979 Wellington Street West

Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

Step 3 Forecasting Report

Step 4 Strategy Report

Prepared for:

Magil Laurentian Realty Corporation
1170 Peel Street
Montreal, QC, H3B 4P2

Prepared by:

CGH TRANSPORTATION

6 Plaza Court
Ottawa, ON K2H 7W1

January 2022

PN: 2020-33

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1 Screening

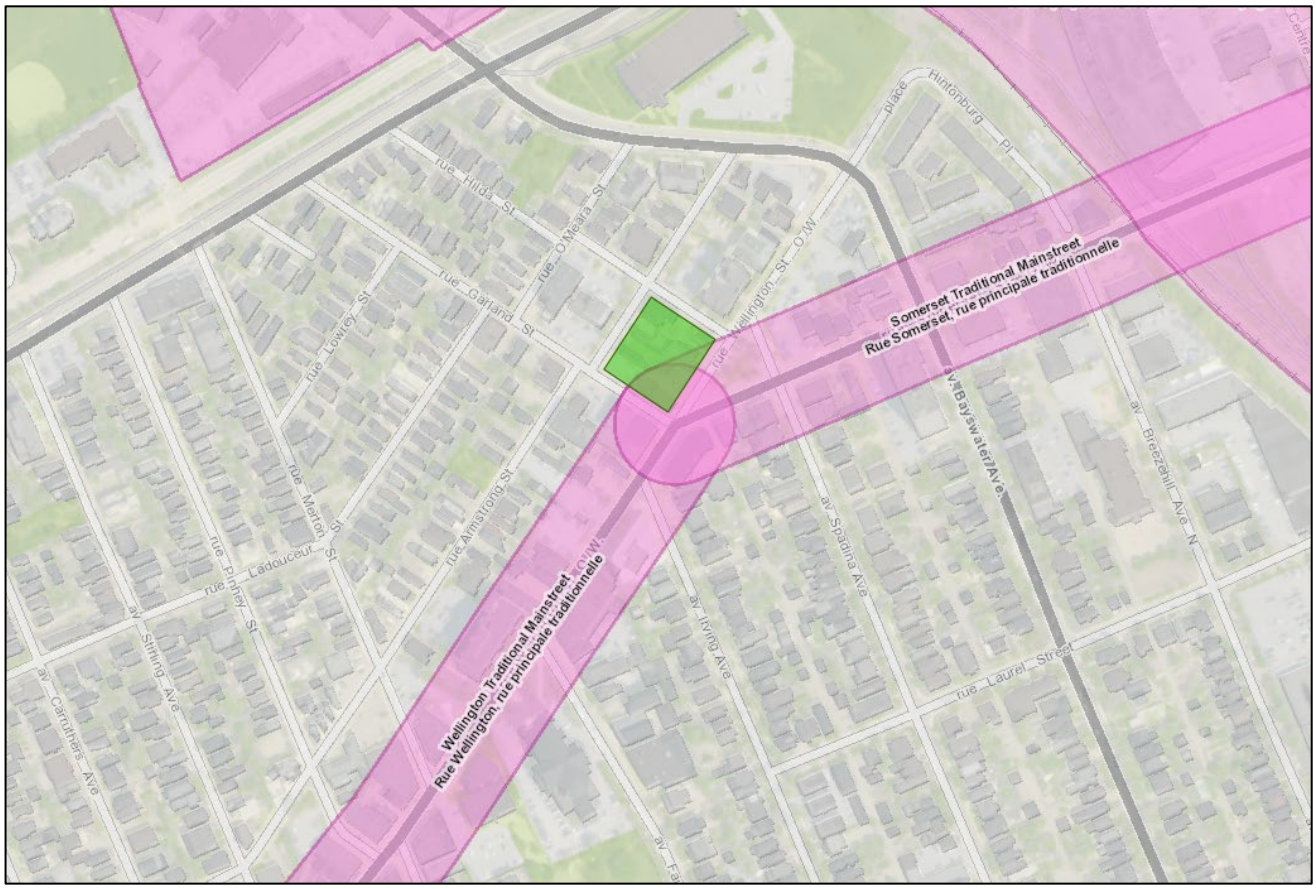
This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for TIA Study PM. As shown in the Screening Form, a TIA is required including the Network Impact Component. This study has been prepared to support a site plan application.

