Cycling Safety Review of High-Volume Intersections

ASSUMPTIONS AND METHODOLOGY

Light vehicles include cars and motorcycles
Heavy vehicles include buses and trucks
Total vehicle counts include light, heavy, bikes (peds are excluded)
Bicycles travelling on off-road pathways are either not counted, or classified as pedestrians. As a result, bicycles are underrepresented at some intersections
Unless otherwise stated, Miovision data is the sole source of all counts. When multiple Miovision datasets are available, a single set is chosen on the basis of:

- Coverage of a full day (minimum 7AM-6PM preferred)
- Time of year, with preference for peak cycling season (May-Sep)
- Day of week, with strong preference for weekdays
- If ideal motor vehicle volume data and bicycle volume data are located in different datasets, volumes may be

Time span for analysis is based on availability from Miovision data
Peak hour turning movements are compared to NACTO's thresholds for consideration of protected turning phases to reduce cycling conflicts at intersections (see below)

Guidance for Considering Protected Signal Phasing (Source: NACTO Don't Give Up at the Intersection (2019))

Consider phased separation when:

- Adjacent turning lane volume exceeds 120-150 vph
- Conflicting left-turning volume exceeds 60-90 vph
- When vehicle turns cross multiple vehicle lanes

(1) ALTA VISTA @ INDUSTRIAL

SUMMARY DATA	
Collection Method	Miovision
Date Collected	21-Nov-2017
Time Period	7AM-6PM
Vehicles	23614
% Trucks/Buses	6%
% Bicycles (on-road)	0%
Bicycles (on-road)	31
Pedestrians	517

ORIENTATION	
Leg	Street
North	Alta Vista
East	Industrial
South	Alta Vista
West	Industrial

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	1447	693	206	2346	70%
Westbound	224	4942	1212	6378	23%
Northbound	1251	697	3502	5450	87%
Eastbound	2736	4765	591	8092	41%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	341	51	85	477	89%
Westbound	65	258	18	341	24%
Northbound	26	98	65	189	48%
Eastbound	64	206	40	310	34%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	0	7	2	9	22%
Westbound	0	3	1	4	25%
Northbound	2	5	3	10	50%
Eastbound	3	5	0	8	38%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	158	75	22
Westbound	30	768	150
Northbound	123	89	528
Eastbound	504	517	63
PM PEAK	Right	Thru	Left
Southbound	346	152	52
Westbound	33	605	148
Northbound	213	129	501
Eastbound	289	713	99

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	1%	1%	0%
Westbound	0%	0%	0%	0%
Northbound	0%	1%	0%	0%
Eastbound	0%	0%	0%	0%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	19%	7%	29%	17%
Westbound	22%	5%	1%	5%
Northbound	2%	12%	2%	3%
Eastbound	2%	4%	6%	4%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	23	24	47	9%
East	152	193	345	67%
South	53	65	118	23%
West	3	4	7	1%

Notes:

1. Major changes have occurred at this intersection since this count was taken - LRT opened, significantly reducing the number of buses on-road making SBR movements

2. Right turn channels at NW and SW corners

3. Existing bike lanes at south leg on Alta Vista Dr, bike route sign on north leg

4. MUP connection at SE corner

(2) BANK @ FIFTH

SUMMARY DATA	
Collection Method	Miovision
Date Collected	20-Jul-2017
Time Period	7AM-6PM
Vehicles	14246
% Trucks/Buses	5%
% Bicycles (on-road)	6%
Bicycles (on-road)	798
Pedestrians	4966

ORIENTATION	
Leg	Street
North	Bank
East	Fifth
South	Bank
West	Fifth

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	291	4680	182	5153	9%
Westbound	244	304	631	1179	74%
Northbound	282	4971	113	5366	7%
Eastbound	327	344	412	1083	68%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	19	280	7	306	8%
Westbound	13	3	20	36	92%
Northbound	6	296	4	306	3%
Eastbound	4	7	8	19	63%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	7	220	2	229	4%
Westbound	19	102	22	143	29%
Northbound	13	252	3	268	6%
Eastbound	27	115	16	158	27%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	29	384	12
Westbound	23	36	49
Northbound	24	755	13
Eastbound	25	54	59
PM PEAK	Right	Thru	Left
Southbound	44	714	22
Westbound	18	78	82
Northbound	32	461	11
Eastbound	45	70	54

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	2%	4%	1%	4%
Westbound	7%	25%	3%	11%
Northbound	4%	5%	3%	5%
Eastbound	8%	25%	4%	13%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	6%	5%	4%	5%
Westbound	5%	1%	3%	3%
Northbound	2%	5%	3%	5%
Eastbound	1%	2%	2%	2%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	472	452	924	19%
East	907	1041	1948	39%
South	289	425	714	14%
West	597	783	1380	28%

Notes:

1. Miovision data was also available for April 2017 at this intersection, however it is deemed that summer volumes are more appropriate for this study

(3) BANK @ RIVERSIDE N

SUMMARY DATA	
Collection Method	Miovision
Date Collected	16-Jul-2015
Time Period	7AM-6PM
Vehicles	23522
% Trucks/Buses	3%
% Bicycles (on-road)	3%
Bicycles (on-road)	618
Pedestrians	581

ORIENTATION	
Leg	Street
North	Bank
East	Riverside
South	Bank
West	Riverside

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	1500	4068		5568	27%
Westbound	1018	8384	2297	11699	28%
Northbound		4879	2	4881	0%
Eastbound					

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	40	180		220	18%
Westbound	30	216	57	303	29%
Northbound		233	0	233	0%
Eastbound					

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	9	203		212	4%
Westbound	104	60	1	165	64%
Northbound		241	0	241	0%
Eastbound					

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	161	378	0
Westbound	204	1031	251
Northbound	0	889	0
Eastbound	0	3	0
PM PEAK	Right	Thru	Left
Southbound	197	665	0
Westbound	98	1363	371
Northbound	0	540	0
Eastbound	0	0	0

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	1%	5%		4%
Westbound	9%	1%	0%	1%
Northbound		5%	0%	5%
Eastbound				

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	3%	4%		4%
Westbound	3%	2%	2%	2%
Northbound		4%	0%	4%
Eastbound				

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	26	31	57	10%
East	104	130	234	40%
South	26	28	54	9%
West	109	127	236	41%

Notes:

1. Riverside N is one-way westbound

2. NBL movement is prohibited at all times

3. Any counted movements that are restricted/infeasible are deleted

4. Miovision data was also available from November 2018 at this intersection, however it is deemed that summer volumes are more appropriate for this study, and Nov 2018 overall vehicle volumes were lower

(4) BANK @ WILTON

SUMMARY DATA	
Collection Method	Miovision
Date Collected	20-Jul-2017
Time Period	7AM-6PM
Vehicles	16213
% Trucks/Buses	4%
% Bicycles (on-road)	6%
Bicycles (on-road)	919
Pedestrians	687

ORIENTATION	
Leg	Street
North	Bank
East	N/A
South	Bank
West	Wilton

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	379	4890		5269	7%
Westbound					
Northbound		5832	1607	7439	22%
Eastbound	1918		72	1990	100%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	5	277		282	2%
Westbound					
Northbound		283	13	296	4%
Eastbound	16		2	18	100%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	9	306		315	3%
Westbound					
Northbound		424	64	488	13%
Eastbound	115		1	116	100%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	17	393	
Westbound			
Northbound		909	237
Eastbound	175		2
PM PEAK	Right	Thru	Left
Southbound	36	782	
Westbound			
Northbound		570	239
Eastbound	292		5

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	2%	6%		5%
Westbound				
Northbound		6%	4%	6%
Eastbound	6%		1%	5%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound		5%		5%
Westbound				
Northbound		4%	1%	4%
Eastbound	1%		3%	1%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	32	21	53	8%
East				
South	1	3	4	1%
West	350	280	630	92%

