	0.80
v/c Ratio	0.28	0.07		0.02	0.18		0.01	0.26		0.14	0.20	0.10
Control Delay	25.3	16.9		20.4	11.6		3.5	3.4		3.8	2.8	0.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	25.3	16.9		20.4	11.6		3.5	3.4		3.8	2.8	0.9

Lanes, Volumes, Timings IBI Group

	٦	-	$\mathbf{\hat{v}}$	-	+		1	1	1	1	Ļ	~
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	С	В	11781	С	В	19121-7	А	А		А	А	A
Approach Delay		23.3			12.4			3.4			2.6	
Approach LOS		С			В			Α			А	1
Queue Length 50th (m)	5.0	1.0		0.4	1.0		0.2	10.6		2.0	7.3	0.0
Queue Length 95th (m)	12.6	5.0		2.5	7.6		1.0	18.3		5.6	13.8	3.1
Internal Link Dist (m)	and the second s	187.4			189.4			690.8			319.7	No.
Turn Bay Length (m)	20.0			20.0			20.0			20.0		20.0
Base Capacity (vph)	397	521		409	510		606	2444		530	2451	1117
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.14	0.03		0.01	0.10		0.01	0.26		0.14	0.20	0.10
Intersection Summary	and the second	N A	a stant	Jue Sel			The second		9			
Area Type:	CBD											
Cycle Length: 60												
Actuated Cycle Length: 60												
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	6:SBTL,	Start of	Green							
Natural Cycle: 45												
Control Type: Actuated-Cod	ordinated											
Maximum v/c Ratio: 0.28												
Intersection Signal Delay: 4	.4			In	tersection	LOS: A						
Intersection Capacity Utiliza	ation 49.3%				CU Level of	of Service	A					
Analysis Period (min) 15												
Splits and Phases: 35: To	enth Line &	Zone 3 S	outh/Aval	on South								

Ø2 (R)		
35 s	25 5	
Ø6 (R)	₹ Ø8	
35 s	25.5	

Intersection Int Delay, s/veh

			8.12	12		5.0	2
Wovement	EBL	EBR	NBL	NBT	SBT	SBR	
Traffic Vol, veh/h	23	12	17	443	349	50	
Future Vol, veh/h	23	12	17	443	349	50	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	S I - 2 -	None		None	
Storage Length	0		400	E.		400	
Veh in Median Storage, #	0		-	0	0		
Grade, %	0	5	-	0	0	-	
Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	24	13	18	466	367	53	

Major/Minor	Minor2		Major1	(in a second	M de la companya de la	ajor2	S - 196	13,12	
Conflicting Flow All	869	367	367	0		-	0		
Stage 1	367					1			
Stage 2	502	ē	11						
Critical Hdwy	6.42	6.22	4.12	1.1		1.05	1.00		
Critical Hdwy Stg 1	5.42						5 7 3		
Critical Hdwy Stg 2	5.42		1 2.2 8						
Follow-up Hdwy	3.518	3.318	2.218	×		0.	300		
Pot Cap-1 Maneuver	322	678	1192	-		1.04	341		
Stage 1	701	4	-	-		14	5 6 8		
Stage 2	608			÷					
Platoon blocked, %				÷					
Mov Cap-1 Maneuver	317	678	1192			15			
Mov Cap-2 Maneuver	317					3.			
Stage 1	701	(n				1.00			
Stage 2	599	-	×				0.00		
		- 49 P							
Approach	EB		NB			SB			
HCM Control Delay, s	15.2		0.3			0			
HCM LOS	C								
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT SBR			2 most			8. i . ji
Capacity (veh/h)	1192	- 388	and set the set		and the second second second	121	2	1 8	
HCM Lane V/C Ratio	0.015	- 0.095							
HCM Control Delay (s)	8.1	- 15.2							10 24
HCM Lane LOS	A	- C							
HCM 95th %tile Q(veh)	0	- 0.3			1. The second				

4.1

Intersection

Int Delay, s/veh

	200 B						
Movement	WBL	WER	NBT	NBR	SBL	SBT	Construction of the second
Traffic Vol, veh/h	80	58	232	203	116	205	
Future Vol, veh/h	80	58	232	203	116	205	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	sur -	None		None		None	
Storage Length	0	8	-	E.	0 2	-	
Veh in Median Storage, #	0		0			0	
Grade, %	0	-	0	-	0.57	0	
Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	84	61	244	214	122	216	