2 Existing and Planned Conditions

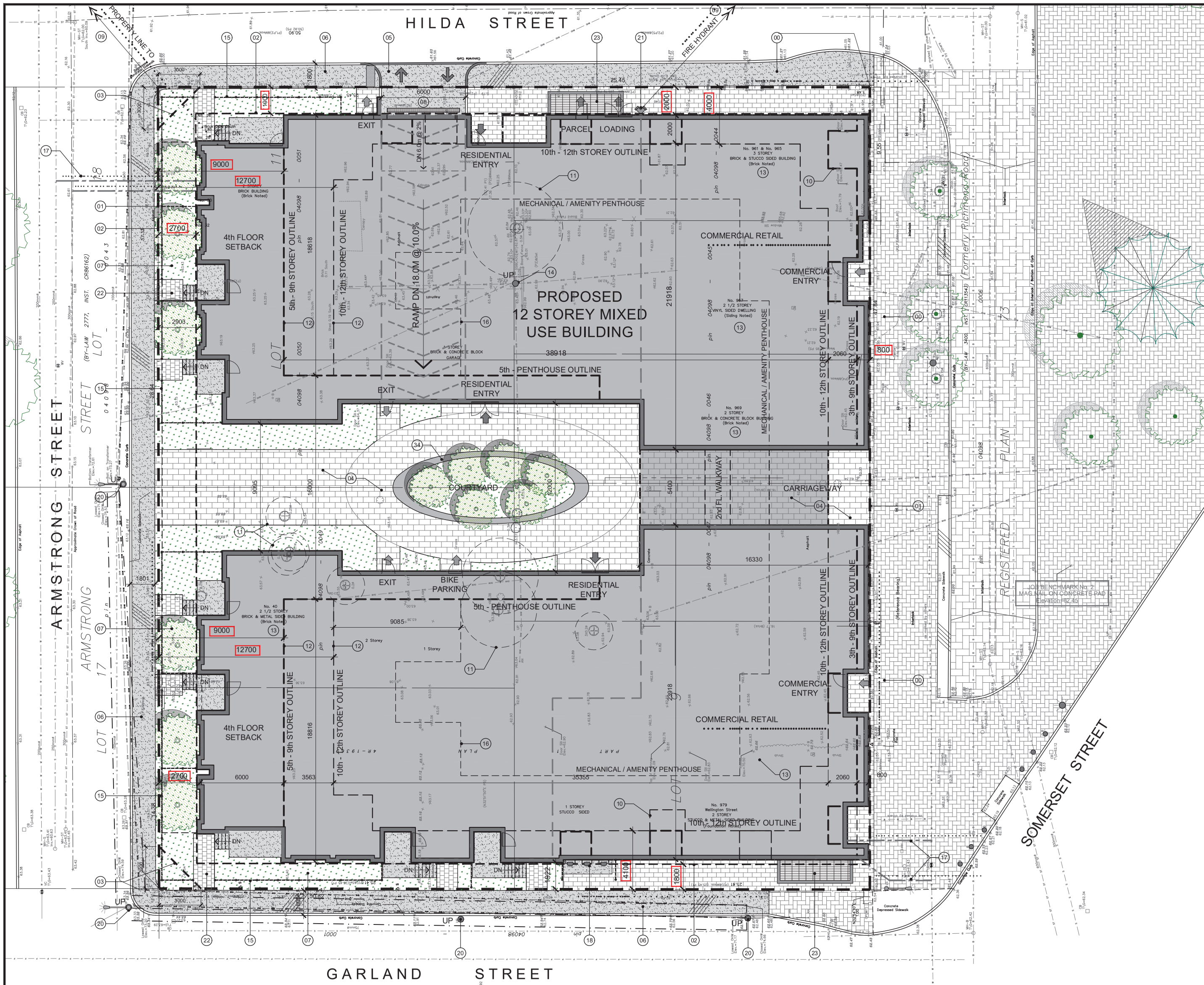
2.1 Proposed Development

The development site, currently zoned as Traditional Mainstreet (TM11 & TM11[2461]) and Residential Fourth Density (R4T), within the Scott Street and Wellington Street West Community Design Plans, and at the intersection of the Wellington Street Traditional Mainstreet and Somerset Street Traditional Mainstreet Design Priority Areas, is proposed as a mixed-use building with 252 residential dwelling units and 8,498 sq. ft. of ground floor commercial development to be built in a single phase by 2024. The plan includes a full-movement access onto Hilda Street and provides underground parking for 151 vehicles. Figure 1 illustrates the Study Area Context. Figure 2 illustrates the proposed concept plan.

Figure 1: Area Context Plan



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: August 26, 2020



KEY MAP

1 SP-1 SITE PLAN SCALE =1:125

0m 2.5 5 7.5 10
SCALE 1:125

PROJECT INFORMATION

ZONING BY-LAW 2008-250 — TM11[2461] S___

SITE AREA — 2,917.0 sq. m. / 31,398 sq. ft.

REQUIRED

GRADE (GEODETIC ELEVATION)		62.50m
BUILDING HEIGHT - 12 STOREYS		39.5m
BUILDING HEIGHT - AMENITY / MECHANICAL		43.5m
FRONT YARD SETBACK		0.8m
CORNER YARD SETBACK		1.8m & 1.9m
REAR YARD SETBACK		2.7m
TRANSPARENT GLAZING	(GROUND FLOOR FACADE)	50%
RESIDENTIAL PARKING PER UNIT	(AFTER 12 UNITS)	0.5
VISITOR PARKING PER UNIT	(AFTER 12 UNITS)	0.1
COMMERCIAL PARKING		
BICYCLE PARKING PER UNIT		1.0
COMMERCIAL BICYCLE PARKING		
AMENITY AREA - PER UNIT		6.0 sq. m
MINIMUM DRIVEWAY WIDTH		3.0m