Notes:

1. Intersection is not signalized. EB approach is stop-controlled

2. Miovision data was also available from Oct 2017 at this intersection, however it is deemed that summer volumes are more appropriate for this study

(5) BAYSWATER @ SOMERSET

SUMMARY DATA	
Collection Method	Miovision
Date Collected	07-Sep-2016
Time Period	7AM-6PM
Vehicles	9336
% Trucks/Buses	3%
% Bicycles (on-road)	7%
Bicycles (on-road)	692
Pedestrians	1745

ORIENTATION	
Leg	Street
North	Bayswater
East	Somerset
South	Bayswater
West	Somerset

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	378	1381	701	2460	44%
Westbound	557	1487	152	2196	32%
Northbound	147	1417	255	1819	22%
Eastbound	197	1473	219	1889	22%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	14	12	27	53	77%
Westbound	26	79	1	106	25%
Northbound	1	17	4	22	23%
Eastbound	3	84	12	99	15%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	13	40	32	85	53%
Westbound	33	282	4	319	12%
Northbound	1	44	6	51	14%
Eastbound	1	225	11	237	5%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	50	222	122
Westbound	57	150	18
Northbound	29	194	25
Eastbound	24	253	37
PM PEAK	Right	Thru	Left
Southbound	63	262	102
Westbound	125	357	31
Northbound	22	292	48
Eastbound	32	246	37

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	3%	3%	4%	3%
Westbound	5%	15%	3%	12%
Northbound	1%	3%	2%	3%
Eastbound	0%	13%	5%	11%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	3%	1%	4%	2%
Westbound	4%	4%	1%	4%
Northbound	1%	1%	2%	1%
Eastbound	1%	5%	5%	4%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	182	225	407	23%
East	190	151	341	20%
South	386	355	741	42%
West	131	125	256	15%

Notes:

(6) BAYVIEW @ SCOTT

SUMMARY DATA	
Collection Method	Miovision
Date Collected	07-Sep-2016
Time Period	7AM-6PM
Vehicles	11916
% Trucks/Buses	14%
% Bicycles (on-road)	1%
Bicycles (on-road)	172
Pedestrians	901

ORIENTATION	
Leg	Street
North	Bayview
East	Scott
South	Bayview
West	Scott

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	168	877	450	1495	41%
Westbound	418	2257	429	3104	27%
Northbound	541	1060	387	1988	47%
Eastbound	593	2757	149	3499	21%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	17	21	30	68	69%
Westbound	31	733	6	770	5%
Northbound	15	13	20	48	73%
Eastbound	9	752	11	772	3%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	0	48	0	48	0%
Westbound	1	16	0	17	6%
Northbound	1	72	6	79	9%
Eastbound	15	11	2	28	61%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	24	223	124
Westbound	30	284	47
Northbound	107	116	45
Eastbound	76	600	20
PM PEAK	Right	Thru	Left
Southbound	16	99	48
Westbound	91	585	82
Northbound	73	265	97
Eastbound	104	442	19

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	5%	0%	3%
Westbound	0%	1%	0%	0%
Northbound	0%	6%	1%	4%
Eastbound	2%	0%	1%	1%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	9%	2%	6%	4%
Westbound	7%	24%	1%	20%
Northbound	3%	1%	5%	2%
Eastbound	1%	21%	7%	18%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	72	121	193	21%
East	57	75	132	15%
South	182	150	332	37%
West	149	95	244	27%

Notes:

1. Major changes have occurred at this intersection since this count was taken - E-W bike path opened, and LRT opened, significantly reducing the number of buses on-road

2. Site visit confirmed that many bicycle movements at this intersection are on MUP on N side of road

(7) CUMBERLAND @ LAURIER

SUMMARY DATA	
Collection Method	Miovision
Date Collected	28-Nov-2018
Time Period	7AM-6PM
Vehicles	7723
% Trucks/Buses	7%
% Bicycles (on-road)	8%
Bicycles (on-road)	642
Pedestrians	9983

ORIENTATION	
Leg	Street
North	Cumberland
East	Laurier
South	Cumberland
West	Laurier

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	296	236	78	610	61%
Westbound	189	1962	228	2379	18%
Northbound	168	361	335	864	58%
Eastbound	202	2017	495	2714	26%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	6	9	7	22	59%
Westbound	5	223	2	230	3%
Northbound	6	7	8	21	67%
Eastbound	4	225	12	241	7%

BICYCLES (ON ROAD) *Aug 28, 2013 data used to better represent peak cycling sea*					
Leg	Right	Thru	Left	Total	% Turns
Southbound	21	45	10	76	41%
Westbound	17	232	11	260	11%
Northbound	0	51	9	60	15%
Eastbound	16	188	42	246	24%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	75	62	14
Westbound	13	290	24
Northbound	22	47	40
Eastbound	28	242	42
PM PEAK	Right	Thru	Left
Southbound	36	40	12
Westbound	43	282	35
Northbound	25	82	61
Eastbound	29	389	94

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	7%	16%	11%	11%
Westbound	8%	10%	5%	9%
Northbound	0%	12%	3%	6%
Eastbound	7%	8%	8%	8%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	2%	3%	7%	3%
Westbound	2%	9%	1%	8%
Northbound	3%	2%	2%	2%
Eastbound	2%	9%	2%	8%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	930	1571	2501	25%
East	1545	1064	2609	26%
South	953	873	1826	18%
West	1608	1439	3047	31%

Notes:

1. Miovision data was also available from March 2018 and August 2013 at this intersection. November 2018 data was used as it better represents traffic during the school year. August 2013 bicycle traffic data was used as it better represents peak-season bicycle volumes

2. Fall 2019 OC Transpo service changes have resulted in large decrease in number of transit vehicles on Laurier and King Edward

(8) CUMMINGS @ OGILVIE

SUMMARY DATA	
Collection Method	Miovision
Date Collected	11-Apr-2018
Time Period	7AM-6PM
Vehicles	20464
% Trucks/Buses	2%
% Bicycles (on-road)	0%
Bicycles (on-road)	94
Pedestrians	412

ORIENTATION	
Leg	Street
North	Cummings
East	Ogilvie
South	Cummings
West	Ogilvie

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	697	1098	1544	3339	67%
Westbound	1310	5740	882	7932	28%
Northbound	1046	1077	193	2316	53%
Eastbound	158	5594	559	6311	11%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	15	28	33	76	63%
Westbound	23	91	56	170	46%
Northbound	52	25	5	82	70%
Eastbound	6	123	15	144	15%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	2	9	3	14	36%
Westbound	2	29	1	32	9%
Northbound	2	4	1	7	43%
Eastbound	0	41	0	41	0%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	112	117	138
Westbound	170	1078	163
Northbound	63	112	18
Eastbound	11	570	48
PM PEAK	Right	Thru	Left
Southbound	84	165	260
Westbound	209	739	110
Northbound	216	163	36
Eastbound	23	1092	110

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	1%	0%	0%
Westbound	0%	0%	0%	0%
Northbound	0%	0%	1%	0%
Eastbound	0%	1%	0%	1%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	2%	2%	2%	2%
Westbound	2%	2%	6%	2%
Northbound	5%	2%	3%	3%
Eastbound	4%	2%	3%	2%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	45	29	74	18%
East	116	27	143	35%
South	25	59	84	20%
West	85	26	111	27%

Notes:

1. Right turn chanel in SE corner

2. Miovision data was also available from July 9th, 2015, however, a more recent and detailed data set, including all pedestrian and cyclist movements, is more appropriate for this study