Major/Minor	Minor1	2 T. M		Maj	or1	NOT N	Major2	2 4 2	34.8-34.8	
Conflicting Flow All	811	351			0	0	458	0		
Stage 1	351		1		-	100	1.1			
Stage 2	460	8			÷	÷		3		
Critical Hdwy	6.42	6.22					4.12			
Critical Hdwy Stg 1	5.42					5	1.5	: - .:		
Critical Hdwy Stg 2	5.42				•					
Follow-up Hdwy	3.518	3.318			*		2.218	3 - 2		
Pot Cap-1 Maneuver	349	692					1103			
Stage 1	713	14			4	Ξ.	-	25		
Stage 2	636	1 1 1 1 1 1					- 1 - E		State of the state of the	
Platoon blocked, %					2					
Mov Cap-1 Maneuver	305	692				•	1103			
Mov Cap-2 Maneuver	305				-	π.	-	()		
Stage 1	713							-		
Stage 2	556				*		-	3 6 3		
and the state of the										
Approach	WB			R IST	NB	201	SB			
HCM Control Delay, s	19.1		1.11		0		3.1			
HCM LOS	С									
Minor Lane/Major Mymt	NBT	NBRWBLn1	SEL	SBT		1114153		생가		
Capacity (veh/h)		- 399	1103		1.2					
HCM Lane V/C Ratio		- 0.364		-						
HCM Control Delay (s)	ومعتشان	- 19.1	8.7	0						1. 1. 1. 1. 1.
HCM Lane LOS		- C	А	А						
	A CONTRACTOR OF THE OWNER		and the second second							

HCM 95th %tile Q(veh)

411

1.6

-

0.4

0.8

Intersection

Int Delay, s/veh

1. A. S.		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	1.1		U	
WBL	WBR	NBT	NBR	SBL	SBT	
20	20	466	30	20	404	
20	20	466	30	20	404	
0	0	0	Ó	0	0	
Stop	Stop	Free	Free	Free	Free	
100 No.	None		None		None	
0			:#X	-	-	
0		0	(-)		0	
0	-	0	(=);		0	
95	95	95	95	95	95	
2	2	2	2	2	2	
21	21	491	32	21	425	
	20 20 0 Stop - 0 0 0 95 2	20 20 20 20 0 0 Stop Stop - None 0 - 0 - 0 - 95 95 2 2	20 20 466 20 20 466 0 0 0 Stop Stop Free - None - 0 - - 0 - 0 0 - 0 95 95 95 2 2 2	20 20 466 30 20 20 466 30 0 0 0 0 0 Stop Stop Free Free - None - None 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 95 95 95 95 2 2 2 2	20 20 466 30 20 20 20 466 30 20 0 0 0 0 0 0 0 0 0 0 0 0 0 Stop Stop Free Free Free Free - None - - - - - 0 - - - - - - 0 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	20 20 466 30 20 404 20 20 466 30 20 404 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Stop Stop Free Free Free Free Free - None - None - None 0 - 0 - - 0 0 - 0 - - 0 0 - 0 - - 0 95 95 95 95 95 95 2 2 2 2 2 2 2

Major/Minor	Minor1			Major	1	2	Major2		
Conflicting Flow All	973	506			0	0	522	0	
Stage 1	506	1.511.51				-			
Stage 2	467	-			-		-		
Critical Hdwy	6.42	6.22				-	4.12	-	
Critical Hdwy Stg 1	5.42					1	9 4 10	3 4	
Critical Hdwy Stg 2	5.42	e.			-	1.3		-	
Follow-up Hdwy	3.518	3.318			•		2.218	÷	
Pot Cap-1 Maneuver	280	566				100	1044	-	
Stage 1	606						-		
Stage 2	631	1 A 1 4						-	
Platoon blocked, %					-			-	
Mov Cap-1 Maneuver	273	566			240		1044	2 - P	
Mov Cap-2 Maneuver	273				3 8 1		*	(2 4)	
Stage 1	606				4		100	1.00	
Stage 2	615								
Approach	WB		1	N	B	242	SB	14	
HCM Control Delay, s	16				0		0.4		
HCM LOS	C								
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT				14-	
Capacity (veh/h)	-	- 368	1044						
HCM Lane V/C Ratio	2	- 0114	0.02	L.					

