

APPENDIX C: Turning Movement Counts & Signal Timing Plans





Turning Movement Count (4 - ALMA ST & 450 DUFFERIN ST EAST & WEST DRIVEWAYS)

Start Time	N Approach 450 DUFFERIN ST WEST DRIVEWAY						E Approach ALMA AVE						W Approach ALMA AVE						NE Approach 450 DUFFERIN ST EAST DRIVEWAY						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	Hard Left N:NE	UTurn N:N	Peds N:	Approach Total	Hard Right E:NE	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Bear Left W:NE	Left W:N	UTurn W:W	Peds W:	Approach Total	Hard Right NE:N	Bear Right NE:W	Hard Left NE:E	UTurn NE:NE	Peds NE:	Approach Total		
07:30:00	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	2	0	0	0	0	1	0	2		
07:45:00	0	0	0	0	2	0	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	4	0	2		
08:00:00	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	3		
08:15:00	0	1	0	0	0	1	0	1	1	1	0	2	0	0	0	1	2	0	0	0	0	0	0	6	13	
08:30:00	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	0	0	0	0	0	3	14	
08:45:00	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	2	0	1	13	
09:00:00	0	0	0	0	2	0	0	1	1	0	1	0	0	0	0	2	0	0	0	0	0	0	0	2	12	
09:15:00	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	0	0	0	0	0	3	9	
BREAK																										
16:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1		
16:15:00	0	1	0	0	0	1	0	0	2	0	1	2	0	0	0	0	0	0	0	0	0	1	0	3		
16:30:00	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	0	0	0	0	0	3		
16:45:00	0	0	0	0	1	0	0	0	1	0	0	1	3	0	0	0	1	3	0	0	0	0	1	4	11	
17:00:00	0	0	0	0	0	0	0	0	2	0	0	2	3	0	0	0	0	3	0	0	1	0	0	6	16	
17:15:00	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	0	1	0	0	3	16	
17:30:00	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14	
17:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	
Grand Total	0	3	0	0	6	3	1	2	14	3	4	20	17	0	0	0	5	17	0	0	3	0	9	3	43	-
Approach%	0%	100%	0%	0%	-	-	5%	10%	70%	15%	-	100%	0%	0%	0%	-	0%	0%	100%	0%	-	-	-	-	-	
Totals %	0%	7%	0%	0%	7%	2.3%	4.7%	32.6%	7%	46.5%	39.5%	0%	0%	0%	0%	39.5%	0%	0%	7%	0%	7%	0%	7%	-	-	
Heavy	0	0	0	0	-	-	0	0	7	0	-	6	0	0	0	-	0	0	0	0	0	0	-	-	-	
Heavy %	0%	0%	0%	0%	-	-	0%	0%	50%	0%	-	35.3%	0%	0%	0%	-	0%	0%	0%	0%	0%	0%	-	-	-	
Bicycles	0	0	0	0	-	-	0	0	1	0	-	1	0	0	0	-	0	0	0	0	0	0	-	-	-	
Bicycle %	0%	0%	0%	0%	-	-	0%	0%	7.1%	0%	-	5.9%	0%	0%	0%	-	0%	0%	0%	0%	0%	0%	-	-	-	



Peak Hour: 07:45 AM - 08:45 AM Weather: Clear Sky (16.65 °C)

Start Time	N Approach 450 DUFFERIN ST WEST DRIVEWAY						E Approach ALMA AVE					W Approach ALMA AVE					NE Approach 450 DUFFERIN ST EAST DRIVEWAY						Int. Total (15 min)			
	Right	Left	Hard Left	UTurn	Peds	Approach Total	Hard Right	Right	Thru	UTurn	Peds	Approach Total	Thru	Bear Left	Left	UTurn	Peds	Approach Total	Hard Right	Bear Right	Hard Left	UTurn		Peds	Approach Total	
07:45:00	0	0	0	0	2	0	1	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	4	0	2
08:00:00	0	1	0	0	0	1	0	0	0	1	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	3
08:15:00	0	1	0	0	0	1	0	1	1	1	0	3	2	0	0	0	1	2	2	0	0	0	0	0	0	6
08:30:00	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	0	1	1	0	0	0	0	0	0	3
Grand Total	0	2	0	0	2	2	1	1	3	2	1	7	5	0	0	0	1	5	0	0	0	0	4	0	14	
Approach%	0%	100%	0%	0%	-	-	14.3%	14.3%	42.9%	28.6%	-	-	100%	0%	0%	0%	-	-	0%	0%	0%	0%	-	-	-	
Totals %	0%	14.3%	0%	0%	14.3%	7.1%	7.1%	21.4%	14.3%	50%	35.7%	0%	0%	0%	35.7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	
PHF	0	0.5	0	0	0.5	0.5	0.25	0.25	0.38	0.5	0.58	0.63	0	0	0	0	0.63	0.63	0	0	0	0	0	0	-	
Heavy	0	0	0	0	0	0	0	0	1	0	1	3	3	0	0	0	3	3	0	0	0	0	0	0	-	
Heavy %	0%	0%	0%	0%	0%	0%	0%	0%	33.3%	0%	14.3%	60%	0%	0%	0%	60%	60%	0%	0%	0%	0%	0%	0%	-		
Lights	0	2	0	0	2	2	1	1	2	2	6	2	2	0	0	0	2	2	0	0	0	0	0	0	-	
Lights %	0%	100%	0%	0%	100%	100%	100%	100%	66.7%	100%	85.7%	40%	0%	0%	0%	40%	40%	0%	0%	0%	0%	0%	0%	-		
Single-Unit Trucks	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	1	0	0	0	0	0	0	-	
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	33.3%	0%	14.3%	20%	0%	0%	0%	20%	20%	0%	0%	0%	0%	0%	0%	-		
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	-	
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	40%	40%	0%	0%	0%	0%	0%	0%	-		
Pedestrians	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	4	-	-	
Pedestrians %	-	-	-	-	25%	-	-	-	-	-	12.5%	-	-	-	-	12.5%	-	-	-	-	-	-	50%	-	-	
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	-	-	0	0	0	0	0	-	-	
Bicycles on Road %	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	-	0%	-	-	



Peak Hour: 04:30 PM - 05:30 PM Weather: Clear Sky (26.4 °C)

Start Time	N Approach 450 DUFFERIN ST WEST DRIVEWAY						E Approach ALMA AVE						W Approach ALMA AVE						NE Approach 450 DUFFERIN ST EAST DRIVEWAY						Int. Total (15 min)
	Right	Left	Hard Left	UTurn	Peds	Approach Total	Hard Right	Right	Thru	UTurn	Peds	Approach Total	Thru	Bear Left	Left	UTurn	Peds	Approach Total	Hard Right	Bear Right	Hard Left	UTurn	Peds	Approach Total	
16:30:00	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	0	1	0	0	0	0	0	0	3
16:45:00	0	0	0	0	1	0	0	0	1	0	0	1	3	0	0	0	1	3	0	0	0	0	1	0	4
17:00:00	0	0	0	0	0	0	0	0	2	0	0	2	3	0	0	0	0	3	0	0	1	0	0	1	6
17:15:00	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	0	1	0	0	1	3
Grand Total	0	0	0	0	1	0	0	0	6	0	0	6	8	0	0	0	1	8	0	0	2	0	1	2	16
Approach%	0%	0%	0%	0%	-	-	0%	0%	100%	0%	-	100%	0%	0%	0%	-	0%	0%	100%	0%	-	-	-	-	-
Totals %	0%	0%	0%	0%	0%	0%	0%	0%	37.5%	0%	37.5%	50%	0%	0%	0%	50%	0%	0%	12.5%	0%	12.5%	-	-	-	-
PHF	0	0	0	0	0	0	0	0	0.75	0	0.75	0.67	0	0	0	0.67	0	0	0.5	0	0.5	-	-	-	-
Heavy	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Heavy %	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Lights	0	0	0	0	0	0	0	0	3	0	3	8	0	0	0	8	0	0	2	0	2	-	-	-	-
Lights %	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	-	-	-	-
Single-Unit Trucks	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	33.3%	0%	33.3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Articulated Trucks	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	16.7%	0%	16.7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	1	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-
Pedestrians %	-	-	-	-	33.3%	-	-	-	-	0%	-	-	-	-	-	33.3%	-	-	-	-	-	33.3%	-	-	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	0	-	
Bicycles on Road %	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-

Peak Hour: 07:45 AM - 08:45 AM Weather: Clear Sky (16.65 °C)



Peak Hour: 04:30 PM - 05:30 PM Weather: Clear Sky (26.4 °C)





Turning Movement Count (1 . DUFFERIN ST & ALMA AVE N / LANE N ALMA E)

Start Time	N Approach DUFFERIN ST						E Approach LANE N ALMA E DUFFERIN						S Approach DUFFERIN ST						W Approach ALMA AVE (NORTH)						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:30:00	0	132	1	0	0	133	0	0	0	0	4	0	0	110	0	0	0	110	0	0	2	0	10	2	245	
07:45:00	0	131	0	0	0	131	2	0	0	0	6	2	0	107	1	0	0	108	1	0	0	0	9	1	242	
08:00:00	0	118	0	0	0	118	1	0	0	0	7	1	0	104	1	0	0	105	2	0	1	0	9	3	227	
08:15:00	1	109	0	0	0	110	1	0	0	0	9	1	0	151	2	0	2	153	3	0	1	0	12	4	268	982
08:30:00	1	151	0	0	2	152	0	0	1	0	73	1	1	125	1	0	0	127	0	0	0	0	26	0	280	1017
08:45:00	0	167	0	0	0	167	0	0	0	0	55	0	0	131	0	0	0	131	0	0	1	0	8	1	299	1074
09:00:00	1	137	0	0	0	138	0	0	0	0	13	0	0	94	1	0	0	95	0	0	0	0	14	0	233	1080
09:15:00	0	131	0	0	0	131	0	0	0	0	16	0	1	97	2	0	0	100	1	0	0	0	9	1	232	1044
BREAK																										
16:00:00	0	128	0	0	0	128	0	0	0	0	14	0	0	141	0	0	0	141	1	0	0	0	15	1	270	
16:15:00	1	115	0	0	0	116	0	0	0	0	6	0	0	170	1	0	0	171	0	0	1	0	11	1	288	
16:30:00	1	112	1	0	0	114	0	0	0	0	7	0	0	194	1	0	0	195	0	0	1	0	12	1	310	
16:45:00	1	126	1	0	0	128	0	0	0	0	13	0	0	207	0	0	1	207	0	0	3	0	12	3	338	1206
17:00:00	1	123	0	0	0	124	0	0	0	0	13	0	0	171	1	0	0	172	2	0	2	0	18	4	300	1236
17:15:00	1	129	0	0	0	130	0	0	0	0	12	0	0	147	0	0	0	147	2	0	0	0	10	2	279	1227
17:30:00	1	117	1	0	0	119	0	0	0	0	12	0	0	169	0	0	0	169	0	0	1	0	16	1	289	1206
17:45:00	0	129	0	0	0	129	0	0	0	0	17	0	0	166	0	0	1	166	0	0	0	0	24	0	295	1163
Grand Total	9	2055	4	0	2	2068	4	0	1	0	277	5	2	2284	11	0	4	2297	12	0	13	0	215	25	4395	-
Approach%	0.4%	99.4%	0.2%	0%	-	-	80%	0%	20%	0%	-	-	0.1%	99.4%	0.5%	0%	-	-	48%	0%	52%	0%	-	-	-	-
Totals %	0.2%	46.8%	0.1%	0%	47.1%	0.1%	0%	0%	0%	0%	0%	0.1%	0%	52%	0.3%	0%	52.3%	0.3%	0%	0.3%	0%	0.6%	0.6%	-	-	
Heavy	3	122	0	0	-	0	0	0	0	0	-	-	0	124	4	0	-	-	2	0	4	0	-	-	-	-
Heavy %	33.3%	5.9%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0%	5.4%	36.4%	0%	-	-	16.7%	0%	30.8%	0%	-	-	-	-
Bicycles	3	47	0	0	-	0	0	0	0	0	-	-	0	47	0	0	-	-	1	0	0	0	-	-	-	-
Bicycle %	33.3%	2.3%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0%	2.1%	0%	0%	-	-	8.3%	0%	0%	0%	-	-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Clear Sky (16.65 °C)

Start Time	N Approach DUFFERIN ST					Approach Total	E Approach LANE N ALMA E DUFFERIN					Approach Total	S Approach DUFFERIN ST					Approach Total	W Approach ALMA AVE (NORTH)					Approach Total	Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds		Right	Thru	Left	UTurn	Peds		Right	Thru	Left	UTurn	Peds		Right	Thru	Left	UTurn	Peds		
08:15:00	1	109	0	0	0	110	1	0	0	0	9	1	0	151	2	0	2	153	3	0	1	0	12	4	268
08:30:00	1	151	0	0	2	152	0	0	1	0	73	1	1	125	1	0	0	127	0	0	0	0	26	0	280
08:45:00	0	167	0	0	0	167	0	0	0	0	55	0	0	131	0	0	0	131	0	0	1	0	8	1	299
09:00:00	1	137	0	0	0	138	0	0	0	0	13	0	0	94	1	0	0	95	0	0	0	0	14	0	233
Grand Total	3	564	0	0	2	567	1	0	1	0	150	2	1	501	4	0	2	506	3	0	2	0	60	5	1080
Approach%	0.5%	99.5%	0%	0%	-	-	50%	0%	50%	0%	-	-	0.2%	99%	0.8%	0%	-	60%	0%	40%	0%	-	-	-	
Totals %	0.3%	52.2%	0%	0%	52.5%	0.1%	0%	0.1%	0%	0%	0.2%	0.1%	46.4%	0.4%	0%	46.9%	0.3%	0%	0.2%	0%	0.5%	0%	-		
PHF	0.75	0.84	0	0	0.85	0.25	0	0.25	0	0.25	0	0.5	0.25	0.83	0.5	0	0.83	0.25	0	0.5	0	0.31	0	-	
Heavy	1	36	0	0	37	0	0	0	0	0	0	0	0	41	1	0	42	0	0	2	0	2	-	-	
Heavy %	33.3%	6.4%	0%	0%	6.5%	0%	0%	0%	0%	0%	0%	0%	0%	8.2%	25%	0%	8.3%	0%	0%	100%	0%	40%	0%	-	
Lights	2	528	0	0	530	1	0	1	0	0	2	1	460	3	0	464	3	0	0	0	3	-	-		
Lights %	66.7%	93.6%	0%	0%	93.5%	100%	0%	100%	0%	0%	100%	100%	91.8%	75%	0%	91.7%	100%	0%	0%	0%	60%	0%	-		
Single-Unit Trucks	1	14	0	0	15	0	0	0	0	0	0	0	13	1	0	14	0	0	1	0	1	-	-		
Single-Unit Trucks %	33.3%	2.5%	0%	0%	2.6%	0%	0%	0%	0%	0%	0%	0%	2.6%	25%	0%	2.8%	0%	0%	50%	0%	20%	0%	-		
Buses	0	19	0	0	19	0	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	-	-		
Buses %	0%	3.4%	0%	0%	3.4%	0%	0%	0%	0%	0%	0%	0%	4.4%	0%	0%	4.3%	0%	0%	0%	0%	0%	0%	-		
Articulated Trucks	0	3	0	0	3	0	0	0	0	0	0	0	6	0	0	6	0	0	1	0	1	-	-		
Articulated Trucks %	0%	0.5%	0%	0%	0.5%	0%	0%	0%	0%	0%	0%	0%	1.2%	0%	0%	1.2%	0%	0%	50%	0%	20%	0%	-		
Pedestrians	-	-	-	-	2	-	-	-	-	-	148	-	-	-	-	2	-	-	-	-	-	60	-	-	
Pedestrians%	-	-	-	-	0.9%	-	-	-	-	-	69.2%	-	-	-	-	0.9%	-	-	-	-	-	28%	-	-	
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	0	-	-	-	-	-	0	-	-	
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0.9%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	
Bicycles on Road	0	6	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	-	-	
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	



Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (26.4 °C)

Start Time	N Approach DUFFERIN ST						E Approach LANE N ALMA E DUFFERIN						S Approach DUFFERIN ST						W Approach ALMA AVE (NORTH)						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:15:00	1	115	0	0	0	116	0	0	0	0	6	0	0	170	1	0	0	171	0	0	1	0	11	1	288
16:30:00	1	112	1	0	0	114	0	0	0	0	7	0	0	194	1	0	0	195	0	0	1	0	12	1	310
16:45:00	1	126	1	0	0	128	0	0	0	0	13	0	0	207	0	0	1	207	0	0	3	0	12	3	338
17:00:00	1	123	0	0	0	124	0	0	0	0	13	0	0	171	1	0	0	172	2	0	2	0	18	4	300
Grand Total	4	476	2	0	0	482	0	0	0	0	39	0	0	742	3	0	1	745	2	0	7	0	53	9	1236
Approach%	0.8%	98.8%	0.4%	0%		-	0%	0%	0%	0%		-	0%	99.6%	0.4%	0%		-	22.2%	0%	77.8%	0%		-	
Totals %	0.3%	38.5%	0.2%	0%		39%	0%	0%	0%	0%		0%	0%	60%	0.2%	0%		60.3%	0.2%	0%	0.6%	0%		0.7%	
PHF	1	0.94	0.5	0		0.94	0	0	0	0		0	0	0.9	0.75	0		0.9	0.25	0	0.58	0		0.56	
Heavy	1	32	0	0		33	0	0	0	0		0	0	23	2	0		25	0	0	0	0		0	
Heavy %	25%	6.7%	0%	0%		6.8%	0%	0%	0%	0%		0%	0%	3.1%	66.7%	0%		3.4%	0%	0%	0%	0%		0%	
Lights	3	444	2	0		449	0	0	0	0		0	0	719	1	0		720	2	0	7	0		9	
Lights %	75%	93.3%	100%	0%		93.2%	0%	0%	0%	0%		0%	0%	96.9%	33.3%	0%		96.6%	100%	0%	100%	0%		100%	
Single-Unit Trucks	1	8	0	0		9	0	0	0	0		0	0	7	2	0		9	0	0	0	0		0	
Single-Unit Trucks %	25%	1.7%	0%	0%		1.9%	0%	0%	0%	0%		0%	0%	0.9%	66.7%	0%		1.2%	0%	0%	0%	0%		0%	
Buses	0	20	0	0		20	0	0	0	0		0	0	14	0	0		14	0	0	0	0		0	
Buses %	0%	4.2%	0%	0%		4.1%	0%	0%	0%	0%		0%	0%	1.9%	0%	0%		1.9%	0%	0%	0%	0%		0%	
Articulated Trucks	0	4	0	0		4	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	
Articulated Trucks %	0%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	
Pedestrians	-	-	-	-	0	-	-	-	-	-	35	-	-	-	-	-	1	-	-	-	-	-	51	-	
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	37.6%	-	-	-	-	-	1.1%	-	-	-	-	-	54.8%	-	
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	2	-	
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	4.3%	-	-	-	-	-	0%	-	-	-	-	-	2.2%	-	
Bicycles on Road	0	15	0	0	0	-	0	0	0	0	0	-	0	18	0	0	0	-	1	0	0	0	0	-	
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	

Peak Hour: 08:15 AM - 09:15 AM Weather: Clear Sky (16.65 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (26.4 °C)





Turning Movement Count (2 . DUFFERIN ST & ALMA AVE S / CONDO DRIVEWAY)

Start Time	N Approach DUFFERIN ST						E Approach ALMA AVE S					S Approach DUFFERIN ST					W Approach BRIXTON WY					Int. Total (15 min)	Int. Total (1 hr)			
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N			UTurn W:W	Peds W:	Approach Total
07:30:00	1	132	0	0	0	133	6	0	2	0	5	8	0	102	0	0	0	102	1	0	3	0	14	4	247	
07:45:00	0	132	0	0	0	132	5	0	2	0	5	7	0	99	0	0	1	99	6	0	2	0	11	8	246	
08:00:00	1	119	0	0	1	120	3	0	2	0	9	5	0	104	0	0	1	104	0	0	0	0	15	0	229	
08:15:00	0	111	0	0	0	111	9	0	1	0	12	10	0	141	0	1	0	142	0	0	2	0	15	2	265	987
08:30:00	0	152	0	0	0	152	6	0	1	0	67	7	0	127	1	0	4	128	7	0	2	0	20	9	296	1036
08:45:00	0	169	0	0	0	169	2	0	1	0	52	3	0	126	0	0	6	126	4	0	1	0	16	5	303	1093
09:00:00	0	137	0	0	2	137	2	0	2	0	14	4	0	92	0	1	2	93	4	0	1	0	16	5	239	1103
09:15:00	0	131	0	0	0	131	4	0	2	0	16	6	0	100	1	0	0	101	1	0	1	0	9	2	240	1078
BREAK																										
16:00:00	1	129	0	0	0	130	4	0	4	0	10	8	0	133	4	0	0	137	1	0	0	0	15	1	276	
16:15:00	1	114	0	0	0	115	5	1	4	0	7	10	0	166	3	0	0	169	1	0	0	0	10	1	295	
16:30:00	2	108	0	0	2	110	13	0	1	0	11	14	0	182	1	0	1	183	5	0	1	0	11	6	313	
16:45:00	0	129	0	0	0	129	13	0	4	0	15	17	0	192	1	1	0	194	0	0	1	0	17	1	341	1225
17:00:00	0	125	0	0	2	125	9	0	0	0	12	9	0	163	2	0	1	165	0	0	1	0	18	1	300	1249
17:15:00	1	129	0	0	0	130	10	1	4	0	14	15	0	138	1	0	0	139	0	0	1	0	16	1	285	1239
17:30:00	2	117	0	0	1	119	5	0	1	0	12	6	0	163	4	1	3	168	1	0	2	0	13	3	296	1222
17:45:00	1	128	0	0	0	129	11	0	3	0	19	14	0	158	2	0	1	160	4	0	2	0	15	6	309	1190
Grand Total	10	2062	0	0	8	2072	107	2	34	0	280	143	0	2186	20	4	20	2210	35	0	20	0	231	55	4480	-
Approach%	0.5%	99.5%	0%	0%	-	-	74.8%	1.4%	23.8%	0%	-	-	0%	98.9%	0.9%	0.2%	-	-	63.6%	0%	36.4%	0%	-	-	-	-
Totals %	0.2%	46%	0%	0%	46.3%	46.3%	2.4%	0%	0.8%	0%	3.2%	3.2%	0%	48.8%	0.4%	0.1%	49.3%	49.3%	0.8%	0%	0.4%	0%	1.2%	1.2%	-	-
Heavy	0	127	0	0	-	-	3	0	0	0	-	-	0	124	0	0	-	-	0	0	0	0	-	-	-	-
Heavy %	0%	6.2%	0%	0%	-	-	2.8%	0%	0%	0%	-	-	0%	5.7%	0%	0%	-	-	0%	0%	0%	0%	-	-	-	-
Bicycles	0	49	1	0	-	-	1	0	8	0	-	-	4	45	0	0	-	-	0	1	0	0	-	-	-	-
Bicycle %	0%	2.4%	0%	0%	-	-	0.9%	0%	23.5%	0%	-	-	0%	2.1%	0%	0%	-	-	0%	0%	0%	0%	-	-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Clear Sky (16.65 °C)

Start Time	N Approach DUFFERIN ST						E Approach ALMA AVE S						S Approach DUFFERIN ST						W Approach BRIXTON WY						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:15:00	0	111	0	0	0	111	9	0	1	0	12	10	0	141	0	1	0	142	0	0	2	0	15	2	265
08:30:00	0	152	0	0	0	152	6	0	1	0	67	7	0	127	1	0	4	128	7	0	2	0	20	9	296
08:45:00	0	169	0	0	0	169	2	0	1	0	52	3	0	126	0	0	6	126	4	0	1	0	16	5	303
09:00:00	0	137	0	0	2	137	2	0	2	0	14	4	0	92	0	1	2	93	4	0	1	0	16	5	239
Grand Total	0	569	0	0	2	569	19	0	5	0	145	24	0	486	1	2	12	489	15	0	6	0	67	21	1103
Approach%	0%	100%	0%	0%	-	-	79.2%	0%	20.8%	0%	-	-	0%	99.4%	0.2%	0.4%	-	-	71.4%	0%	28.6%	0%	-	-	-
Totals %	0%	51.6%	0%	0%	51.6%	51.6%	1.7%	0%	0.5%	0%	2.2%	2.2%	0%	44.1%	0.1%	0.2%	44.3%	44.3%	1.4%	0%	0.5%	0%	1.9%	1.9%	-
PHF	0	0.84	0	0	0.84	0.84	0.53	0	0.63	0	0.6	0.6	0	0.86	0.25	0.5	0.86	0.86	0.54	0	0.75	0	0.58	0.58	-
Heavy	0	36	0	0	36	36	2	0	0	0	2	2	0	40	0	0	40	40	0	0	0	0	0	0	-
Heavy %	0%	6.3%	0%	0%	6.3%	6.3%	10.5%	0%	0%	0%	8.3%	8.3%	0%	8.2%	0%	0%	8.2%	8.2%	0%	0%	0%	0%	0%	0%	-
Lights	0	533	0	0	533	533	17	0	5	0	22	22	0	446	1	2	449	449	15	0	6	0	21	21	-
Lights %	0%	93.7%	0%	0%	93.7%	93.7%	89.5%	0%	100%	0%	91.7%	91.7%	0%	91.8%	100%	100%	91.8%	91.8%	100%	0%	100%	0%	100%	100%	-
Single-Unit Trucks	0	14	0	0	14	14	2	0	0	0	2	2	0	12	0	0	12	12	0	0	0	0	0	0	-
Single-Unit Trucks %	0%	2.5%	0%	0%	2.5%	2.5%	10.5%	0%	0%	0%	8.3%	8.3%	0%	2.5%	0%	0%	2.5%	2.5%	0%	0%	0%	0%	0%	0%	-
Buses	0	19	0	0	19	19	0	0	0	0	0	0	0	22	0	0	22	22	0	0	0	0	0	0	-
Buses %	0%	3.3%	0%	0%	3.3%	3.3%	0%	0%	0%	0%	0%	0%	0%	4.5%	0%	0%	4.5%	4.5%	0%	0%	0%	0%	0%	0%	-
Articulated Trucks	0	3	0	0	3	3	0	0	0	0	0	0	0	6	0	0	6	6	0	0	0	0	0	0	-
Articulated Trucks %	0%	0.5%	0%	0%	0.5%	0.5%	0%	0%	0%	0%	0%	0%	0%	1.2%	0%	0%	1.2%	1.2%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	2	-	-	-	-	144	-	-	-	-	-	-	11	-	-	-	-	-	67	-	-
Pedestrians%	-	-	-	-	0.9%	-	-	-	-	63.7%	-	-	-	-	-	-	4.9%	-	-	-	-	-	29.6%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0.4%	-	-	-	-	-	0.4%	-	-	-	-	-	0%	-	-	-
Bicycles on Road	0	5	1	0	0	-	0	0	2	0	0	-	3	9	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-



Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (26.4 °C)