(9) DONALD @ VANIER PKWY

SUMMARY DATA	
Collection Method	Miovision
Date Collected	19-Apr-2018
Time Period	7AM-6PM
Vehicles	28997
% Trucks/Buses	2%
% Bicycles (on-road)	0%
Bicycles (on-road)	51
Pedestrians	314

ORIENTATION	
Leg	Street
North	Vanier
East	Donald
South	Vanier
West	Donald

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	51	12633	1105	13789	8%
Westbound	862	383	614	1859	79%
Northbound	629	10835	473	11937	9%
Eastbound	499	322	28	849	62%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	0	208	10	218	5%
Westbound	16	13	18	47	72%
Northbound	18	203	5	226	10%
Eastbound	12	8	1	21	62%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	1	3	0	4	25%
Westbound	0	23	0	23	0%
Northbound	0	3	0	3	0%
Eastbound	0	21	0	21	0%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	5	1760	157
Westbound	145	28	75
Northbound	80	1363	38
Eastbound	66	29	1
PM PEAK	Right	Thru	Left
Southbound	0	1855	145
Westbound	104	54	118
Northbound	91	1603	60
Eastbound	73	42	1

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	2%	0%	0%	0%
Westbound	0%	5%	0%	1%
Northbound	0%	0%	0%	0%
Eastbound	0%	6%	0%	2%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	2%	1%	2%
Westbound	2%	3%	3%	2%
Northbound	3%	2%	1%	2%
Eastbound	2%	2%	3%	2%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	43	41	84	27%
East	40	28	68	22%
South	58	47	105	33%
West	32	25	57	18%

Notes:

1. Right turn channel at SE corner

2. Existing bike lanes on west leg

3. Miovision data was also available from July 2015 at this intersection, however, more recent data within the cycling season (late April) is included

(10) GLADSTONE @ BANK

SUMMARY DATA	
Collection Method	Miovision
Date Collected	27-Jul-2016
Time Period	7AM-6PM
Vehicles	13632
% Trucks/Buses	4%
% Bicycles (on-road)	6%
Bicycles (on-road)	798
Pedestrians	5875

ORIENTATION	
Leg	Street
North	Bank
East	Gladstone
South	Bank
West	Gladstone

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	288	3278	122	3688	11%
Westbound	176	925	339	1440	36%
Northbound	716	2527	697	3940	36%
Eastbound	1059	1734	390	3183	46%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	9	167	3	179	7%
Westbound	4	60	8	72	17%
Northbound	17	181	16	214	15%
Eastbound	30	81	7	118	31%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	9	285	3	297	4%
Westbound	12	61	9	82	26%
Northbound	21	238	11	270	12%
Eastbound	20	110	19	149	26%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	35	339	5
Westbound	28	112	29
Northbound	90	514	115
Eastbound	121	246	67
PM PEAK	Right	Thru	Left
Southbound	47	724	24
Westbound	29	172	57
Northbound	97	347	96
Eastbound	166	265	48

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	3%	8%	2%	7%
Westbound	6%	6%	3%	5%
Northbound	3%	8%	2%	6%
Eastbound	2%	6%	5%	4%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	3%	4%	2%	4%
Westbound	2%	6%	2%	5%
Northbound	2%	6%	2%	5%
Eastbound	3%	4%	2%	3%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	432	415	847	14%
East	1007	1248	2255	38%
South	513	616	1129	19%
West	705	939	1644	28%

Notes:

(11) GLADSTONE @ BOOTH

SUMMARY DATA	
Collection Method	Miovision
Date Collected	27-Jul-2016
Time Period	7AM-6PM
Vehicles	10958
% Trucks/Buses	2%
% Bicycles (on-road)	4%
Bicycles (on-road)	455
Pedestrians	861

ORIENTATION	
Leg	Street
North	Booth
East	Gladstone
South	Booth
West	Gladstone

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	156	1230	276	1662	26%
Westbound	253	2062	452	2767	25%
Northbound	525	2138	489	3152	32%
Eastbound	296	2134	219	2649	19%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	5	14	6	25	44%
Westbound	3	89	4	96	7%
Northbound	3	19	7	29	34%
Eastbound	5	113	5	123	8%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	9	19	2	30	37%
Westbound	2	175	14	191	8%
Northbound	8	37	9	54	31%
Eastbound	16	162	2	180	10%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	15	144	37
Westbound	24	265	40
Northbound	81	316	57
Eastbound	76	364	27
PM PEAK	Right	Thru	Left
Southbound	21	263	47
Westbound	40	457	111
Northbound	75	359	99
Eastbound	37	316	37

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	5%	2%	1%	2%
Westbound	1%	8%	3%	6%
Northbound	1%	2%	2%	2%
Eastbound	5%	7%	1%	6%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	3%	1%	2%	1%
Westbound	1%	4%	1%	3%
Northbound	1%	1%	1%	1%
Eastbound	2%	5%	2%	4%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	90	125	215	25%
East	107	82	189	22%
South	178	125	303	35%
West	60	94	154	18%

Notes:

1. Trucks are prohibited on Booth Street

(12) GLADSTONE @ PRESTON

SUMMARY DATA	
Collection Method	Miovision
Date Collected	20-Jun-2017
Time Period	7AM-6PM
Vehicles	12688
% Trucks/Buses	6%
% Bicycles (on-road)	4%
Bicycles (on-road)	470
Pedestrians	1596

ORIENTATION	
Leg	Street
North	Preston
East	Gladstone
South	Preston
West	Gladstone

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	238	2540	429	3207	21%
Westbound	548	1751	584	2883	39%
Northbound	641	2562	416	3619	29%
Eastbound	392	1137	181	1710	34%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	8	195	70	273	29%
Westbound	78	81	21	180	55%
Northbound	27	201	16	244	18%
Eastbound	12	77	13	102	25%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	15	54	9	78	31%
Westbound	5	148	24	177	16%
Northbound	6	45	5	56	20%
Eastbound	9	145	5	159	9%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	24	378	76
Westbound	64	189	50
Northbound	85	405	46
Eastbound	60	221	29
PM PEAK	Right	Thru	Left
Southbound	51	375	54
Westbound	77	475	85
Northbound	104	381	76
Eastbound	38	205	22

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	6%	2%	2%	2%
Westbound	1%	7%	4%	5%
Northbound	1%	2%	1%	1%
Eastbound	2%	11%	3%	8%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	3%	7%	14%	8%
Westbound	12%	4%	3%	6%
Northbound	4%	7%	4%	6%
Eastbound	3%	6%	7%	5%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	160	185	345	22%
East	253	210	463	29%
South	150	180	330	21%
West	192	266	458	29%

Notes:

1. Miovision data was also available from July 2016 at this intersection. June 2017 data was chosen as it is more recent

(13) HAZELDEAN @ EAGLESON

SUMMARY DATA	
Collection Method	Miovision
Date Collected	18-Aug-2016
Time Period	7AM-6PM
Vehicles	30170
% Trucks/Buses	2%
% Bicycles (on-road)	0%
Bicycles (on-road)	45
Pedestrians	65

ORIENTATION	
Leg	Street
North	Eagleson
East	Hazeldean
South	Eagleson
West	Hazeldean

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	1559	5496	745	7800	30%
Westbound	744	3697	1528	5969	38%
Northbound	1707	5989	1676	9372	36%
Eastbound	1663	3262	1307	6232	48%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	28	146	17	191	24%
Westbound	16	64	50	130	51%
Northbound	46	139	67	252	45%
Eastbound	79	67	33	179	63%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	0	5	0	5	0%
Westbound	0	20	1	21	5%
Northbound	0	7	0	7	0%
Eastbound	3	9	0	12	25%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	121	531	104
Westbound	63	222	111
Northbound	323	1159	210
Eastbound	150	492	189
PM PEAK	Right	Thru	Left
Southbound	302	1246	89
Westbound	150	802	327
Northbound	183	744	266
Eastbound	322	366	175