PROVIDED

12 STOREY BUILDING HEIGHT	39.0m
AMENITY / MECHANICAL LEVEL BUILDING HEIGHT	3.6m
FRONT YARD SETBACK	0.9m
CORNER YARD SETBACK - EAST	2.0m
CORNER YARD SETBACK - WEST	1.8m
REAR YARD SETBACK	2.7m
AMENITY AREA - PER UNIT	6.0 sq. m.
PARKING - PER UNIT (AFTER 12 UNITS)	0.5
VISITOR PARKING - PER UNIT (AFTER 12 UNITS)	0.1
~~COMMERCIAL PARKING~~	
BICYCLE PARKING - PER UNIT	0.5
~~COMMERCIAL BICYCLE PARKING~~	

SITE PLAN SYMBOLS

- UNIT PAVERS ON CITY BOULEVARD
- PROPOSED CONCRETE SURFACE
- UNIT PAVER SURFACE
- PRIVATE WALKWAYS
- SOFT LANDSCAPING
- BIKE RACK
- TWO WAY VEHICLE CIRCULATION
- MAIN ENTRANCE
- UNIT BALCONY DOOR / FIRE EXIT
- PROPERTY LINE
- ZONING SETBACKS
- EXISTING TREE TO BE REMOVED

DRAWING NOTES

1. PROPERTY LINE
2. BUILDING SETBACKS AT GRADE - SEE SCHEDULE ___
3. CORNER SITE TRIANGLE
4. HARD SURFACE PAVING, SEE LANDSCAPE PLAN
5. DEPRESSED CURB AND SIDEWALK WITH TWSI
6. 1.8m WIDE CITY SIDEWALK AND STREET CURB
7. SOFT LANDSCAPING, SEE LANDSCAPE PLAN
8. 6.0m WIDE GARAGE ENTRY WITH TRENCH DRAIN
9. EXISTING FIRE HYDRANT
10. OUTLINE OF PRIVATE TERRACE ABOVE
11. EXISTING TREE TO BE REMOVED
12. OUTLINE OF UPPER FLOORS
13. EXISTING BUILDING TO BE REMOVED
14. EXISTING UTILITY POLE TO BE REMOVED
15. 1200mm HT. BLACK METAL PICKET FENCE
16. OUTLINE OF AMENITY / MECHANICAL LEVEL
17. PROPOSED SERVICES
18. GAS EQUIPMENT LOCATION
19. EXISTING STREET LIGHT
20. EXISTING UTILITY POLE, RELOCATE AS REQUIRED
21. SIAMESE CONNECTION
22. PRIVATE WALKWAY TO GROUND FLOOR UNIT
23. INTAKE / EXHAUST GRILL
24. SEAT WALL, SEE LANDSCAPE FOR DETAILS
25.
26.
27.
28.
29.
30.
31.
32.
33.

PROJECT STATISTICS

GROSS BUILDING FLOOR AREA
(OTTAWA ZONING DEFINITION)

BELOW GRADE PARKING LEVEL		0.0 sq. m. / 000 sq. ft.
GROUND FLOOR		1,349.8 sq. m. / 14,529 sq. ft.
2nd FLOOR		1,667.4 sq. m. / 17,948 sq. ft.
3rd FLOOR		1,711.6 sq. m. / 18,423 sq. ft.
4th FLOOR		1,711.6 sq. m. / 18,423 sq. ft.
5th - 7th FLOOR	3 x 1,414.7 sq. m. / 3 x 15,228 sq. ft.	4,244.2 sq. m. / 45,684 sq. ft.
8th & 9th FLOOR	2 x 1,407.1 sq. m. / 2 x 15,146 sq. ft.	2,814.2 sq. m. / 30,292 sq. ft.
10th FLOOR		1,100.1 sq. m. / 11,841 sq. ft.
11th & 12th FLOOR	2 x 1,083.3 sq. m. / 2 x 11,661 sq. ft.	2,166.7 sq. m. / 23,322 sq. ft.
MECHANICAL / AMENITY LEVEL		000 sq. m. / 000 sq. ft.
TOTAL AREA ABOVE GRADE		16,765.5 sq. m. / 180,462 sq. ft.

UNIT STATISTICS

STUDIO	10
1 BEDROOM UNIT	68
1 BEDROOM + STUDY UNIT	84
2 BEDROOM UNIT	68
2 BEDROOM + STUDY UNIT	14
3 BEDROOM UNIT (2 LEVEL)	8
TOTAL	252
COMMERCIAL UNIT	789.5 sq. m. / 8,498 sq. ft.