Start Time	N Approach DUFFERIN ST						E Approach ALMA AVE S						S Approach DUFFERIN ST						W Approach BRIXTON WY						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:15:00	1	114	0	0	0	115	5	1	4	0	7	10	0	166	3	0	0	169	1	0	0	0	10	1	295
16:30:00	2	108	0	0	2	110	13	0	1	0	11	14	0	182	1	0	1	183	5	0	1	0	11	6	313
16:45:00	0	129	0	0	0	129	13	0	4	0	15	17	0	192	1	1	0	194	0	0	1	0	17	1	341
17:00:00	0	125	0	0	2	125	9	0	0	0	12	9	0	163	2	0	1	165	0	0	1	0	18	1	300
Grand Total	3	476	0	0	4	479	40	1	9	0	45	50	0	703	7	1	2	711	6	0	3	0	56	9	1249
Approach%	0.6%	99.4%	0%	0%	-	-	80%	2%	18%	0%	-	-	0%	98.9%	1%	0.1%	-	-	66.7%	0%	33.3%	0%	-	-	-
Totals %	0.2%	38.1%	0%	0%	38.4%	38.4%	3.2%	0.1%	0.7%	0%	4%	4%	0%	56.3%	0.6%	0.1%	56.9%	56.9%	0.5%	0%	0.2%	0%	0.7%	0.7%	-
PHF	0.38	0.92	0	0	0.93	0.93	0.77	0.25	0.56	0	0.74	0.74	0	0.92	0.58	0.25	0.92	0.92	0.3	0	0.75	0	0.38	0.38	-
Heavy	0	33	0	0	33	33	1	0	0	0	1	1	0	24	0	0	24	24	0	0	0	0	0	0	-
Heavy %	0%	6.9%	0%	0%	6.9%	6.9%	2.5%	0%	0%	0%	2%	2%	0%	3.4%	0%	0%	3.4%	3.4%	0%	0%	0%	0%	0%	0%	-
Lights	3	443	0	0	446	446	39	1	9	0	49	49	0	679	7	1	687	687	6	0	3	0	9	9	-
Lights %	100%	93.1%	0%	0%	93.1%	93.1%	97.5%	100%	100%	0%	98%	98%	0%	96.6%	100%	100%	96.6%	96.6%	100%	0%	100%	0%	100%	100%	-
Single-Unit Trucks	0	8	0	0	8	8	0	0	0	0	0	0	0	9	0	0	9	9	0	0	0	0	0	0	-
Single-Unit Trucks %	0%	1.7%	0%	0%	1.7%	1.7%	0%	0%	0%	0%	0%	0%	0%	1.3%	0%	0%	1.3%	1.3%	0%	0%	0%	0%	0%	0%	-
Buses	0	20	0	0	20	20	1	0	0	0	1	1	0	13	0	0	13	13	0	0	0	0	0	0	-
Buses %	0%	4.2%	0%	0%	4.2%	4.2%	2.5%	0%	0%	0%	2%	2%	0%	1.8%	0%	0%	1.8%	1.8%	0%	0%	0%	0%	0%	0%	-
Articulated Trucks	0	5	0	0	5	5	0	0	0	0	0	0	0	2	0	0	2	2	0	0	0	0	0	0	-
Articulated Trucks %	0%	1.1%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.3%	0.3%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	41	-	-	-	-	-	2	-	-	-	-	-	55	-	-
Pedestrians%	-	-	-	-	3.7%	-	-	-	-	-	38.3%	-	-	-	-	-	1.9%	-	-	-	-	-	51.4%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	3.7%	-	-	-	-	-	0%	-	-	-	-	-	0.9%	-	-
Bicycles on Road	0	17	0	0	0	-	1	0	1	0	0	-	1	18	0	0	0	-	0	1	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Clear Sky (16.65 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (26.4 °C)





Turning Movement Count (2 . DUFFERIN ST & FLORENCE ST)

Start Time	N Approach DUFFERIN ST					S Approach DUFFERIN ST					W Approach FLORENCE ST					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	U-Turn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:30:00	1	94	0	0	95	101	7	0	7	108	2	1	0	3	3	206	
07:45:00	2	93	0	0	95	103	5	0	11	108	5	4	0	3	9	212	
08:00:00	1	118	0	1	119	128	3	0	2	131	3	1	0	2	4	254	
08:15:00	3	121	0	0	124	112	11	0	10	123	5	4	0	10	9	256	928
08:30:00	1	114	0	0	115	165	7	0	29	172	4	2	0	16	6	293	1015
08:45:00	4	160	0	0	164	139	7	0	16	146	3	1	0	9	4	314	1117
09:00:00	4	140	0	0	144	129	8	0	26	137	3	4	0	18	7	288	1151
09:15:00	3	119	1	1	123	108	8	0	14	116	4	2	0	14	6	245	1140
BREAK																	
16:00:00	6	82	1	1	89	145	13	0	9	158	10	1	0	17	11	258	
16:15:00	3	99	0	0	102	161	20	0	9	181	3	1	0	5	4	287	
16:30:00	2	115	0	0	117	124	9	0	8	133	6	0	0	13	6	256	
16:45:00	4	117	0	0	121	178	17	0	3	195	6	1	0	2	7	323	1124
17:00:00	1	93	0	1	94	145	21	0	9	166	3	1	0	16	4	264	1130
17:15:00	0	127	0	0	127	160	18	0	4	178	5	1	0	12	6	311	1154
17:30:00	3	93	0	1	96	152	21	0	3	173	9	2	0	8	11	280	1178
17:45:00	0	114	0	0	114	136	11	0	6	147	8	1	0	8	9	270	1125
Grand Total	38	1799	2	5	1839	2186	186	0	166	2372	79	27	0	156	106	4317	-
Approach%	2.1%	97.8%	0.1%	-	-	92.2%	7.8%	0%	-	-	74.5%	25.5%	0%	-	-	-	-
Totals %	0.9%	41.7%	0%	-	42.6%	50.6%	4.3%	0%	-	54.9%	1.8%	0.6%	0%	-	2.5%	-	-
Heavy	4	116	0	-	-	107	8	0	-	-	2	1	0	-	-	-	-
Heavy %	10.5%	6.4%	0%	-	-	4.9%	4.3%	0%	-	-	2.5%	3.7%	0%	-	-	-	-
Bicycles	3	18	0	-	-	18	37	0	-	-	26	1	0	-	-	-	-
Bicycle %	7.9%	1%	0%	-	-	0.8%	19.9%	0%	-	-	32.9%	3.7%	0%	-	-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Mostly Cloudy (-0.7 °C)

Start Time	N Approach DUFFERIN ST					S Approach DUFFERIN ST					W Approach FLORENCE ST					Int. Total (15 min)
	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	
08:15:00	3	121	0	0	124	112	11	0	10	123	5	4	0	10	9	256
08:30:00	1	114	0	0	115	165	7	0	29	172	4	2	0	16	6	293
08:45:00	4	160	0	0	164	139	7	0	16	146	3	1	0	9	4	314
09:00:00	4	140	0	0	144	129	8	0	26	137	3	4	0	18	7	288
Grand Total	12	535	0	0	547	545	33	0	81	578	15	11	0	53	26	1151
Approach%	2.2%	97.8%	0%	-	-	94.3%	5.7%	0%	-	-	57.7%	42.3%	0%	-	-	-
Totals %	1%	46.5%	0%	47.5%	47.4%	2.9%	0%	50.2%	1.3%	1%	0%	2.3%	-	-	-	-
PHF	0.75	0.84	0	0.83	0.83	0.75	0	0.84	0.75	0.69	0	0.72	-	-	-	-
Heavy	2	35	0	37	36	4	0	40	0	1	0	1	-	-	-	-
Heavy %	16.7%	6.5%	0%	6.8%	6.6%	12.1%	0%	6.9%	0%	9.1%	0%	3.8%	-	-	-	-
Lights	10	500	0	510	509	29	0	538	15	10	0	25	-	-	-	-
Lights %	83.3%	93.5%	0%	93.2%	93.4%	87.9%	0%	93.1%	100%	90.9%	0%	96.2%	-	-	-	-
Single-Unit Trucks	1	16	0	17	17	2	0	19	0	1	0	1	-	-	-	-
Single-Unit Trucks %	8.3%	3%	0%	3.1%	3.1%	6.1%	0%	3.3%	0%	9.1%	0%	3.8%	-	-	-	-
Buses	1	18	0	19	19	2	0	21	0	0	0	0	-	-	-	-
Buses %	8.3%	3.4%	0%	3.5%	3.5%	6.1%	0%	3.6%	0%	0%	0%	0%	-	-	-	-
Articulated Trucks	0	1	0	1	0	0	0	0	0	0	0	0	-	-	-	-
Articulated Trucks %	0%	0.2%	0%	0.2%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	65	-	-	-	53	-	-	-	-
Pedestrians%	-	-	-	0%	-	-	-	48.5%	-	-	-	39.6%	-	-	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	16	-	-	-	0	-	-	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	11.9%	-	-	-	0%	-	-	-	-
Bicycles on Road	1	8	0	0	-	2	1	0	0	-	11	0	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	0%	-	-	-	0%	-	-	-	-



Peak Hour: 04:45 PM - 05:45 PM Weather: Light Rain (1.2 °C)

Start Time	N Approach DUFFERIN ST					S Approach DUFFERIN ST					W Approach FLORENCE ST					Int. Total (15 min)
	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	
16:45:00	4	117	0	0	121	178	17	0	3	195	6	1	0	2	7	323
17:00:00	1	93	0	1	94	145	21	0	9	166	3	1	0	16	4	264
17:15:00	0	127	0	0	127	160	18	0	4	178	5	1	0	12	6	311
17:30:00	3	93	0	1	96	152	21	0	3	173	9	2	0	8	11	280
Grand Total	8	430	0	2	438	635	77	0	19	712	23	5	0	38	28	1178
Approach%	1.8%	98.2%	0%		-	89.2%	10.8%	0%		-	82.1%	17.9%	0%		-	-
Totals %	0.7%	36.5%	0%		37.2%	53.9%	6.5%	0%		60.4%	2%	0.4%	0%		2.4%	-
PHF	0.5	0.85	0		0.86	0.89	0.92	0		0.91	0.64	0.63	0		0.64	-
Heavy	1	18	0		19	18	2	0		20	0	0	0		0	-
Heavy %	12.5%	4.2%	0%		4.3%	2.8%	2.6%	0%		2.8%	0%	0%	0%		0%	-
Lights	7	412	0		419	617	75	0		692	23	5	0		28	-
Lights %	87.5%	95.8%	0%		95.7%	97.2%	97.4%	0%		97.2%	100%	100%	0%		100%	-
Single-Unit Trucks	1	5	0		6	1	2	0		3	0	0	0		0	-
Single-Unit Trucks %	12.5%	1.2%	0%		1.4%	0.2%	2.6%	0%		0.4%	0%	0%	0%		0%	-
Buses	0	13	0		13	17	0	0		17	0	0	0		0	-
Buses %	0%	3%	0%		3%	2.7%	0%	0%		2.4%	0%	0%	0%		0%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	2	-	-	-	17		-	-	-	38		-	-
Pedestrians%	-	-	-	3.4%	-	-	-	28.8%		-	-	-	64.4%		-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	2		-	-	-	0		-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	3.4%		-	-	-	0%		-	-
Bicycles on Road	2	3	0	0	-	8	19	0	0	-	3	1	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	0%		-	-	-	0%		-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Mostly Cloudy (-0.7 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Light Rain (1.2 °C)





Turning Movement Count (1 . DUFFERIN ST & GORDON ST)

Start Time	N Approach DUFFERIN ST					S Approach DUFFERIN ST					W Approach GORDON ST					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	U-Turn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:30:00	0	96	0	10	96	105	0	0	4	105	3	6	0	3	9	210	
07:45:00	0	86	0	8	86	102	0	0	6	102	6	10	0	3	16	204	
08:00:00	0	116	0	7	116	127	0	0	9	127	7	4	0	6	11	254	
08:15:00	0	116	0	26	116	117	0	0	5	117	10	6	0	8	16	249	917
08:30:00	0	100	0	36	100	165	0	0	26	165	14	11	0	7	25	290	997
08:45:00	0	152	0	34	152	141	0	0	23	141	12	11	0	8	23	316	1109
09:00:00	0	127	0	11	127	137	0	0	11	137	15	8	0	5	23	287	1142
09:15:00	0	108	0	3	108	107	0	0	10	107	10	3	0	4	13	228	1121
BREAK																	
16:00:00	0	82	0	19	82	155	0	0	2	155	6	6	0	15	12	249	
16:15:00	0	100	0	9	100	169	0	0	1	169	5	3	0	11	8	277	
16:30:00	0	109	0	10	109	118	0	0	11	118	13	10	0	14	23	250	
16:45:00	0	107	0	9	107	182	0	0	4	182	5	8	0	2	13	302	1078
17:00:00	0	91	0	6	91	147	0	0	1	147	3	11	0	12	14	252	1081
17:15:00	0	124	0	4	124	162	0	0	5	162	2	5	0	7	7	293	1097
17:30:00	0	90	0	5	90	155	0	0	4	155	9	9	0	8	18	263	1110
17:45:00	0	110	0	12	110	133	0	0	5	133	6	9	0	5	15	258	1066
Grand Total	0	1714	0	209	1714	2222	0	0	127	2222	126	120	0	118	246	4182	-
Approach%	0%	100%	0%	-	-	100%	0%	0%	-	-	51.2%	48.8%	0%	-	-	-	-
Totals %	0%	41%	0%	41%	41%	53.1%	0%	0%	53.1%	53.1%	3%	2.9%	0%	5.9%	-	-	-
Heavy	0	117	0	-	-	107	0	0	-	-	4	4	0	-	-	-	-
Heavy %	0%	6.8%	0%	-	-	4.8%	0%	0%	-	-	3.2%	3.3%	0%	-	-	-	-
Bicycles	2	14	0	-	-	18	0	0	-	-	8	1	0	-	-	-	-
Bicycle %	0%	0.8%	0%	-	-	0.8%	0%	0%	-	-	6.3%	0.8%	0%	-	-	-	-



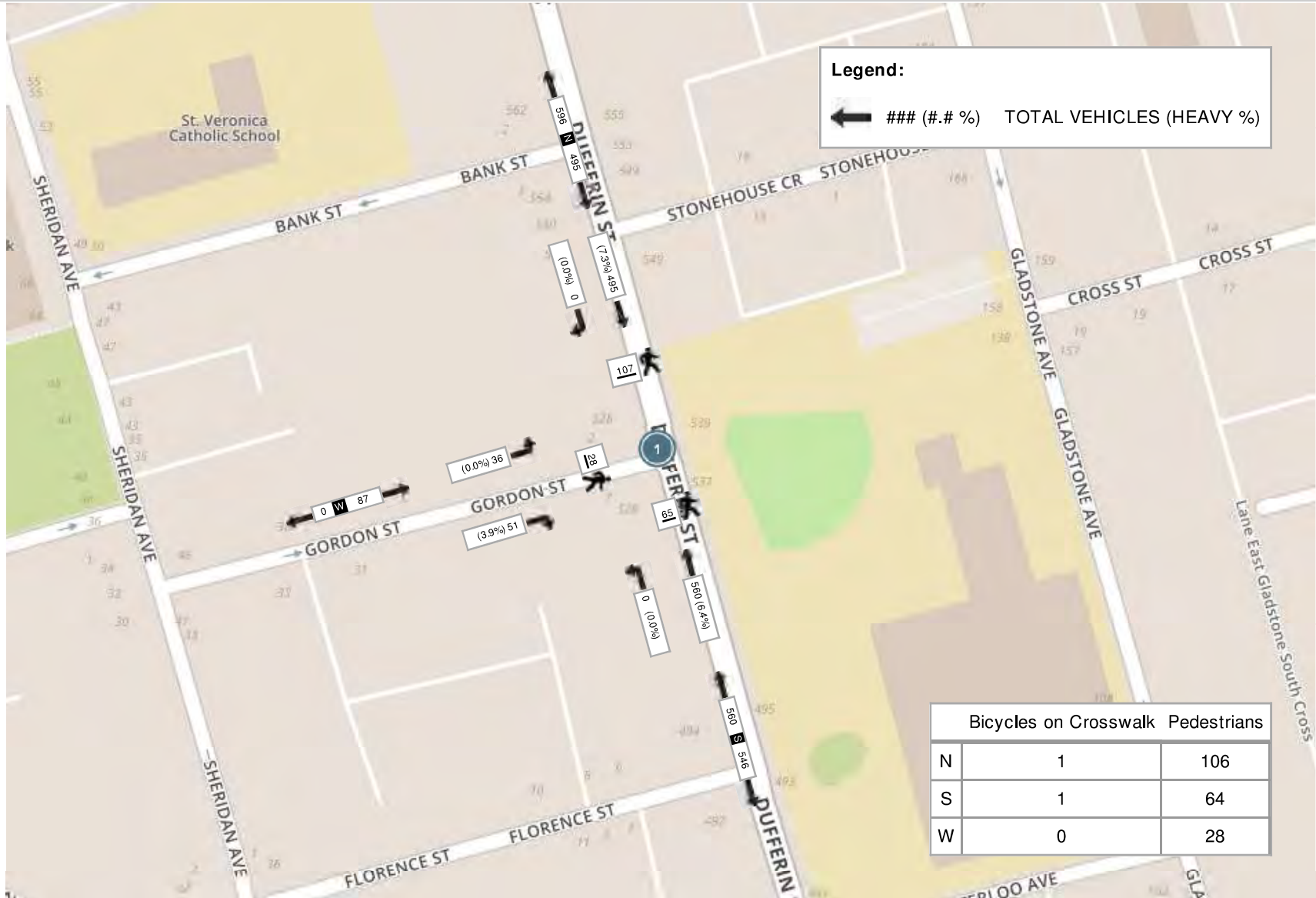
Peak Hour: 08:15 AM - 09:15 AM Weather: Mostly Cloudy (-0.7 °C)

Start Time	N Approach DUFFERIN ST					S Approach DUFFERIN ST					W Approach GORDON ST					Int. Total (15 min)
	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	
08:15:00	0	116	0	26	116	117	0	0	5	117	10	6	0	8	16	249
08:30:00	0	100	0	36	100	165	0	0	26	165	14	11	0	7	25	290
08:45:00	0	152	0	34	152	141	0	0	23	141	12	11	0	8	23	316
09:00:00	0	127	0	11	127	137	0	0	11	137	15	8	0	5	23	287
Grand Total	0	495	0	107	495	560	0	0	65	560	51	36	0	28	87	1142
Approach%	0%	100%	0%	-	-	100%	0%	0%	-	-	58.6%	41.4%	0%	-	-	-
Totals %	0%	43.3%	0%	43.3%	43.3%	49%	0%	0%	49%	49%	4.5%	3.2%	0%	7.6%	7.6%	-
PHF	0	0.81	0	0.81	0.81	0.85	0	0	0.85	0.85	0.85	0.82	0	0.87	0.87	-
Heavy	0	36	0	36	36	36	0	0	36	36	2	0	0	2	2	-
Heavy %	0%	7.3%	0%	7.3%	7.3%	6.4%	0%	0%	6.4%	6.4%	3.9%	0%	0%	2.3%	2.3%	-
Lights	0	459	0	459	459	524	0	0	524	524	49	36	0	85	85	-
Lights %	0%	92.7%	0%	92.7%	92.7%	93.6%	0%	0%	93.6%	93.6%	96.1%	100%	0%	97.7%	97.7%	-
Single-Unit Trucks	0	18	0	18	18	18	0	0	18	18	0	0	0	0	0	-
Single-Unit Trucks %	0%	3.6%	0%	3.6%	3.6%	3.2%	0%	0%	3.2%	3.2%	0%	0%	0%	0%	0%	-
Buses	0	17	0	17	17	18	0	0	18	18	2	0	0	2	2	-
Buses %	0%	3.4%	0%	3.4%	3.4%	3.2%	0%	0%	3.2%	3.2%	3.9%	0%	0%	2.3%	2.3%	-
Articulated Trucks	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	-
Articulated Trucks %	0%	0.2%	0%	0.2%	0.2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	106	-	-	-	-	64	-	-	-	-	28	-	-
Pedestrians%	-	-	-	53%	-	-	-	-	32%	-	-	-	-	14%	-	-
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	1	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0.5%	-	-	-	-	0.5%	-	-	-	-	0%	-	-
Bicycles on Road	0	5	0	0	-	2	0	0	0	-	4	1	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-

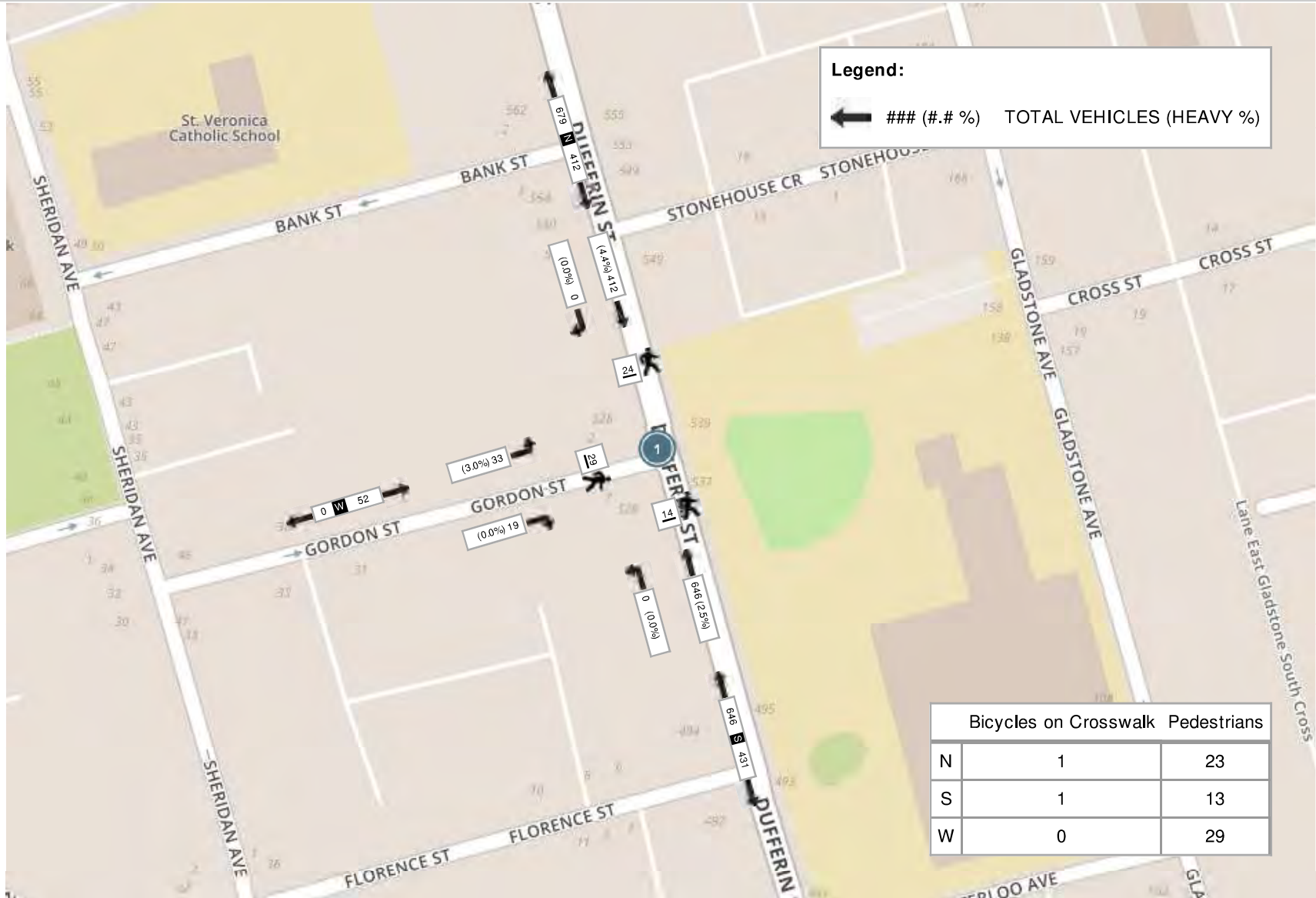
Peak Hour: 04:45 PM - 05:45 PM Weather: Light Rain (1.2 °C)

Start Time	N Approach DUFFERIN ST					S Approach DUFFERIN ST					W Approach GORDON ST					Int. Total (15 min)
	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	
16:45:00	0	107	0	9	107	182	0	0	4	182	5	8	0	2	13	302
17:00:00	0	91	0	6	91	147	0	0	1	147	3	11	0	12	14	252
17:15:00	0	124	0	4	124	162	0	0	5	162	2	5	0	7	7	293
17:30:00	0	90	0	5	90	155	0	0	4	155	9	9	0	8	18	263
Grand Total	0	412	0	24	412	646	0	0	14	646	19	33	0	29	52	1110
Approach%	0%	100%	0%		-	100%	0%	0%		-	36.5%	63.5%	0%		-	-
Totals %	0%	37.1%	0%		37.1%	58.2%	0%	0%		58.2%	1.7%	3%	0%		4.7%	-
PHF	0	0.83	0		0.83	0.89	0	0		0.89	0.53	0.75	0		0.72	-
Heavy	0	18	0		18	16	0	0		16	0	1	0		1	-
Heavy %	0%	4.4%	0%		4.4%	2.5%	0%	0%		2.5%	0%	3%	0%		1.9%	-
Lights	0	394	0		394	630	0	0		630	19	32	0		51	-
Lights %	0%	95.6%	0%		95.6%	97.5%	0%	0%		97.5%	100%	97%	0%		98.1%	-
Single-Unit Trucks	0	6	0		6	1	0	0		1	0	1	0		1	-
Single-Unit Trucks %	0%	1.5%	0%		1.5%	0.2%	0%	0%		0.2%	0%	3%	0%		1.9%	-
Buses	0	12	0		12	15	0	0		15	0	0	0		0	-
Buses %	0%	2.9%	0%		2.9%	2.3%	0%	0%		2.3%	0%	0%	0%		0%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	23	-	-	-	13		-	-	-	-	29	-	-
Pedestrians%	-	-	-	34.3%	-	-	-	19.4%		-	-	-	-	43.3%	-	-
Bicycles on Crosswalk	-	-	-	1	-	-	-	1		-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	1.5%	-	-	-	1.5%		-	-	-	-	0%	-	-
Bicycles on Road	2	1	0	0	-	7	0	0	0	-	1	0	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	0%		-	-	-	-	0%	-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Mostly Cloudy (-0.7 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Light Rain (1.2 °C)





Turning Movement Count (2 . DUFFERIN ST & PEEL AVE)

Start Time	N Approach DUFFERIN ST					E Approach PEEL AVE					S Approach DUFFERIN ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	U-Turn S:S	Peds S:	Approach Total		
07:30:00	81	14	0	0	95	21	3	0	5	24	0	86	1	0	87	206	
07:45:00	92	15	0	1	107	26	5	0	8	31	2	100	0	0	102	240	
08:00:00	114	16	0	0	130	28	9	0	7	37	3	88	0	0	91	258	
08:15:00	138	28	0	0	166	33	9	0	45	42	7	120	0	0	127	335	1039
08:30:00	126	28	1	0	155	26	4	0	31	30	2	108	0	0	110	295	1128
08:45:00	135	45	0	0	180	22	4	0	9	26	10	85	0	0	95	301	1189
09:00:00	132	36	0	1	168	22	6	0	7	28	2	77	0	0	79	275	1206
09:15:00	117	24	0	0	141	23	4	0	12	27	2	105	0	0	107	275	1146
BREAK																	
16:00:00	67	29	0	0	96	40	4	0	7	44	4	120	0	1	124	264	
16:15:00	81	14	0	0	95	39	3	0	6	42	6	123	0	3	129	266	
16:30:00	79	13	0	0	92	23	3	0	5	26	2	130	0	4	132	250	
16:45:00	86	19	0	0	105	37	5	0	9	42	4	116	0	0	120	267	1047
17:00:00	93	30	0	0	123	40	4	0	14	44	1	110	0	1	111	278	1061
17:15:00	97	35	0	0	132	31	1	0	16	32	5	128	0	1	133	297	1092
17:30:00	85	25	0	3	110	40	2	0	25	42	7	150	0	0	157	309	1151
17:45:00	120	30	0	0	150	46	2	0	16	48	8	122	0	0	130	328	1212
Grand Total	1643	401	1	5	2045	497	68	0	222	565	65	1768	1	10	1834	4444	-
Approach%	80.3%	19.6%	0%	-	-	88%	12%	0%	-	-	3.5%	96.4%	0.1%	-	-	-	-
Totals %	37%	9%	0%	46%	11.2%	1.5%	0%	12.7%	1.5%	39.8%	0%	41.3%	-	-	-	-	-
Heavy	92	9	0	-	15	4	0	-	3	97	0	-	-	-	-	-	-
Heavy %	5.6%	2.2%	0%	-	3%	5.9%	0%	-	4.6%	5.5%	0%	-	-	-	-	-	-
Bicycles	84	8	0	-	20	4	0	-	17	54	0	-	-	-	-	-	-
Bicycle %	5.1%	2%	0%	-	4%	5.9%	0%	-	26.2%	3.1%	0%	-	-	-	-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Clear (16.6 °C)