HCM Lane V/C Ratio	-	<u>-</u>	0.114	0.02	-					
HCM Control Delay (s)		÷	16	8.5	0					
HCM Lane LOS		71	С	А	А					
HCM 95th %tile Q(veh)			0.4	0.1						

LANE SUMMARY

♡ Site: Mer Bleue and Brian Coburn Roundabout - 2031 - BGSG - PM

New Site Roundabout

	Demand F		Mar VP	Deg.	Lane	Average	Level of	95% Back c	f Queue	Lane	Lane	Cap.	Prob.
1 . I.S	Total veh/h	HV %	Cap. veh/h	Satn	Util.	Delay	Service	Veh	Dist	Config	Length	Adj	Block.
South: Mer Ble	International Society of the second states of the s	70	Venn	v/c	%	sec	No. 1 No. 1 No. 1	THE REPORT FOR THE	m	DATA BOAT AND THE OWNER	m	%	%
Lane 1	412	3.0	438	0.939	100	59.7	LOS F	7.9	61.6	Full	500	0.0	0.0
Lane 2 ^d	438	3.0	466	0.939	100	57.5	LOS F	7.8	60.9	Full	420	0.0	0.0
Lane 3	252	3.0	438	0.574	100	21.6	LOS C	2.2	17.1	Two Seg ⁹	50	0.0	0.0
Approach	1101	3.0		0,939		50.1	LOS F	7.9	61.6				
East: Brian Co	burn Road							ST 8 19 2	5 °				
Lane 1	327	3.0	482	0.678	100	25.2	LOS D	3.1	23.9	Full	500	0.0	0.0
Lane 2 ^d	345	3.0	509	0,678	100	24.1	LOS C	3.0	23.3	Full	500	0.0	0.0
Lane 3	305	3.0	482	0,633	100	22.7	LOS C	2.7	21.1	Two Seg ⁹	50	0.0	0.0
Approach	977	3.0		0.678		24.0	LOS C	3.1	23.9				
North: Mer Ble	ue Road												
Lane 1	669	3.0	582	1.149	100	110.5	LOS F	37.0	288.5	Full	500	0.0	0.0
Lane 2 ^d	698	3.0	607	1.149	100	109.3	LOS F	38.0	296.1	Full	500	0.0	0.0
Lane 3	222	3.0	582	0.382	100	11.9	LOS B	1.3	10.0	Two Seg ⁹	50	0.0	0,0
Approach	1588	3.0		1.149		96.2	LOS F	38.0	296.1				
West: Brian Co	bum Road	d Exter	nsion				A Contractor		al ginara		8.11.18	S. CEN	
Lane 1	471	3.0	369	1.275	100	173.7	LOS F	38.2	297.9	Full	500	0.0	0.0
Lane 2 ^d	506	3.0	397	1.275	100	171.0	LOS F	40.6	316.0	Full	500	0.0	0.0
Lane 3	252	3.0	369	0.681	100	31.6	LOS D	2.8	21.6	Two Seg ⁹	50	0.0	0.0
Approach	1228	3.0		1.275		143.5	LOS F	40.6	316.0				
Intersection	4895	3.0		1.275		83.3	LOSE	40.6	316.0				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

- 9 All Movement Classes allocated to Segment 1 are also allocated to Segment 2. This Two-Segment Lane has been modelled as a full-length lane
- d Dominant lane on roundabout approach

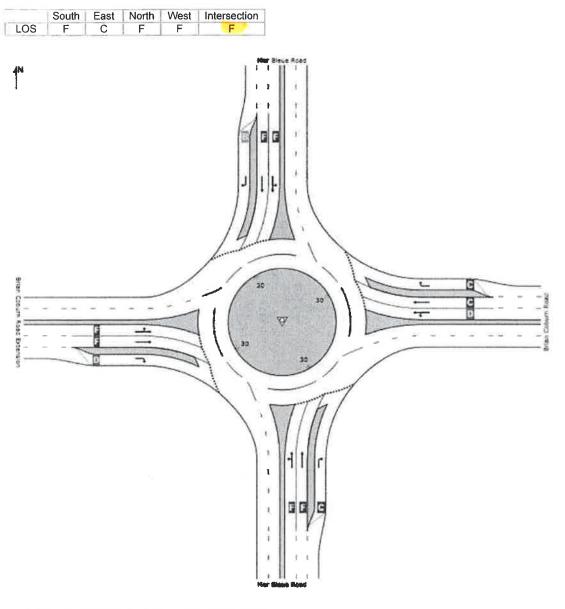
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LEVEL OF SERVICE