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	0%	0%	0%
Westbound	0%	1%	0%	0%
Northbound	0%	0%	0%	0%
Eastbound	0%	0%	0%	0%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	2%	3%	2%	2%
Westbound	2%	2%	3%	2%
Northbound	3%	2%	4%	3%
Eastbound	5%	2%	2%	3%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	0	5	5	8%
East	0	4	4	6%
South	2	1	3	5%
West	30	23	53	82%

Notes:

1. Right turn channel at all corners

2. No sidewalk at NE and SE corners

(14) HAZELDEAN @ TERRY FOX

SUMMARY DATA	
Collection Method	Miovision
Date Collected	03-Mar-2016
Time Period	7AM-6PM
Vehicles	28736
% Trucks/Buses	4%
% Bicycles (on-road)	0%
Bicycles (on-road)	1
Pedestrians	102

ORIENTATION	
Leg	Street
North	Terry Fox
East	Hazeldean
South	Terry Fox
West	Hazeldean

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	2373	3489	1543	7405	53%
Westbound	1620	3413	1214	6247	45%
Northbound	958	3944	1535	6437	39%
Eastbound	1440	3807	2254	7501	49%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	87	148	115	350	58%
Westbound	134	98	24	256	62%
Northbound	32	172	45	249	31%
Eastbound	52	133	105	290	54%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	0	1	0	1	0%
Westbound	0	0	0	0	
Northbound	0	0	0	0	
Eastbound	0	0	0	0	

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	218	339	137
Westbound	148	228	84
Northbound	165	648	154
Eastbound	173	627	267
PM PEAK	Right	Thru	Left
Southbound	415	791	275
Westbound	294	637	243
Northbound	108	664	240
Eastbound	253	453	345

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	0%	0%	0%
Westbound	0%	0%	0%	0%
Northbound	0%	0%	0%	0%
Eastbound	0%	0%	0%	0%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	4%	4%	7%	5%
Westbound	8%	3%	2%	4%
Northbound	3%	4%	3%	4%
Eastbound	3%	3%	4%	4%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	8	16	24	24%
East	11	14	25	25%
South	21	22	43	42%
West	5	5	10	10%

Notes:

1. Right turn channels at all corners

2. MUP connection in SW corner

3. Miovision data was also available from June 26th, 2014, however, a more recent and detailed data set, including all pedestrian and cyclist movements, is more appropriate for this study

(15) HUNT CLUB @ MERIVALE

SUMMARY DATA	
Collection Method	Miovision
Date Collected	26-Apr-2016
Time Period	7AM-6PM
Vehicles	37144
% Trucks/Buses	4%
% Bicycles (on-road)	0%
Bicycles (on-road)	24
Pedestrians	207

ORIENTATION	
Leg	Street
North	Merivale
East	Hunt Club
South	Merivale
West	Hunt Club

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	2088	5106	1842	9036	43%
Westbound	1708	6286	1245	9239	32%
Northbound	1393	5527	1082	8002	31%
Eastbound	976	5987	2381	9344	36%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	81	211	52	344	39%
Westbound	47	201	102	350	43%
Northbound	131	198	101	430	54%
Eastbound	95	203	77	375	46%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	0	7	1	8	13%
Westbound	0	0	0	0	-
Northbound	0	6	1	7	14%
Eastbound	0	9	0	9	0%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	172	481	190
Westbound	161	644	112
Northbound	181	1140	93
Eastbound	92	1051	404
PM PEAK	Right	Thru	Left
Southbound	357	970	195
Westbound	275	1097	198
Northbound	167	724	161
Eastbound	144	717	313

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	0%	0%	0%
Westbound	0%	0%	0%	0%
Northbound	0%	0%	0%	0%
Eastbound	0%	0%	0%	0%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	4%	4%	3%	4%
Westbound	3%	3%	8%	4%
Northbound	9%	3%	9%	5%
Eastbound	9%	3%	3%	4%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	26	20	46	22%
East	29	29	58	28%
South	15	20	35	17%
West	28	40	68	33%

Notes:

1. Right turn channels at all corners of the intersection

2. Miovision data was also available from June 8th, 2013 at this intersection, however weekday and more recent data is more appropriate for this study

(16) HUNT CLUB @ PRINCE OF WALES

SUMMARY DATA	
Collection Method	Miovision
Date Collected	10-Jul-2016
Time Period	7AM-6PM
Vehicles	47825
% Trucks/Buses	4%
% Bicycles (on-road)	0%
Bicycles (on-road)	220
Pedestrians	82

ORIENTATION	
Leg	Street
North	Prince of Wales
East	Hunt Club
South	Prince of Wales
West	Hunt Club

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	1605	4337	2572	8514	49%
Westbound	2482	9776	4757	17015	43%
Northbound	6328	4300	313	10941	61%
Eastbound	250	7956	1204	9410	15%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	86	68	130	284	76%
Westbound	105	407	155	667	39%
Northbound	176	45	13	234	81%
Eastbound	17	454	69	540	16%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	5	48	1	54	11%
Westbound	18	34	8	60	43%
Northbound	1	67	0	68	1%
Eastbound	0	34	4	38	11%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	288	456	236
Westbound	470	1305	592
Northbound	956	834	34
Eastbound	24	851	134
PM PEAK	Right	Thru	Left
Southbound	178	937	495
Westbound	283	1491	761
Northbound	941	529	35
Eastbound	36	1210	184

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	1%	0%	1%
Westbound	1%	0%	0%	0%
Northbound	0%	2%	0%	1%
Eastbound	0%	0%	0%	0%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	5%	2%	5%	3%
Westbound	4%	4%	3%	4%
Northbound	3%	1%	4%	2%
Eastbound	6%	5%	5%	5%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	4	3	7	9%
East	9	5	14	17%
South	13	24	37	45%
West	12	12	24	29%

Notes:

1. Right turn channels at all corners

(17) ISLAND PARK @ RICHMOND

SUMMARY DATA	
Collection Method	Miovision
Date Collected	26-Jul-2016
Time Period	7AM-6PM
Vehicles	15692
% Trucks/Buses	2%
% Bicycles (on-road)	3%
Bicycles (on-road)	505
Pedestrians	712

ORIENTATION	
Leg	Street
North	Island Park
East	Wellington
South	Island Park
West	Richmond

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	579	4358	359	5296	18%
Westbound	157	2426	332	2915	17%
Northbound	446	2775	477	3698	25%
Eastbound	349	2120	472	2941	28%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	4	8	1	13	38%
Westbound	3	144	1	148	3%
Northbound	0	11	1	12	8%
Eastbound	3	160	1	164	2%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	4	68	7	79	14%
Westbound	13	133	3	149	11%
Northbound	6	135	2	143	6%
Eastbound	1	133	0	134	1%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	64	641	49
Westbound	21	249	47
Northbound	74	389	60
Eastbound	34	288	47
PM PEAK	Right	Thru	Left
Southbound	82	488	41
Westbound	30	419	45
Northbound	77	393	47
Eastbound	52	331	67

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	1%	2%	2%	1%
Westbound	8%	5%	1%	5%
Northbound	1%	5%	0%	4%
Eastbound	0%	6%	0%	4%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	1%	0%	0%	0%
Westbound	2%	5%	0%	5%
Northbound	0%	0%	0%	0%
Eastbound	1%	7%	0%	5%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	131	145	276	39%
East	68	40	108	15%
South	125	104	229	32%
West	40	59	99	14%

Notes:

(18) KING EDWARD @ SUSSEX

SUMMARY DATA	
Collection Method	Miovision
Date Collected	18-May-2017
Time Period	7AM-6PM
Vehicles	18097
% Trucks/Buses	2%
% Bicycles (on-road)	4%
Bicycles (on-road)	647
Pedestrians	937