Start Time	N Approach DUFFERIN ST					E Approach PEEL AVE					S Approach DUFFERIN ST					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
08:15:00	138	28	0	0	166	33	9	0	45	42	7	120	0	0	127	335
08:30:00	126	28	1	0	155	26	4	0	31	30	2	108	0	0	110	295
08:45:00	135	45	0	0	180	22	4	0	9	26	10	85	0	0	95	301
09:00:00	132	36	0	1	168	22	6	0	7	28	2	77	0	0	79	275
Grand Total	531	137	1	1	669	103	23	0	92	126	21	390	0	0	411	1206
Approach%	79.4%	20.5%	0.1%	-	-	81.7%	18.3%	0%	-	-	5.1%	94.9%	0%	-	-	-
Totals %	44%	11.4%	0.1%	-	55.5%	8.5%	1.9%	0%	-	10.4%	1.7%	32.3%	0%	-	34.1%	-
PHF	0.96	0.76	0.25	-	0.93	0.78	0.64	0	-	0.75	0.53	0.81	0	-	0.81	-
Heavy	27	3	0	-	30	3	3	0	-	6	2	30	0	-	32	-
Heavy %	5.1%	2.2%	0%	-	4.5%	2.9%	13%	0%	-	4.8%	9.5%	7.7%	0%	-	7.8%	-
Lights	504	134	1	-	639	100	20	0	-	120	19	360	0	-	379	-
Lights %	94.9%	97.8%	100%	-	95.5%	97.1%	87%	0%	-	95.2%	90.5%	92.3%	0%	-	92.2%	-
Single-Unit Trucks	8	3	0	-	11	1	3	0	-	4	2	14	0	-	16	-
Single-Unit Trucks %	1.5%	2.2%	0%	-	1.6%	1%	13%	0%	-	3.2%	9.5%	3.6%	0%	-	3.9%	-
Buses	17	0	0	-	17	1	0	0	-	1	0	16	0	-	16	-
Buses %	3.2%	0%	0%	-	2.5%	1%	0%	0%	-	0.8%	0%	4.1%	0%	-	3.9%	-
Articulated Trucks	2	0	0	-	2	1	0	0	-	1	0	0	0	-	0	-
Articulated Trucks %	0.4%	0%	0%	-	0.3%	1%	0%	0%	-	0.8%	0%	0%	0%	-	0%	-
Pedestrians	-	-	-	1	-	-	-	-	92	-	-	-	-	0	-	-
Pedestrians%	-	-	-	1.1%	-	-	-	-	98.9%	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-
Bicycles on Road	28	2	0	0	-	6	0	0	0	-	2	8	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-



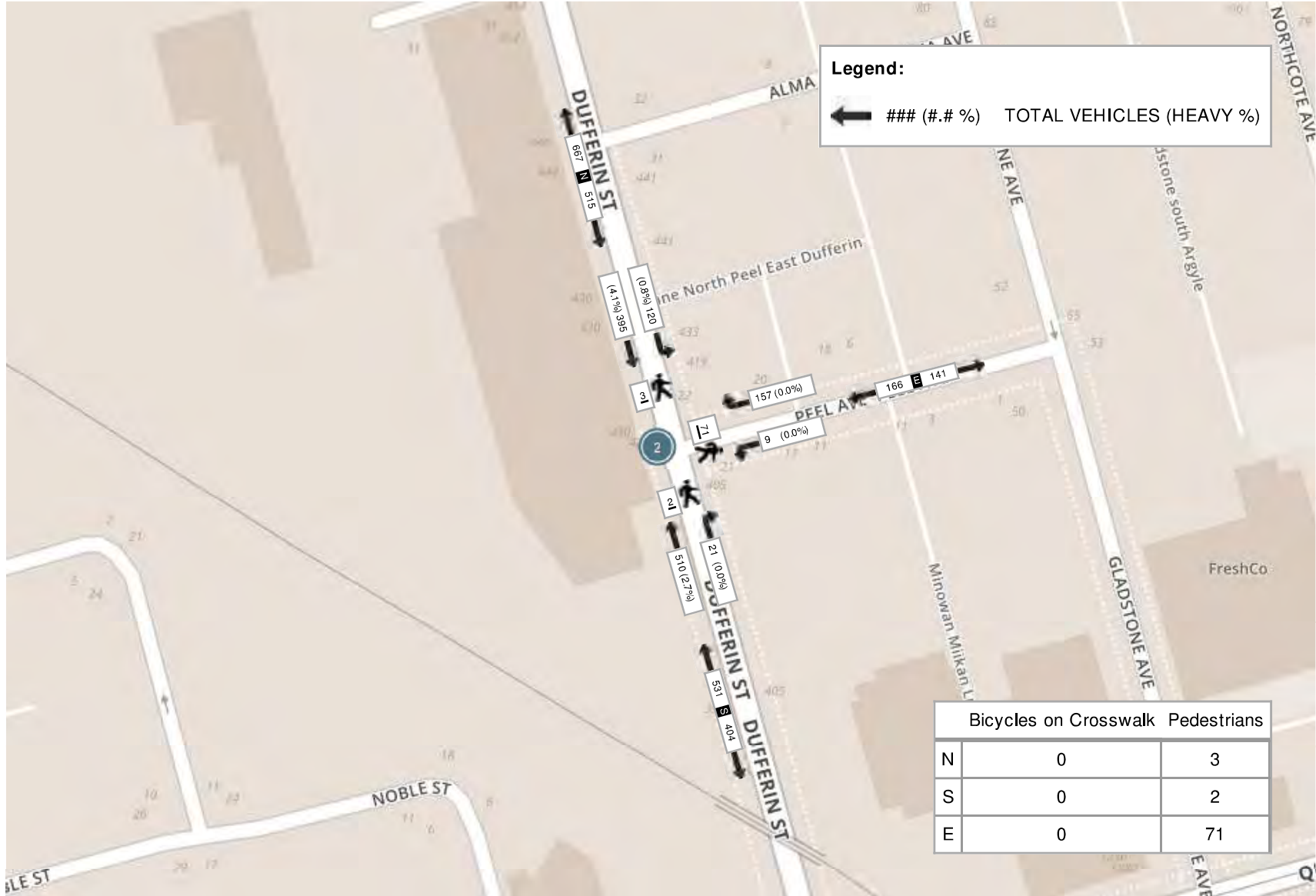
Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (18.1 °C)

Start Time	N Approach DUFFERIN ST					E Approach PEEL AVE					S Approach DUFFERIN ST					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
17:00:00	93	30	0	0	123	40	4	0	14	44	1	110	0	1	111	278
17:15:00	97	35	0	0	132	31	1	0	16	32	5	128	0	1	133	297
17:30:00	85	25	0	3	110	40	2	0	25	42	7	150	0	0	157	309
17:45:00	120	30	0	0	150	46	2	0	16	48	8	122	0	0	130	328
Grand Total	395	120	0	3	515	157	9	0	71	166	21	510	0	2	531	1212
Approach%	76.7%	23.3%	0%	-	-	94.6%	5.4%	0%	-	-	4%	96%	0%	-	-	-
Totals %	32.6%	9.9%	0%	42.5%	13%	0.7%	0%	13.7%	1.7%	42.1%	0%	43.8%	-	-	-	-
PHF	0.82	0.86	0	0.86	0.85	0.56	0	0.86	0.66	0.85	0	0.85	-	-	-	-
Heavy	16	1	0	17	0	0	0	0	0	14	0	14	-	-	-	-
Heavy %	4.1%	0.8%	0%	3.3%	0%	0%	0%	0%	0%	2.7%	0%	2.6%	-	-	-	-
Lights	379	119	0	498	157	9	0	166	21	496	0	517	-	-	-	-
Lights %	95.9%	99.2%	0%	96.7%	100%	100%	0%	100%	100%	97.3%	0%	97.4%	-	-	-	-
Single-Unit Trucks	4	1	0	5	0	0	0	0	0	4	0	4	-	-	-	-
Single-Unit Trucks %	1%	0.8%	0%	1%	0%	0%	0%	0%	0%	0.8%	0%	0.8%	-	-	-	-
Buses	12	0	0	12	0	0	0	0	0	10	0	10	-	-	-	-
Buses %	3%	0%	0%	2.3%	0%	0%	0%	0%	0%	2%	0%	1.9%	-	-	-	-
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-
Pedestrians	-	-	-	3	-	-	-	71	-	-	-	2	-	-	-	-
Pedestrians%	-	-	-	3.9%	-	-	-	93.4%	-	-	-	2.6%	-	-	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	0%	-	-	-	0%	-	-	-	-
Bicycles on Road	20	3	0	0	-	8	2	0	0	-	9	21	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	0%	-	-	-	0%	-	-	-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Clear (16.6 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (18.1 °C)





Turning Movement Count (3 - DUFFERIN ST & PEEL AVE)

Start Time	N Approach DUFFERIN ST					E Approach PEEL AVE					S Approach DUFFERIN ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total		
07:30:00	122	13	0	0	135	13	2	0	6	15	4	88	0	1	92	242	
07:45:00	133	11	0	0	144	18	6	0	8	24	3	84	0	5	87	255	
08:00:00	108	12	0	0	120	23	7	0	9	30	5	81	0	3	86	236	
08:15:00	98	13	0	1	111	22	6	0	28	28	4	117	0	1	121	260	993
08:30:00	126	30	0	1	156	37	13	0	73	50	11	95	0	3	106	312	1063
08:45:00	149	27	0	3	176	15	7	0	42	22	8	104	0	4	112	310	1118
09:00:00	110	29	0	1	139	16	4	0	22	20	6	77	0	2	83	242	1124
09:15:00	116	15	0	0	131	21	3	0	16	24	7	78	0	1	85	240	1104
BREAK																	
16:00:00	114	16	0	0	130	20	1	0	20	21	7	121	0	4	128	279	
16:15:00	106	14	0	0	120	19	4	0	12	23	6	141	0	5	147	290	
16:30:00	102	18	0	0	120	27	5	0	10	32	5	154	0	2	159	311	
16:45:00	113	19	0	0	132	29	3	0	15	32	6	167	0	4	173	337	1217
17:00:00	105	23	0	0	128	23	5	0	13	28	5	143	0	4	148	304	1242
17:15:00	114	15	0	4	129	28	8	0	16	36	8	108	0	2	116	281	1233
17:30:00	105	17	0	0	122	23	10	0	19	33	7	147	0	1	154	309	1231
17:45:00	108	26	0	0	134	34	12	0	23	46	10	124	0	4	134	314	1208
Grand Total	1829	298	0	10	2127	368	96	0	332	464	102	1829	0	46	1931	4522	-
Approach%	86%	14%	0%	-	-	79.3%	20.7%	0%	-	-	5.3%	94.7%	0%	-	-	-	-
Totals %	40.4%	6.6%	0%	-	47%	8.1%	2.1%	0%	-	10.3%	2.3%	40.4%	0%	-	42.7%	-	-
Heavy	118	10	0	-	-	9	0	0	-	-	34	116	0	-	-	-	-
Heavy %	6.5%	3.4%	0%	-	-	2.4%	0%	0%	-	-	33.3%	6.3%	0%	-	-	-	-
Bicycles	55	9	0	-	-	9	9	0	-	-	22	36	0	-	-	-	-
Bicycle %	3%	3%	0%	-	-	2.4%	9.4%	0%	-	-	21.6%	2%	0%	-	-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Clear Sky (16.65 °C)

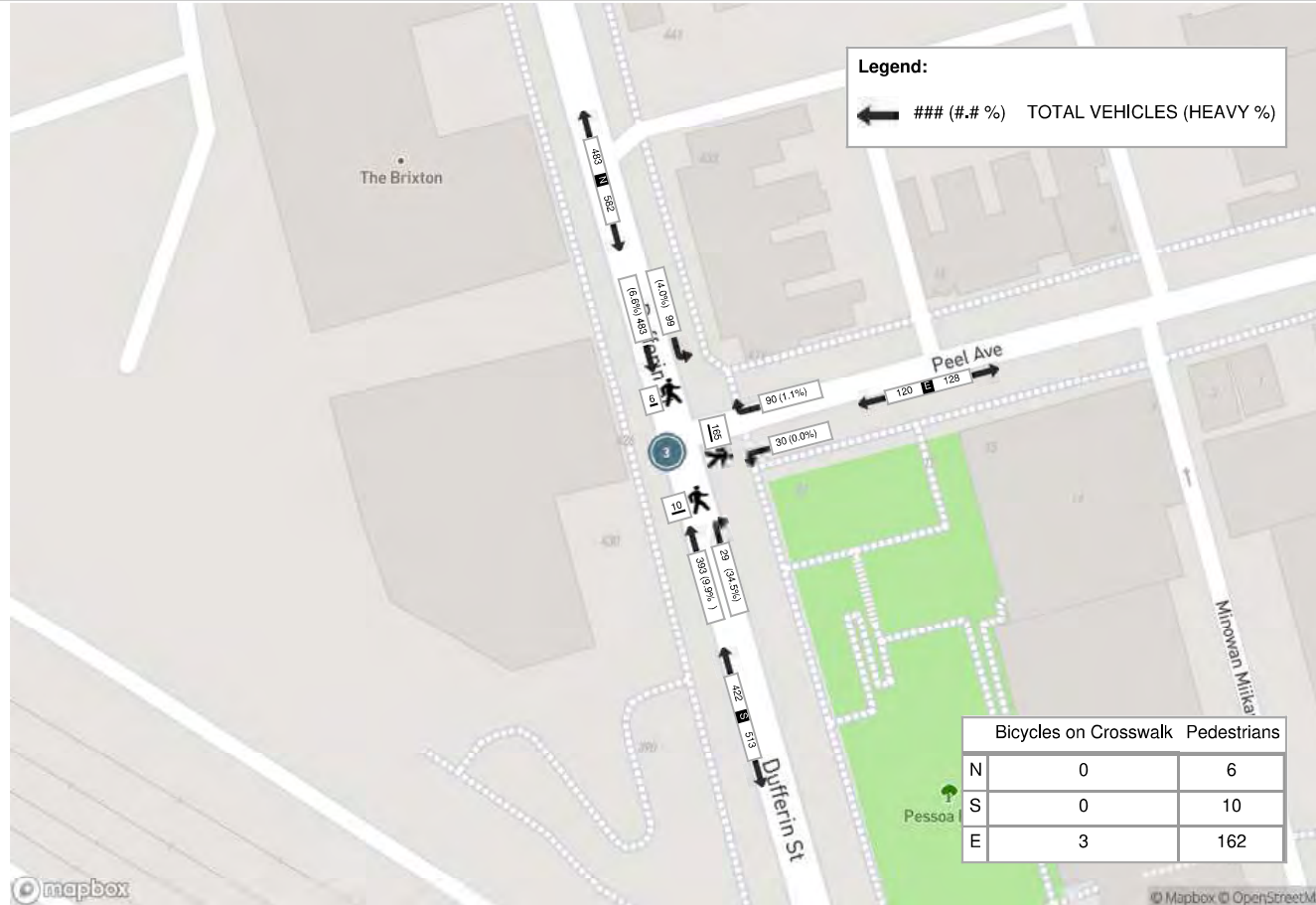
Start Time	N Approach DUFFERIN ST					E Approach PEEL AVE					S Approach DUFFERIN ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
08:15:00	98	13	0	1	111	22	6	0	28	28	4	117	0	1	121	260
08:30:00	126	30	0	1	156	37	13	0	73	50	11	95	0	3	106	312
08:45:00	149	27	0	3	176	15	7	0	42	22	8	104	0	4	112	310
09:00:00	110	29	0	1	139	16	4	0	22	20	6	77	0	2	83	242
Grand Total	483	99	0	6	582	90	30	0	165	120	29	393	0	10	422	1124
Approach%	83%	17%	0%	-	-	75%	25%	0%	-	-	6.9%	93.1%	0%	-	-	-
Totals %	43%	8.8%	0%	-	51.8%	8%	2.7%	0%	-	10.7%	2.6%	35%	0%	-	37.5%	-
PHF	0.81	0.83	0	-	0.83	0.61	0.58	0	-	0.6	0.66	0.84	0	-	0.87	-
Heavy	32	4	0	-	36	1	0	0	-	1	10	39	0	-	49	-
Heavy %	6.6%	4%	0%	-	6.2%	1.1%	0%	0%	-	0.8%	34.5%	9.9%	0%	-	11.6%	-
Lights	451	95	0	-	546	89	30	0	-	119	19	354	0	-	373	-
Lights %	93.4%	96%	0%	-	93.8%	98.9%	100%	0%	-	99.2%	65.5%	90.1%	0%	-	88.4%	-
Single-Unit Trucks	10	4	0	-	14	0	0	0	-	0	1	12	0	-	13	-
Single-Unit Trucks %	2.1%	4%	0%	-	2.4%	0%	0%	0%	-	0%	3.4%	3.1%	0%	-	3.1%	-
Buses	19	0	0	-	19	0	0	0	-	0	8	22	0	-	30	-
Buses %	3.9%	0%	0%	-	3.3%	0%	0%	0%	-	0%	27.6%	5.6%	0%	-	7.1%	-
Articulated Trucks	3	0	0	-	3	1	0	0	-	1	1	5	0	-	6	-
Articulated Trucks %	0.6%	0%	0%	-	0.5%	1.1%	0%	0%	-	0.8%	3.4%	1.3%	0%	-	1.4%	-
Pedestrians	-	-	-	6	-	-	-	-	162	-	-	-	-	10	-	-
Pedestrians%	-	-	-	3.3%	-	-	-	-	89.5%	-	-	-	-	5.5%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	3	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	1.7%	-	-	-	-	0%	-	-
Bicycles on Road	6	0	0	0	-	2	1	0	0	-	5	8	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-



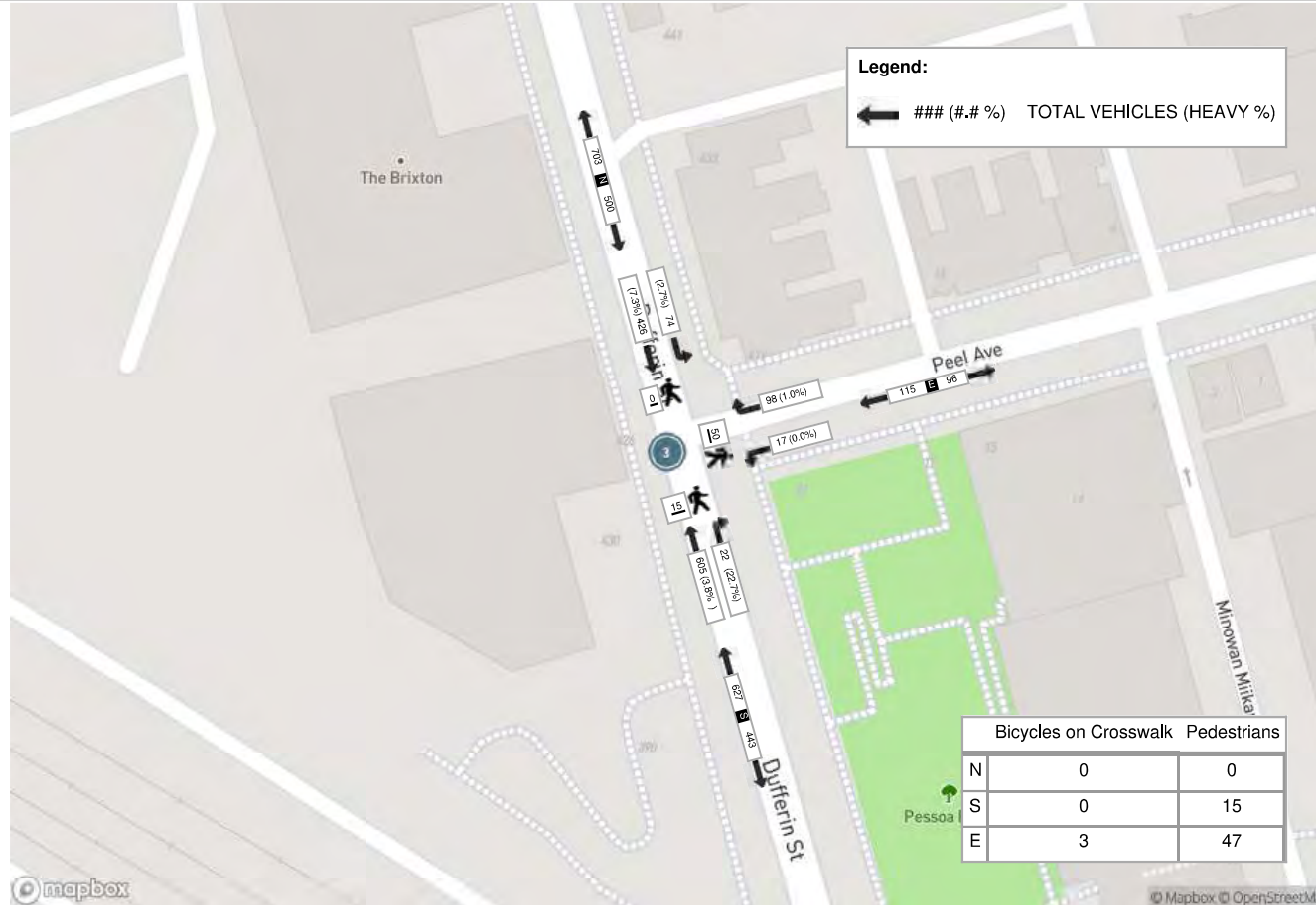
Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (26.4 °C)

Start Time	N Approach DUFFERIN ST					E Approach PEEL AVE					S Approach DUFFERIN ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:15:00	106	14	0	0	120	19	4	0	12	23	6	141	0	5	147	290
16:30:00	102	18	0	0	120	27	5	0	10	32	5	154	0	2	159	311
16:45:00	113	19	0	0	132	29	3	0	15	32	6	167	0	4	173	337
17:00:00	105	23	0	0	128	23	5	0	13	28	5	143	0	4	148	304
Grand Total	426	74	0	0	500	98	17	0	50	115	22	605	0	15	627	1242
Approach%	85.2%	14.8%	0%	-	-	85.2%	14.8%	0%	-	-	3.5%	96.5%	0%	-	-	-
Totals %	34.3%	6%	0%	-	40.3%	7.9%	1.4%	0%	-	9.3%	1.8%	48.7%	0%	-	50.5%	-
PHF	0.94	0.8	0	-	0.95	0.84	0.85	0	-	0.9	0.92	0.91	0	-	0.91	-
Heavy	31	2	0	-	33	1	0	0	-	1	5	23	0	-	28	-
Heavy %	7.3%	2.7%	0%	-	6.6%	1%	0%	0%	-	0.9%	22.7%	3.8%	0%	-	4.5%	-
Lights	395	72	0	-	467	97	17	0	-	114	17	582	0	-	599	-
Lights %	92.7%	97.3%	0%	-	93.4%	99%	100%	0%	-	99.1%	77.3%	96.2%	0%	-	95.5%	-
Single-Unit Trucks	8	0	0	-	8	1	0	0	-	1	0	8	0	-	8	-
Single-Unit Trucks %	1.9%	0%	0%	-	1.6%	1%	0%	0%	-	0.9%	0%	1.3%	0%	-	1.3%	-
Buses	18	2	0	-	20	0	0	0	-	0	5	13	0	-	18	-
Buses %	4.2%	2.7%	0%	-	4%	0%	0%	0%	-	0%	22.7%	2.1%	0%	-	2.9%	-
Articulated Trucks	5	0	0	-	5	0	0	0	-	0	0	2	0	-	2	-
Articulated Trucks %	1.2%	0%	0%	-	1%	0%	0%	0%	-	0%	0%	0.3%	0%	-	0.3%	-
Pedestrians	-	-	-	0	-	-	-	-	47	-	-	-	-	15	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	72.3%	-	-	-	-	23.1%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	3	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	4.6%	-	-	-	-	0%	-	-
Bicycles on Road	19	2	0	0	-	2	4	0	0	-	6	13	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Clear Sky (16.65 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Clear Sky (26.4 °C)





Turning Movement Count (1 - DUFFERIN ST & QUEEN ST W)

Start Time	N Approach DUFFERIN ST						E Approach QUEEN ST W						S Approach DUFFERIN ST						W Approach QUEEN ST W						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:30:00	12	62	15	0	22	89	17	57	33	0	10	107	17	77	6	0	18	100	9	114	16	0	11	139	435	
07:45:00	8	72	15	0	25	95	9	61	52	0	15	122	26	58	8	0	27	92	12	122	15	0	19	149	458	
08:00:00	7	79	20	0	35	106	15	62	46	0	33	123	19	66	10	0	43	95	6	139	22	0	29	167	491	
08:15:00	7	93	15	0	34	115	17	67	49	0	35	133	29	76	9	0	47	114	12	140	27	0	13	179	541	1925
08:30:00	7	117	8	0	45	132	20	80	45	0	66	145	31	78	10	0	51	119	14	118	26	0	34	158	554	2044
08:45:00	10	119	14	0	33	143	13	76	38	0	49	127	25	77	13	0	45	115	19	139	27	0	33	185	570	2156
09:00:00	11	77	16	0	29	104	10	64	43	0	27	117	31	67	6	0	44	104	18	108	19	0	28	145	470	2135
09:15:00	10	67	14	0	35	91	8	51	28	0	15	87	35	64	9	0	24	108	19	105	40	0	28	164	450	2044
BREAK																										
16:00:00	17	85	11	0	80	113	25	93	46	0	33	164	29	88	9	0	48	126	17	55	25	0	40	97	500	
16:15:00	14	96	9	0	62	119	11	92	27	0	35	130	41	107	11	0	51	159	15	62	23	0	37	100	508	
16:30:00	20	82	12	0	55	114	16	101	44	0	44	161	35	118	14	0	45	167	15	62	14	0	20	91	533	
16:45:00	17	77	18	0	100	112	18	118	42	0	48	178	31	110	11	0	64	152	17	70	17	0	26	104	546	2087
17:00:00	9	79	14	0	71	102	22	93	38	0	47	153	27	121	7	0	55	155	13	73	12	0	35	98	508	2095
17:15:00	19	73	17	0	77	109	28	107	33	0	60	168	32	116	10	0	76	158	13	83	11	0	44	107	542	2129
17:30:00	20	77	18	0	91	115	17	100	31	0	56	148	25	104	7	0	70	136	10	71	17	0	43	98	497	2093
17:45:00	10	77	10	0	83	97	15	104	25	0	50	144	24	111	8	0	63	143	17	67	24	0	44	108	492	2039
Grand Total	198	1332	226	0	877	1756	261	1326	620	0	623	2207	457	1438	148	0	771	2043	226	1528	335	0	484	2089	8095	-
Approach%	11.3%	75.9%	12.9%	0%	-	-	11.8%	60.1%	28.1%	0%	-	-	22.4%	70.4%	7.2%	0%	-	-	10.8%	73.1%	16%	0%	-	-	-	-
Totals %	2.4%	16.5%	2.8%	0%	21.7%	-	3.2%	16.4%	7.7%	0%	27.3%	-	5.6%	17.8%	1.8%	0%	25.2%	-	2.8%	18.9%	4.1%	0%	25.8%	-	-	-
Heavy	5	95	7	0	-	-	9	101	17	0	-	-	12	98	56	0	-	-	9	112	17	0	-	-	-	-
Heavy %	2.5%	7.1%	3.1%	0%	-	-	3.4%	7.6%	2.7%	0%	-	-	2.6%	6.8%	37.8%	0%	-	-	4%	7.3%	5.1%	0%	-	-	-	-
Bicycles	3	6	0	0	-	-	0	53	4	0	-	-	12	14	0	0	-	-	3	48	2	0	-	-	-	-
Bicycle %	1.5%	0.5%	0%	0%	-	-	0%	4%	0.6%	0%	-	-	2.6%	1%	0%	0%	-	-	1.3%	3.1%	0.6%	0%	-	-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (-2.01 °C)