V Site: Mer Bleue and Brian Coburn Roundabout - 2031 - BGSG - PM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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LANE SUMMARY

♥ Site: Gerry Lalonde & Collector Road - 2031 BGSG - PM

New Site Roundabout

Lane Use a	nd Perfor	mance											
	Demand I Total	ΗV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Veh	Dist	Lane Config	Lane Length	Cap. Adj. %	Prob Block %
South: Gerry	veh/h	%	veh/h	v/c	%	sec	Martin Contraction		m		m	70	70
Lane 1 ^d	75	3.0	989	0.076	100	4.3	LOS A	0.3	2.0	Full	500	0.0	0.0
Approach	75	3.0		0.076		4.3	LOS A	0.3	2.0				
East: Collecto	or Road												
Lane 1 ^d	188	3.0	984	0.191	100	5.5	LOS A	0.7	5.8	Full	500	0.0	0.0
Approach	188	3.0		0.191		5.5	LOSA	0.7	5.8				
North: Gerry I	Lalonde												
Lane 1 ^d	135	3.0	958	0.141	100	5.1	LOS A	0.5	4.0	Full	500	0.0	0.0
Approach	135	3.0		0.141		5.1	LOS A	0.5	4.0				
West: Collect	or Road												
Lane 1 ^d	67	3.0	1028	0.066	100	4.1	LOS A	0.2	1.8	Full	500	0.0	0.0
Approach	67	3.0		0.066		4.1	LOSA	0.2	1.8				
Intersection	465	3.0		0.191		5.0	LOSA	0.7	5.8				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

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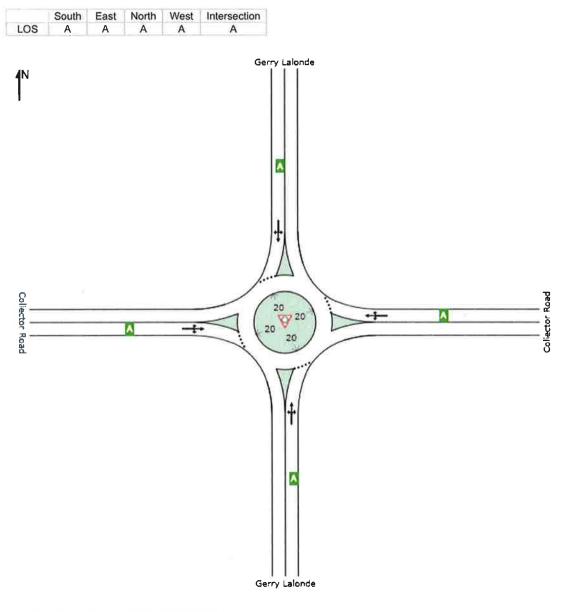
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LEVEL OF SERVICE

♥ Site: Gerry Lalonde & Collector Road - 2031 BGSG - PM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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LANE SUMMARY

♥ Site: Wall Rd & Collector Road - 2031 BGSG - PM

New Site Roundabout

	 	~	~	~	~	•

Lane Use a	nd Perfor	mance											
	Demand F Total veh/h	lows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Gerry	Lalonde												
Lane 1 ^d	60	3.0	905	0.066	100	4.6	LOS A	0.2	1.8	Full	500	0.0	0.0
Approach	60	3.0		0.066		4.6	LOS A	0.2	1.8				
East: Collecte	or Road												
Lane 1 ^d	126	3.0	1039	0.122	100	4.6	LOS A	0.4	3.5	Full	500	0.0	0.0
Approach	126	3.0		0.122		4.6	LOS A	0.4	3.5				
North: Gerry	Lalonde												
Lane 1 ^d	60	3.0	971	0.062	100	4.3	LOS A	0.2	1.6	Full	500	0.0	0.0
Approach	60	3.0		0.062		4,3	LOSA	0.2	1.6				
West: Collect	or Road												
Lane 1 ^d	187	3.0	1000	0.187	100	5.4	LOS A	0.7	5.7	Full	500	0.0	0.0
Approach	187	3.0		0.187		5.4	LOS A	0.7	5.7				
Intersection	434	3.0		0.187		4.9	LOSA	0.7	5.7				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies. Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