CAR PARKING

REQUIRED

RESIDENCE	- 0.5 PER UNIT AFTER 12 UNITS	120
VISITOR	- 0.1 PER UNIT AFTER 12 UNITS	24
COMMERCIAL RETAIL		10
TOTAL		154
10% REDUCTION WHEN ALL SPACES ARE BELOW GRADE IN ZONING SECTION 101 (RESIDENTIAL ONLY)		-14
TOTAL		140

PROVIDED

RESIDENCE	- 0.5 PER UNIT (252 UNITS)	119
VISITOR	- 0.1 PER UNIT (252 UNITS)	22
COMMERCIAL		10
TOTAL		151

BICYCLE PARKING

REQUIRED

RESIDENCE	- 1.0 PER UNIT (252 UNITS)	252
COMMERCIAL		3
TOTAL		255

PROVIDED

INTERIOR	252
EXTERIOR	20

AMENITY AREA

AT GRADE EXTERIOR - PRIVATE YARDS	220.0 sq. m.
AT GRADE EXTERIOR - COMMUNAL	230.0 sq. m.
GROUND FLOOR INTERIOR - COMMUNAL	75.0 sq. m.
AMENITY LEVEL INTERIOR - COMMUNAL	305.0 sq. m.
AMENITY LEVEL EXTERIOR - COMMUNAL	450.0 sq. m.
5th & 10th FLOOR TERRACE - PRIVATE	620.0 sq. m.
BALCONIES (ALL LEVELS) - PRIVATE	600.0 sq. m.
TOTAL	2,500.0 sq. m.
TOTAL COMMUNAL	1,060.0 sq. m.

REQUIRED COMMUNAL @ 50% = 756 sq. m.

SITE COVERAGE

BUILDING FOOTPRINT	69.6%	2,030.6 sq. m.
DRIVING SURFACE	0.4%	11.4 sq. m.
LANDSCAPE AREA	30.0%	875.0 sq. m.
TOTAL	100.0%	2,917.0 sq. m.

REFUGE REQUIREMENT (252 UNITS)

GARBAGE	- 0.11 PER UNIT	28 YARDS
RECYCLING GMP	- 0.018 PER UNIT	5 YARDS
RECYCLING FIBER	- 0.038 PER UNIT	10 YARDS
COMPOST	- 240L PER 50 UNITS	5

NOTATION SYMBOLS:

- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- ◇00 INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- ⬡00 INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (000) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- DETAIL NUMBER / TITLE / SCALE / DETAIL REFERENCE PAGE / DETAIL CROSS REFERENCE PAGE

No.	DESCRIPTION	DATE
8	ISSUED FOR OWNER / CONSULTANT REVIEW	Dec. 09, 21
7	REVISED AS PER CITY COMMENTS	June 16, 21
6	ISSUED FOR ZA & OPA ROUND 1 COMMENT	Apr. 07, 21
5	ISSUED FOR ZA & OPA APPLICATION	Nov. 18, 20
4	ISSUED FOR OWNER / CONSULTANT REVIEW	Nov. 05, 20
3	ISSUED FOR ZA & OPA (DRAFT)	Sept. 16, 20
2	ISSUED FOR REVISED DESIGN	Aug. 20, 20
1	ISSUED FOR DESIGN CONCEPT	Mar. 17, 20

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — RODERICK I. LAHEY LICENCE 4376
SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT: ML DEVCO — ML Wellington Realty Investments Inc.

ARCHITECT: RODERICKLAHEY ARCHITECT INC
56 Beech Street, Ottawa, Ontario K1S 3J6
t.613.724.9932 f.613.724.1209 www.rodericklahey.ca

PROJECT TITLE:
979 WELLINGTON STREET
979 to 961 WELLINGTON STREET
26 to 40 ARMSTRONG STREET
OTTAWA ONTARIO

SHEET TITLE:
SITE PLAN

DRAWN: RV	CHECKED: T.Z.
SCALE: 1:125	SHEET No. SP-1
PROJECT No. 1945	

Plan No.: #______

TRANSPORTATION ENGINEER	GEOTECHNICAL ENGINEER	LANDSCAPE ARCHITECT	PROJECT DEVELOPER
CGH TRANSPORTATION INC. 13 Markham Avenue K2G 3Z1 Tel: (343) 999-9117 Email:Christopher.Gordon@CGHTransportation.com	**Paterson Group** 154 Colonnade Road South Ottawa, Ontario K2E 7J5 Tel: 613.226-7381 Email: MD'Arcy@Patersongroup.ca	**Projet Paysage** 24 Mont Royal West Office 801 Montreal, Quebec H2T 2S Tel: (514) 889-5442 Cell: (514) ________ Email: sgallant@projetpaysage.com	**ML Wellington Realty Investments Inc.** 651 Churchill Avenue North, Ottawa ON, K1Z 5G2 Tel.: (613) 686-6319 E-Mail: mflanigan@mldevco.ca E-Mail: psmale@mldevco.ca

LEGAL DESCRIPTION	SURVEYOR	CIVIL ENGINEER	URBAN PLANNER
TOPOGRAPHICAL PLAN OF SURVEY OF **LOTS 7, 8, 9 and 10** **PART OF LOT 11** **REGISTERED PLAN 89** **CITY OF OTTAWA** Surveyed by Annis, O'Sullivan, Vollebekk Ltd.	**Annis O'Sullivan Vollebekk Ltd.** Ontario Land Surveyors 14 Concourse Gate, Suite 500, Nepean, Ontario K2E 7S6 Tel: (613) 727-0850 Fax: (613) 727-1079 Email: EdH@aovltd.com	**IBI Group** 333 Preston Street, Suite 400 K1S 5N4 Tel: (613) 225-1311 Fax: (613) 225-9868 Email: jmoffatt@IBIGroup.com	**FoTenn Consultants Inc.** 396 Cooper Street, Suite 300, Ottawa, ON Canada, K2P 2H7 Tel.:(613) 730-5709 Fax: (613) 730-1136 E-Mail: bolduc@fotenn.com

2.2 Existing Conditions

2.2.1 Area Road Network

Scott Street: Scott Street is a City of Ottawa arterial road with a four-lane urban cross-section including two outside-lane transit priority lanes. A sidewalk and a curbside bike lane are on the south side of the road and a mixed -use path is on the north side of the road. The posted speed limit is to be 50 km/h, and the City-protected right-of-way within the study area is 26.0 metres. Scott Street is a truck route.