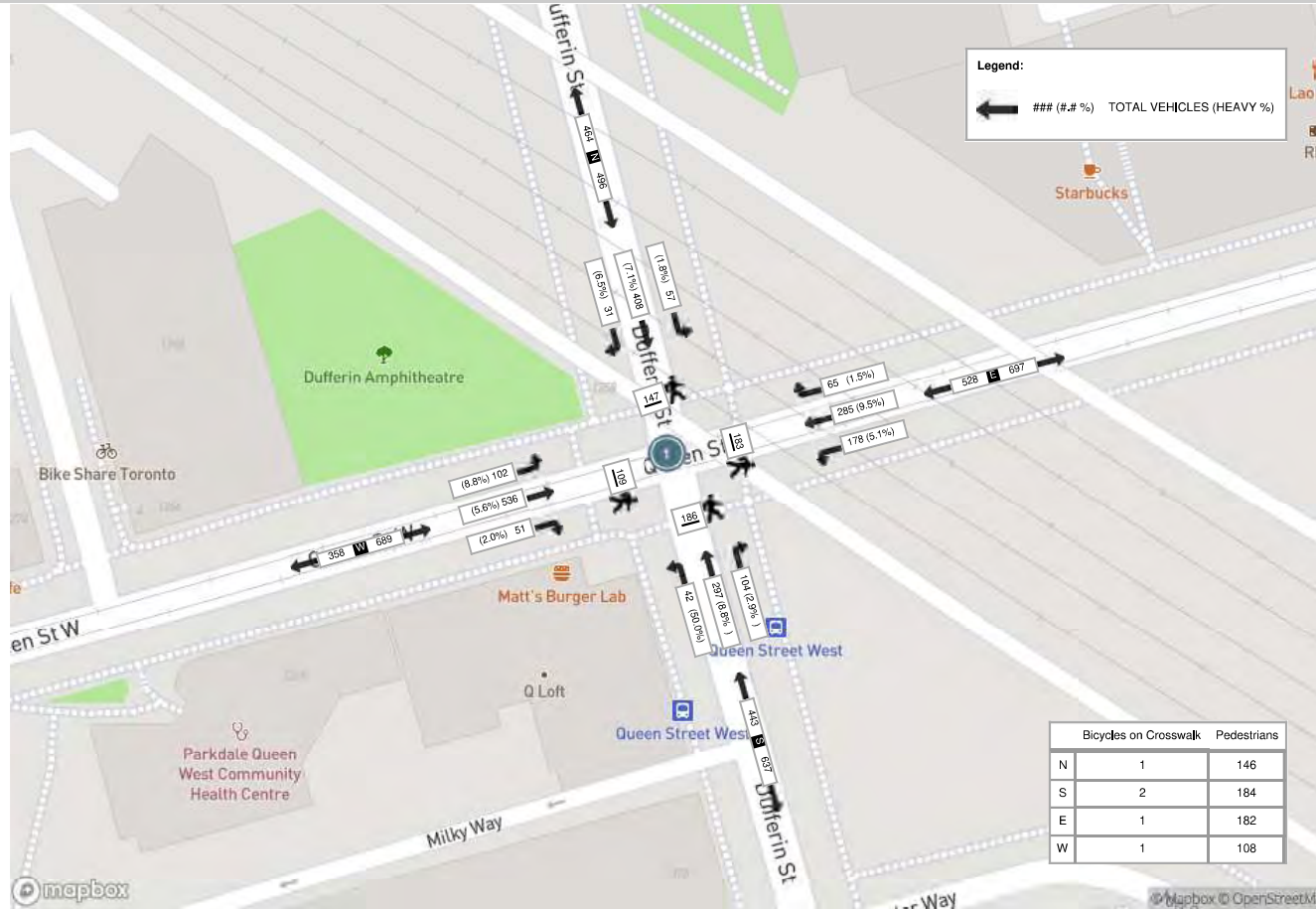
Start Time	N Approach DUFFERIN ST						E Approach QUEEN ST W						S Approach DUFFERIN ST						W Approach QUEEN ST W						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	7	79	20	0	35	106	15	62	46	0	33	123	19	66	10	0	43	95	6	139	22	0	29	167	491
08:15:00	7	93	15	0	34	115	17	67	49	0	35	133	29	76	9	0	47	114	12	140	27	0	13	179	541
08:30:00	7	117	8	0	45	132	20	80	45	0	66	145	31	78	10	0	51	119	14	118	26	0	34	158	554
08:45:00	10	119	14	0	33	143	13	76	38	0	49	127	25	77	13	0	45	115	19	139	27	0	33	185	570
Grand Total	31	408	57	0	147	496	65	285	178	0	183	528	104	297	42	0	186	443	51	536	102	0	109	689	2156
Approach%	6.3%	82.3%	11.5%	0%	-	-	12.3%	54%	33.7%	0%	-	-	23.5%	67%	9.5%	0%	-	-	7.4%	77.8%	14.8%	0%	-	-	-
Totals %	1.4%	18.9%	2.6%	0%	23%	23%	3%	13.2%	8.3%	0%	24.5%	24.5%	4.8%	13.8%	1.9%	0%	20.5%	20.5%	2.4%	24.9%	4.7%	0%	32%	32%	-
PHF	0.78	0.86	0.71	0	0.87	0.87	0.81	0.89	0.91	0	0.91	0.91	0.84	0.95	0.81	0	0.93	0.93	0.67	0.96	0.94	0	0.93	0.93	-
Heavy	2	29	1	0	32	32	1	27	9	0	37	37	3	26	21	0	50	50	1	30	9	0	40	40	-
Heavy %	6.5%	7.1%	1.8%	0%	6.5%	6.5%	1.5%	9.5%	5.1%	0%	7%	7%	2.9%	8.8%	50%	0%	11.3%	11.3%	2%	5.6%	8.8%	0%	5.8%	5.8%	-
Lights	29	379	56	0	464	464	64	258	169	0	491	491	101	271	21	0	393	393	50	506	93	0	649	649	-
Lights %	93.5%	92.9%	98.2%	0%	93.5%	93.5%	98.5%	90.5%	94.9%	0%	93%	93%	97.1%	91.2%	50%	0%	88.7%	88.7%	98%	94.4%	91.2%	0%	94.2%	94.2%	-
Single-Unit Trucks	2	9	1	0	12	12	1	7	6	0	14	14	1	6	2	0	9	9	1	15	8	0	24	24	-
Single-Unit Trucks %	6.5%	2.2%	1.8%	0%	2.4%	2.4%	1.5%	2.5%	3.4%	0%	2.7%	2.7%	1%	2%	4.8%	0%	2%	2%	2.8%	7.8%	0%	0%	3.5%	3.5%	-
Buses	0	20	0	0	20	20	0	20	3	0	23	23	1	18	19	0	38	38	0	14	1	0	15	15	-
Buses %	0%	4.9%	0%	0%	4%	4%	0%	7%	1.7%	0%	4.4%	4.4%	1%	6.1%	45.2%	0%	8.6%	8.6%	0%	2.6%	1%	0%	2.2%	2.2%	-
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	3	0	1	0	0	1	1	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0.7%	0%	0%	0.7%	0.7%	0%	0.2%	0%	0%	0.1%	0.1%	-
Pedestrians	-	-	-	-	146	146	-	-	-	-	182	182	-	-	-	-	184	184	-	-	-	-	108	108	-
Pedestrians%	-	-	-	-	23.4%	23.4%	-	-	-	-	29.1%	29.1%	-	-	-	-	29.4%	29.4%	-	-	-	-	17.3%	17.3%	-
Bicycles on Crosswalk	-	-	-	-	1	1	-	-	-	-	1	1	-	-	-	-	2	2	-	-	-	-	1	1	-
Bicycles on Crosswalk%	-	-	-	-	0.2%	0.2%	-	-	-	-	0.2%	0.2%	-	-	-	-	0.3%	0.3%	-	-	-	-	0.2%	0.2%	-
Bicycles on Road	0	1	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	11	0	0	0	0	-
Bicycles on Road%	-	-	-	-	0%	0%	-	-	-	-	0%	0%	-	-	-	-	0%	0%	-	-	-	-	0%	0%	-



Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (2.58 °C)

Start Time	N Approach DUFFERIN ST						E Approach QUEEN ST W						S Approach DUFFERIN ST						W Approach QUEEN ST W						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:30:00	20	82	12	0	55	114	16	101	44	0	44	161	35	118	14	0	45	167	15	62	14	0	20	91	533
16:45:00	17	77	18	0	100	112	18	118	42	0	48	178	31	110	11	0	64	152	17	70	17	0	26	104	546
17:00:00	9	79	14	0	71	102	22	93	38	0	47	153	27	121	7	0	55	155	13	73	12	0	35	98	508
17:15:00	19	73	17	0	77	109	28	107	33	0	60	168	32	116	10	0	76	158	13	83	11	0	44	107	542
Grand Total	65	311	61	0	303	437	84	419	157	0	199	660	125	465	42	0	240	632	58	288	54	0	125	400	2129
Approach%	14.9%	71.2%	14%	0%	-	-	12.7%	63.5%	23.8%	0%	-	-	19.8%	73.6%	6.6%	0%	-	-	14.5%	72%	13.5%	0%	-	-	-
Totals %	3.1%	14.6%	2.9%	0%	20.5%	3.9%	3.9%	19.7%	7.4%	0%	31%	3.9%	5.9%	21.8%	2%	0%	29.7%	2.7%	2.7%	13.5%	2.5%	0%	18.8%	-	-
PHF	0.81	0.95	0.85	0	0.96	0.75	0.75	0.89	0.89	0	0.93	0.89	0.89	0.96	0.75	0	0.95	0.85	0.85	0.87	0.79	0	0.93	-	-
Heavy	0	22	1	0	23	4	20	2	0	26	0	18	9	0	27	0	21	1	0	22	-	-	-	-	-
Heavy %	0%	7.1%	1.6%	0%	5.3%	4.8%	4.8%	1.3%	0%	3.9%	0%	3.9%	21.4%	0%	4.3%	0%	7.3%	1.9%	0%	5.5%	-	-	-	-	-
Lights	65	289	60	0	414	80	399	155	0	634	125	447	33	0	605	58	267	53	0	378	-	-	-	-	-
Lights %	100%	92.9%	98.4%	0%	94.7%	95.2%	95.2%	98.7%	0%	96.1%	100%	96.1%	78.6%	0%	95.7%	100%	92.7%	98.1%	0%	94.5%	-	-	-	-	-
Single-Unit Trucks	0	7	1	0	8	4	6	1	0	11	0	2	1	0	3	0	6	1	0	7	-	-	-	-	-
Single-Unit Trucks %	0%	2.3%	1.6%	0%	1.8%	4.8%	1.4%	0.6%	0%	1.7%	0%	0.4%	2.4%	0%	0.5%	0%	2.1%	1.9%	0%	1.8%	-	-	-	-	-
Buses	0	14	0	0	14	0	13	0	0	13	0	16	8	0	24	0	14	0	0	14	-	-	-	-	-
Buses %	0%	4.5%	0%	0%	3.2%	0%	3.1%	0%	0%	2%	0%	3.4%	19%	0%	3.8%	0%	4.9%	0%	0%	3.5%	-	-	-	-	-
Articulated Trucks	0	1	0	0	1	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	-	-	-	-	-
Articulated Trucks %	0%	0.3%	0%	0%	0.2%	0%	0.2%	0.6%	0%	0.3%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.3%	-	-	-	-	-
Pedestrians	-	-	-	-	302	-	-	-	-	195	-	-	-	-	235	-	-	-	-	121	-	-	-	-	-
Pedestrians%	-	-	-	-	34.8%	-	-	-	-	22.5%	-	-	-	-	27.1%	-	-	-	-	14%	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	4	-	-	-	-	5	-	-	-	-	4	-	-	-	-	-
Bicycles on Crosswalk%	-	-	-	-	0.1%	-	-	-	-	0.5%	-	-	-	-	0.6%	-	-	-	-	0.5%	-	-	-	-	-
Bicycles on Road	1	3	0	0	0	-	0	20	3	0	0	-	4	4	0	0	0	-	1	15	2	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (-2.01 °C)



Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (2.58 °C)





Turning Movement Count (3 . DUFFERIN ST & WATERLOO AVE)

Start Time	N Approach DUFFERIN ST					E Approach WATERLOO AVE					S Approach DUFFERIN ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	U-Turn S:S	Peds S:	Approach Total		
07:30:00	106	0	0	1	106	6	3	0	2	9	0	102	0	0	102	217	
07:45:00	89	0	0	0	89	4	3	0	6	7	0	102	0	0	102	198	
08:00:00	124	0	1	0	125	3	3	0	5	6	0	129	0	1	129	260	
08:15:00	129	0	0	0	129	16	9	0	8	25	0	108	0	0	108	262	937
08:30:00	118	0	0	1	118	19	6	0	25	25	0	156	0	0	156	299	1019
08:45:00	162	0	0	0	162	16	4	0	9	20	0	132	0	1	132	314	1135
09:00:00	139	0	0	0	139	16	5	0	8	21	0	121	0	0	121	281	1156
09:15:00	121	0	0	0	121	7	4	0	8	11	0	105	0	0	105	237	1131
BREAK																	
16:00:00	92	0	0	0	92	15	5	0	4	20	0	143	0	0	143	255	
16:15:00	107	0	0	0	107	8	3	0	7	11	0	175	0	0	175	293	
16:30:00	125	0	0	0	125	6	2	0	6	8	0	132	0	0	132	265	
16:45:00	116	0	0	0	116	10	3	0	3	13	0	180	0	0	180	309	1122
17:00:00	94	0	0	0	94	14	2	0	10	16	0	159	0	2	159	269	1136
17:15:00	134	0	0	0	134	7	4	0	13	11	0	171	0	0	171	316	1159
17:30:00	109	0	0	1	109	9	5	0	19	14	0	162	0	0	162	285	1179
17:45:00	121	0	0	0	121	6	5	0	19	11	0	145	0	0	145	277	1147
Grand Total	1886	0	1	3	1887	162	66	0	152	228	0	2222	0	4	2222	4337	-
Approach%	99.9%	0%	0.1%	-	-	71.1%	28.9%	0%	-	-	0%	100%	0%	-	-	-	-
Totals %	43.5%	0%	0%	-	43.5%	3.7%	1.5%	0%	-	5.3%	0%	51.2%	0%	-	51.2%	-	-
Heavy	116	0	1	-	-	7	2	0	-	-	0	109	0	-	-	-	-
Heavy %	6.2%	0%	100%	-	-	4.3%	3%	0%	-	-	0%	4.9%	0%	-	-	-	-
Bicycles	18	42	0	-	-	6	2	0	-	-	3	21	0	-	-	-	-
Bicycle %	1%	0%	0%	-	-	3.7%	3%	0%	-	-	0%	0.9%	0%	-	-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Mostly Cloudy (-0.7 °C)

Start Time	N Approach DUFFERIN ST					E Approach WATERLOO AVE					S Approach DUFFERIN ST					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
08:15:00	129	0	0	0	129	16	9	0	8	25	0	108	0	0	108	262
08:30:00	118	0	0	1	118	19	6	0	25	25	0	156	0	0	156	299
08:45:00	162	0	0	0	162	16	4	0	9	20	0	132	0	1	132	314
09:00:00	139	0	0	0	139	16	5	0	8	21	0	121	0	0	121	281
Grand Total	548	0	0	1	548	67	24	0	50	91	0	517	0	1	517	1156
Approach%	100%	0%	0%		-	73.6%	26.4%	0%		-	0%	100%	0%		-	-
Totals %	47.4%	0%	0%		47.4%	5.8%	2.1%	0%		7.9%	0%	44.7%	0%		44.7%	-
PHF	0.85	0	0		0.85	0.88	0.67	0		0.91	0	0.83	0		0.83	-
Heavy	37	0	0		37	2	0	0		2	0	39	0		39	-
Heavy %	6.8%	0%	0%		6.8%	3%	0%	0%		2.2%	0%	7.5%	0%		7.5%	-
Lights	511	0	0		511	65	24	0		89	0	478	0		478	-
Lights %	93.2%	0%	0%		93.2%	97%	100%	0%		97.8%	0%	92.5%	0%		92.5%	-
Single-Unit Trucks	19	0	0		19	0	0	0		0	0	20	0		20	-
Single-Unit Trucks %	3.5%	0%	0%		3.5%	0%	0%	0%		0%	0%	3.9%	0%		3.9%	-
Buses	17	0	0		17	2	0	0		2	0	19	0		19	-
Buses %	3.1%	0%	0%		3.1%	3%	0%	0%		2.2%	0%	3.7%	0%		3.7%	-
Articulated Trucks	1	0	0		1	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0.2%	0%	0%		0.2%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	49	-	-	-	-	1	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	94.2%	-	-	-	-	1.9%	-	-
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	1	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	1.9%	-	-	-	-	1.9%	-	-	-	-	0%	-	-
Bicycles on Road	6	25	0	0	-	0	2	0	0	-	0	4	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-



Peak Hour: 04:45 PM - 05:45 PM Weather: Light Rain (1.2 °C)

Start Time	N Approach DUFFERIN ST					E Approach WATERLOO AVE					S Approach DUFFERIN ST					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
16:45:00	116	0	0	0	116	10	3	0	3	13	0	180	0	0	180	309
17:00:00	94	0	0	0	94	14	2	0	10	16	0	159	0	2	159	269
17:15:00	134	0	0	0	134	7	4	0	13	11	0	171	0	0	171	316
17:30:00	109	0	0	1	109	9	5	0	19	14	0	162	0	0	162	285
Grand Total	453	0	0	1	453	40	14	0	45	54	0	672	0	2	672	1179
Approach%	100%	0%	0%	-	-	74.1%	25.9%	0%	-	-	0%	100%	0%	-	-	-
Totals %	38.4%	0%	0%	38.4%	3.4%	1.2%	0%	4.6%	0%	57%	0%	57%	-	-	-	-
PHF	0.85	0	0	0.85	0.71	0.7	0	0.84	0	0.93	0	0.93	-	-	-	-
Heavy	18	0	0	18	2	0	0	2	0	19	0	19	-	-	-	-
Heavy %	4%	0%	0%	4%	5%	0%	0%	3.7%	0%	2.8%	0%	2.8%	-	-	-	-
Lights	435	0	0	435	38	14	0	52	0	653	0	653	-	-	-	-
Lights %	96%	0%	0%	96%	95%	100%	0%	96.3%	0%	97.2%	0%	97.2%	-	-	-	-
Single-Unit Trucks	5	0	0	5	0	0	0	0	0	3	0	3	-	-	-	-
Single-Unit Trucks %	1.1%	0%	0%	1.1%	0%	0%	0%	0%	0%	0.4%	0%	0.4%	-	-	-	-
Buses	13	0	0	13	2	0	0	2	0	16	0	16	-	-	-	-
Buses %	2.9%	0%	0%	2.9%	5%	0%	0%	3.7%	0%	2.4%	0%	2.4%	-	-	-	-
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-
Pedestrians	-	-	-	1	-	-	-	44	-	-	-	2	-	-	-	-
Pedestrians%	-	-	-	2.1%	-	-	-	91.7%	-	-	-	4.2%	-	-	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	1	-	-	-	0	-	-	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	2.1%	-	-	-	0%	-	-	-	-
Bicycles on Road	3	2	0	0	-	2	0	0	0	-	3	6	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	0%	-	-	-	0%	-	-	-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Mostly Cloudy (-0.7 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Light Rain (1.2 °C)



LOCATION: Queen St W & Dufferin St
MODE/COMMENT: FXT with LPI & TSP*, with 2 Wire Polara APS**
TCS: 1329
PREPARED/CHECKED BY: CIMA+/AD
PREPARATION DATE: June 25, 2018
IMPLEMENTATION DATE: August 8, 2018

DISTRICT: Toronto & East York
COMPUTER SYSTEM: TransSuite
CONTROLLER/CABINET TYPE: Peek ATC-1000 / TS2 T1
CONFLICT FLASH: Red & Red
DESIGN WALK SPEED: 1,0 m/s (FDW based on full crossing at 1,2 m/s)
CHANNEL/DROP: 4003/35
CONTROLLER FIRMWARE: 3,018,1,2976



NEMA Phase	Local Plan Split Table	OFF	AM	PM	NGHT	WKND	Event	Phase Mode (Fixed/Demanded or Callable)	Remarks
		All Other Times	06:30-09:30 M-F	15:00-19:00 M-F	23:00 - 06:30 Daily	10:00-19:00 Sat & Sun	TBD		
		Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 16		
1 	WLK FDW MIN 6 MAX1 7 AMB 3 ALR 1 SPLIT	11	11	11				Fixed POZ activated by Request Loop All times except NGHT plan (max extension of 13 secs in Green)	Pedestrian Minimums: EWWK = 7 sec, EWFD = 18 sec NSWK = 7 sec, NSFD = 13 sec NS Leading Pedestrian Interval 5 secs - NSWK comes up 5 secs before NS vehicle green. *See back for TSP instructions TSP activated for WBLT, EB/WB through phases on June 15, 2017. NB/SB TSP enabled on January 10, 2018.
2 Queen St W 	WLK 7 FDW 18 MIN 25 MAX1 26 AMB 3 ALR 4 SPLIT	33	37	33	33	34	38	Fixed POZ activated by Request Loop (max extension of 16 secs in Green/SDW)	Activated APS on for FULL Walk during EW & NS walk periods when no arrow is displayed. Extended Push Activation= 3 seconds **APS pending third party activation
3 	WLK FDW MIN MAX1 AMB ALR SPLIT								
4 Dufferin St 	ADV WLK 5 WLK 7 FDW 12 MIN 19 MAX1 20 AMB 4 ALR 2 SPLIT	32	32	36	31	35	31	Fixed POZ activated by Request Loop Split shown includes 5 secs of NS LPI (max extension of 16 secs in Green/SDW)	
5 	WLK FDW MIN MAX1 AMB ALR SPLIT								
6 Queen St W 	WLK 7 FDW 18 MIN 25 MAX1 37 AMB 3 ALR 4 SPLIT	44	48	44	33	45	49	Fixed POZ activated by Request Loop (max extension of 16 secs in Green/SDW)	
7 	WLK FDW MIN MAX1 AMB ALR SPLIT								
8 Dufferin St 	ADV WLK 5 WLK 7 FDW 12 MIN 19 MAX1 20 AMB 4 ALR 2 SPLIT	32	32	36	31	35	31	Fixed POZ activated by Request Loop (max extension of 16 secs in Green/SDW)	
	CL	76	80	80	64	80	80		
	OF	69	69	51	10	56	28		

Notes:

LOCATION:	Dufferin St & Gordon St	ATO/WARD:	Area 1/9
MODE/COMMENT:	SAP with PR, 2-wire Polara APS and TSP	COMPUTER SYSTEM:	TransSuite
TCS	2317	CONTROLLER/CABINET TYPE:	Peek ATC-1000 / TS2T1
PREPARED/DATE:	Behnam Amini / February 27, 2020	CONFLICT FLASH:	Red & Red
CHECKED BY/ DATE:	Masoud Ramezani / April 3, 2020	DESIGN WALK SPEED:	1.0 m/s (FDW based on full crossing at 1.2 m/s)
IMPLEMENTATION DATE:	July 17, 2020	CHANNEL/DROP:	4007/3
		CONTROLLER/FIRMWARE:	3.018.1.2976



NEMA Phase	Local Plan Split Table	OFF	AM	PM	NGHT	WKND	Phase Mode (Fixed/Demanded or Callable)	Remarks
		All Other Times	06:30-09:30 M-F	15:00-19:00 M-F	23:00-06:30 Daily	10:00-19:00 Sat/Sun		
		Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5		
1	 WLK FDW MIN MAX1 AMB ALR SPLIT							Pedestrian Minimums: NSWK = 7 sec, NSFD = 10 sec EWWK = 7 sec, EWFD = 12 sec EB phase is callable by vehicle and/or pedestrian actuation. If a vehicle and / or pedestrian call is received, the maximum EBG is served. The EWWK & EWFD are displayed on the pedestrian signal heads if a vehicle and / or pedestrian call is received.
2	 WLK 7 FDW 10 MIN 17 MAX1 46 AMB 3.0 ALR 2.4 SPLIT						Fixed POZ activated by Request Loop (Max extension of 30 secs in Green/WLK)	APS on during 7 sec of NSWK & 7 sec of EWWK when activated by pushbutton, Side Street Passage Time = 3 sec Extended Push Activation = 3 sec See back for TSP Instructions. TSP enabled on Feb 23, 2016
3	 WLK FDW MIN MAX1 AMB ALR SPLIT							TSP Filter Script #4 is removed because the firmware 3.18.2976 issue with unused in Phase 4/8 does not apply since the update to SAP with no slop on the side street. Offset Correction time added to Phase 4/8 is always served in WLK
4	 WLK 7 FDW 12 MIN 19 MAX1 19 AMB 3.0 ALR 1.9 SPLIT						Callable by Traficam and/or pushbutton	
5	 WLK FDW MIN MAX1 AMB ALR SPLIT							
6	 WLK 7 FDW 10 MIN 17 MAX1 46 AMB 3.0 ALR 2.4 SPLIT						Fixed POZ activated by Request Loop (Max extension of 30 secs in Green/WLK)	
7	 WLK FDW MIN MAX1 AMB ALR SPLIT							
8	 WLK 7 FDW 12 MIN 19 MAX1 19 AMB 3.0 ALR 1.9 SPLIT						Served concurrently with Phase 4.	
	CL	76	80	80	64	80		
	OF	58	77	43	20	60		

APPENDIX D: Corridor Growth Calculations



Project: Radiator
Project ID: 6722-18
Intersection: Queen Street West / Dufferin Street
Peak Hour: AM Peak

Date	North of Intersection			2-Way
	Year	Northbound	Southbound	
	2022	464	496	960
	2019	380	579	959
	2017	407	537	944
	2014	346	312	658
	2013	484	583	1067
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0

Trend Point at start		426.0	535.7	961.7
Trend Point at end		408.3	474.0	882.3
Slope		2.0	6.9	8.8
Annual Growth		0.5%	1.4%	1.0%

Date	South of Intersection			2-Way
	Year	Northbound	Southbound	
	2022	443	637	1080
	2019	458	754	1212
	2017	457	701	1158
	2014	422	435	857
	2013	602	505	1107
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0

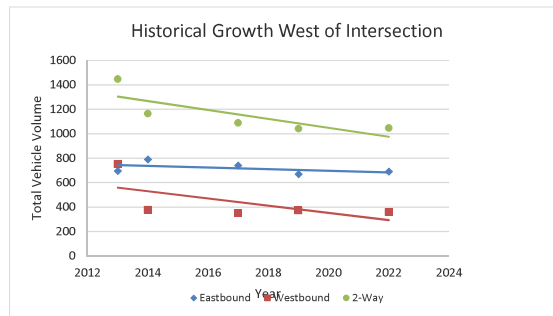
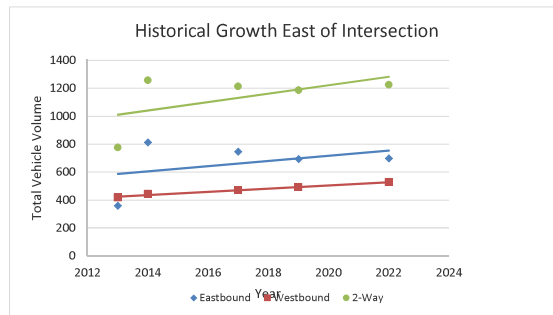
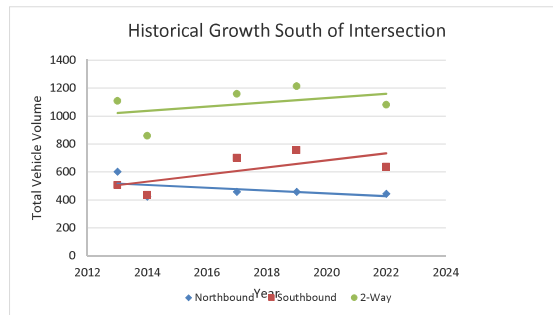
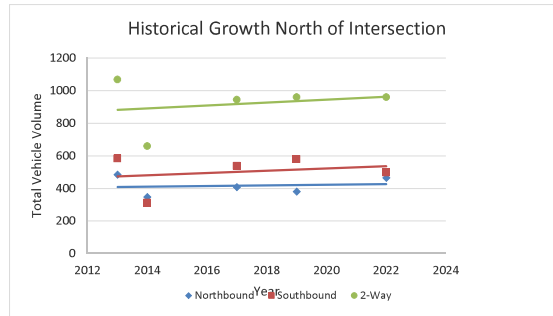
Trend Point at start		444.7	657.7	1102.4
Trend Point at end		459.6	732.0	1191.6
Slope		-3.0	-14.9	-17.8
Annual Growth		-0.7%	-2.1%	-1.5%

Date	East of Intersection			2-Way
	Year	Eastbound	Westbound	
	2022	697	528	1225
	2019	694	492	1186
	2017	745	469	1214
	2014	812	444	1256
	2013	359	416	775
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0

Trend Point at start		688.6	527.8	1216.5
Trend Point at end		732.4	468.8	1201.2
Slope		-8.8	11.8	3.1
Annual Growth		-1.2%	2.4%	0.3%

Date	West of Intersection			2-Way
	Year	Eastbound	Westbound	
	2022	689	358	1047
	2019	670	371	1041
	2017	739	349	1088
	2014	790	375	1165
	2013	696	751	1447
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0

Trend Point at start		676.1	362.8	1038.9
Trend Point at end		719.7	356.3	1075.9
Slope		-8.7	1.3	-7.4
Annual Growth		-1.2%	0.4%	-0.7%



Project: Radiator
Project ID: 6722-18
Intersection: Queen Street West / Dufferin Street
Peak Hour: PM Peak

Date	North of Intersection			2-Way
	Year	Northbound	Southbound	
	2022	603	437	1040
	2019	597	491	1088
	2017	522	401	923
	2014	346	312	658
	2013	531	396	927
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0

Trend Point at start		616.7	467.3	1084.1
Trend Point at end		442.2	359.5	801.7
Slope		19.4	12.0	31.4
Annual Growth		3.8%	3.0%	3.4%

Date	South of Intersection			2-Way
	Year	Northbound	Southbound	
	2022	632	526	1158
	2019	646	605	1251
	2017	565	523	1088
	2014	422	435	857
	2013	733	708	1441
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0