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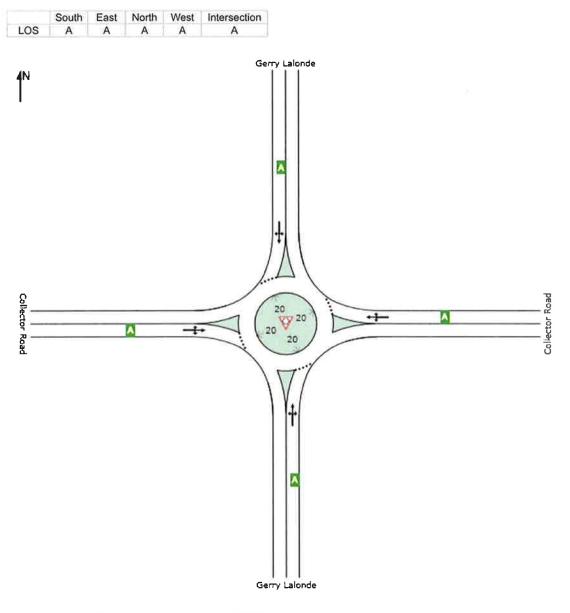
Project: J:\34739-CumbServReport\5.7 Calculations\5.7.6 Roads (Trans)\SIDRA\Wall Road and Collector Road Roundabout\Wall Rd and Collector Rd - 2025 2031 BGSG - Feb 17 2016.sip6

LEVEL OF SERVICE

♥ Site: Wall Rd & Collector Road - 2031 BGSG - PM

New Site Roundabout

All Movement Classes



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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Traffic Signal Warrants Analysis

Input Da	ta Sheet	Analysis Sheet Result	s Sheet Proposed Collision	GO TO Justification:
What are the ir	ntersecting roadways?	Mer Bleue Road & Navan Road		
What is the dire	ection of the Main Road street?	East-West 💌	When was the data collected?	Future (2025) Background Traffic
Justificatio	n 1 - 4: Volume Warrants			
a Number of	lanes on the Main Road?	1 💌		
b Number of	lanes on the Minor Road?	1 💌		
c How many	approaches? 3			
d What is the	e operating environment?	Rural 💌 Pop	oulation < 10,000 AND Speed >= 7	0 km/hr
e What is the	e eight hour vehicle volume at the	e intersection? (Please fill in table	pelow)	
Hour Ending	Main Eastbound Approach	Minor Northbound Approach	Main Westbound Approach	Minor Southbound Approach Pedestrians
Hour Ending	LT TH RT	LT TH RT	LT TH RT	LT TH RT Road

0.00	91	140						409	95	33		157	
9:00	135	372	0	0	0	0	0	359	100	96	0	143	
10:00	135	372	0	0	0	0	0	359	100	96	0	143	
12:30	135	372	0	0	0	0	0	359	100	96	0	143	
13:30	135	372	0	0	0	0	0	359	100	96	0	143	
16:00	135	372	0	0	0	0	0	359	100	96	0	143	
17:00	135	372	0	0	0	0	0	359	100	96	0	143	
18:00	178	597						248	104	159		129	
Total	1,079	2,975	0	0	0	0	0	2,871	799	768	0	1,144	0

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zor	le 1	Zo	Zone 2		f needed)	Zone 4	Total	
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Total
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Factored 8 hour pedestrian volume	C)	0		0		0		
% Assigned to crossing rate	04	%	0%		0'	%	()%	
Net 8 Hour Pedestrian Volume at Cross	sing								0
Net 8 Hour Vehicular Volume on Street	Being Cross	sed							0

	Zo	ne 1	Zo	Zone 2		f needed)	Zone 4 (Total	
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Total
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians	0		0		0		0		
Factored volume of delayed pedestrians		0		0	1	0	0		
% Assigned to Crossing Rate	C)%)%	0	%	()%	
Net 8 Hour Volume of Total Pedestrians	5								0
Net 8 Hour Volume of Delayed Pedestri	ans								0

Results Sheet

Intersection: Mer Bleue Road & Navan Road

GO TO Justification:

Summary Results

	Justification	Compliance	Signal J	ustified?
		Compliance	YES	NO
1. Minimum Vehicular	A Total Volume	100 %	~	
Volume	B Crossing Volume	100 %		
2. Delay to Cross	A Main Road	100 %		>
Traffic	B Crossing Road	96 %		·
3. Combination	A Justificaton 1	100 %	V	
	B Justification 2	96 %	, T	
4. 4-Hr Volume		100 %	v	
5. Collision Expe	rience	0 %		>
6. Pedestrians	A Volume	Justification not met		~
	B Delay	Justification not met		v