Albert Street: Albert Street is a City of Ottawa arterial road with a four-lane urban cross-section including two outside-lane transit priority lanes. Within the study area, sidewalks are provided on both sides of the street, the posted speed limit is 50 km/h and the City-protected right-of-way is 26.0 metres. Albert Street is a truck route.

Wellington Street West: Wellington Street West is a City of Ottawa arterial road with a four-lane urban cross-section with sidewalks on both sides of the road and on-street parking permitted in parking lanes on both sides of the road, west of Garland Street. East of Garland Street, Wellington Street West has a two-lane urban cross-section with sidewalks on both sides of the street and on-side parking permitted on the south side of the road. The posted speed limit is 50 km/h and the City-protected right of way is 20.0 metres west of Garland Street, and the existing right of way is 20.0 metres to the east. West of Garland Street, Wellington Street West is a truck route.

Somerset Street West: Somerset Street West is a City of Ottawa arterial road with a four-lane urban cross-section with sidewalks on both sides of the road and on-street parking permitted in parking lanes on both sides of the road. For the length of the bridge over the Trillium LRT line, the parking lanes are suspended, and curbside bike lanes are present. The posted speed limit is 50 km/h and the existing right of way is 20.0 metres. Somerset Street West is a truck route.

Bayview Station Road: Bayview Station Road is a City of Ottawa collector road with a four-lane urban cross-section with sidewalks on both sides of the road and on-street parking permitted in parking lanes on both sides of the road. The unposted speed limit is 50 km/h, the City-protected right of way south of Scott Street is 24.0 metres, and the existing right of way north of Scott Street is 18.0 metres.

Bayswater Avenue: Bayswater Avenue is a City of Ottawa collector road with a two-lane urban cross-section with sidewalks on both sides of the road and on-street parking permitted on the west side of the road starting approximately 90 metres south of Somerset Street West. The unposted speed limit is 50 km/h, the City-protected right of way north of Somerset Street West is 24.0 m, and the existing right of way south of Somerset Street West is 25.0 metres.

Armstrong Street: Armstrong Street is a City of Ottawa local road with a two-lane urban cross-section with sidewalks on both sides of the road. The posted speed limit is 40 km/h and the existing right of way is 12.0 metres.

Melrose Avenue: Melrose Avenue is a one-way (northbound) City of Ottawa local road with a one-lane urban cross-section with sidewalks on both sides of the road and on-street parking permitted on the west side of the road. The posted speed limit is 40 km/h and the existing right of way is 15.0 metres.

Fairmont Avenue: Fairmont Avenue is a City of Ottawa local road with a two-lane urban cross-section with sidewalks on both sides of the road and on-street parking permitted on the west side of the road. The posted speed limit is 40 km/h and the existing right of way is 19.0 metres.

Garland Street: Garland Street is a City of Ottawa local road with a two-lane urban cross-section north of Armstrong Street, and a one-lane urban cross-section north of Armstrong Street where it is one-way (northbound) with a southbound curbside bike lane. Throughout the study area, sidewalks are on both sides of the road and on-

street parking is permitted on the east side of the road. The posted speed limit is 40 km/h and the existing right of way is 12.0 metres.

Hilda Street: Hilda Street is a City of Ottawa local road with a two-lane urban cross-section north of Armstrong Street, and a one-lane urban cross-section north of the proposed site access where it is one-way (southbound). Sidewalks are provided on both sides of the road and on-street parking is permitted on the west side of the road. The posted speed limit is 40 km/h and the existing right of way is 12.0 metres.

Hintonburg Place: Hintonburg Place is a City of Ottawa local road with a two-lane urban cross-section with on-street parking permitted on its north/east side, and a sidewalk provided on its south/west side for 15 metres past its 90-degree bend. The unposted speed limit is assumed to be 50 km/h, and the existing right of way is 20.0 metres to the north of its 90-degree bend, and 15.0 metres to the south.