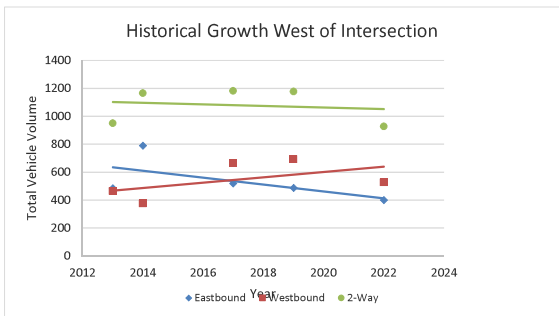
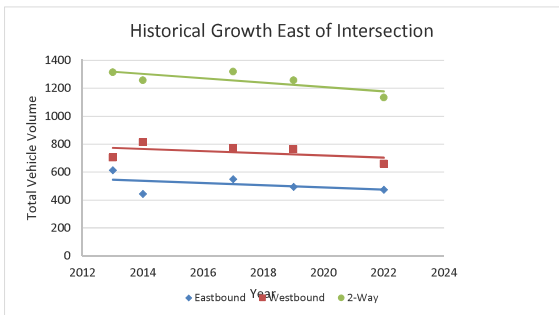
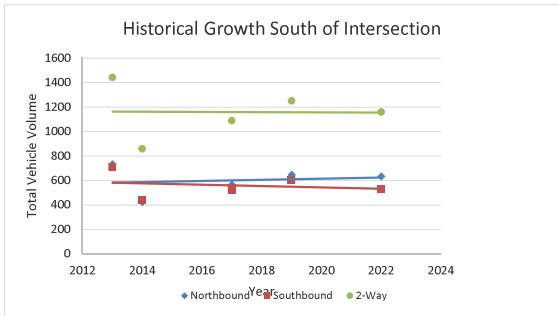
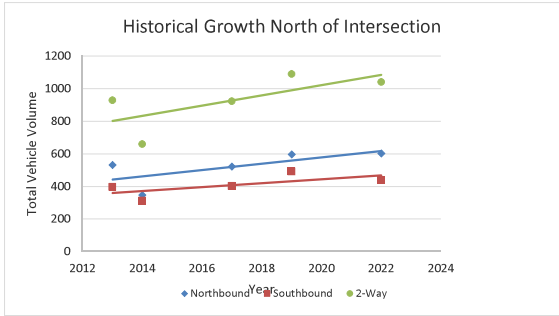
Trend Point at start		646.3	547.3	1193.5
Trend Point at end		586.4	554.9	1141.3
Slope		12.0	-1.5	10.4
Annual Growth		2.0%	-0.3%	0.9%

Date	East of Intersection			2-Way
	Year	Eastbound	Westbound	
	2022	474	660	1134
	2019	493	763	1256
	2017	548	771	1319
	2014	444	812	1256
	2013	612	703	1315
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0

Trend Point at start		467.3	669.6	1136.9
Trend Point at end		538.0	785.4	1323.3
Slope		-14.1	-23.2	-37.3
Annual Growth		-2.8%	-3.1%	-3.0%

Date	West of Intersection			2-Way
	Year	Eastbound	Westbound	
	2022	400	526	926
	2019	486	691	1177
	2017	519	663	1182
	2014	790	375	1165
	2013	484	465	949
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0

Trend Point at start		403.8	547.8	951.6
Trend Point at end		524.8	695.7	1220.4
Slope		-24.2	-29.6	-53.8
Annual Growth		-5.1%	-4.7%	-4.9%



APPENDIX E: Transportation Tomorrow Survey (TTS) Results



APPENDIX F: Synchro 11 Capacity Analysis Results



Timings

1: Dufferin Street & Gordon Street

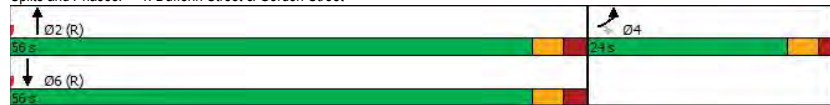
10/11/2022

Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	35	50	580	490
Future Volume (vph)	35	50	580	490
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	19.0	19.0	17.0	17.0
Minimum Split (s)	23.9	23.9	22.4	22.4
Total Split (s)	24.0	24.0	56.0	56.0
Total Split (%)	30.0%	30.0%	70.0%	70.0%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	1.9	1.9	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.4	5.4
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Min	C-Min
Act Effct Green (s)	19.0	19.0	56.6	56.6
Actuated g/C Ratio	0.24	0.24	0.71	0.71
v/c Ratio	0.10	0.16	0.27	0.23
Control Delay	24.7	8.5	6.2	6.0
Queue Delay	0.0	0.0	0.3	0.0
Total Delay	24.7	8.5	6.5	6.0
LOS	C	A	A	A
Approach Delay	15.1		6.5	6.0
Approach LOS	B		A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 77 (96%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.27
 Intersection Signal Delay: 6.9 Intersection LOS: A
 Intersection Capacity Utilization 40.4% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 1: Dufferin Street & Gordon Street



Queues

1: Dufferin Street & Gordon Street

10/11/2022

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	39	56	644	544
v/c Ratio	0.10	0.16	0.27	0.23
Control Delay	24.7	8.5	6.2	6.0
Queue Delay	0.0	0.0	0.3	0.0
Total Delay	24.7	8.5	6.5	6.0
Queue Length 50th (m)	4.7	0.0	20.6	16.8
Queue Length 95th (m)	12.0	8.5	28.6	23.8
Internal Link Dist (m)	143.2		75.5	78.8
Turn Bay Length (m)				
Base Capacity (vph)	402	359	2381	2358
Starvation Cap Reductn	0	0	1044	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.16	0.48	0.23

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: Dufferin Street & Gordon Street

10/11/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	50	0	580	490	0
Future Volume (vph)	35	50	0	580	490	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	4.9	4.9		5.4	5.4	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frbp, ped/bikes	1.00	0.91		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1685	1328		3368	3336	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1685	1328		3368	3336	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	56	0	644	544	0
RTOR Reduction (vph)	0	45	0	0	0	0
Lane Group Flow (vph)	39	11	0	644	544	0
Confl. Peds. (#/hr)	105	65	30			30
Confl. Bikes (#/hr)						5
Heavy Vehicles (%)	0%	3%	0%	6%	7%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	15.2	15.2		54.5	54.5	
Effective Green, g (s)	15.2	15.2		54.5	54.5	
Actuated g/C Ratio	0.19	0.19		0.68	0.68	
Clearance Time (s)	4.9	4.9		5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	252		2294	2272	
v/s Ratio Prot	c0.02			c0.19	0.16	
v/s Ratio Perm		0.01				
v/c Ratio	0.12	0.04		0.28	0.24	
Uniform Delay, d1	26.9	26.5		5.0	4.9	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		0.3	0.2	
Delay (s)	27.0	26.5		5.3	5.1	
Level of Service	C	C		A	A	
Approach Delay (s)	26.7			5.3	5.1	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

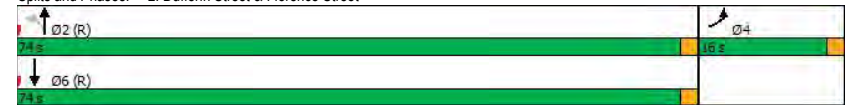
Timings
2: Dufferin Street & Florence Street

10/11/2022

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	10	35	570	530
Future Volume (vph)	10	35	570	530
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	10.0	1.0	1.0	1.0
Minimum Split (s)	16.0	12.0	12.0	12.0
Total Split (s)	16.0	74.0	74.0	74.0
Total Split (%)	17.8%	82.2%	82.2%	82.2%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0		2.0	2.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	14.0		72.0	72.0
Actuated g/C Ratio	0.16		0.80	0.80
v/c Ratio	0.12		0.27	0.22
Control Delay	21.3		2.6	2.4
Queue Delay	0.0		0.0	0.5
Total Delay	21.3		2.6	2.9
LOS	C		A	A
Approach Delay	21.3		2.6	2.9
Approach LOS	C		A	A

Intersection Summary	
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.27
Intersection Signal Delay:	3.1
Intersection Capacity Utilization	53.5%
Intersection LOS:	A
ICU Level of Service	A
Analysis Period (min)	15




Splits and Phases: 2: Dufferin Street & Florence Street



Queues

2: Dufferin Street & Florence Street

10/11/2022










			
Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	27	658	587
v/c Ratio	0.12	0.27	0.22
Control Delay	21.3	2.6	2.4
Queue Delay	0.0	0.0	0.5
Total Delay	21.3	2.6	2.9
Queue Length 50th (m)	1.7	11.2	9.3
Queue Length 95th (m)	8.8	15.4	12.9
Internal Link Dist (m)	144.8	37.6	75.5
Turn Bay Length (m)			
Base Capacity (vph)	230	2403	2669
Starvation Cap Reductn	0	0	1567
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.12	0.27	0.53

Intersection Summary

HCM Signalized Intersection Capacity Analysis

2: Dufferin Street & Florence Street

10/11/2022

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	15	35	570	530	10
Future Volume (vph)	10	15	35	570	530	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	2.0			2.0	2.0	
Lane Util. Factor	1.00			0.95	0.95	
Frb. ped/bikes	0.90			1.00	1.00	
Flpb. ped/bikes	1.00			0.99	1.00	
Frt	0.92			1.00	1.00	
Flt Protected	0.98			1.00	1.00	
Satd. Flow (prot)	1393			3328	3336	
Flt Permitted	0.98			0.90	1.00	
Satd. Flow (perm)	1393			3004	3336	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	16	38	620	576	11
RTOR Reduction (vph)	14	0	0	0	1	0
Lane Group Flow (vph)	13	0	0	658	586	0
Confl. Peds. (#/hr)		80	55			55
Confl. Bikes (#/hr)						10
Heavy Vehicles (%)	9%	0%	12%	6%	6%	16%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	14.0			72.0	72.0	
Effective Green, g (s)	14.0			72.0	72.0	
Actuated g/C Ratio	0.16			0.80	0.80	
Clearance Time (s)	2.0			2.0	2.0	
Lane Grp Cap (vph)	216			2403	2668	
v/s Ratio Prot	c0.01				0.18	
v/s Ratio Perm				c0.22		
v/c Ratio	0.06			0.27	0.22	
Uniform Delay, d1	32.4			2.3	2.2	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.6			0.3	0.2	
Delay (s)	33.0			2.6	2.4	
Level of Service	C			A	A	
Approach Delay (s)	33.0			2.6	2.4	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay		3.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio		0.24		
Actuated Cycle Length (s)		90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization		53.5%	ICU Level of Service	A
Analysis Period (min)		15		
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
3: Dufferin Street & Waterloo Avenue

10/11/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑↑			↑↑
Traffic Volume (veh/h)	25	65	540	0	0	545
Future Volume (Veh/h)	25	65	540	0	0	545
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	71	587	0	0	592
Pedestrians	50					
Lane Width (m)	3.0					
Walking Speed (m/s)	1.1					
Percent Blockage	4					
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			372		62	
pX, platoon unblocked	0.97					
vC, conflicting volume	933	344			637	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	858	344			637	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	89			100	
cM capacity (veh/h)	278	627			918	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	98	294	294	296	296	
Volume Left	27	0	0	0	0	
Volume Right	71	0	0	0	0	
eSH	466	1700	1700	1700	1700	
Volume to Capacity	0.21	0.17	0.17	0.17	0.17	
Queue Length 95th (m)	6.0	0.0	0.0	0.0	0.0	
Control Delay (s)	14.8	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	14.8	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			27.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
4: Dufferin Street & Alma Avenue (N)

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑↑			↑↑	
Traffic Volume (veh/h)	0	0	5	0	0	0	5	540	0	0	565	5
Future Volume (Veh/h)	0	0	5	0	0	0	5	540	0	0	565	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	6	0	0	0	6	600	0	0	628	6
Pedestrians		60			150							
Lane Width (m)		3.5			3.5							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		6			14							
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)								332			101	
pX, platoon unblocked	0.97	0.97	0.97	0.97	0.97		0.97					
vC, conflicting volume	1003	1453	377	1082	1456	450	694			750		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	948	1411	305	1030	1414	450	631			750		
tC, single (s)	9.5	6.5	6.9	7.5	6.5	6.9	4.6			4.1		
tC, 2 stage (s)												
tF (s)	4.5	4.0	3.3	3.5	4.0	3.3	2.5			2.2		
p0 queue free %	100	100	99	100	100	100	99			100		
cM capacity (veh/h)	88	110	640	135	109	484	742			748		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	6	0	306	300	314	320						
Volume Left	0	0	6	0	0	0						
Volume Right	6	0	0	0	0	6						
eSH	640	1700	742	1700	748	1700						
Volume to Capacity	0.01	0.00	0.01	0.18	0.00	0.19						
Queue Length 95th (m)	0.2	0.0	0.2	0.0	0.0	0.0						
Control Delay (s)	10.7	0.0	0.3	0.0	0.0	0.0						
Lane LOS	B	A	A									
Approach Delay (s)	10.7	0.0	0.1		0.0							
Approach LOS	B	A										
Intersection Summary												
Average Delay				0.1								
Intersection Capacity Utilization				28.4%		ICU Level of Service				A		
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis
5: Dufferin Street & Brixton Way/Alma Avenue (S)

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔		↔		↔		↕		↕		↕	
Traffic Volume (veh/h)	5	0	15	5	0	20	0	520	0	0	570	0	
Future Volume (Veh/h)	5	0	15	5	0	20	0	520	0	0	570	0	
Sign Control	Stop			Stop			Free			Free			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Hourly flow rate (vph)	5	0	16	5	0	22	0	571	0	0	626	0	
Pedestrians	65			145			10			0			
Lane Width (m)	3.5			3.0			3.5			3.5			
Walking Speed (m/s)	1.1			1.1			1.1			1.1			
Percent Blockage	6			12			1			0			
Right turn flare (veh)													
Median type	None						None						
Median storage (veh)													
Upstream signal (m)	277						156						
pX, platoon unblocked	0.99	0.99	0.99	0.99	0.99		0.99						
vC, conflicting volume	998	1407	388	1055	1407	430	691			716			
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	983	1394	367	1040	1394	430	673			716			
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.1	4.1			4.1			
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2			
p0 queue free %	97	100	97	96	100	95	100			100			
cM capacity (veh/h)	160	118	587	138	118	488	865			791			
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2						
Volume Total	21	5	22	286	286	313	313						
Volume Left	5	5	0	0	0	0	0						
Volume Right	16	0	22	0	0	0	0						
eSH	359	138	488	1700	1700	1700	1700						
Volume to Capacity	0.06	0.04	0.05	0.17	0.17	0.18	0.18						
Queue Length 95th (m)	1.4	0.9	1.1	0.0	0.0	0.0	0.0						
Control Delay (s)	15.7	32.1	12.7	0.0	0.0	0.0	0.0						
Lane LOS	C	D	B										
Approach Delay (s)	15.7	16.3	0.0			0.0							
Approach LOS	C	C											
Intersection Summary													
Average Delay	0.6												
Intersection Capacity Utilization	33.3%			ICU Level of Service			A						
Analysis Period (min)	15												

HCM Unsignalized Intersection Capacity Analysis
6: Dufferin Street & Peel Avenue

10/11/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↕	↕
Traffic Volume (veh/h)	30	90	430	30	100	490
Future Volume (Veh/h)	30	90	430	30	100	490
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	100	478	33	111	544
Pedestrians	165		10		5	
Lane Width (m)	3.0		3.5		3.5	
Walking Speed (m/s)	1.1		1.1		1.1	
Percent Blockage	13		1		0	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	181			253		
pX, platoon unblocked						
vC, conflicting volume	1164	426			676	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1164	426			676	
tC, single (s)	6.8	6.9			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	77	80			86	
cM capacity (veh/h)	141	502			786	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	133	319	192	292	363	
Volume Left	33	0	0	111	0	
Volume Right	100	0	33	0	0	
eSH	307	1700	1700	786	1700	
Volume to Capacity	0.43	0.19	0.11	0.14	0.21	
Queue Length 95th (m)	15.9	0.0	0.0	3.7	0.0	
Control Delay (s)	25.4	0.0	0.0	4.9	0.0	
Lane LOS	D			A		
Approach Delay (s)	25.4	0.0	2.2			
Approach LOS	D					
Intersection Summary						
Average Delay	3.7					
Intersection Capacity Utilization	48.3%		ICU Level of Service		A	
Analysis Period (min)	15					

Timings

7: Dufferin Street & Queen Street West

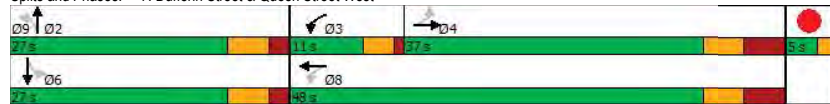
10/11/2022

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations		↔		↔		↔		↔	
Traffic Volume (vph)	100	535	180	285	40	295	55	435	
Future Volume (vph)	100	535	180	285	40	295	55	435	
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA	
Protected Phases		4	3	8		2		6	9
Permitted Phases	4		8		2		6		
Detector Phase	4	4	3	8	2	2	6	6	
Switch Phase									
Minimum Initial (s)	25.0	25.0	6.0	25.0	19.0	19.0	19.0	19.0	1.0
Minimum Split (s)	33.0	33.0	10.0	33.0	25.0	25.0	25.0	25.0	3.0
Total Split (s)	37.0	37.0	11.0	48.0	27.0	27.0	27.0	27.0	5.0
Total Split (%)	46.3%	46.3%	13.8%	60.0%	33.8%	33.8%	33.8%	33.8%	6%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	4.0	4.0	1.0	4.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0	
Total Lost Time (s)		8.0		8.0		6.0		6.0	
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Max	Max	Max	Max	None
Act Effct Green (s)		27.8		27.8		21.1		21.1	
Actuated g/C Ratio		0.44		0.44		0.34		0.34	
v/c Ratio		0.65		0.65		0.55		0.59	
Control Delay		16.5		17.9		20.9		21.3	
Queue Delay		0.0		0.0		0.0		0.0	
Total Delay		16.5		17.9		20.9		21.3	
LOS		B		B		C		C	
Approach Delay		16.5		17.9		20.9		21.3	
Approach LOS		B		B		C		C	

Intersection Summary

Cycle Length: 80	
Actuated Cycle Length: 62.9	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 96.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: Dufferin Street & Queen Street West



Queues

7: Dufferin Street & Queen Street West

10/11/2022

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	721	557	464	548
v/c Ratio	0.65	0.65	0.55	0.59
Control Delay	16.5	17.9	20.9	21.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.5	17.9	20.9	21.3
Queue Length 50th (m)	32.0	25.2	20.8	25.0
Queue Length 95th (m)	47.1	39.6	42.2	49.2
Internal Link Dist (m)	219.1	102.5	166.7	156.8
Turn Bay Length (m)				
Base Capacity (vph)	1213	1233	842	926
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.59	0.45	0.55	0.59

Intersection Summary

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HCM Signalized Intersection Capacity Analysis
7: Dufferin Street & Queen Street West

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔		↔		
Traffic Volume (vph)	100	535	50	180	285	65	40	295	105	55	435	30
Future Volume (vph)	100	535	50	180	285	65	40	295	105	55	435	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	8.0			8.0			6.0			6.0		
Lane Util. Factor	0.95			0.95			0.95			0.95		
Frbp, ped/bikes	0.99			0.99			0.95			0.99		
Flpb, ped/bikes	0.99			0.98			1.00			0.99		
Fr	0.99			0.98			0.96			0.99		
Flt Protected	0.99			0.98			1.00			0.99		
Satd. Flow (prot)	3272			3129			2947			3255		
Flt Permitted	0.76			0.61			0.86			0.85		
Satd. Flow (perm)	2520			1940			2545			2775		
Peak-hour factor, PHF	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)	105	563	53	189	300	68	42	311	111	58	458	32
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	715	0	0	557	0	0	464	0	0	548	0
Confl. Peds. (#/hr)	145	185	185		145	110		185	185		110	
Confl. Bikes (#/hr)		10			5			5				
Heavy Vehicles (%)	8%	5%	1%	5%	9%	1%	50%	8%	2%	1%	7%	6%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2				6
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		27.8			27.8			21.1			21.1	
Effective Green, g (s)		27.8			27.8			21.1			21.1	
Actuated g/C Ratio		0.44			0.44			0.34			0.34	
Clearance Time (s)		8.0			8.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1113			857			853			930	
v/s Ratio Prot												
v/s Ratio Perm		0.28			c0.29			0.18			c0.20	
v/c Ratio		0.64			0.65			0.54			0.59	
Uniform Delay, d1		13.7			13.7			17.0			17.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			1.7			2.5			2.7	
Delay (s)		15.0			15.5			19.5			20.0	
Level of Service		B			B			B			C	
Approach Delay (s)		15.0			15.5			19.5			20.0	
Approach LOS		B			B			B			C	
Intersection Summary												
HCM 2000 Control Delay		17.2			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.71										
Actuated Cycle Length (s)		62.9			Sum of lost time (s)			20.0				
Intersection Capacity Utilization		96.7%			ICU Level of Service			F				
Analysis Period (min)		15										
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
8: Alma Avenue (N) & Site Driveway

10/11/2022

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	0	5	10	0	0	0
Future Volume (Veh/h)	0	5	10	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Hourly flow rate (vph)	0	9	17	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	17				26	17
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	17				26	17
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1613				995	1068
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	9	17	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1613	1700	1700			
Volume to Capacity	0.00	0.01	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

Timings

1: Dufferin Street & Gordon Street

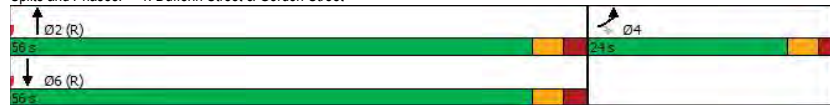
10/11/2022

Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖	↗	↕	↕
Traffic Volume (vph)	35	20	715	440
Future Volume (vph)	35	20	715	440
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	19.0	19.0	17.0	17.0
Minimum Split (s)	23.9	23.9	23.4	23.4
Total Split (s)	24.0	24.0	56.0	56.0
Total Split (%)	30.0%	30.0%	70.0%	70.0%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	1.9	1.9	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.4	5.4
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Min	C-Min
Act Effct Green (s)	19.0	19.0	62.4	62.4
Actuated g/C Ratio	0.24	0.24	0.78	0.78
v/c Ratio	0.10	0.06	0.28	0.18
Control Delay	24.7	10.9	5.2	4.7
Queue Delay	0.0	0.0	0.2	0.0
Total Delay	24.7	10.9	5.4	4.7
LOS	C	B	A	A
Approach Delay	19.6		5.4	4.7
Approach LOS	B		A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.28
 Intersection Signal Delay: 5.8
 Intersection Capacity Utilization 44.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 1: Dufferin Street & Gordon Street



Queues

1: Dufferin Street & Gordon Street

10/11/2022

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	38	22	777	478
v/c Ratio	0.10	0.06	0.28	0.18
Control Delay	24.7	10.9	5.2	4.7
Queue Delay	0.0	0.0	0.2	0.0
Total Delay	24.7	10.9	5.4	4.7
Queue Length 50th (m)	4.5	0.0	25.8	14.3
Queue Length 95th (m)	11.7	5.4	35.1	20.6
Internal Link Dist (m)	143.2		75.5	78.8
Turn Bay Length (m)				
Base Capacity (vph)	394	365	2731	2678
Starvation Cap Reductn	0	0	1063	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.06	0.47	0.18

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: Dufferin Street & Gordon Street

10/11/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	20	0	715	440	0
Future Volume (vph)	35	20	0	715	440	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	4.9	4.9		5.4	5.4	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frbp, ped/bikes	1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1652	1461		3500	3433	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1652	1461		3500	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	22	0	777	478	0
RTOR Reduction (vph)	0	19	0	0	0	0
Lane Group Flow (vph)	38	3	0	777	478	0
Confl. Peds. (#/hr)	25	15	30			30
Heavy Vehicles (%)	2%	0%	0%	2%	4%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	11.4	11.4		58.3	58.3	
Effective Green, g (s)	11.4	11.4		58.3	58.3	
Actuated g/C Ratio	0.14	0.14		0.73	0.73	
Clearance Time (s)	4.9	4.9		5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	235	208		2550	2501	
v/s Ratio Prot	c0.02			c0.22	0.14	
v/s Ratio Perm		0.00				
v/c Ratio	0.16	0.02		0.30	0.19	
Uniform Delay, d1	30.1	29.5		3.8	3.4	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.0		0.3	0.2	
Delay (s)	30.4	29.5		4.1	3.6	
Level of Service	C	C		A	A	
Approach Delay (s)	30.1			4.1	3.6	
Approach LOS	C			A	A	

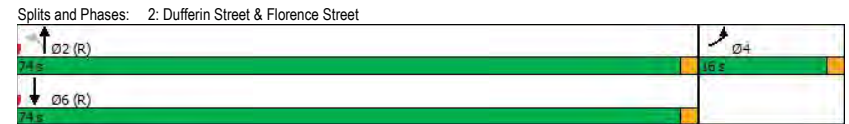
Intersection Summary			
HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Timings
2: Dufferin Street & Florence Street

10/11/2022

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	5	75	710	450
Future Volume (vph)	5	75	710	450
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	10.0	1.0	1.0	1.0
Minimum Split (s)	16.0	12.0	12.0	12.0
Total Split (s)	16.0	74.0	74.0	74.0
Total Split (%)	17.8%	82.2%	82.2%	82.2%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0		2.0	2.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	14.0		72.0	72.0
Actuated g/C Ratio	0.16		0.80	0.80
v/c Ratio	0.13		0.36	0.19
Control Delay	16.2		3.0	2.2
Queue Delay	0.0		0.0	0.4
Total Delay	16.2		3.0	2.7
LOS	B		A	A
Approach Delay	16.2		3.0	2.7
Approach LOS	B		A	A




Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 40	
Control Type: Pretimed	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 3.2	Intersection LOS: A
Intersection Capacity Utilization 56.3%	ICU Level of Service B
Analysis Period (min) 15	



Queues

2: Dufferin Street & Florence Street

10/11/2022










			
Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	32	862	506
v/c Ratio	0.13	0.36	0.19
Control Delay	16.2	3.0	2.2
Queue Delay	0.0	0.0	0.4
Total Delay	16.2	3.0	2.7
Queue Length 50th (m)	0.8	16.3	7.7
Queue Length 95th (m)	8.4	21.7	10.9
Internal Link Dist (m)	144.8	37.6	75.5
Turn Bay Length (m)			
Base Capacity (vph)	255	2364	2723
Starvation Cap Reductn	0	0	1670
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.13	0.36	0.48

Intersection Summary

HCM Signalized Intersection Capacity Analysis

2: Dufferin Street & Florence Street

10/11/2022

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	25	75	710	450	10
Future Volume (vph)	5	25	75	710	450	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	2.0			2.0		
Lane Util. Factor	1.00			0.95		
Frbp, ped/bikes	0.96			1.00		
Flpb, ped/bikes	1.00			0.99		
Frt	0.89			1.00		
Flt Protected	0.99			1.00		
Satd. Flow (prot)	1494			3455		
Flt Permitted	0.99			0.85		
Satd. Flow (perm)	1494			2956		
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	5	27	82	780	495	11
RTOR Reduction (vph)	23	0	0	0	2	0
Lane Group Flow (vph)	9	0	0	862	504	0
Confl. Peds. (#/hr)	20			40		
Confl. Bikes (#/hr)				5		
Heavy Vehicles (%)	0%	0%	2%	2%	4%	12%
Turn Type	Prot		Perm		NA	
Protected Phases	4		2		6	
Permitted Phases			2			
Actuated Green, G (s)	14.0		72.0		72.0	
Effective Green, g (s)	14.0		72.0		72.0	
Actuated g/C Ratio	0.16		0.80		0.80	
Clearance Time (s)	2.0		2.0		2.0	
Lane Grp Cap (vph)	232		2364		2720	
v/s Ratio Prot	c0.01				0.15	
v/s Ratio Perm			c0.29			
v/c Ratio	0.04		0.36		0.19	
Uniform Delay, d1	32.3		2.5		2.1	
Progression Factor	1.00		1.00		1.00	
Incremental Delay, d2	0.3		0.4		0.2	
Delay (s)	32.6		3.0		2.3	
Level of Service	C		A		A	
Approach Delay (s)	32.6		3.0		2.3	
Approach LOS	C		A		A	

Intersection Summary

HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
3: Dufferin Street & Waterloo Avenue