ORIENTATION	
Leg	Street
North	Private Driveway
East	Sussex
South	King Edward
West	Sussex

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	15	88	55	158	44%
Westbound	83	2323	4338	6744	66%
Northbound	346	37	224	607	94%
Eastbound	3421	6115	19	9555	36%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	0	1	0	1	0%
Westbound	1	94	40	135	30%
Northbound	18	3	8	29	90%
Eastbound	111	110	0	221	50%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	0	4	7	11	64%
Westbound	2	298	5	305	2%
Northbound	7	5	43	55	91%
Eastbound	13	263	0	276	5%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	1	12	2
Westbound	36	638	624
Northbound	38	14	43
Eastbound	372	1009	8
PM PEAK	Right	Thru	Left
Southbound	2	24	12
Westbound	4	223	784
Northbound	86	1	46
Eastbound	762	827	1

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	4%	11%	6%
Westbound	2%	11%	0%	4%
Northbound	2%	11%	16%	8%
Eastbound	0%	4%	0%	3%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	1%	0%	1%
Westbound	1%	3%	1%	2%
Northbound	5%	7%	3%	4%
Eastbound	3%	2%	0%	2%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	96	109	205	22%
East	49	64	113	12%
South	257	308	565	60%
West	24	30	54	6%

Notes:

1. NB left prohibition 3PM to 6PM M-F

2. WB through prohibition 3PM to 6PM M-F

3. SB right prohibition 3PM to 6PM M-F

4. Existing bike lanes on Sussex (north/south legs)

5. Miovision data was also available from May 11th, 2015, however, a more recent data set for the same time period is more appropriate for this study

(19) KING EDWARD @ ST PATRICK

SUMMARY DATA	
Collection Method	Miovision
Date Collected	09-May-2016
Time Period	7AM-6PM
Vehicles	24692
% Trucks/Buses	8%
% Bicycles (on-road)	0%
Bicycles (on-road)	86
Pedestrians	755

ORIENTATION	
Leg	Street
North	King Edward
East	St. Patrick
South	King Edward
West	St. Patrick

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	365	7997		8362	4%
Westbound	5782	2385	597	8764	73%
Northbound		5526		5526	0%
Eastbound					

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	250	701		951	26%
Westbound	69	99	41	209	53%
Northbound		794		794	0%
Eastbound					

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	0	9		9	0%
Westbound	3	62	0	65	5%
Northbound		12		12	0%
Eastbound					

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	74	1458	
Westbound	485	545	133
Northbound		484	
Eastbound			
PM PEAK	Right	Thru	Left
Southbound	114	870	
Westbound	1286	289	77
Northbound		1242	
Eastbound			

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	0%		0%
Westbound		2%	0%	1%
Northbound		0%		
Eastbound				

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	41%	8%		10%
Westbound	1%	4%	6%	2%
Northbound		13%		13%
Eastbound				

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	60	40	100	13%
East	107	94	201	27%
South	54	60	114	15%
West	151	189	340	45%

Notes:

1. Two-lane right turn channel at NE corner
2. Existing cycling infrastructure (bike lane) at east leg and sharrows at south leg
3. NB left and NB right prohibitions at all times
4. SB left prohibition, SB right on red prohibition
5. King Edward Ave is a one-way street WB
6. Diamond lane on King Edward Ave (3:30 - 5:30 PM)
7. Any counted movements that are restricted/infeasible are deleted

(20) LAURIER @ KING EDWARD

SUMMARY DATA	
Collection Method	Miovision
Date Collected	03-Aug-2016
Time Period	7AM-6PM
Vehicles	14601
% Trucks/Buses	5%
% Bicycles (on-road)	7%
Bicycles (on-road)	981
Pedestrians	3862

ORIENTATION	
Leg	Street
North	King Edward
East	Laurier
South	King Edward
West	Laurier

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	639	3101	341	4081	24%
Westbound	256	1302	88	1646	21%
Northbound	310	3451	532	4293	20%
Eastbound	660	2142	38	2840	25%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	16	75	4	95	21%
Westbound	5	72	2	79	9%
Northbound	16	111	188	315	65%
Eastbound	191	79	1	271	71%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	8	15	3	26	42%
Westbound	8	445	0	453	2%
Northbound	1	15	18	34	56%
Eastbound	25	442	1	468	6%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	95	405	45
Westbound	26	275	15
Northbound	37	407	109
Eastbound	115	274	4
PM PEAK	Right	Thru	Left
Southbound	99	442	31
Westbound	38	169	10
Northbound	53	563	76
Eastbound	129	406	4

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	1%	0%	1%	1%
Westbound	3%	24%	0%	21%
Northbound	0%	0%	2%	1%
Eastbound	3%	17%	3%	13%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	2%	2%	1%	2%
Westbound	2%	4%	2%	4%
Northbound	5%	3%	25%	7%
Eastbound	22%	3%	3%	8%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	555	843	1398	36%
East	226	292	518	13%
South	657	628	1285	33%
West	312	349	661	17%

Notes:

1. Fall 2019 OC Transpo service changes have resulted in large decrease in number of transit vehicles on Laurier and King Edward

(21) MONTREAL @ AVIATION

SUMMARY DATA	
Collection Method	Miovision
Date Collected	25-Jan-2018
Time Period	7AM-6PM
Vehicles	24742
% Trucks/Buses	3%
% Bicycles (on-road)	0%
Bicycles (on-road)	4
Pedestrians	584

ORIENTATION	
Leg	Street
North	Aviation
East	Montreal
South	Aviation
West	Montreal

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	363	1565	1116	3044	49%
Westbound	1146	6185	1522	8853	30%
Northbound	1652	1844	3	3499	47%
Eastbound	1945	6397	306	8648	26%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	7	4	35	46	91%
Westbound	12	302	22	336	10%
Northbound	6	17	0	23	26%
Eastbound	18	267	4	289	8%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	0	0	0	0	
Westbound	0	0	0	0	
Northbound	0	0	0	0	
Eastbound	0	4	0	4	0%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	63	259	224
Westbound	152	1016	285
Northbound	250	213	229
Eastbound	256	752	41
PM PEAK	Right	Thru	Left
Southbound	58	298	124
Westbound	226	891	225
Northbound	220	324	284
Eastbound	283	1057	49

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	0%	0%	0%
Westbound	0%	0%	0%	0%
Northbound	0%	0%	0%	0%
Eastbound	0%	0%	0%	0%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	2%	0%	3%	1%
Westbound	1%	5%	1%	4%
Northbound	0%	1%	0%	1%
Eastbound	1%	4%	1%	3%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	109	130	239	41%
East	24	35	59	10%
South	118	112	230	39%
West	24	32	56	10%

Notes:

1. Right turn channels at all corners

2. No sidewalks on Aviation Pkwy. MUPs extend NW and SE from the corners, as well as south on the west side of Aviation Pkwy

3. Miovision data was also available from July 24th, 2014, however, a more recent and detailed data set, including all pedestrian and cyclist movements, is more appropriate for this study

(22) MOODIE @ ROBERTSON

SUMMARY DATA	
Collection Method	Miovision
Date Collected	08-Mar-2016
Time Period	7AM-6PM
Vehicles	26417
% Trucks/Buses	3%
% Bicycles (on-road)	0%
Bicycles (on-road)	3
Pedestrians	443

ORIENTATION	
Leg	Street
North	Moodie
East	Robertson
South	Moodie
West	Robertson

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	1167	1978	2198	5343	63%
Westbound	1704	4547	1185	7436	39%
Northbound	1595	1812	1679	5086	64%
Eastbound	1358	5737	770	7865	27%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	43	73	52	168	57%
Westbound	35	101	30	166	39%
Northbound	38	85	30	153	44%
Eastbound	37	131	29	197	34%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	0	0	1	1	100%
Westbound	0	1	0	1	0%
Northbound	0	0	1	1	100%
Eastbound	0	0	0	0	