2.2.2 Existing Intersections

The existing signalized area intersections within 400 metres of the site have been summarized below:

Albert Street/Scott Street at Bayview Station Road	The intersection of Albert Street/Scott Street and Bayview Station Road is a signalized intersection. The northbound approach consists of an auxiliary left-turn lane and a shared through/channelized right-turn lane, and the southbound approach consists of an auxiliary left-turn lane and a shared through/right-turn lane. The eastbound approach consists of a through lane, a shared transit priority/right-turn lane, and a bike lane and the westbound approach consists of an auxiliary left-turn lane, a through lane, and a shared transit priority/right-turn lane. No turn restrictions were noted.
Armstrong Street at Garland Street	The intersection of Armstrong Street and Garland Street is an all-way stop-controlled intersection. The northbound approach consists of a shared all-movements lane and the southbound approach consists of a shared left-turn/right-turn lane. The eastbound consists of a shared left-turn/through lane and the westbound approach consists of a shared through/right-turn lane. Southbound through movements, eastbound right turns, and westbound left turns onto the outbound south leg are restricted.
Armstrong Street at Bayview Station Road	The intersection of Armstrong Street and Bayview Station Road is a T-intersection stop controlled on the minor approach of Armstrong Street. The northbound approach consists of a shared left-turn/through lane and the southbound approach consists of a shared through/right-turn lane. The eastbound approach consists of a shared left-turn/right-turn lane. No turn restrictions were noted.
Wellington Street W at Melrose Avenue	The intersection of Wellington Street West and Melrose Avenue is a signalized intersection. The northbound approach consists of a shared left-turn/right-turn lane, and the eastbound and westbound approaches each consist of a through lane. No turn restrictions were noted.
Wellington Street W at Fairmont Avenue	The intersection of Wellington Street West and Fairmont Avenue is a signalized intersection. The northbound approach consists of a shared left-turn/right-turn lane, the eastbound approach consists of a shared

	through/right-turn lane, and the westbound approach consists of a shared left-turn/through lane. No turn restrictions were noted.
Wellington Street W/Somerset Street W at Garland Street	The intersection of Wellington Street West/Somerset Street West at Garland Street is a signalized intersection. The eastbound approach consists of a shared left-turn/through lane, the westbound approach consists of a shared through/right-turn lane, and the north leg is inbound only. The slight-right, constituting the eastbound through movement is restricted on red.
Wellington Street W/Hintonburg Place at Bayview Station Road/Bayswater Avenue	The intersection of Wellington Street West/Hintonburg Place at Bayview Station Road/Bayswater Avenue is a unsignalized intersection stop controlled on the minor approach of Wellington Street West. The northbound approach consists of a shared left-turn/through lane and the southbound approach consists of a shared through/right-turn lane. The eastbound and westbound approaches each consist of a shared all-movements lane. No turn restrictions were noted.
Somerset Street W at Bayswater Avenue	The intersection of Somerset Street West and Bayswater Avenue is a signalized intersection. The northbound approach consists of a shared all-movements lane and the southbound approach consists of an auxiliary left-turn lane and a shared through/right-turn lane. The eastbound and westbound approaches each consist of a shared left-turn/through lane and an auxiliary right-turn lane. No turn restrictions were noted.

2.2.3 Existing Driveways

Driveways to low density residential developments and small commercial developments exist on both sides of Garland Street and Armstrong Street within 200 metres of the site access. Driveways to medium-rise residential buildings and low-density residential developments are found along Hilda Street and Wellington Street West within 200 metres of the site access.

The proposed site access onto Hilda is south of the access to 959 Wellington Street West, and south of the northbound vehicular directional closure at the intersection with Armstrong Street.

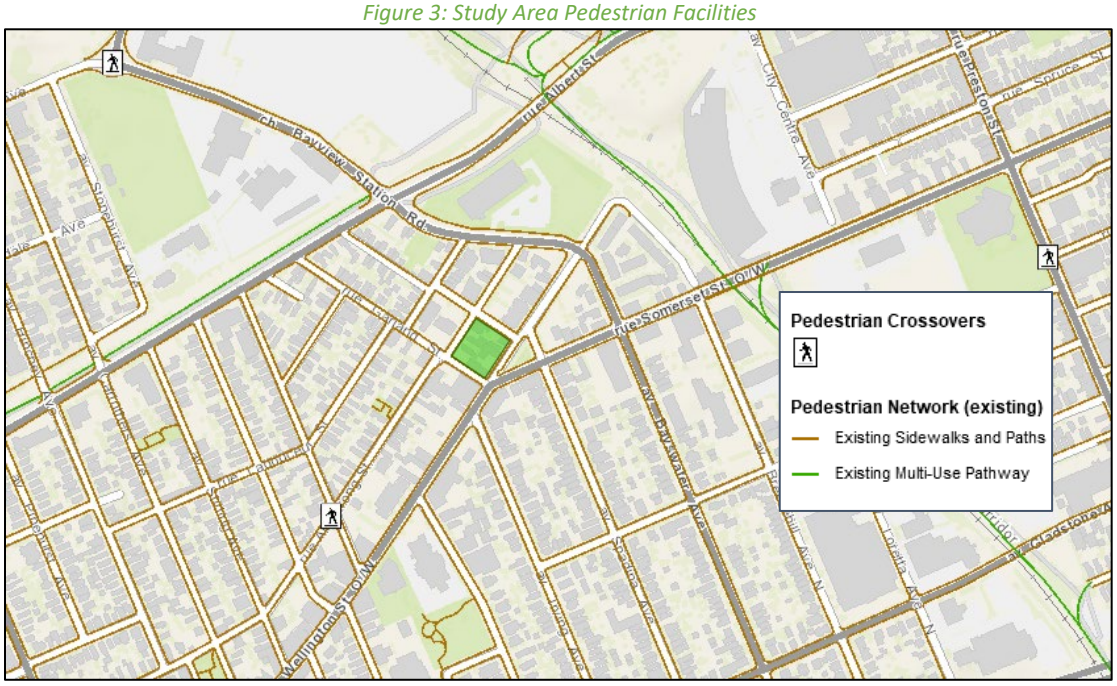
2.2.4 Cycling and Pedestrian Facilities

Figure 3 illustrates the pedestrian facilities in the study area and Figure 4 illustrates the cycling facilities.