10/11/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑↑			↑↑
Traffic Volume (veh/h)	15	40	745	0	0	475
Future Volume (Veh/h)	15	40	745	0	0	475
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	16	43	801	0	0	511
Pedestrians	45					
Lane Width (m)	3.0					
Walking Speed (m/s)	1.1					
Percent Blockage	4					
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			372		62	
pX, platoon unblocked	0.97					
vC, conflicting volume	1102	446			846	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1053	446			846	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	92			100	
cM capacity (veh/h)	212	532			771	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	59	400	400	256	256	
Volume Left	16	0	0	0	0	
Volume Right	43	0	0	0	0	
eSH	377	1700	1700	1700	1700	
Volume to Capacity	0.16	0.24	0.24	0.15	0.15	
Queue Length 95th (m)	4.2	0.0	0.0	0.0	0.0	
Control Delay (s)	16.3	0.0	0.0	0.0	0.0	
Lane LOS	C					
Approach Delay (s)	16.3	0.0		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			30.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
4: Dufferin Street & Alma Avenue (N)

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑↑			↑↑	
Traffic Volume (veh/h)	5	0	0	0	0	0	5	740	0	0	485	5
Future Volume (Veh/h)	5	0	0	0	0	0	5	740	0	0	485	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	5	0	0	0	0	0	5	813	0	0	533	5
Pedestrians		55			40							
Lane Width (m)		3.5			3.5							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		5			4							
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)								332			101	
pX, platoon unblocked	0.99	0.99	0.99	0.99	0.99		0.99					
vC, conflicting volume	1007	1454	324	1130	1456	446	593				853	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	977	1430	283	1101	1433	446	556				853	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	5.4				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.9				2.2	
p0 queue free %	97	100	100	100	100	100	99				100	
cM capacity (veh/h)	181	121	673	149	121	544	630				765	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	5	0	412	406	266	272						
Volume Left	5	0	5	0	0	0						
Volume Right	0	0	0	0	0	5						
eSH	181	1700	630	1700	765	1700						
Volume to Capacity	0.03	0.00	0.01	0.24	0.00	0.16						
Queue Length 95th (m)	0.6	0.0	0.2	0.0	0.0	0.0						
Control Delay (s)	25.5	0.0	0.2	0.0	0.0	0.0						
Lane LOS	D	A	A									
Approach Delay (s)	25.5	0.0	0.1		0.0							
Approach LOS	D	A										
Intersection Summary												
Average Delay				0.2								
Intersection Capacity Utilization				34.0%		ICU Level of Service	A					
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis
5: Dufferin Street & Brixton Way/Alma Avenue (S)

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔		↕			↕	
Traffic Volume (veh/h)	5	0	5	10	0	40	5	700	0	0	480	5
Future Volume (Veh/h)	5	0	5	10	0	40	5	700	0	0	480	5
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	5	11	0	43	5	761	0	0	522	5
Pedestrians	55			45			5			5		
Lane Width (m)	3.5			3.0			3.5			3.5		
Walking Speed (m/s)	1.1			1.1			1.1			1.1		
Percent Blockage	5			4			0			0		
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (m)	277						156					
pX, platoon unblocked												
vC, conflicting volume	1018	1396	318	1082	1398	430	582					806
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1018	1396	318	1082	1398	430	582					806
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1					4.1
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2
p0 queue free %	97	100	99	93	100	92	99					100
cM capacity (veh/h)	158	130	648	156	129	550	951					798
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2					
Volume Total	10	11	43	259	507	348	179					
Volume Left	5	11	0	5	0	0	0					
Volume Right	5	0	43	0	0	0	5					
eSH	254	156	550	951	1700	1700	1700					
Volume to Capacity	0.04	0.07	0.08	0.01	0.30	0.20	0.11					
Queue Length 95th (m)	0.9	1.7	1.9	0.1	0.0	0.0	0.0					
Control Delay (s)	19.8	29.9	12.1	0.2	0.0	0.0	0.0					
Lane LOS	C	D	B	A								
Approach Delay (s)	19.8	15.7	0.1		0.0							
Approach LOS	C	C										
Intersection Summary												
Average Delay	0.8											
Intersection Capacity Utilization	37.7%			ICU Level of Service			A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
6: Dufferin Street & Peel Avenue

10/11/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↕	↕
Traffic Volume (veh/h)	15	100	605	20	75	420
Future Volume (Veh/h)	15	100	605	20	75	420
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	109	658	22	82	457
Pedestrians	50	15				
Lane Width (m)	3.0	3.5				
Walking Speed (m/s)	1.1	1.1				
Percent Blockage	4	1				
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	181			253		
pX, platoon unblocked	0.93	0.93			0.93	
vC, conflicting volume	1126	390			730	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	996	208			572	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	85			91	
cM capacity (veh/h)	197	722			895	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	125	439	241	234	305	
Volume Left	16	0	0	82	0	
Volume Right	109	0	22	0	0	
eSH	538	1700	1700	895	1700	
Volume to Capacity	0.23	0.26	0.14	0.09	0.18	
Queue Length 95th (m)	6.8	0.0	0.0	2.3	0.0	
Control Delay (s)	13.7	0.0	0.0	3.9	0.0	
Lane LOS	B			A		
Approach Delay (s)	13.7	0.0	1.7			
Approach LOS	B					
Intersection Summary						
Average Delay	2.0					
Intersection Capacity Utilization	48.3%		ICU Level of Service		A	
Analysis Period (min)	15					

Timings

7: Dufferin Street & Queen Street West

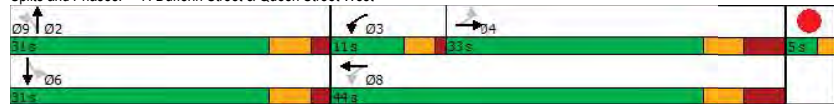
10/11/2022

	↖	→	↙	←	↖	↑	↙	↓	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations		↔	↔	↔		↔	↔	↔	
Traffic Volume (vph)	55	290	155	420	40	485	60	310	
Future Volume (vph)	55	290	155	420	40	485	60	310	
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA	
Protected Phases		4	3	8		2		6	9
Permitted Phases	4		8		2		6		
Detector Phase	4	4	3	8	2	2	6	6	
Switch Phase									
Minimum Initial (s)	25.0	25.0	6.0	25.0	19.0	19.0	19.0	19.0	1.0
Minimum Split (s)	33.0	33.0	10.0	33.0	25.0	25.0	25.0	25.0	3.0
Total Split (s)	33.0	33.0	11.0	44.0	31.0	31.0	31.0	31.0	5.0
Total Split (%)	41.3%	41.3%	13.8%	55.0%	38.8%	38.8%	38.8%	38.8%	6%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	4.0	4.0	1.0	4.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0	
Total Lost Time (s)		8.0		8.0		6.0		6.0	
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Max	Max	Max	Max	None
Act Effct Green (s)		28.2		28.2		25.1		25.1	
Actuated g/C Ratio		0.42		0.42		0.37		0.37	
v/c Ratio		0.40		0.69		0.63		0.49	
Control Delay		13.9		20.0		21.4		19.2	
Queue Delay		0.0		0.0		0.0		0.0	
Total Delay		13.9		20.0		21.4		19.2	
LOS		B		C		C		B	
Approach Delay		13.9		20.0		21.4		19.3	
Approach LOS		B		C		C		B	

Intersection Summary

Cycle Length: 80	
Actuated Cycle Length: 67.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 19.1	Intersection LOS: B
Intersection Capacity Utilization 100.9%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 7: Dufferin Street & Queen Street West



Queues

7: Dufferin Street & Queen Street West

10/11/2022

	→	←	↑	↓
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	418	681	670	449
v/c Ratio	0.40	0.69	0.63	0.49
Control Delay	13.9	20.0	21.4	19.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.9	20.0	21.4	19.2
Queue Length 50th (m)	17.1	35.1	33.1	20.7
Queue Length 95th (m)	26.7	51.4	61.2	40.5
Internal Link Dist (m)	219.1	102.5	166.7	156.8
Turn Bay Length (m)				
Base Capacity (vph)	1036	1265	1058	920
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.40	0.54	0.63	0.49

Intersection Summary

HCM Signalized Intersection Capacity Analysis
7: Dufferin Street & Queen Street West

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Traffic Volume (vph)	55	290	60	155	420	85	40	485	125	60	310	65
Future Volume (vph)	55	290	60	155	420	85	40	485	125	60	310	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	8.0			8.0			6.0			6.0		
Lane Util. Factor	0.95			0.95			0.95			0.95		
Frbp, ped/bikes	0.97			0.97			0.96			0.98		
Flpb, ped/bikes	0.99			0.97			1.00			0.99		
Frft	0.98			0.98			0.97			0.98		
Flt Protected	0.99			0.99			1.00			0.99		
Satd. Flow (prot)	3156			3155			3182			3193		
Flt Permitted	0.77			0.75			0.90			0.77		
Satd. Flow (perm)	2460			2379			2867			2481		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	57	299	62	160	433	88	41	500	129	62	320	67
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	403	0	0	681	0	0	670	0	0	449	0
Confl. Peds. (#/hr)	305		240		240		305		125		200	
Confl. Bikes (#/hr)	15		15		20		20		5		5	
Heavy Vehicles (%)	1%	7%	0%	1%	4%	4%	21%	3%	0%	1%	7%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	4		3		8		2		2		6	
Permitted Phases	4		8		2		6		6		6	
Actuated Green, G (s)	28.2		28.2		25.1		25.1		25.1		25.1	
Effective Green, g (s)	28.2		28.2		25.1		25.1		25.1		25.1	
Actuated g/C Ratio	0.42		0.42		0.37		0.37		0.37		0.37	
Clearance Time (s)	8.0		8.0		6.0		6.0		6.0		6.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	1030		996		1069		925		925		925	
v/s Ratio Prot	0.16		c0.29		c0.23		0.18		0.18		0.18	
v/c Ratio	0.39		0.68		0.63		0.49		0.49		0.49	
Uniform Delay, d1	13.6		15.9		17.3		16.2		16.2		16.2	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.2		2.0		2.8		1.8		1.8		1.8	
Delay (s)	13.8		17.9		20.0		18.0		18.0		18.0	
Level of Service	B		B		C		B		B		B	
Approach Delay (s)	13.8		17.9		20.0		18.0		18.0		18.0	
Approach LOS	B		B		C		B		B		B	
Intersection Summary												
HCM 2000 Control Delay	17.8		HCM 2000 Level of Service				B					
HCM 2000 Volume to Capacity ratio	0.74											
Actuated Cycle Length (s)	67.3		Sum of lost time (s)				20.0					
Intersection Capacity Utilization	100.9%		ICU Level of Service				G					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
8: Alma Avenue (N) & Site Driveway

10/11/2022

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	0	5	10	0	0	0
Future Volume (Veh/h)	0	5	10	0	0	0
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Hourly flow rate (vph)	0	7	15	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	15				22 15	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	15				22 15	
tC, single (s)	4.1				6.4 6.2	
tC, 2 stage (s)						
tF (s)	2.2				3.5 3.3	
p0 queue free %	100				100 100	
cM capacity (veh/h)	1616				1000 1070	
Direction, Lane #						
Volume Total	7	15	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1616	1700	1700			
Volume to Capacity	0.00	0.01	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A		A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A		A			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%		ICU Level of Service A	
Analysis Period (min)			15			

Timings

1: Dufferin Street & Gordon Street

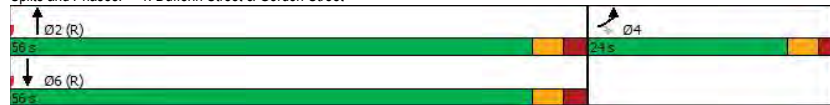
10/11/2022

Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	35	50	595	500
Future Volume (vph)	35	50	595	500
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases	4			
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	19.0	19.0	17.0	17.0
Minimum Split (s)	23.9	23.9	22.4	22.4
Total Split (s)	24.0	24.0	56.0	56.0
Total Split (%)	30.0%	30.0%	70.0%	70.0%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	1.9	1.9	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.4	5.4
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Min	C-Min
Act Effct Green (s)	19.0	19.0	56.6	56.6
Actuated g/C Ratio	0.24	0.24	0.71	0.71
v/c Ratio	0.10	0.16	0.28	0.24
Control Delay	24.7	8.5	6.2	6.0
Queue Delay	0.0	0.0	0.3	0.0
Total Delay	24.7	8.5	6.5	6.0
LOS	C	A	A	A
Approach Delay	15.1		6.5	6.0
Approach LOS	B		A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 77 (96%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.28
 Intersection Signal Delay: 6.9 Intersection LOS: A
 Intersection Capacity Utilization 40.9% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 1: Dufferin Street & Gordon Street



Queues

1: Dufferin Street & Gordon Street

10/11/2022

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	39	56	661	556
v/c Ratio	0.10	0.16	0.28	0.24
Control Delay	24.7	8.5	6.2	6.0
Queue Delay	0.0	0.0	0.3	0.0
Total Delay	24.7	8.5	6.5	6.0
Queue Length 50th (m)	4.7	0.0	21.3	17.2
Queue Length 95th (m)	12.0	8.5	29.5	24.3
Internal Link Dist (m)	143.2		75.5	78.8
Turn Bay Length (m)				
Base Capacity (vph)	402	359	2381	2358
Starvation Cap Reductn	0	0	1037	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.16	0.49	0.24

Intersection Summary

(This section contains a table with the same data as the main table above, but it is mostly obscured by a blue bar in the image.)

HCM Signalized Intersection Capacity Analysis
1: Dufferin Street & Gordon Street

10/11/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	50	0	595	500	0
Future Volume (vph)	35	50	0	595	500	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	4.9	4.9		5.4	5.4	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frbp, ped/bikes	1.00	0.91		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1685	1328		3368	3336	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1685	1328		3368	3336	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	56	0	661	556	0
RTOR Reduction (vph)	0	45	0	0	0	0
Lane Group Flow (vph)	39	11		661	556	0
Confl. Peds. (#/hr)	105	65	30			30
Confl. Bikes (#/hr)						5
Heavy Vehicles (%)	0%	3%	0%	6%	7%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	15.2	15.2		54.5	54.5	
Effective Green, g (s)	15.2	15.2		54.5	54.5	
Actuated g/C Ratio	0.19	0.19		0.68	0.68	
Clearance Time (s)	4.9	4.9		5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	252		2294	2272	
v/s Ratio Prot	c0.02			c0.20	0.17	
v/s Ratio Perm		0.01				
v/c Ratio	0.12	0.04		0.29	0.24	
Uniform Delay, d1	26.9	26.5		5.1	4.9	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		0.3	0.3	
Delay (s)	27.0	26.5		5.4	5.1	
Level of Service	C	C		A	A	
Approach Delay (s)	26.7			5.4	5.1	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		
c	Critical Lane Group		

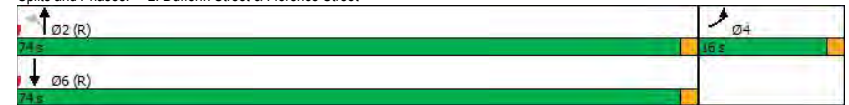
Timings
2: Dufferin Street & Florence Street

10/11/2022

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	10	35	585	540
Future Volume (vph)	10	35	585	540
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	10.0	1.0	1.0	1.0
Minimum Split (s)	16.0	12.0	12.0	12.0
Total Split (s)	16.0	74.0	74.0	74.0
Total Split (%)	17.8%	82.2%	82.2%	82.2%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	2.0		2.0	2.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	14.0		72.0	72.0
Actuated g/C Ratio	0.16		0.80	0.80
v/c Ratio	0.12		0.28	0.22
Control Delay	21.3		2.6	2.4
Queue Delay	0.0		0.0	0.5
Total Delay	21.3		2.6	2.9
LOS	C		A	A
Approach Delay	21.3		2.6	2.9
Approach LOS	C		A	A

Intersection Summary	
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.28
Intersection Signal Delay:	3.1
Intersection Capacity Utilization	54.2%
Intersection LOS:	A
ICU Level of Service	A
Analysis Period (min)	15




Splits and Phases: 2: Dufferin Street & Florence Street



Queues

2: Dufferin Street & Florence Street










10/11/2022

			
Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	27	674	598
v/c Ratio	0.12	0.28	0.22
Control Delay	21.3	2.6	2.4
Queue Delay	0.0	0.0	0.5
Total Delay	21.3	2.6	2.9
Queue Length 50th (m)	1.7	11.6	9.5
Queue Length 95th (m)	8.8	15.8	13.1
Internal Link Dist (m)	144.8	37.6	75.5
Turn Bay Length (m)			
Base Capacity (vph)	230	2404	2669
Starvation Cap Reductn	0	0	1561
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.12	0.28	0.54
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

2: Dufferin Street & Florence Street

10/11/2022

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	15	35	585	540	10
Future Volume (vph)	10	15	35	585	540	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	2.0			2.0	2.0	
Lane Util. Factor	1.00			0.95	0.95	
Frbp, ped/bikes	0.90			1.00	1.00	
Flpb, ped/bikes	1.00			0.99	1.00	
Frt	0.92			1.00	1.00	
Flt Protected	0.98			1.00	1.00	
Satd. Flow (prot)	1393			3329	3336	
Flt Permitted	0.98			0.90	1.00	
Satd. Flow (perm)	1393			3006	3336	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	16	38	636	587	11
RTOR Reduction (vph)	14	0	0	0	1	0
Lane Group Flow (vph)	13	0	0	674	597	0
Confl. Peds. (#/hr)		80	55			55
Confl. Bikes (#/hr)						10
Heavy Vehicles (%)	9%	0%	12%	6%	6%	16%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	14.0			72.0	72.0	
Effective Green, g (s)	14.0			72.0	72.0	
Actuated g/C Ratio	0.16			0.80	0.80	
Clearance Time (s)	2.0			2.0	2.0	
Lane Grp Cap (vph)	216			2404	2668	
v/s Ratio Prot	c0.01				0.18	
v/s Ratio Perm				c0.22		
v/c Ratio	0.06			0.28	0.22	
Uniform Delay, d1	32.4			2.3	2.2	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.6			0.3	0.2	
Delay (s)	33.0			2.6	2.4	
Level of Service	C			A	A	
Approach Delay (s)	33.0			2.6	2.4	
Approach LOS	C			A	A	
Intersection Summary						
HCM 2000 Control Delay			3.1		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.24			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	4.0
Intersection Capacity Utilization			54.2%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
3: Dufferin Street & Waterloo Avenue

10/11/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↕			↕
Traffic Volume (veh/h)	25	65	555	0	0	555
Future Volume (Veh/h)	25	65	555	0	0	555
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	71	603	0	0	603
Pedestrians	50					
Lane Width (m)	3.0					
Walking Speed (m/s)	1.1					
Percent Blockage	4					
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			372			62
pX, platoon unblocked	0.96					
vC, conflicting volume	954	352			653	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	878	352			653	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	89			100	
cM capacity (veh/h)	270	619			906	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	98	302	302	302	302	
Volume Left	27	0	0	0	0	
Volume Right	71	0	0	0	0	
eSH	456	1700	1700	1700	1700	
Volume to Capacity	0.21	0.18	0.18	0.18	0.18	
Queue Length 95th (m)	6.1	0.0	0.0	0.0	0.0	
Control Delay (s)	15.0	0.0	0.0	0.0	0.0	
Lane LOS	C					
Approach Delay (s)	15.0	0.0		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			27.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
4: Dufferin Street & Alma Avenue (N)

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Volume (veh/h)	0	0	5	0	0	0	5	555	0	0	575	5
Future Volume (Veh/h)	0	0	5	0	0	0	5	555	0	0	575	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	6	0	0	0	6	617	0	0	639	6
Pedestrians		60			150							
Lane Width (m)		3.5			3.5							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		6			14							
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)								332			101	
pX, platoon unblocked	0.97	0.97	0.97	0.97	0.97		0.97					
vC, conflicting volume	1022	1481	382	1104	1484	458	705				767	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	966	1437	307	1050	1440	458	639				767	
tC, single (s)	9.5	6.5	6.9	7.5	6.5	6.9	4.6				4.1	
tC, 2 stage (s)												
tF (s)	4.5	4.0	3.3	3.5	4.0	3.3	2.5				2.2	
p0 queue free %	100	100	99	100	100	100	99				100	
cM capacity (veh/h)	84	105	638	130	105	478	735				737	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	6	0	314	308	320	326						
Volume Left	0	0	6	0	0	0						
Volume Right	6	0	0	0	0	6						
eSH	638	1700	735	1700	737	1700						
Volume to Capacity	0.01	0.00	0.01	0.18	0.00	0.19						
Queue Length 95th (m)	0.2	0.0	0.2	0.0	0.0	0.0						
Control Delay (s)	10.7	0.0	0.3	0.0	0.0	0.0						
Lane LOS	B	A	A									
Approach Delay (s)	10.7	0.0	0.1		0.0							
Approach LOS	B	A										
Intersection Summary												
Average Delay						0.1						
Intersection Capacity Utilization						28.8%		ICU Level of Service			A	
Analysis Period (min)						15						

HCM Unsignalized Intersection Capacity Analysis
5: Dufferin Street & Brixton Way/Alma Avenue (S)

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔		↕		↕		↕
Traffic Volume (veh/h)	5	0	15	5	0	20	0	535	0	0	580	0
Future Volume (Veh/h)	5	0	15	5	0	20	0	535	0	0	580	0
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	5	0	16	5	0	22	0	588	0	0	637	0
Pedestrians	65			145			10			0		
Lane Width (m)	3.5			3.0			3.5			3.5		
Walking Speed (m/s)	1.1			1.1			1.1			1.1		
Percent Blockage	6			12			1			0		
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (m)							277					
pX, platoon unblocked	0.99	0.99	0.99	0.99	0.99		0.99					
vC, conflicting volume	1018	1435	394	1078	1435	439	702	733				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	999	1420	368	1059	1420	439	680	733				
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.1	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2	2.2				
p0 queue free %	97	100	97	96	100	95	100	100				
cM capacity (veh/h)	155	114	585	133	114	482	858	780				
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2					
Volume Total	21	5	22	294	294	318	318					
Volume Left	5	5	0	0	0	0	0					
Volume Right	16	0	22	0	0	0	0					
eSH	353	133	482	1700	1700	1700	1700					
Volume to Capacity	0.06	0.04	0.05	0.17	0.17	0.19	0.19					
Queue Length 95th (m)	1.4	0.9	1.1	0.0	0.0	0.0	0.0					
Control Delay (s)	15.9	33.0	12.8	0.0	0.0	0.0	0.0					
Lane LOS	C	D	B									
Approach Delay (s)	15.9	16.6	0.0		0.0							
Approach LOS	C	C										
Intersection Summary												
Average Delay	0.6											
Intersection Capacity Utilization	34.3%			ICU Level of Service			A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
6: Dufferin Street & Peel Avenue

10/11/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↕	↕
Traffic Volume (veh/h)	30	90	445	30	100	500
Future Volume (Veh/h)	30	90	445	30	100	500
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	100	494	33	111	556
Pedestrians	165		10		5	
Lane Width (m)	3.0		3.5		3.5	
Walking Speed (m/s)	1.1		1.1		1.1	
Percent Blockage	13		1		0	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	181			253		
pX, platoon unblocked						
vC, conflicting volume	1186	434	692			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1186	434	692			
tC, single (s)	6.8	6.9	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	80	86			
cM capacity (veh/h)	136	496	775			
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	133	329	198	296	371	
Volume Left	33	0	0	111	0	
Volume Right	100	0	33	0	0	
eSH	300	1700	1700	775	1700	
Volume to Capacity	0.44	0.19	0.12	0.14	0.22	
Queue Length 95th (m)	16.5	0.0	0.0	3.8	0.0	
Control Delay (s)	26.3	0.0	0.0	4.9	0.0	
Lane LOS	D			A		
Approach Delay (s)	26.3	0.0	2.2			
Approach LOS	D					
Intersection Summary						
Average Delay	3.7					
Intersection Capacity Utilization	48.9%			ICU Level of Service		
Analysis Period (min)	15			A		

Timings

7: Dufferin Street & Queen Street West

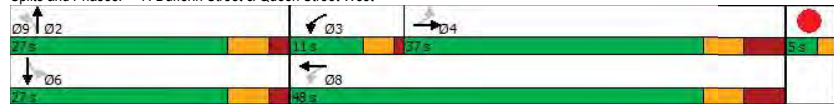
10/11/2022

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations		↔		↔		↔		↔	
Traffic Volume (vph)	100	550	180	290	45	310	55	445	
Future Volume (vph)	100	550	180	290	45	310	55	445	
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA	
Protected Phases		4	3	8		2		6	9
Permitted Phases	4		8		2		6		
Detector Phase	4	4	3	8	2	2	6	6	
Switch Phase									
Minimum Initial (s)	25.0	25.0	6.0	25.0	19.0	19.0	19.0	19.0	1.0
Minimum Split (s)	33.0	33.0	10.0	33.0	25.0	25.0	25.0	25.0	3.0
Total Split (s)	37.0	37.0	11.0	48.0	27.0	27.0	27.0	27.0	5.0
Total Split (%)	46.3%	46.3%	13.8%	60.0%	33.8%	33.8%	33.8%	33.8%	6%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	4.0	4.0	1.0	4.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0	
Total Lost Time (s)		8.0		8.0		6.0		6.0	
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Max	Max	Max	Max	None
Act Effct Green (s)		28.0		28.0		21.1		21.1	
Actuated g/C Ratio		0.44		0.44		0.33		0.33	
v/c Ratio		0.66		0.66		0.59		0.61	
Control Delay		16.8		18.1		21.9		21.8	
Queue Delay		0.0		0.0		0.0		0.0	
Total Delay		16.8		18.1		21.9		21.8	
LOS		B		B		C		C	
Approach Delay		16.8		18.1		21.9		21.8	
Approach LOS		B		B		C		C	

Intersection Summary

Cycle Length: 80	
Actuated Cycle Length: 63.2	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 19.3	Intersection LOS: B
Intersection Capacity Utilization 96.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: Dufferin Street & Queen Street West



Queues

7: Dufferin Street & Queen Street West

10/11/2022

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	742	562	489	558
v/c Ratio	0.66	0.66	0.59	0.61
Control Delay	16.8	18.1	21.9	21.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.8	18.1	21.9	21.8
Queue Length 50th (m)	33.3	25.6	22.3	25.6
Queue Length 95th (m)	48.8	40.1	45.7	51.2
Internal Link Dist (m)	219.1	102.5	166.7	156.8
Turn Bay Length (m)				
Base Capacity (vph)	1218	1218	826	920
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.61	0.46	0.59	0.61

Intersection Summary

HCM Signalized Intersection Capacity Analysis
7: Dufferin Street & Queen Street West

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔		↔		
Traffic Volume (vph)	100	550	55	180	290	65	45	310	110	55	445	30
Future Volume (vph)	100	550	55	180	290	65	45	310	110	55	445	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	8.0			8.0			6.0			6.0		
Lane Util. Factor	0.95			0.95			0.95			0.95		
Frbp, ped/bikes	0.99			0.99			0.95			0.99		
Flpb, ped/bikes	0.99			0.98			1.00			0.99		
Fr	0.99			0.98			0.96			0.99		
Flt Protected	0.99			0.98			1.00			0.99		
Satd. Flow (prot)	3270			3132			2941			3258		
Flt Permitted	0.77			0.60			0.85			0.84		
Satd. Flow (perm)	2524			1922			2508			2767		
Peak-hour factor, PHF	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)	105	579	58	189	305	68	47	326	116	58	468	32
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	735	0	0	562	0	0	489	0	0	558	0
Confl. Peds. (#/hr)	145	185	185		145	110		185	185		110	
Confl. Bikes (#/hr)		10			5			5				
Heavy Vehicles (%)	8%	5%	1%	5%	9%	1%	50%	8%	2%	1%	7%	6%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2				6
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		28.0			28.0			21.1			21.1	
Effective Green, g (s)		28.0			28.0			21.1			21.1	
Actuated g/C Ratio		0.44			0.44			0.33			0.33	
Clearance Time (s)		8.0			8.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1120			852			838			925	
v/s Ratio Prot												
v/s Ratio Perm		0.29			c0.29			0.19			c0.20	
v/c Ratio		0.66			0.66			0.58			0.60	
Uniform Delay, d1		13.8			13.8			17.4			17.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.4			1.9			3.0			2.9	
Delay (s)		15.2			15.7			20.3			20.4	
Level of Service		B			B			C			C	
Approach Delay (s)		15.2			15.7			20.3			20.4	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay		17.6			HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio		0.72										
Actuated Cycle Length (s)		63.1			Sum of lost time (s)						20.0	
Intersection Capacity Utilization		96.7%			ICU Level of Service						F	
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
8: Alma Avenue (N) & Site Driveway