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	107	176	356
Westbound	152	307	81
Northbound	309	361	225
Eastbound	112	1211	70
PM PEAK	Right	Thru	Left
Southbound	194	433	287
Westbound	325	901	225
Northbound	148	225	225
Eastbound	269	536	120

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	0%	0%	0%
Westbound	0%	0%	0%	0%
Northbound	0%	0%	0%	0%
Eastbound	0%	0%	0%	0%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	4%	4%	2%	3%
Westbound	2%	2%	2%	2%
Northbound	2%	4%	2%	3%
Eastbound	3%	2%	4%	2%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	43	64	107	24%
East	66	50	116	26%
South	59	60	119	27%
West	41	60	101	23%

Notes:

1. Right turn channels at all corners

2. Existing curbside or floating bike lanes on all legs

3. Miovision data was also available from June 25th 2014, however, a more recent data set with detailed pedestrian and cyclist movements is more appropriate for this study

(23) NELSON @ RIDEAU

SUMMARY DATA	
Collection Method	Miovision
Date Collected	01-Dec-2015
Time Period	7AM-6PM
Vehicles	8124
% Trucks/Buses	7%
% Bicycles (on-road)	1%
Bicycles (on-road)	48
Pedestrians	5900

ORIENTATION	
Leg	Street
North	Nelson
East	Rideau
South	Nelson
West	Rideau

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	394	9	424	827	99%
Westbound	692	2285	82	3059	25%
Northbound	84	21	52	157	87%
Eastbound	61	2861	502	3424	16%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	23	1	7	31	97%
Westbound	13	259	1	273	5%
Northbound	2	0	1	3	100%
Eastbound	2	277	23	302	8%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	4	6	1	11	45%
Westbound	0	15	0	15	0%
Northbound	1	5	2	8	38%
Eastbound	1	13	0	14	7%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	57	3	47
Westbound	54	334	8
Northbound	10	2	5
Eastbound	12	374	72
PM PEAK	Right	Thru	Left
Southbound	76	3	76
Westbound	209	410	13
Northbound	14	3	6
Eastbound	4	446	74

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	1%	38%	0%	1%
Westbound	0%	1%	0%	0%
Northbound	1%	19%	4%	5%
Eastbound	2%	0%	0%	0%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	5%	6%	2%	4%
Westbound	2%	10%	1%	8%
Northbound	2%	0%	2%	2%
Eastbound	3%	9%	4%	8%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	1076	1222	2298	39%
East	522	849	1371	23%
South	532	810	1342	23%
West	375	514	889	15%

Notes:

1. Traffic counts were also available from June 24th 2011, however, a more recent data set with detailed pedestrian and cyclist movements is more appropriate for this study

2. Since the counts were taken in 2015, the City has implemented measures to reduce cut-through traffic on Nelson, which is anticipated to significantly lower WBR volumes at the intersection during peak periods.

(24) PRESTON @ POW-QED

SUMMARY DATA	
Collection Method	Miovision
Date Collected	10-Jan-2018
Time Period	7AM-6PM
Vehicles	14066
% Trucks/Buses	2%
% Bicycles (on-road)	2%
Bicycles (on-road)	310
Pedestrians	1466

ORIENTATION	
Leg	Street
North	Preston
East	Queen Elizabeth Drive
South	Drivewau
West	Prince of Wales

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	2985	14	1848	4847	100%
Westbound	2213	1617	23	3853	58%
Northbound	13	38	34	85	55%
Eastbound	29	1357	3354	4740	71%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	96	6	5	107	94%
Westbound	9	3	2	14	79%
Northbound	2	7	2	11	36%
Eastbound	0	9	90	99	91%

BICYCLES (ON ROAD) *Jul 22, 2015 data used to better represent peak cycling seas*					
Leg	Right	Thru	Left	Total	% Turns
Southbound	15	21	18	54	61%
Westbound	66	34	12	112	70%
Northbound	6	82	3	91	10%
Eastbound	1	46	6	53	13%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	300	4	245
Westbound	310	176	2
Northbound	3	4	1
Eastbound	3	263	640
PM PEAK	Right	Thru	Left
Southbound	594	0	404
Westbound	405	410	2
Northbound	1	2	5
Eastbound	4	244	367

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	51%	1%	1%
Westbound	3%	2%	32%	3%
Northbound	29%	65%	8%	49%
Eastbound	3%	3%	0%	1%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	3%	15%	0%	2%
Westbound	0%	0%	5%	0%
Northbound	10%	6%	5%	6%
Eastbound	0%	1%	3%	2%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	132	44	176	12%
East	285	170	455	31%
South	228	169	397	27%
West	257	181	438	30%

Notes:

1. Trucks are prohibited on QE Driveway

2. Three Miovision datasets were provided for this intersection. One set (Aug 6, 2018) is from a Saturday and limited to 5PM-midnight. The second set (Jul 22, 2015) is from 3PM to 11PM and misses the AM peak period. The third set (Jan 10, 2018) contains a full weekday of data but likely underrepresents cyclists due to seasonality. The third set is selected as it is the only one that captures a full weekday of traffic volumes. A site visit was used to confirm bicycle movement patterns at this intersection

3. Site visit confirmed that most bicycles are off-road at this intersection using trails, and crossing in the crosswalk, so bicycles are not accurately represented in on-road data

(25) SOMERSET @ PRESTON

SUMMARY DATA	
Collection Method	Miovision
Date Collected	20-Jun-2017
Time Period	7AM-6PM
Vehicles	11530
% Trucks/Buses	6%
% Bicycles (on-road)	5%
Bicycles (on-road)	530
Pedestrians	1893

ORIENTATION	
Leg	Street
North	Preston
East	Somerset
South	Preston
West	Somerset

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	275	1975	189	2439	19%
Westbound	152	1665	351	2168	23%
Northbound	397	2054	504	2955	30%
Eastbound	593	1775	343	2711	35%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	15	202	15	232	13%
Westbound	11	64	16	91	30%
Northbound	9	231	23	263	12%
Eastbound	58	72	11	141	49%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	22	36	3	61	41%
Westbound	8	198	8	214	7%
Northbound	4	27	14	45	40%
Eastbound	15	171	24	210	19%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	27	279	18
Westbound	14	159	35
Northbound	49	361	66
Eastbound	94	317	55
PM PEAK	Right	Thru	Left
Southbound	51	298	40
Westbound	25	401	55
Northbound	54	318	84
Eastbound	69	298	57

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	7%	2%	1%	2%
Westbound	5%	10%	2%	9%
Northbound	1%	1%	3%	1%
Eastbound	2%	8%	6%	7%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	5%	9%	7%	8%
Westbound	6%	3%	4%	4%
Northbound	2%	10%	4%	8%
Eastbound	9%	4%	3%	5%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	231	269	500	26%
East	194	174	368	19%
South	264	254	518	27%
West	236	271	507	27%

Notes:

(26) PRINCE OF WALES @ FISHER

SUMMARY DATA	
Collection Method	Miovision
Date Collected	06-Apr-2016
Time Period	7AM-6PM
Vehicles	18215
% Trucks/Buses	3%
% Bicycles (on-road)	0%
Bicycles (on-road)	14
Pedestrians	7

ORIENTATION	
Leg	Street
North	Prince of Wales
East	N/A
South	Prince of Wales
West	Fisher

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	112	4781		4893	2%
Westbound					
Northbound		5873	2989	8862	34%
Eastbound	3898		71	3969	100%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	5	149		154	3%
Westbound					
Northbound		146	82	228	36%
Eastbound	92		3	95	100%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	0	9		9	0%
Westbound					
Northbound		3	0	3	0%
Eastbound	1		1	2	100%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	22	809	
Westbound			
Northbound		1001	506
Eastbound	549		9
PM PEAK	Right	Thru	Left
Southbound	21	761	
Westbound			
Northbound		768	400
Eastbound	588		2