Count Date: Future (2025) Background Traffic

Input Data Sheet	Analysis Sheet Results	Sheet Proposed Collis	GO TO Justification:
What are the intersecting roadways? Mer	r Bleue Road & Renaud Road		_
What is the direction of the Main Road street?	North-South -	When was the data collected?	Future (2025) Background Traffic
Justification 1 - 4: Volume Warrants			
a Number of lanes on the Main Road?	1 💌		
b Number of lanes on the Minor Road?	1 💌		
c How many approaches? 3			
d What is the operating environment?	Urban 🝷 Popul	ation >= 10,000 AND Speed < 7	70 km/hr
e What is the eight hour vehicle volume at the in	ntersection? (Please fill in table be	elow)	

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor W	Pedestrians Crossing Main		
riour Enuing	LT	тн	RT	LT	тн	RT	LT	тн	RT	LT	тн	RT	Road
8:00	22	231		270		4		117	389				
9:00	15	234	0	406	0	11	0	202	348	0	0	0	
10:00	15	234	0	406	0	11	0	202	348	0	0	0	
12:30	15	234	0	406	0	11	0	202	348	0	0	0	
13:30	15	234	0	406	0	11	0	202	348	0	0	0	
16:00	15	234	0	406	0	11	0	202	348	0	0	0	
17:00	15	234	0	406	0	11	0	202	348	0	0	0	
18:00	8	237		541		17		286	306				
Total	120	1,872	0	3,247	0	87	0	1,615	2,783	0	0	0	0

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zon	ie 1	Zoi	Zone 2		f needed)	Zone 4	Total	
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Total
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Factored 8 hour pedestrian volume	C)	0		0		0		
% Assigned to crossing rate	04	%	0	%	0'	%	(0%	
Net 8 Hour Pedestrian Volume at Cross	sing				-				0
Net 8 Hour Vehicular Volume on Street	Being Cross	sed							0

	Zone 1		Zone 2		Zone 3 (i	f needed)	Zone 4 (Total	
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Iotai
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians	0		0		0		0		
Factored volume of delayed pedestrians		0 0 0 0		0					
% Assigned to Crossing Rate	0	%	()%	0	%	(0%	
Net 8 Hour Volume of Total Pedestrians	5								0
Net 8 Hour Volume of Delayed Pedestri	ans								0

Results Sheet

Analysis Sheet

Proposed Collision

GO TO Justification:

Summary Results

Intersection: Mer Bleue Road & Renaud Road

Signal Justified? Justification Compliance YES NO 1. Minimum A Total Volume 100 % Vehicular ~ Volume B Crossing Volume 100 % 2. Delay to A Main Road 100 % Cross Traffic • B Crossing Road 100 % 3. Combination A Justificaton 1 100 % ~ B Justification 2 100 % 4. 4-Hr Volume 100 % • 5. Collision Experience 0 % ~ 6. Pedestrians A Volume Justification not met ~ B Delay Justification not met

Count Date: Future (2025) Background Traffic

Input Data Sheet	Analysis Sheet Results S	Sheet Proposed Collis	GO TO Justification:	
What are the intersecting roadways? Me	er Bleue Road & Collector Road			•
What is the direction of the Main Road street?	North-South -	When was the data collected?	Future (2025) Total Traffic	
Justification 1 - 4: Volume Warrants				
a Number of lanes on the Main Road?	1 💌			
b Number of lanes on the Minor Road?	1 💌			
c How many approaches? 3				
d What is the operating environment?	Urban - Popula	tion >= 10,000 AND Speed < 2	70 km/hr	
e What is the eight hour vehicle volume at the ir	ntersection? (Please fill in table be	low)		
Hour Ending Main Northbound Approach	Minor Eastbound Approach	Main Southbound Approach	Minor Westbound Approach	Pedestrians Crossing Main

Hour Ending			+ F			- -							Crossing Main
Tiour Enuing	LT	тн	RT	LT	тн	RT	LT	тн	RT	LT	тн	RT	Road
8:00		303	21				42	135		44	0	143	
9:00	0	291	31	0	0	0	102	250	0	34	0	116	
10:00	0	291	31	0	0	0	102	250	0	34	0	116	
12:30	0	291	31	0	0	0	102	250	0	34	0	116	
13:30	0	291	31	0	0	0	102	250	0	34	0	116	
16:00	0	291	31	0	0	0	102	250	0	34	0	116	
17:00	0	291	31	0	0	0	102	250	0	34	0	116	
18:00		279	41				161	365		24	0	88	
Total	0	2,328	248	0	0	0	815	2,000	0	272	0	927	0