10/11/2022

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	0	5	10	0	0	0
Future Volume (Veh/h)	0	5	10	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Hourly flow rate (vph)	0	9	17	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	17				26	17
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	17				26	17
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1613				995	1068
Direction, Lane #						
Volume Total	9	17	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1613	1700	1700			
Volume to Capacity	0.00	0.01	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS					A	
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS					A	
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%		ICU Level of Service	A
Analysis Period (min)			15			

Timings

1: Dufferin Street & Gordon Street

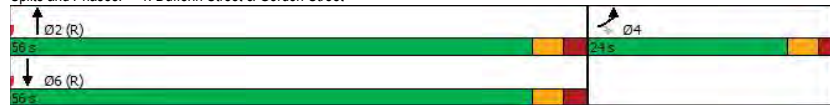
10/11/2022

Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	35	20	770	490
Future Volume (vph)	35	20	770	490
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	19.0	19.0	17.0	17.0
Minimum Split (s)	23.9	23.9	23.4	23.4
Total Split (s)	24.0	24.0	56.0	56.0
Total Split (%)	30.0%	30.0%	70.0%	70.0%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	1.9	1.9	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.4	5.4
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Min	C-Min
Act Effct Green (s)	19.0	19.0	62.4	62.4
Actuated g/C Ratio	0.24	0.24	0.78	0.78
v/c Ratio	0.10	0.06	0.31	0.20
Control Delay	24.7	10.9	5.4	4.8
Queue Delay	0.0	0.0	0.2	0.0
Total Delay	24.7	10.9	5.6	4.8
LOS	C	B	A	A
Approach Delay	19.6		5.6	4.8
Approach LOS	B		A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.31
 Intersection Signal Delay: 5.9 Intersection LOS: A
 Intersection Capacity Utilization 45.7% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 1: Dufferin Street & Gordon Street



Queues

1: Dufferin Street & Gordon Street

10/11/2022

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	38	22	837	533
v/c Ratio	0.10	0.06	0.31	0.20
Control Delay	24.7	10.9	5.4	4.8
Queue Delay	0.0	0.0	0.2	0.0
Total Delay	24.7	10.9	5.6	4.8
Queue Length 50th (m)	4.5	0.0	28.5	16.3
Queue Length 95th (m)	11.7	5.4	38.3	23.2
Internal Link Dist (m)	143.2		75.5	78.8
Turn Bay Length (m)				
Base Capacity (vph)	394	365	2731	2678
Starvation Cap Reductn	0	0	1038	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.06	0.49	0.20

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: Dufferin Street & Gordon Street

10/11/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	20	0	770	490	0
Future Volume (vph)	35	20	0	770	490	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	4.9	4.9		5.4	5.4	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frbp, ped/bikes	1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1652	1461		3500	3433	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1652	1461		3500	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	22	0	837	533	0
RTOR Reduction (vph)	0	19	0	0	0	0
Lane Group Flow (vph)	38	3	0	837	533	0
Confl. Peds. (#/hr)	25	15	30			30
Heavy Vehicles (%)	2%	0%	0%	2%	4%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	11.4	11.4		58.3	58.3	
Effective Green, g (s)	11.4	11.4		58.3	58.3	
Actuated g/C Ratio	0.14	0.14		0.73	0.73	
Clearance Time (s)	4.9	4.9		5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	235	208		2550	2501	
v/s Ratio Prot	c0.02			c0.24	0.16	
v/s Ratio Perm		0.00				
v/c Ratio	0.16	0.02		0.33	0.21	
Uniform Delay, d1	30.1	29.5		3.9	3.5	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.0		0.3	0.2	
Delay (s)	30.4	29.5		4.2	3.7	
Level of Service	C	C		A	A	
Approach Delay (s)	30.1			4.2	3.7	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

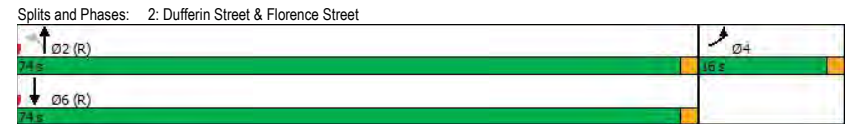
c Critical Lane Group

Timings
2: Dufferin Street & Florence Street

10/11/2022

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	5	75	765	500
Future Volume (vph)	5	75	765	500
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	10.0	1.0	1.0	1.0
Minimum Split (s)	16.0	12.0	12.0	12.0
Total Split (s)	16.0	74.0	74.0	74.0
Total Split (%)	17.8%	82.2%	82.2%	82.2%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0		2.0	2.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	14.0		72.0	72.0
Actuated g/C Ratio	0.16		0.80	0.80
v/c Ratio	0.13		0.39	0.21
Control Delay	16.2		3.2	2.3
Queue Delay	0.0		0.0	0.5
Total Delay	16.2		3.2	2.8
LOS	B		A	A
Approach Delay	16.2		3.2	2.8
Approach LOS	B		A	A




Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 40	
Control Type: Pretimed	
Maximum v/c Ratio: 0.39	
Intersection Signal Delay: 3.3	Intersection LOS: A
Intersection Capacity Utilization 59.2%	ICU Level of Service B
Analysis Period (min) 15	



Queues

2: Dufferin Street & Florence Street

10/11/2022

			
Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	32	923	560
v/c Ratio	0.13	0.39	0.21
Control Delay	16.2	3.2	2.3
Queue Delay	0.0	0.0	0.5
Total Delay	16.2	3.2	2.8
Queue Length 50th (m)	0.8	18.0	8.7
Queue Length 95th (m)	8.4	24.0	12.1
Internal Link Dist (m)	144.8	37.6	75.5
Turn Bay Length (m)			
Base Capacity (vph)	255	2358	2724
Starvation Cap Reductn	0	0	1637
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.13	0.39	0.52

Intersection Summary

Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	
Adj. Flow (vph)	5	27	82	841	549	11
RTOR Reduction (vph)	23	0	0	0	2	0
Lane Group Flow (vph)	9	0	0	923	558	0
Confl. Peds. (#/hr)		20	40			40
Confl. Bikes (#/hr)						5
Heavy Vehicles (%)	0%	0%	2%	2%	4%	12%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	14.0			72.0	72.0	
Effective Green, g (s)	14.0			72.0	72.0	
Actuated g/C Ratio	0.16			0.80	0.80	
Clearance Time (s)	2.0			2.0	2.0	
Lane Grp Cap (vph)	232			2357	2723	
v/s Ratio Prot	c0.01				0.16	
v/s Ratio Perm				c0.31		
v/c Ratio	0.04			0.39	0.21	
Uniform Delay, d1	32.3			2.6	2.2	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.3			0.5	0.2	
Delay (s)	32.6			3.1	2.3	
Level of Service	C			A	A	
Approach Delay (s)	32.6			3.1	2.3	
Approach LOS	C			A	A	










Intersection Summary

HCM 2000 Control Delay		3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio		0.33		
Actuated Cycle Length (s)		90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization		59.2%	ICU Level of Service	B
Analysis Period (min)		15		
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis

2: Dufferin Street & Florence Street

10/11/2022

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	25	75	765	500	10
Future Volume (vph)	5	25	75	765	500	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	2.0			2.0	2.0	
Lane Util. Factor	1.00			0.95	0.95	
Frbp, ped/bikes	0.96			1.00	1.00	
Flpb, ped/bikes	1.00			0.99	1.00	
Frt	0.89			1.00	1.00	
Flt Protected	0.99			1.00	1.00	
Satd. Flow (prot)	1494			3461	3404	
Flt Permitted	0.99			0.85	1.00	
Satd. Flow (perm)	1494			2947	3404	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	5	27	82	841	549	11
RTOR Reduction (vph)	23	0	0	0	2	0
Lane Group Flow (vph)	9	0	0	923	558	0
Confl. Peds. (#/hr)		20	40			40
Confl. Bikes (#/hr)						5
Heavy Vehicles (%)	0%	0%	2%	2%	4%	12%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	14.0			72.0	72.0	
Effective Green, g (s)	14.0			72.0	72.0	
Actuated g/C Ratio	0.16			0.80	0.80	
Clearance Time (s)	2.0			2.0	2.0	
Lane Grp Cap (vph)	232			2357	2723	
v/s Ratio Prot	c0.01				0.16	
v/s Ratio Perm				c0.31		
v/c Ratio	0.04			0.39	0.21	
Uniform Delay, d1	32.3			2.6	2.2	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.3			0.5	0.2	
Delay (s)	32.6			3.1	2.3	
Level of Service	C			A	A	
Approach Delay (s)	32.6			3.1	2.3	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay		3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio		0.33		
Actuated Cycle Length (s)		90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization		59.2%	ICU Level of Service	B
Analysis Period (min)		15		
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
3: Dufferin Street & Waterloo Avenue

10/11/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↕			↕
Traffic Volume (veh/h)	15	40	800	0	0	525
Future Volume (Veh/h)	15	40	800	0	0	525
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	16	43	860	0	0	565
Pedestrians	45					
Lane Width (m)	3.0					
Walking Speed (m/s)	1.1					
Percent Blockage	4					
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			372		62	
pX, platoon unblocked	0.97					
vC, conflicting volume	1188	475			905	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1130	475			905	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	92			100	
cM capacity (veh/h)	187	509			733	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	59	430	430	282	282	
Volume Left	16	0	0	0	0	
Volume Right	43	0	0	0	0	
eSH	347	1700	1700	1700	1700	
Volume to Capacity	0.17	0.25	0.25	0.17	0.17	
Queue Length 95th (m)	4.6	0.0	0.0	0.0	0.0	
Control Delay (s)	17.5	0.0	0.0	0.0	0.0	
Lane LOS	C					
Approach Delay (s)	17.5	0.0		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			32.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
4: Dufferin Street & Alma Avenue (N)

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Volume (veh/h)	5	0	0	0	0	0	5	795	0	0	535	5
Future Volume (Veh/h)	5	0	0	0	0	0	5	795	0	0	535	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	5	0	0	0	0	0	5	874	0	0	588	5
Pedestrians		55			40							
Lane Width (m)		3.5			3.5							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		5			4							
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)								332			101	
pX, platoon unblocked	0.98	0.98	0.98	0.98	0.98		0.98					
vC, conflicting volume	1092	1570	352	1218	1572	477	648			914		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1050	1537	292	1178	1540	477	595			914		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	5.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.9			2.2		
p0 queue free %	97	100	100	100	100	100	99			100		
cM capacity (veh/h)	159	104	659	130	103	520	598			726		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	5	0	442	437	294	299						
Volume Left	5	0	5	0	0	0						
Volume Right	0	0	0	0	0	5						
eSH	159	1700	598	1700	726	1700						
Volume to Capacity	0.03	0.00	0.01	0.26	0.00	0.18						
Queue Length 95th (m)	0.7	0.0	0.2	0.0	0.0	0.0						
Control Delay (s)	28.4	0.0	0.2	0.0	0.0	0.0						
Lane LOS	D	A	A									
Approach Delay (s)	28.4	0.0	0.1		0.0							
Approach LOS	D	A										
Intersection Summary												
Average Delay						0.2						
Intersection Capacity Utilization						35.5%		ICU Level of Service		A		
Analysis Period (min)						15						

HCM Unsignalized Intersection Capacity Analysis
5: Dufferin Street & Brixton Way/Alma Avenue (S)

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔		↕			↕	
Traffic Volume (veh/h)	5	0	5	10	0	40	5	755	0	0	530	5
Future Volume (Veh/h)	5	0	5	10	0	40	5	755	0	0	530	5
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	5	11	0	43	5	821	0	0	576	5
Pedestrians	55			45			5			5		
Lane Width (m)	3.5			3.0			3.5			3.5		
Walking Speed (m/s)	1.1			1.1			1.1			1.1		
Percent Blockage	5			4			0			0		
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (m)	277						156					
pX, platoon unblocked	0.97	0.97	1.00	0.97	0.97	0.97	1.00			0.97		
vC, conflicting volume	1102	1510	346	1169	1512	460	636			866		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1039	1458	339	1108	1460	387	631			804		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	92	100	92	99			100		
cM capacity (veh/h)	148	116	627	145	115	570	911			777		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2					
Volume Total	10	11	43	279	547	384	197					
Volume Left	5	11	0	5	0	0	0					
Volume Right	5	0	43	0	0	0	5					
eSH	240	145	570	911	1700	1700	1700					
Volume to Capacity	0.04	0.08	0.08	0.01	0.32	0.23	0.12					
Queue Length 95th (m)	1.0	1.8	1.9	0.1	0.0	0.0	0.0					
Control Delay (s)	20.6	31.9	11.8	0.2	0.0	0.0	0.0					
Lane LOS	C	D	B	A								
Approach Delay (s)	20.6	15.9	0.1		0.0							
Approach LOS	C	C										
Intersection Summary												
Average Delay	0.8											
Intersection Capacity Utilization	39.2%			ICU Level of Service			A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
6: Dufferin Street & Peel Avenue

10/11/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↕	↕
Traffic Volume (veh/h)	15	100	660	20	75	470
Future Volume (Veh/h)	15	100	660	20	75	470
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	109	717	22	82	511
Pedestrians	50	15				
Lane Width (m)	3.0	3.5				
Walking Speed (m/s)	1.1	1.1				
Percent Blockage	4	1				
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	181			253		
pX, platoon unblocked	0.90	0.90			0.90	
vC, conflicting volume	1212	420			789	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1021	143			552	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	86			91	
cM capacity (veh/h)	183	768			880	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	125	478	261	252	341	
Volume Left	16	0	0	82	0	
Volume Right	109	0	22	0	0	
eSH	545	1700	1700	880	1700	
Volume to Capacity	0.23	0.28	0.15	0.09	0.20	
Queue Length 95th (m)	6.7	0.0	0.0	2.3	0.0	
Control Delay (s)	13.6	0.0	0.0	3.8	0.0	
Lane LOS	B	A		A		
Approach Delay (s)	13.6	0.0	1.6			
Approach LOS	B					
Intersection Summary						
Average Delay	1.8					
Intersection Capacity Utilization	51.2%		ICU Level of Service		A	
Analysis Period (min)	15					

Timings

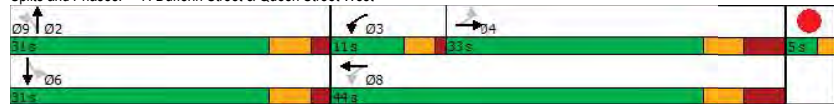
7: Dufferin Street & Queen Street West

10/11/2022

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9	
Lane Configurations	↔		↔		↔		↔			
Traffic Volume (vph)	55	300	160	430	40	540	60	360		
Future Volume (vph)	55	300	160	430	40	540	60	360		
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA		
Protected Phases	4		3		8		2		6 9	
Permitted Phases	4		8		2		6			
Detector Phase	4		4		3		8		2 2 2 6 6	
Switch Phase										
Minimum Initial (s)	25.0	25.0	6.0	25.0	19.0	19.0	19.0	19.0	1.0	
Minimum Split (s)	33.0	33.0	10.0	33.0	25.0	25.0	25.0	25.0	3.0	
Total Split (s)	33.0	33.0	11.0	44.0	31.0	31.0	31.0	31.0	5.0	
Total Split (%)	41.3%	41.3%	13.8%	55.0%	38.8%	38.8%	38.8%	38.8%	6%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	2.0	
All-Red Time (s)	4.0	4.0	1.0	4.0	2.0	2.0	2.0	2.0	0.0	
Lost Time Adjust (s)	0.0		0.0		0.0		0.0			
Total Lost Time (s)	8.0		8.0		6.0		6.0			
Lead/Lag	Lag	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	None	None	None	None	Max	Max	Max	Max	None	
Act Effct Green (s)	28.7		28.7		25.1		25.1			
Actuated g/C Ratio	0.42		0.42		0.37		0.37			
v/c Ratio	0.41		0.70		0.69		0.56			
Control Delay	13.9		20.3		23.3		20.8			
Queue Delay	0.0		0.0		0.0		0.0			
Total Delay	13.9		20.3		23.3		20.8			
LOS	B		C		C		C			
Approach Delay	13.9		20.3		23.3		20.8			
Approach LOS	B		C		C		C			

Intersection Summary	
Cycle Length:	80
Actuated Cycle Length:	67.9
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	20.2
Intersection LOS:	C
Intersection Capacity Utilization:	102.5%
ICU Level of Service:	G
Analysis Period (min):	15

Splits and Phases: 7: Dufferin Street & Queen Street West



Queues

7: Dufferin Street & Queen Street West

10/11/2022

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	433	696	732	500
v/c Ratio	0.41	0.70	0.69	0.56
Control Delay	13.9	20.3	23.3	20.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.9	20.3	23.3	20.8
Queue Length 50th (m)	17.8	36.3	38.0	24.3
Queue Length 95th (m)	27.8	53.2	68.0	46.2
Internal Link Dist (m)	219.1	102.5	166.7	156.8
Turn Bay Length (m)				
Base Capacity (vph)	1048	1249	1055	894
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	0.56	0.69	0.56

Intersection Summary

HCM Signalized Intersection Capacity Analysis
7: Dufferin Street & Queen Street West

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔		↔	↔	
Traffic Volume (vph)	55	300	65	160	430	85	40	540	130	60	360	65
Future Volume (vph)	55	300	65	160	430	85	40	540	130	60	360	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	8.0			8.0			6.0			6.0		
Lane Util. Factor	0.95			0.95			0.95			0.95		
Frbp, ped/bikes	0.97			0.97			0.96			0.98		
Flpb, ped/bikes	0.99			0.97			1.00			0.99		
Frft	0.98			0.98			0.97			0.98		
Flt Protected	0.99			0.99			1.00			0.99		
Satd. Flow (prot)	3151			3158			3198			3210		
Flt Permitted	0.78			0.74			0.90			0.75		
Satd. Flow (perm)	2460			2363			2877			2429		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	57	309	67	165	443	88	41	557	134	62	371	67
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	417	0	0	696	0	0	732	0	0	500	0
Confl. Peds. (#/hr)	305		240		240		305		125		200	
Confl. Bikes (#/hr)	15		15		20		5		5		5	
Heavy Vehicles (%)	1%	7%	0%	1%	4%	4%	21%	3%	0%	1%	7%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	4		3		8		2		6		6	
Permitted Phases	4		8		2		6		6		6	
Actuated Green, G (s)	28.7		28.7		25.1		25.1		25.1		25.1	
Effective Green, g (s)	28.7		28.7		25.1		25.1		25.1		25.1	
Actuated g/C Ratio	0.42		0.42		0.37		0.37		0.37		0.37	
Clearance Time (s)	8.0		8.0		6.0		6.0		6.0		6.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	1041		1000		1065		899		899		899	
v/s Ratio Prot	0.17		c0.29		c0.25		0.21		0.21		0.21	
v/c Ratio	0.40		0.70		0.69		0.56		0.56		0.56	
Uniform Delay, d1	13.6		16.0		18.0		16.9		16.9		16.9	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.3		2.1		3.6		2.5		2.5		2.5	
Delay (s)	13.8		18.1		21.7		19.4		19.4		19.4	
Level of Service	B		B		C		B		B		B	
Approach Delay (s)	13.8		18.1		21.7		19.4		19.4		19.4	
Approach LOS	B		B		C		B		B		B	
Intersection Summary												
HCM 2000 Control Delay	18.7		HCM 2000 Level of Service				B					
HCM 2000 Volume to Capacity ratio	0.78											
Actuated Cycle Length (s)	67.8		Sum of lost time (s)				20.0					
Intersection Capacity Utilization	102.5%		ICU Level of Service				G					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
8: Alma Avenue (N) & Site Driveway

10/11/2022

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	0	5	10	0	0	0
Future Volume (Veh/h)	0	5	10	0	0	0
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Hourly flow rate (vph)	0	7	15	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	15				22 15	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	15				22 15	
tC, single (s)	4.1				6.4 6.2	
tC, 2 stage (s)						
tF (s)	2.2				3.5 3.3	
p0 queue free %	100				100 100	
cM capacity (veh/h)	1616				1000 1070	
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	7	15	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1616	1700	1700			
Volume to Capacity	0.00	0.01	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	6.7%		ICU Level of Service		A	
Analysis Period (min)	15					

Timings

1: Dufferin Street & Gordon Street

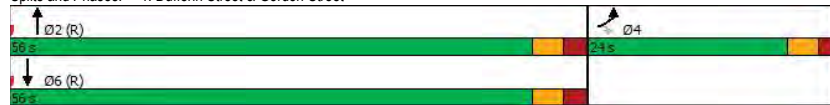
10/11/2022

Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	35	50	600	500
Future Volume (vph)	35	50	600	500
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases	4			
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	19.0	19.0	17.0	17.0
Minimum Split (s)	23.9	23.9	22.4	22.4
Total Split (s)	24.0	24.0	56.0	56.0
Total Split (%)	30.0%	30.0%	70.0%	70.0%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	1.9	1.9	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.4	5.4
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Min	C-Min
Act Effct Green (s)	19.0	19.0	56.6	56.6
Actuated g/C Ratio	0.24	0.24	0.71	0.71
v/c Ratio	0.10	0.16	0.28	0.24
Control Delay	24.7	8.5	6.3	6.0
Queue Delay	0.0	0.0	0.3	0.0
Total Delay	24.7	8.5	6.6	6.0
LOS	C	A	A	A
Approach Delay	15.1		6.6	6.0
Approach LOS	B		A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 77 (96%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.28
 Intersection Signal Delay: 6.9 Intersection LOS: A
 Intersection Capacity Utilization 41.0% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 1: Dufferin Street & Gordon Street



Queues

1: Dufferin Street & Gordon Street

10/11/2022

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	39	56	667	556
v/c Ratio	0.10	0.16	0.28	0.24
Control Delay	24.7	8.5	6.3	6.0
Queue Delay	0.0	0.0	0.3	0.0
Total Delay	24.7	8.5	6.6	6.0
Queue Length 50th (m)	4.7	0.0	21.5	17.2
Queue Length 95th (m)	12.0	8.5	29.8	24.3
Internal Link Dist (m)	143.2		75.5	78.8
Turn Bay Length (m)				
Base Capacity (vph)	402	359	2381	2358
Starvation Cap Reductn	0	0	1034	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.16	0.50	0.24

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: Dufferin Street & Gordon Street

10/11/2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	50	0	600	500	0
Future Volume (vph)	35	50	0	600	500	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	4.9	4.9		5.4	5.4	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frbp, ped/bikes	1.00	0.91		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1685	1328		3368	3336	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1685	1328		3368	3336	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	56	0	667	556	0
RTOR Reduction (vph)	0	45	0	0	0	0
Lane Group Flow (vph)	39	11		667	556	0
Confl. Peds. (#/hr)	105	65	30			30
Confl. Bikes (#/hr)						5
Heavy Vehicles (%)	0%	3%	0%	6%	7%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	15.2	15.2		54.5	54.5	
Effective Green, g (s)	15.2	15.2		54.5	54.5	
Actuated g/C Ratio	0.19	0.19		0.68	0.68	
Clearance Time (s)	4.9	4.9		5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	252		2294	2272	
v/s Ratio Prot	c0.02			c0.20	0.17	
v/s Ratio Perm		0.01				
v/c Ratio	0.12	0.04		0.29	0.24	
Uniform Delay, d1	26.9	26.5		5.1	4.9	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		0.3	0.3	
Delay (s)	27.0	26.5		5.4	5.1	
Level of Service	C	C		A	A	
Approach Delay (s)	26.7			5.4	5.1	
Approach LOS	C			A	A	

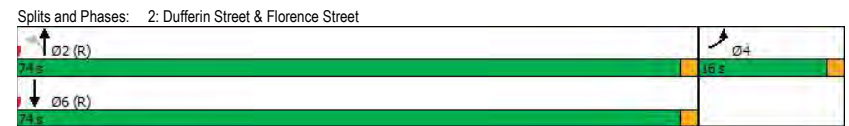
Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Timings
2: Dufferin Street & Florence Street

10/11/2022

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	10	35	590	540
Future Volume (vph)	10	35	590	540
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	10.0	1.0	1.0	1.0
Minimum Split (s)	16.0	12.0	12.0	12.0
Total Split (s)	16.0	74.0	74.0	74.0
Total Split (%)	17.8%	82.2%	82.2%	82.2%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0		2.0	2.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	14.0		72.0	72.0
Actuated g/C Ratio	0.16		0.80	0.80
v/c Ratio	0.12		0.28	0.22
Control Delay	21.3		2.7	2.4
Queue Delay	0.0		0.0	0.5
Total Delay	21.3		2.7	2.9
LOS	C		A	A
Approach Delay	21.3		2.7	2.9
Approach LOS	C		A	A




Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 40	
Control Type: Pretimed	
Maximum v/c Ratio: 0.28	
Intersection Signal Delay: 3.2	Intersection LOS: A
Intersection Capacity Utilization 54.3%	ICU Level of Service A
Analysis Period (min) 15	



Queues

2: Dufferin Street & Florence Street

10/11/2022










			
Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	27	679	598
v/c Ratio	0.12	0.28	0.22
Control Delay	21.3	2.7	2.4
Queue Delay	0.0	0.0	0.5
Total Delay	21.3	2.7	2.9
Queue Length 50th (m)	1.7	11.7	9.5
Queue Length 95th (m)	8.8	16.0	13.1
Internal Link Dist (m)	144.8	37.6	75.5
Turn Bay Length (m)			
Base Capacity (vph)	230	2406	2669
Starvation Cap Reductn	0	0	1561
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.12	0.28	0.54

Intersection Summary

HCM Signalized Intersection Capacity Analysis

2: Dufferin Street & Florence Street

10/11/2022

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	15	35	590	540	10
Future Volume (vph)	10	15	35	590	540	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	2.0			2.0	2.0	
Lane Util. Factor	1.00			0.95	0.95	
Frb. ped/bikes	0.90			1.00	1.00	
Flpb. ped/bikes	1.00			0.99	1.00	
Frt	0.92			1.00	1.00	
Flt Protected	0.98			1.00	1.00	
Satd. Flow (prot)	1393			3329	3336	
Flt Permitted	0.98			0.90	1.00	
Satd. Flow (perm)	1393			3007	3336	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	16	38	641	587	11
RTOR Reduction (vph)	14	0	0	0	1	0
Lane Group Flow (vph)	13	0	0	679	597	0
Confl. Peds. (#/hr)		80	55			55
Confl. Bikes (#/hr)						10
Heavy Vehicles (%)	9%	0%	12%	6%	6%	16%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	14.0			72.0	72.0	
Effective Green, g (s)	14.0			72.0	72.0	
Actuated g/C Ratio	0.16			0.80	0.80	
Clearance Time (s)	2.0			2.0	2.0	
Lane Grp Cap (vph)	216			2405	2668	
v/s Ratio Prot	c0.01				0.18	
v/s Ratio Perm				c0.23		
v/c Ratio	0.06			0.28	0.22	
Uniform Delay, d1	32.4			2.3	2.2	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.6			0.3	0.2	
Delay (s)	33.0			2.6	2.4	
Level of Service	C			A	A	
Approach Delay (s)	33.0			2.6	2.4	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	3.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
3: Dufferin Street & Waterloo Avenue

10/11/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑↑			↑↑
Traffic Volume (veh/h)	25	65	560	0	0	555
Future Volume (Veh/h)	25	65	560	0	0	555
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	71	609	0	0	603
Pedestrians	50					
Lane Width (m)	3.0					
Walking Speed (m/s)	1.1					
Percent Blockage	4					
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			372		62	
pX, platoon unblocked	0.96					
vC, conflicting volume	960	354			659	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	884	354			659	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	88			100	
cM capacity (veh/h)	267	616			901	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	98	304	304	302	302	
Volume Left	27	0	0	0	0	
Volume Right	71	0	0	0	0	
eSH	453	1700	1700	1700	1700	
Volume to Capacity	0.22	0.18	0.18	0.18	0.18	
Queue Length 95th (m)	6.2	0.0	0.0	0.0	0.0	
Control Delay (s)	15.1	0.0	0.0	0.0	0.0	
Lane LOS	C					
Approach Delay (s)	15.1	0.0		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			27.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
4: Dufferin Street & Alma Avenue (N)