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	0%		0%
Westbound				
Northbound		0%	0%	0%
Eastbound	0%		1%	0%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	4%	3%		3%
Westbound				
Northbound		2%	3%	3%
Eastbound	2%		4%	2%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	0	1	1	14%
East				
South	0	2	2	29%
West	1	3	4	57%

Notes:

1. No westbound count (T-intersection)

2. Miovision data was also available from Aug 1, 2014, however, a more recent data set with detailed pedestrian and cyclist movements is more appropriate for this study

3. Right turn channels in NW and SW corner

4. No sidewalks along Prince of Wales Dr or north side of Fisher Ave

(27) PRINCE OF WALES @ MEADOWLANDS/HOG'S BACK

SUMMARY DATA	
Collection Method	Miovision
Date Collected	20-Jul-2016
Time Period	7AM-6PM
Vehicles	22803
% Trucks/Buses	2%
% Bicycles (on-road)	2%
Bicycles (on-road)	358
Pedestrians	848

ORIENTATION	
Leg	Street
North	Prince of Wales
East	Hog's Back
South	Prince of Wales
West	Meadowlands

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	618	3260	1254	5132	36%
Westbound	1149	2571	3106	6826	62%
Northbound	3346	2859	268	6473	56%
Eastbound	237	2673	640	3550	25%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	32	131	3	166	21%
Westbound	8	18	45	71	75%
Northbound	47	109	4	160	32%
Eastbound	9	15	43	67	78%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	3	50	7	60	17%
Westbound	0	24	80	104	77%
Northbound	25	39	1	65	40%
Eastbound	1	124	4	129	4%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	52	384	167
Westbound	126	163	418
Northbound	581	492	29
Eastbound	18	537	79
PM PEAK	Right	Thru	Left
Southbound	108	562	190
Westbound	197	657	525
Northbound	503	424	30
Eastbound	33	333	87

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	1%	1%	1%
Westbound	0%	1%	2%	1%
Northbound	1%	1%	0%	1%
Eastbound	0%	4%	1%	3%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	5%	4%	0%	3%
Westbound	1%	1%	1%	1%
Northbound	1%	4%	1%	2%
Eastbound	4%	1%	6%	2%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	85	62	147	17%
East	83	89	172	20%
South	149	194	343	40%
West	71	115	186	22%

Notes:

1. Right turn channels at NE and SW corners

(28) SMYTH @ RIVERSIDE HOSPITAL

SUMMARY DATA	
Collection Method	Miovision
Date Collected	20-Nov-2016
Time Period	7AM-6PM
Vehicles	14726
% Trucks/Buses	3%
% Bicycles (on-road)	0%
Bicycles (on-road)	50
Pedestrians	158

ORIENTATION	
Leg	Street
North	N/A
East	Smyth
South	Riverside Hospital
West	Smyth

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound					
Westbound		6172	389	6561	6%
Northbound	476		370	846	100%
Eastbound	386	6452		6838	6%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound					
Westbound		170	29	199	15%
Northbound	38		15	53	100%
Eastbound	11	168		179	6%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound					
Westbound		10	0	10	0%
Northbound	0		13	13	100%
Eastbound	16	11		27	59%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound			
Westbound		862	73
Northbound	26		26
Eastbound	71	1038	
PM PEAK	Right	Thru	Left
Southbound			
Westbound		1112	36
Northbound	103		88
Eastbound	28	783	

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound				
Westbound		0%	0%	0%
Northbound	0%		3%	1%
Eastbound	4%	0%		0%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound				
Westbound		3%	7%	3%
Northbound	7%		4%	6%
Eastbound	3%	3%		3%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North				
East	29	8	37	23%
South	20	25	45	28%
West	40	36	76	48%

Notes:

1. Miovision data was also available from May 9th 2014, however, a more recent data set with detailed pedestrian and cyclist movements is more appropriate for this study

2. North leg contains a pedestrian and cyclist cut-through to Frobisher Ln

(29) SOMERSET @ BRONSON

SUMMARY DATA	
Collection Method	Miovision
Date Collected	18-Aug-2016
Time Period	7AM-6PM
Vehicles	15750
% Trucks/Buses	4%
% Bicycles (on-road)	3%
Bicycles (on-road)	516
Pedestrians	2801

ORIENTATION	
Leg	Street
North	Bronson
East	Somerset
South	Bronson
West	Somerset

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	543	3309	101	3953	16%
Westbound	145	1970	1355	3470	43%
Northbound	460	3777	469	4706	20%
Eastbound	448	1654	430	2532	35%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	15	144	4	163	12%
Westbound	13	81	27	121	33%
Northbound	19	156	15	190	18%
Eastbound	20	69	10	99	30%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	10	17	0	27	37%
Westbound	2	221	6	229	3%
Northbound	3	31	1	35	11%
Eastbound	4	209	12	225	7%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	41	106	9
Westbound	13	188	139
Northbound	61	744	38
Eastbound	29	214	63
PM PEAK	Right	Thru	Left
Southbound	111	641	9
Westbound	23	418	234
Northbound	48	448	52
Eastbound	84	276	40

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	2%	0%	0%	1%
Westbound	1%	10%	0%	6%
Northbound	1%	1%	0%	1%
Eastbound	1%	11%	3%	8%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	3%	4%	4%	4%
Westbound	8%	4%	2%	3%
Northbound	4%	4%	3%	4%
Eastbound	4%	4%	2%	3%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	419	472	891	32%
East	250	248	498	18%
South	456	432	888	32%
West	264	260	524	19%

Notes:

1. No right-turn on red M-F 7AM-7PM all directions

(30) SOMERSET @ KENT

SUMMARY DATA	
Collection Method	Miovision
Date Collected	10-Sep-2014
Time Period	7AM-6PM
Vehicles	14058
% Trucks/Buses	3%
% Bicycles (on-road)	4%
Bicycles (on-road)	495
Pedestrians	4076

ORIENTATION	
Leg	Street
North	Kent
East	Somerset
South	Kent
West	Somerset

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound					
Westbound	469	1671		2140	22%
Northbound	967	6790	407	8164	17%
Eastbound		2278	542	2820	19%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound					
Westbound	19	77		96	20%
Northbound	27	164	21	212	23%
Eastbound		111	20	131	15%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound					
Westbound	5	172		177	3%
Northbound	8	86	14	108	20%
Eastbound		196	14	210	7%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound			
Westbound	66	165	
Northbound	149	1474	74
Eastbound		379	69
PM PEAK	Right	Thru	Left
Southbound			
Westbound	86	363	
Northbound	123	733	71
Eastbound		385	104

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound				
Westbound	1%	9%		7%
Northbound	1%	1%	3%	1%
Eastbound		8%	2%	7%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound				
Westbound	4%	4%		4%
Northbound	3%	2%	5%	2%
Eastbound		4%	3%	4%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	426	423	849	21%
East	609	590	1199	29%
South	568	531	1099	27%
West	541	388	929	23%

Notes:

1. Miovision data was also available from April 2017 at this intersection, however it is deemed that peak cycling season volumes are more appropriate for this study, and Sept. 2017 overall vehicle volumes were lower (as well as for every category)

2. Kent St is one-way NB

(31) ST LAURENT @ OGILVIE

SUMMARY DATA	
Collection Method	Miovision
Date Collected	01-Jun-2017
Time Period	7AM-6PM
Vehicles	32143
% Trucks/Buses	4%
% Bicycles (on-road)	1%
Bicycles (on-road)	257
Pedestrians	1483