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zor	le 1	Zoi	Zone 2		f needed)	Zone 4 (i	Total	
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Total
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Factored 8 hour pedestrian volume	C)	0		0		0		
% Assigned to crossing rate	0% 0% 0%				%	0	%		
Net 8 Hour Pedestrian Volume at Cross	sing								0
Net 8 Hour Vehicular Volume on Street	Being Cross	sed							0

	Zo	ne 1	Zo	ne 2	Zone 3 (i	f needed)	Zone 4 (if needed)	Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Total
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians		0		0		0		0	
Factored volume of delayed pedestrians		0		0		0		0	
% Assigned to Crossing Rate	C)%	C)%	0	1%	()%	
Net 8 Hour Volume of Total Pedestrian	5								0
Net 8 Hour Volume of Delayed Pedestri	ans								0

Results Sheet

Proposed Collision

GO TO Justification:

Summary Results

Intersection: Mer Bleue Road & Collector Road

Signal Justified? Justification Compliance YES NO 1. Minimum A Total Volume 99 % Vehicular ~ Volume % B Crossing Volume 59 2. Delay to A Main Road 91 % Cross Traffic ~ B Crossing Road 45 % 3. Combination A Justificaton 1 59 % ~ B Justification 2 45 % 4. 4-Hr Volume 79 % ~ 5. Collision Experience 0 % ~ 6. Pedestrians A Volume Justification not met ~ B Delay Justification not met

Count Date: Future (2025) Total Traffic

Input Da	ta Shee	et		Analysis	Sheet	Results	Sheet	Propose	d Collision) Justificatio	on:	
What are the in	ntersecting r	oadways?	Me	er Bleue Ro	ad & Collec	tor Road							•
What is the dire	ection of the	Main Road	street?	No	rth-South	•	When was t	he data col	llected?	uture (203	1) Total Tra	ffic	
Justification	n 1 - 4: Vo	olume Wa	rrants										
a Number of	lanes on the	e Main Road	1?	1	•								
b Number of	lanes on the	e Minor Roa	d?	1	•								
c How many	approaches	3	-										
d What is the	e operating e	environment	?	Urban	-	Popula	tion >= 10,000	AND	Speed < 70 k	m/hr			
e What is the	e eight hour	vehicle volu	me at the i	ntersection?	P (Please fil	l in table be	low)						
Linux Facility a	Main No	rthbound Ap	proach	Minor E	astbound A	oproach	Main Sou	uthbound A	pproach	Minor W	estbound A	pproach	Pedestrians
Hour Ending	LT	TH	RT	LT	TH	RT	LT	тн	RT	LT	TH	RT	Crossing Main Road
8:00		385	41				83	173		87		285	
9:00	0	368	61	0	0	0	202	322	0	67	0	231	
10:00	0	368	61	0	0	0	202	322	0	67	0	231	

Justification 5: Collision Experience

2,943

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

12:30

13:30

16:00

17:00

18:00

Total

* Include only collisions that are susceptable to correction through the installation of traffic signal control

1,616

2,575

1,847

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zor	le 1	Zo	ne 2	Zone 3 (i	f needed)	Zone 4 (if needed)	Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Total
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Factored 8 hour pedestrian volume	C)		0	()		0	
% Assigned to crossing rate	0'	%	C	1%	0'	%	()%	
Net 8 Hour Pedestrian Volume at Cross	sing								0
Net 8 Hour Vehicular Volume on Street	Being Cross	sed							0

	Zo	ne 1	Zo	ne 2	Zone 3 (i	f needed)	Zone 4 (if needed)	Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Total
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians		0		0		0		0	
Factored volume of delayed pedestrians		0		0	1	0		0	
% Assigned to Crossing Rate	C)%	()%	0	1%	()%	
Net 8 Hour Volume of Total Pedestrians	5								0
Net 8 Hour Volume of Delayed Pedestri	ans								0

Results	s Sheet
---------	---------

GO TO Justification:

Intersection: Mer Bleue Road & Collector Road

Count Date: Future (2031) Total Traffic

Summary Results

	Justification	Compliance	Signal	Justified?
•	Justification	Compliance	YES	NO
1. Minimum Vehicular	A Total Volume	100 %		7
Volume	B Crossing Volume	98 %		
2. Delay to Cross	A Main Road	99 %		~
Traffic	B Crossing Road	87 %		
3. Combination	A Justificaton 1	98 %	v	
	B Justification 2	87 %	·	
4. 4-Hr Volume		100 %	¥	
5. Collision Expe	rience	0 %		V
6. Pedestrians	A Volume	Justification not met		•
	B Delay	Justification not met		•

– Appendix H –

Auxiliary Lane Analysis



APPENDIX A

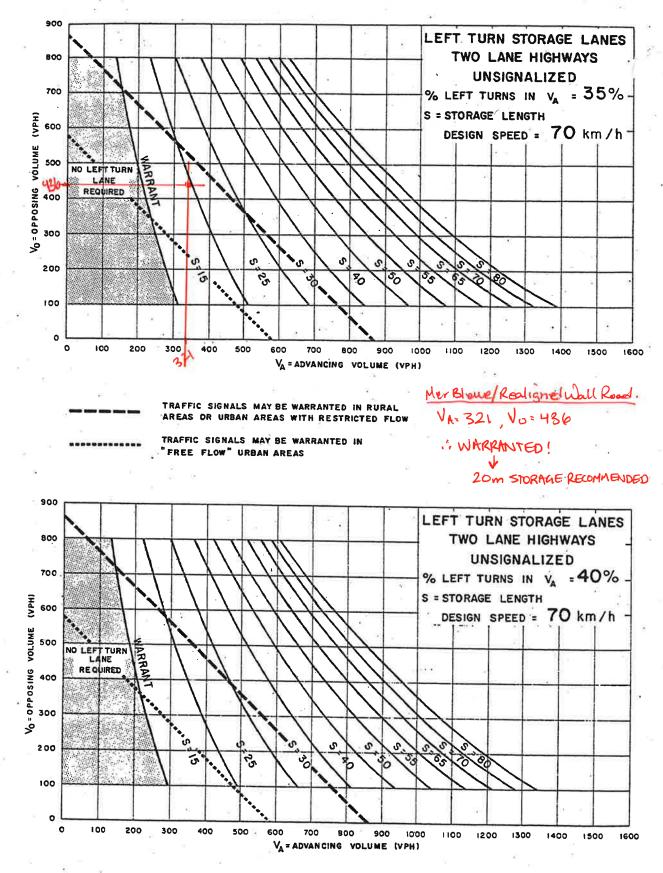


Figure EA-13

EA-14

AT-GRADE INTERSECTIONS



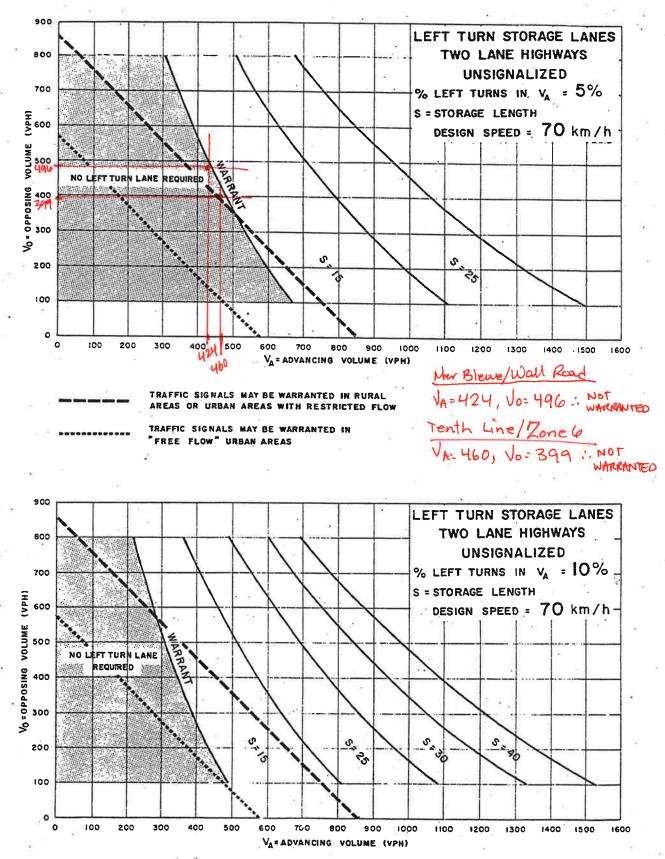


Figure EA-10

EA-11