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑↑			↑↑	
Traffic Volume (veh/h)	5	0	20	0	0	0	15	555	0	0	575	5
Future Volume (Veh/h)	5	0	20	0	0	0	15	555	0	0	575	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	22	0	0	0	17	617	0	0	639	6
Pedestrians		60			150							
Lane Width (m)		3.5			3.5							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		6			14							
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)								332			101	
pX, platoon unblocked	0.97	0.97	0.97	0.97	0.97		0.97					
vC, conflicting volume	1044	1503	382	1142	1506	458	705				767	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	988	1460	307	1089	1463	458	639				767	
tC, single (s)	9.5	6.5	6.9	7.5	6.5	6.9	4.6				4.1	
tC, 2 stage (s)												
tF (s)	4.5	4.0	3.3	3.5	4.0	3.3	2.5				2.2	
p0 queue free %	92	100	97	100	100	100	98				100	
cM capacity (veh/h)	79	101	638	117	100	478	735				737	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	28	0	326	308	320	326						
Volume Left	6	0	17	0	0	0						
Volume Right	22	0	0	0	0	6						
eSH	254	1700	735	1700	737	1700						
Volume to Capacity	0.11	0.00	0.02	0.18	0.00	0.19						
Queue Length 95th (m)	2.8	0.0	0.5	0.0	0.0	0.0						
Control Delay (s)	20.9	0.0	0.8	0.0	0.0	0.0						
Lane LOS	C	A	A									
Approach Delay (s)	20.9	0.0	0.4		0.0							
Approach LOS	C	A										
Intersection Summary												
Average Delay						0.6						
Intersection Capacity Utilization						36.1%		ICU Level of Service			A	
Analysis Period (min)						15						

HCM Unsignalized Intersection Capacity Analysis
5: Dufferin Street & Brixton Way/Alma Avenue (S)

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔		↕		↕		↕
Traffic Volume (veh/h)	5	0	15	5	0	20	0	545	0	0	595	0
Future Volume (Veh/h)	5	0	15	5	0	20	0	545	0	0	595	0
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	5	0	16	5	0	22	0	599	0	0	654	0
Pedestrians	65			145			10			0		
Lane Width (m)	3.5			3.0			3.5			3.5		
Walking Speed (m/s)	1.1			1.1			1.1			1.1		
Percent Blockage	6			12			1			0		
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (m)	277						156					
pX, platoon unblocked	0.99	0.99	0.99	0.99	0.99		0.99					
vC, conflicting volume	1040	1463	402	1097	1463	444	719	744				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1021	1448	376	1078	1448	444	696	744				
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.1	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2	2.2				
p0 queue free %	97	100	97	96	100	95	100	100				
cM capacity (veh/h)	149	109	578	129	109	478	846	772				
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2					
Volume Total	21	5	22	300	300	327	327					
Volume Left	5	5	0	0	0	0	0					
Volume Right	16	0	22	0	0	0	0					
eSH	344	129	478	1700	1700	1700	1700					
Volume to Capacity	0.06	0.04	0.05	0.18	0.18	0.19	0.19					
Queue Length 95th (m)	1.5	0.9	1.1	0.0	0.0	0.0	0.0					
Control Delay (s)	16.2	34.0	12.9	0.0	0.0	0.0	0.0					
Lane LOS	C	D	B									
Approach Delay (s)	16.2	16.8	0.0		0.0							
Approach LOS	C	C										
Intersection Summary												
Average Delay	0.6											
Intersection Capacity Utilization	34.6%			ICU Level of Service			A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
6: Dufferin Street & Peel Avenue

10/11/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↕	↕
Traffic Volume (veh/h)	30	90	455	30	100	515
Future Volume (Veh/h)	30	90	455	30	100	515
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	100	506	33	111	572
Pedestrians	165		10		5	
Lane Width (m)	3.0		3.5		3.5	
Walking Speed (m/s)	1.1		1.1		1.1	
Percent Blockage	13		1		0	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	181			253		
pX, platoon unblocked						
vC, conflicting volume	1206	440	704			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1206	440	704			
tC, single (s)	6.8	6.9	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	75	80	86			
cM capacity (veh/h)	132	491	767			
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	133	337	202	302	381	
Volume Left	33	0	0	111	0	
Volume Right	100	0	33	0	0	
eSH	293	1700	1700	767	1700	
Volume to Capacity	0.45	0.20	0.12	0.14	0.22	
Queue Length 95th (m)	17.0	0.0	0.0	3.8	0.0	
Control Delay (s)	27.1	0.0	0.0	4.9	0.0	
Lane LOS	D	A		A		
Approach Delay (s)	27.1	0.0	2.2			
Approach LOS	D					
Intersection Summary						
Average Delay	3.8					
Intersection Capacity Utilization	49.6%		ICU Level of Service		A	
Analysis Period (min)	15					

Timings

7: Dufferin Street & Queen Street West

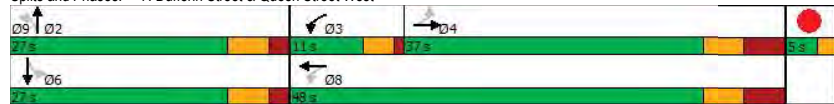
10/11/2022

	↖	→	↙	←	↖	↑	↙	↓	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations		↔		↔		↔		↔	
Traffic Volume (vph)	100	550	180	290	45	320	55	460	
Future Volume (vph)	100	550	180	290	45	320	55	460	
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA	
Protected Phases		4	3	8		2		6	9
Permitted Phases	4		8		2		6		
Detector Phase	4	4	3	8	2	2	6	6	
Switch Phase									
Minimum Initial (s)	25.0	25.0	6.0	25.0	19.0	19.0	19.0	19.0	1.0
Minimum Split (s)	33.0	33.0	10.0	33.0	25.0	25.0	25.0	25.0	3.0
Total Split (s)	37.0	37.0	11.0	48.0	27.0	27.0	27.0	27.0	5.0
Total Split (%)	46.3%	46.3%	13.8%	60.0%	33.8%	33.8%	33.8%	33.8%	6%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	4.0	4.0	1.0	4.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0	
Total Lost Time (s)		8.0		8.0		6.0		6.0	
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Max	Max	Max	Max	None
Act Effct Green (s)		28.0		28.0		21.1		21.1	
Actuated g/C Ratio		0.44		0.44		0.33		0.33	
v/c Ratio		0.66		0.66		0.60		0.62	
Control Delay		16.8		18.1		22.2		22.1	
Queue Delay		0.0		0.0		0.0		0.0	
Total Delay		16.8		18.1		22.2		22.1	
LOS		B		B		C		C	
Approach Delay		16.8		18.1		22.2		22.1	
Approach LOS		B		B		C		C	

Intersection Summary

Cycle Length: 80	
Actuated Cycle Length: 63.2	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 19.5	Intersection LOS: B
Intersection Capacity Utilization 96.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: Dufferin Street & Queen Street West



Queues

7: Dufferin Street & Queen Street West

10/11/2022

	→	←	↑	↓
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	742	562	500	574
v/c Ratio	0.66	0.66	0.60	0.62
Control Delay	16.8	18.1	22.2	22.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.8	18.1	22.2	22.1
Queue Length 50th (m)	33.3	25.6	23.0	26.5
Queue Length 95th (m)	48.8	40.1	46.9	52.6
Internal Link Dist (m)	219.1	102.5	166.7	156.8
Turn Bay Length (m)				
Base Capacity (vph)	1218	1218	828	922
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.61	0.46	0.60	0.62

Intersection Summary

HCM Signalized Intersection Capacity Analysis
7: Dufferin Street & Queen Street West

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔		↔		
Traffic Volume (vph)	100	550	55	180	290	65	45	320	110	55	460	30
Future Volume (vph)	100	550	55	180	290	65	45	320	110	55	460	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	8.0			8.0			6.0			6.0		
Lane Util. Factor	0.95			0.95			0.95			0.95		
Frbp, ped/bikes	0.99			0.99			0.95			0.99		
Flpb, ped/bikes	0.99			0.98			1.00			0.99		
Frt	0.99			0.98			0.97			0.99		
Flt Protected	0.99			0.98			1.00			0.99		
Satd. Flow (prot)	3270			3132			2949			3261		
Flt Permitted	0.77			0.60			0.85			0.85		
Satd. Flow (perm)	2524			1922			2513			2770		
Peak-hour factor, PHF	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)	105	579	58	189	305	68	47	337	116	58	484	32
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	735	0	0	562	0	0	500	0	0	574	0
Confl. Peds. (#/hr)	145		185	185		145	110		185	185		110
Confl. Bikes (#/hr)			10			5			5			
Heavy Vehicles (%)	8%	5%	1%	5%	9%	1%	50%	8%	2%	1%	7%	6%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2				6
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		28.0			28.0			21.1			21.1	
Effective Green, g (s)		28.0			28.0			21.1			21.1	
Actuated g/C Ratio		0.44			0.44			0.33			0.33	
Clearance Time (s)		8.0			8.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1120			852			840			926	
v/s Ratio Prot												
v/s Ratio Perm		0.29			c0.29			0.20			c0.21	
v/c Ratio		0.66			0.66			0.60			0.62	
Uniform Delay, d1		13.8			13.8			17.5			17.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.4			1.9			3.1			3.1	
Delay (s)		15.2			15.7			20.5			20.7	
Level of Service		B			B			C			C	
Approach Delay (s)		15.2			15.7			20.5			20.7	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay		17.8			HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio		0.73										
Actuated Cycle Length (s)		63.1			Sum of lost time (s)						20.0	
Intersection Capacity Utilization		96.7%			ICU Level of Service						F	
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
8: Alma Avenue (N) & Site Driveway

10/11/2022

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	0	5	10	10	20	0
Future Volume (Veh/h)	0	5	10	10	20	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Hourly flow rate (vph)	0	9	17	17	34	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	34				34	26
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	34				34	26
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1591				984	1056
Direction, Lane #						
Volume Total	9	34	34			
Volume Left	0	0	34			
Volume Right	0	17	0			
cSH	1591	1700	984			
Volume to Capacity	0.00	0.02	0.03			
Queue Length 95th (m)	0.0	0.0	0.8			
Control Delay (s)	0.0	0.0	8.8			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	8.8			
Approach LOS			A			
Intersection Summary						
Average Delay			3.9			
Intersection Capacity Utilization			13.3%		ICU Level of Service	A
Analysis Period (min)			15			

Timings

1: Dufferin Street & Gordon Street

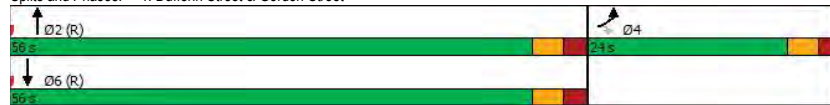
10/11/2022

Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	35	20	770	490
Future Volume (vph)	35	20	770	490
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases	4			
Detector Phase	4	4	2	6
Switch Phase				
Minimum Initial (s)	19.0	19.0	17.0	17.0
Minimum Split (s)	23.9	23.9	23.4	23.4
Total Split (s)	24.0	24.0	56.0	56.0
Total Split (%)	30.0%	30.0%	70.0%	70.0%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	1.9	1.9	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.4	5.4
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Min	C-Min
Act Effct Green (s)	19.0	19.0	62.4	62.4
Actuated g/C Ratio	0.24	0.24	0.78	0.78
v/c Ratio	0.10	0.06	0.31	0.20
Control Delay	24.7	10.9	5.4	4.8
Queue Delay	0.0	0.0	0.2	0.0
Total Delay	24.7	10.9	5.6	4.8
LOS	C	B	A	A
Approach Delay	19.6		5.6	
Approach LOS	B		A	

Intersection Summary

Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.31	
Intersection Signal Delay: 5.9	Intersection LOS: A
Intersection Capacity Utilization 45.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Dufferin Street & Gordon Street



Queues

1: Dufferin Street & Gordon Street

10/11/2022

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	38	22	837	533
v/c Ratio	0.10	0.06	0.31	0.20
Control Delay	24.7	10.9	5.4	4.8
Queue Delay	0.0	0.0	0.2	0.0
Total Delay	24.7	10.9	5.6	4.8
Queue Length 50th (m)	4.5	0.0	28.5	16.3
Queue Length 95th (m)	11.7	5.4	38.3	23.2
Internal Link Dist (m)	143.2		75.5	
Turn Bay Length (m)				
Base Capacity (vph)	394	365	2731	2678
Starvation Cap Reductn	0	0	1038	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.06	0.49	0.20

Intersection Summary

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HCM Signalized Intersection Capacity Analysis
1: Dufferin Street & Gordon Street

10/11/2022

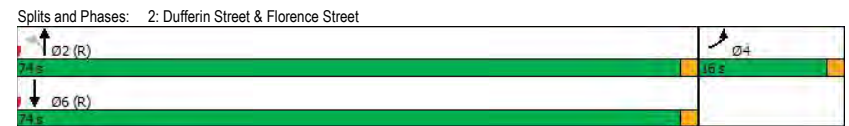
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	20	0	770	490	0
Future Volume (vph)	35	20	0	770	490	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	4.9	4.9		5.4	5.4	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frbp, ped/bikes	1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1652	1461		3500	3433	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1652	1461		3500	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	22	0	837	533	0
RTOR Reduction (vph)	0	19	0	0	0	0
Lane Group Flow (vph)	38	3	0	837	533	0
Confl. Peds. (#/hr)	25	15	30			30
Heavy Vehicles (%)	2%	0%	0%	2%	4%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	11.4	11.4		58.3	58.3	
Effective Green, g (s)	11.4	11.4		58.3	58.3	
Actuated g/C Ratio	0.14	0.14		0.73	0.73	
Clearance Time (s)	4.9	4.9		5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	235	208		2550	2501	
v/s Ratio Prot	c0.02			c0.24	0.16	
v/s Ratio Perm		0.00				
v/c Ratio	0.16	0.02		0.33	0.21	
Uniform Delay, d1	30.1	29.5		3.9	3.5	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.0		0.3	0.2	
Delay (s)	30.4	29.5		4.2	3.7	
Level of Service	C	C		A	A	
Approach Delay (s)	30.1			4.2	3.7	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Timings
2: Dufferin Street & Florence Street

10/11/2022




Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	5	75	765	500
Future Volume (vph)	5	75	765	500
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	10.0	1.0	1.0	1.0
Minimum Split (s)	16.0	12.0	12.0	12.0
Total Split (s)	16.0	74.0	74.0	74.0
Total Split (%)	17.8%	82.2%	82.2%	82.2%
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0		2.0	2.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	14.0		72.0	72.0
Actuated g/C Ratio	0.16		0.80	0.80
v/c Ratio	0.13		0.39	0.21
Control Delay	16.2		3.2	2.3
Queue Delay	0.0		0.0	0.5
Total Delay	16.2		3.2	2.8
LOS	B		A	A
Approach Delay	16.2		3.2	2.8
Approach LOS	B		A	A
Intersection Summary				
Cycle Length: 90				
Actuated Cycle Length: 90				
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green				
Natural Cycle: 40				
Control Type: Pretimed				
Maximum v/c Ratio: 0.39				
Intersection Signal Delay: 3.3			Intersection LOS: A	
Intersection Capacity Utilization 59.2%			ICU Level of Service B	
Analysis Period (min) 15				



Queues

2: Dufferin Street & Florence Street










10/11/2022

			
Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	32	923	560
v/c Ratio	0.13	0.39	0.21
Control Delay	16.2	3.2	2.3
Queue Delay	0.0	0.0	0.5
Total Delay	16.2	3.2	2.8
Queue Length 50th (m)	0.8	18.0	8.7
Queue Length 95th (m)	8.4	24.0	12.1
Internal Link Dist (m)	144.8	37.6	75.5
Turn Bay Length (m)			
Base Capacity (vph)	255	2358	2724
Starvation Cap Reductn	0	0	1637
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.13	0.39	0.52
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

2: Dufferin Street & Florence Street

10/11/2022

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	25	75	765	500	10
Future Volume (vph)	5	25	75	765	500	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	2.0			2.0	2.0	
Lane Util. Factor	1.00			0.95	0.95	
Frbp, ped/bikes	0.96			1.00	1.00	
Flpb, ped/bikes	1.00			0.99	1.00	
Frt	0.89			1.00	1.00	
Flt Protected	0.99			1.00	1.00	
Satd. Flow (prot)	1494			3461	3404	
Flt Permitted	0.99			0.85	1.00	
Satd. Flow (perm)	1494			2947	3404	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	5	27	82	841	549	11
RTOR Reduction (vph)	23	0	0	0	2	0
Lane Group Flow (vph)	9	0	0	923	558	0
Confl. Peds. (#/hr)	20			40		40
Confl. Bikes (#/hr)						5
Heavy Vehicles (%)	0%	0%	2%	2%	4%	12%
Turn Type	Prot		Perm		NA	NA
Protected Phases	4				2	6
Permitted Phases			2			
Actuated Green, G (s)	14.0				72.0	72.0
Effective Green, g (s)	14.0				72.0	72.0
Actuated g/C Ratio	0.16				0.80	0.80
Clearance Time (s)	2.0				2.0	2.0
Lane Grp Cap (vph)	232				2357	2723
v/s Ratio Prot	c0.01					0.16
v/s Ratio Perm			c0.31			
v/c Ratio	0.04				0.39	0.21
Uniform Delay, d1	32.3				2.6	2.2
Progression Factor	1.00				1.00	1.00
Incremental Delay, d2	0.3				0.5	0.2
Delay (s)	32.6				3.1	2.3
Level of Service	C				A	A
Approach Delay (s)	32.6				3.1	2.3
Approach LOS	C				A	A
Intersection Summary						
HCM 2000 Control Delay				3.4	HCM 2000 Level of Service	
HCM 2000 Volume to Capacity ratio				0.33	A	
Actuated Cycle Length (s)				90.0	Sum of lost time (s)	
Intersection Capacity Utilization				59.2%	ICU Level of Service	
Analysis Period (min)				15	B	
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
3: Dufferin Street & Waterloo Avenue

10/11/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↕			↕
Traffic Volume (veh/h)	15	40	800	0	0	525
Future Volume (Veh/h)	15	40	800	0	0	525
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	16	43	860	0	0	565
Pedestrians	45					
Lane Width (m)	3.0					
Walking Speed (m/s)	1.1					
Percent Blockage	4					
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			372		62	
pX, platoon unblocked	0.97					
vC, conflicting volume	1188	475			905	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1130	475			905	
tC, single (s)	6.8	7.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	92			100	
cM capacity (veh/h)	187	509			733	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	59	430	430	282	282	
Volume Left	16	0	0	0	0	
Volume Right	43	0	0	0	0	
eSH	347	1700	1700	1700	1700	
Volume to Capacity	0.17	0.25	0.25	0.17	0.17	
Queue Length 95th (m)	4.6	0.0	0.0	0.0	0.0	
Control Delay (s)	17.5	0.0	0.0	0.0	0.0	
Lane LOS	C					
Approach Delay (s)	17.5	0.0		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			32.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
4: Dufferin Street & Alma Avenue (N)

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Volume (veh/h)	5	0	10	0	0	0	25	795	0	0	535	5
Future Volume (Veh/h)	5	0	10	0	0	0	25	795	0	0	535	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	5	0	11	0	0	0	27	874	0	0	588	5
Pedestrians		55			40							
Lane Width (m)		3.5			3.5							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		5			4							
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)								332			101	
pX, platoon unblocked	0.98	0.98	0.98	0.98	0.98	1.00	0.98			1.00		
vC, conflicting volume	1136	1614	352	1273	1616	477	648			914		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1086	1573	292	1225	1576	471	595			909		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	5.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.9			2.2		
p0 queue free %	97	100	98	100	100	100	95			100		
cM capacity (veh/h)	145	95	659	115	95	523	598			728		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	16	0	464	437	294	299						
Volume Left	5	0	27	0	0	0						
Volume Right	11	0	0	0	0	5						
eSH	313	1700	598	1700	728	1700						
Volume to Capacity	0.05	0.00	0.05	0.26	0.00	0.18						
Queue Length 95th (m)	1.2	0.0	1.1	0.0	0.0	0.0						
Control Delay (s)	17.1	0.0	1.3	0.0	0.0	0.0						
Lane LOS	C	A	A									
Approach Delay (s)	17.1	0.0	0.7		0.0							
Approach LOS	C	A										
Intersection Summary												
Average Delay						0.6						
Intersection Capacity Utilization						50.1%		ICU Level of Service		A		
Analysis Period (min)						15						

HCM Unsignalized Intersection Capacity Analysis
5: Dufferin Street & Brixton Way/Alma Avenue (S)

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔		↔		↕			↕	
Traffic Volume (veh/h)	5	0	5	10	0	40	5	775	0	0	540	5
Future Volume (Veh/h)	5	0	5	10	0	40	5	775	0	0	540	5
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	5	11	0	43	5	842	0	0	587	5
Pedestrians	55			45			5			5		
Lane Width (m)	3.5			3.0			3.5			3.5		
Walking Speed (m/s)	1.1			1.1			1.1			1.1		
Percent Blockage	5			4			0			0		
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (m)							277			156		
pX, platoon unblocked	0.96	0.96	1.00	0.96	0.96	0.96	1.00			0.96		
vC, conflicting volume	1124	1542	351	1196	1544	471	647			887		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1034	1470	345	1109	1472	362	642			796		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	92	100	93	99			100		
cM capacity (veh/h)	148	112	622	143	112	584	902			772		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2					
Volume Total	10	11	43	286	561	391	201					
Volume Left	5	11	0	5	0	0	0					
Volume Right	5	0	43	0	0	0	5					
eSH	239	143	584	902	1700	1700	1700					
Volume to Capacity	0.04	0.08	0.07	0.01	0.33	0.23	0.12					
Queue Length 95th (m)	1.0	1.9	1.8	0.1	0.0	0.0	0.0					
Control Delay (s)	20.7	32.4	11.7	0.2	0.0	0.0	0.0					
Lane LOS	C	D	B	A								
Approach Delay (s)	20.7	15.9	0.1		0.0							
Approach LOS	C	C										
Intersection Summary												
Average Delay	0.7											
Intersection Capacity Utilization	39.8%			ICU Level of Service			A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
6: Dufferin Street & Peel Avenue

10/11/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↕	↕
Traffic Volume (veh/h)	15	100	680	20	75	480
Future Volume (Veh/h)	15	100	680	20	75	480
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	109	739	22	82	522
Pedestrians	50	15				
Lane Width (m)	3.0	3.5				
Walking Speed (m/s)	1.1	1.1				
Percent Blockage	4	1				
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)				181		
pX, platoon unblocked	0.89	0.89			0.89	
vC, conflicting volume	1240	430			811	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1029	122			548	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	86			91	
cM capacity (veh/h)	179	782			872	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	125	493	268	256	348	
Volume Left	16	0	0	82	0	
Volume Right	109	0	22	0	0	
eSH	546	1700	1700	872	1700	
Volume to Capacity	0.23	0.29	0.16	0.09	0.20	
Queue Length 95th (m)	6.7	0.0	0.0	2.4	0.0	
Control Delay (s)	13.5	0.0	0.0	3.7	0.0	
Lane LOS	B	A		A		
Approach Delay (s)	13.5	0.0	1.6			
Approach LOS	B					
Intersection Summary						
Average Delay	1.8					
Intersection Capacity Utilization	52.0%			ICU Level of Service		
Analysis Period (min)	15			A		

Timings

7: Dufferin Street & Queen Street West

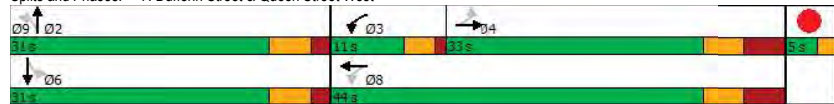
10/11/2022

	↖	→	↙	←	↖	↑	↙	↓	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations		↔	↔	↔		↔	↔	↔	
Traffic Volume (vph)	55	300	160	430	40	560	60	370	
Future Volume (vph)	55	300	160	430	40	560	60	370	
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA	
Protected Phases		4	3	8		2		6	9
Permitted Phases	4		8		2		6		
Detector Phase	4	4	3	8	2	2	6	6	
Switch Phase									
Minimum Initial (s)	25.0	25.0	6.0	25.0	19.0	19.0	19.0	19.0	1.0
Minimum Split (s)	33.0	33.0	10.0	33.0	25.0	25.0	25.0	25.0	3.0
Total Split (s)	33.0	33.0	11.0	44.0	31.0	31.0	31.0	31.0	5.0
Total Split (%)	41.3%	41.3%	13.8%	55.0%	38.8%	38.8%	38.8%	38.8%	6%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	4.0	4.0	1.0	4.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0	
Total Lost Time (s)		8.0		8.0		6.0		6.0	
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Max	Max	Max	Max	None
Act Effct Green (s)		28.7		28.7		25.1		25.1	
Actuated g/C Ratio		0.42		0.42		0.37		0.37	
v/c Ratio		0.41		0.70		0.71		0.57	
Control Delay		13.9		20.3		23.9		21.2	
Queue Delay		0.0		0.0		0.0		0.0	
Total Delay		13.9		20.3		23.9		21.2	
LOS		B		C		C		C	
Approach Delay		13.9		20.3		23.9		21.2	
Approach LOS		B		C		C		C	

Intersection Summary

Cycle Length: 80	
Actuated Cycle Length: 67.9	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 20.5	Intersection LOS: C
Intersection Capacity Utilization 103.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 7: Dufferin Street & Queen Street West



Queues

7: Dufferin Street & Queen Street West

10/11/2022

	→	←	↑	↓
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	433	696	752	510
v/c Ratio	0.41	0.70	0.71	0.57
Control Delay	13.9	20.3	23.9	21.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.9	20.3	23.9	21.2
Queue Length 50th (m)	17.8	36.3	39.4	24.9
Queue Length 95th (m)	27.8	53.2	#71.2	47.3
Internal Link Dist (m)	219.1	102.5	166.7	156.8
Turn Bay Length (m)				
Base Capacity (vph)	1048	1249	1057	887
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	0.56	0.71	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
7: Dufferin Street & Queen Street West

10/11/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔		↔		
Traffic Volume (vph)	55	300	65	160	430	85	40	560	130	60	370	65
Future Volume (vph)	55	300	65	160	430	85	40	560	130	60	370	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	8.0			8.0			6.0			6.0		
Lane Util. Factor	0.95			0.95			0.95			0.95		
Frbp, ped/bikes	0.97			0.97			0.96			0.98		
Flpb, ped/bikes	0.99			0.97			1.00			0.99		
Frt	0.98			0.98			0.97			0.98		
Flt Protected	0.99			0.99			1.00			0.99		
Satd. Flow (prot)	3151			3158			3205			3214		
Flt Permitted	0.78			0.74			0.90			0.75		
Satd. Flow (perm)	2460			2363			2884			2409		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	57	309	67	165	443	88	41	577	134	62	381	67
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	417	0	0	696	0	0	752	0	0	510	0
Confl. Peds. (#/hr)	305		240		240		305		125		200	
Confl. Bikes (#/hr)	15		15		20		20		5		5	
Heavy Vehicles (%)	1%	7%	0%	1%	4%	4%	21%	3%	0%	1%	7%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	4		3		8		2		6		6	
Permitted Phases	4		8		2		6		6		6	
Actuated Green, G (s)	28.7		28.7		25.1		25.1		25.1		25.1	
Effective Green, g (s)	28.7		28.7		25.1		25.1		25.1		25.1	
Actuated g/C Ratio	0.42		0.42		0.37		0.37		0.37		0.37	
Clearance Time (s)	8.0		8.0		6.0		6.0		6.0		6.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	1041		1000		1067		891		891		891	
v/s Ratio Prot	0.17		c0.29		c0.26		0.21		0.21		0.21	
v/c Ratio	0.40		0.70		0.70		0.57		0.57		0.57	
Uniform Delay, d1	13.6		16.0		18.2		17.1		17.1		17.1	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.3		2.1		3.9		2.7		2.7		2.7	
Delay (s)	13.8		18.1		22.1		19.7		19.7		19.7	
Level of Service	B		B		C		B		B		B	
Approach Delay (s)	13.8		18.1		22.1		19.7		19.7		19.7	
Approach LOS	B		B		C		B		B		B	
Intersection Summary												
HCM 2000 Control Delay	18.9		HCM 2000 Level of Service		B							
HCM 2000 Volume to Capacity ratio	0.79											
Actuated Cycle Length (s)	67.8		Sum of lost time (s)		20.0							
Intersection Capacity Utilization	103.0%		ICU Level of Service		G							
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
8: Alma Avenue (N) & Site Driveway

10/11/2022

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	0	5	10	20	10	0
Future Volume (Veh/h)	0	5	10	20	10	0
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Hourly flow rate (vph)	0	7	15	30	15	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	45				37 30	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	45				37 30	
tC, single (s)	4.1				6.4 6.2	
tC, 2 stage (s)						
tF (s)	2.2				3.5 3.3	
p0 queue free %	100				98 100	
cM capacity (veh/h)	1576				981 1050	
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	7	45	15			
Volume Left	0	0	15			
Volume Right	0	30	0			
cSH	1576	1700	981			
Volume to Capacity	0.00	0.03	0.02			
Queue Length 95th (m)	0.0	0.0	0.4			
Control Delay (s)	0.0	0.0	8.7			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	8.7			
Approach LOS	A					
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization			13.3%		ICU Level of Service A	
Analysis Period (min)			15			