ORIENTATION	
Leg	Street
North	St. Laurent
East	Ogilvie
South	St. Laurent
West	Ogilvie

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	1349	5311	421	7081	25%
Westbound	217	3118	3760	7095	56%
Northbound	3745	6024	1232	11001	45%
Eastbound	1121	2744	1549	5414	49%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	29	395	11	435	9%
Westbound	2	45	103	150	70%
Northbound	129	352	91	572	38%
Eastbound	60	46	32	138	67%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	2	5	1	8	38%
Westbound	0	127	2	129	2%
Northbound	5	7	0	12	42%
Eastbound	1	106	1	108	2%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	133	785	33
Westbound	24	611	625
Northbound	508	771	141
Eastbound	58	227	66
PM PEAK	Right	Thru	Left
Southbound	192	759	71
Westbound	30	406	467
Northbound	609	850	182
Eastbound	205	589	302

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	0%	0%	0%
Westbound	0%	4%	0%	2%
Northbound	0%	0%	0%	0%
Eastbound	0%	4%	0%	2%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	2%	7%	3%	6%
Westbound	1%	1%	3%	2%
Northbound	3%	6%	7%	5%
Eastbound	5%	2%	2%	2%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	181	46	227	15%
East	170	81	251	17%
South	223	120	343	23%
West	326	336	662	45%

Notes:

1. Right turn channels at all corners

2. Existing floating bicycle lanes on est and west legs on Ogilvie Rd

3. No U-turns all directions

(32) ST PATRICK @ SUSSEX

SUMMARY DATA	
Collection Method	Miovision
Date Collected	09-May-2016
Time Period	7AM-6PM
Vehicles	12703
% Trucks/Buses	5%
% Bicycles (on-road)	3%
Bicycles (on-road)	394
Pedestrians	2811

ORIENTATION	
Leg	Street
North	Sussex
East	St. Patrick
South	Sussex
West	St. Patrick

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	3931			3931	100%
Westbound	244	2045		2289	11%
Northbound		4666	836	5502	15%
Eastbound					

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	141			141	100%
Westbound	17	302		319	5%
Northbound		93	34	127	27%
Eastbound					

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	98			98	100%
Westbound	1	94		95	1%
Northbound		190	11	201	5%
Eastbound					

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	677		
Westbound	40	374	
Northbound		759	0
Eastbound			
PM PEAK	Right	Thru	Left
Southbound	565		
Westbound	15	420	
Northbound		777	246
Eastbound			

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	2%			2%
Westbound	0%	4%		4%
Northbound		4%	1%	3%
Eastbound				

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	3%			3%
Westbound	6%	12%		12%
Northbound		2%	4%	2%
Eastbound				

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	477	307	784	28%
East	775	579	1354	48%
South	116	59	175	6%
West	309	189	498	18%

Notes:

1. Two stage pedestrian crossing across Sussex Dr on north leg
2. Existing bike lane on Sussex Dr
3. St Patrick is one-way WB
4. NB left on red prohibited
5. Southbound vehicles must turn right
6. Volumes for prohibited movements have been deleted

(33) WELLINGTON @ LYON

SUMMARY DATA	
Collection Method	Miovision
Date Collected	04-Sep-2019
Time Period	7AM-6PM
Vehicles	16946
% Trucks/Buses	6%
% Bicycles (on-road)	4%
Bicycles (on-road)	637
Pedestrians	3442

ORIENTATION	
Leg	Street
North	Driveway
East	Wellington
South	Lyon
West	Wellington

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	102	60	25	187	68%
Westbound	41	5348	934	6323	15%
Northbound	67	0	120	187	100%
Eastbound	5174	3357	6	8537	61%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	0	2	1	3	33%
Westbound	4	547	40	591	7%
Northbound	6	0	8	14	100%
Eastbound	101	366	0	467	22%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	1	2	0	3	33%
Westbound	0	56	4	60	7%
Northbound	2	2	14	18	89%
Eastbound	532	24	0	556	96%

PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	13	4	2
Westbound	12	510	155
Northbound	9	0	9
Eastbound	1219	748	1
PM PEAK	Right	Thru	Left
Southbound	40	19	7
Westbound	1	1163	108
Northbound	18	2	40
Eastbound	591	406	0

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	1%	3%	0%	2%
Westbound	0%	1%	0%	1%
Northbound	3%	100%	10%	8%
Eastbound	9%	1%	0%	6%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	3%	4%	2%
Westbound	9%	9%	4%	8%
Northbound	8%	0%	6%	6%
Eastbound	2%	10%	0%	5%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	415	1260	1675	49%
East	257	914	1171	34%
South	221	354	575	17%
West	21	0	21	1%

Notes:

1. Miovision data was also available from August 2019 for this intersection, however, the counts for August 30th 2019 are on Labour Day weekend and thus may be different from typical

2. No trucks WB through on Wellington

3. No EB left 7-9 AM and 3-5 PM

4. No EB right on red

5. Pedestrian crossing prohibited on west leg

(34) INDUSTRIAL @ RIVERSIDE

SUMMARY DATA	
Collection Method	Miovision
Date Collected	29-Nov-2017
Time Period	7AM-6PM
Vehicles	37308
% Trucks/Buses	6%
% Bicycles (on-road)	0%
Bicycles (on-road)	17
Pedestrians	365

ORIENTATION	
Leg	Street
North	Riverside
East	Industrial
South	Riverside
West	Industrial

LIGHT (CARS, MOTORCYCLES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	1051	7841	5683	14575	46%
Westbound	7372	43	2551	9966	100%
Northbound	2379	7768	63	10210	24%
Eastbound	21	42	60	123	66%

HEAVY (TRUCKS, BUSES)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	742	145	125	1012	86%
Westbound	577	14	118	709	98%
Northbound	113	178	6	297	40%
Eastbound	4	16	379	399	96%

BICYCLES (ON ROAD)					
Leg	Right	Thru	Left	Total	% Turns
Southbound	5	3	2	10	70%
Westbound	1	1	0	2	50%
Northbound	0	2	0	2	0%
Eastbound	0	3	0	3	0%

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PEAK HOUR MOVEMENTS (LIGHT, HEAVY, BICYCLES)			
AM PEAK	Right	Thru	Left
Southbound	262	1143	772
Westbound	1111	10	366
Northbound	264	1110	8
Eastbound	5	1	68
PM PEAK	Right	Thru	Left
Southbound	198	1184	724
Westbound	1090	14	411
Northbound	367	1175	8
Eastbound	6	5	65

Gold indicates lower end of NACTO threshold for protected phase met (potential justification for protected phase)

Red indicates upper end of NACTO threshold for protected phase met (strong justification for protected phase)

Green indicates volume is below NACTO threshold for protected phase

BIKES AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	0%	0%	0%	0%
Westbound	0%	2%	0%	0%
Northbound	0%	0%	0%	0%
Eastbound	0%	5%	0%	1%

Darker green indicates that bicycles account for a higher percentage of vehicle volumes

HEAVY AS % OF VEHICLES				
Leg	Right	Thru	Left	All
Southbound	41%	2%	2%	6%
Westbound	7%	24%	4%	7%
Northbound	5%	2%	9%	3%
Eastbound	16%	26%	86%	76%

Darker red indicates that heavy vehicles account for a higher percentage of vehicle volumes

PEDESTRIANS				
Leg	CW	CCW	Total	%
North	32	24	56	15%
East	23	15	38	10%
South	79	119	198	54%
West	22	51	73	20%

Notes:

1. Major changes have occurred at this intersection since this count was taken - LRT opened, significantly reducing the number of buses on-road making SBR and WBR movements

2. Right turn channels at NE and SE corners

3. Miovision data was also available from April 2017 for the period of only 11 AM to 4 PM.