Sidewalks are provided along both sides of all study area roads and a pedestrian crossover is provided across Armstrong Street at Merton Street. MUPs are located along the north side of Scott Street and on the east side of the Trillium LRT corridor, with a connection to the Tom Brown Arena.

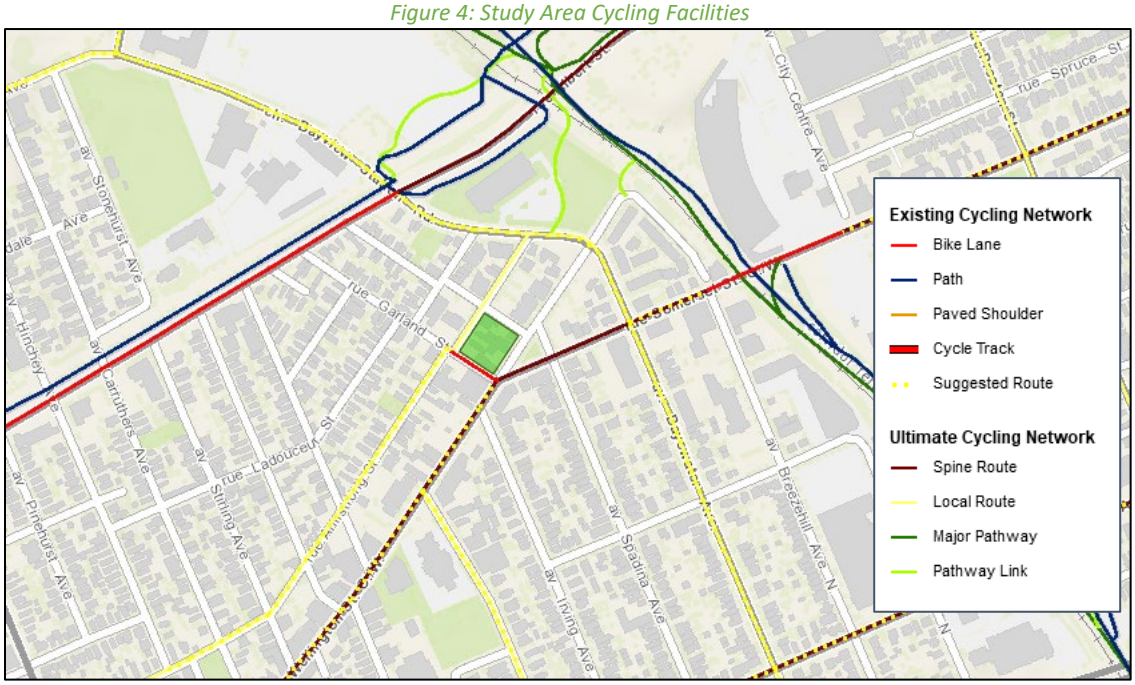
Cycling facilities include curbside bike lanes on the south side of Scott Street, west side of Garland Street south of Armstrong Street, and on both sides of Somerset Street West on the bridge over the Trillium LRT corridor. The Scott Street/Albert Street corridor and the Trillium Pathway south of Bayview Station are cross-town bikeways, Scott Street, Albert Street, Somerset Street West, and Wellington Street West west of Garland Street are spine routes, Bayview Station Road, Bayswater Avenue, Garland Street south of Armstrong Street and Armstrong Street are local routes. MUP locations are noted above.

Figure 3: Study Area Pedestrian Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: August 26, 2020

Figure 4: Study Area Cycling Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: August 26, 2020

2.2.5 Existing Transit

Within the study area, the route #11 travels along Wellington Street West/Somerset Street West, and the routes #16, 61, 63, 66, 75 travel along Scott Street. The frequency of these routes within proximity of the proposed site currently are:

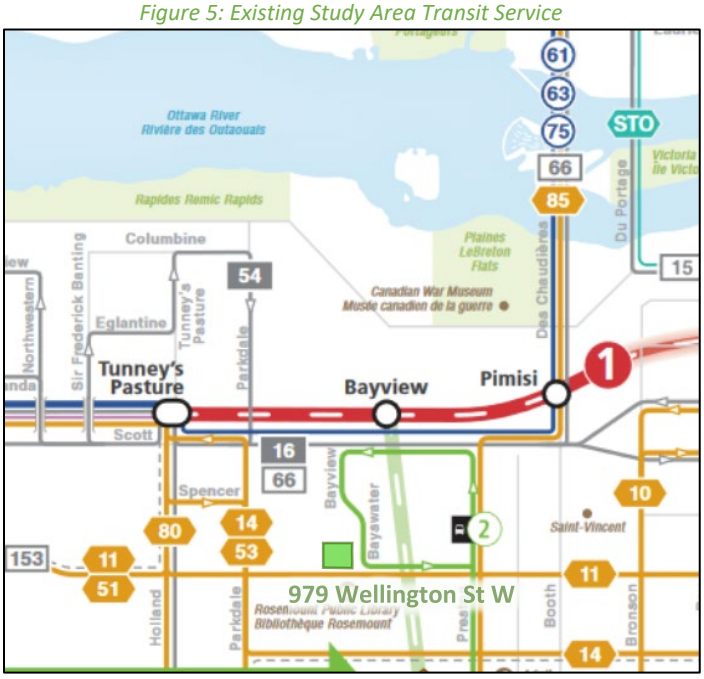
- Route #11 – 15-minute service all day, 30-minute service after 9:00pm

- Route #16 – 30-minute service all day
- Route #61 – 10-30-minute service, operating during peak period/peak direction only
- Route #63 – 15-minute service, operating during peak period/peak direction only
- Route #66 – 30-minute service, operating during peak period/peak direction only
- Route #75 – 15-minute service, operating during peak period/peak direction only

Furthermore, Bayview Station is less than 350 metres radially from the site, which in addition to having the routes listed as operating along Scott Street stop here, both O-Train LRT lines service this station.

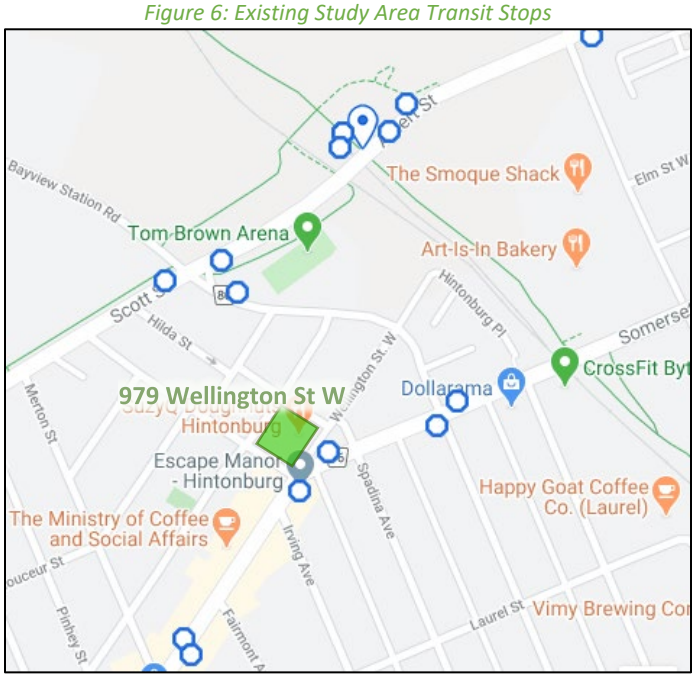
Figure 5 illustrates the transit system map in the study area and Figure 6 illustrates nearby transit stops. It should be noted that at the time of report creation, the Line 2 O-Train was running replacement bus service due to construction.

Figure 5: Existing Study Area Transit Service



Source: http://www.octranspo.com/ Accessed: July 23, 2020

Figure 6: Existing Study Area Transit Stops



Source: http://www.octranspo.com/ Accessed: July 23, 2020

2.2.6 Existing Area Traffic Management Measures

Extensive use of bulb-outs and on-street parking is found throughout the study area, with tight corner radii, vehicular directional closures, and textured crossings additionally present. A vehicular directional closure is noted on Hilda Street preventing northbound movements at the intersection with Armstrong Street.

2.2.7 Existing Peak Hour Travel Demand

Existing turning movement counts were acquired from the City of Ottawa for the existing study with the exception of Armstrong Street at Garland Street and Armstrong Street at Bayview Station Road, which did not have data available, and, due to pandemic-related traffic disruption, none could be collected. Validated StreetLight™ data for these intersections were requested from the City on July 14, 2020, however these data were not able to be generated. Table 1 summarizes the intersection count dates.

Table 1: Intersection Count Date

Intersection	Count Date
Albert Street/Scott Street at Bayview Station Road	Wednesday, September 7, 2016
Armstrong Street at Garland Street	Pending Streetlight Data
Armstrong Street at Bayview Station Road	Pending Streetlight Data
Wellington Street W at Melrose Avenue	Wednesday, November 16, 2016
Wellington Street W at Fairmont Avenue	Thursday, February 22, 2018
Wellington Street W/Somerset Street W at Garland Street	Wednesday, August 12, 2015
Somerset Street W at Bayswater Avenue	Wednesday, September 7, 2016

Figure 7 illustrates the existing traffic counts and Table 2 summarizes the existing intersection operations. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. Detailed turning movement count data is included in Appendix B and the Synchro worksheets are provided in Appendix C.

Figure 7: Existing Traffic Counts

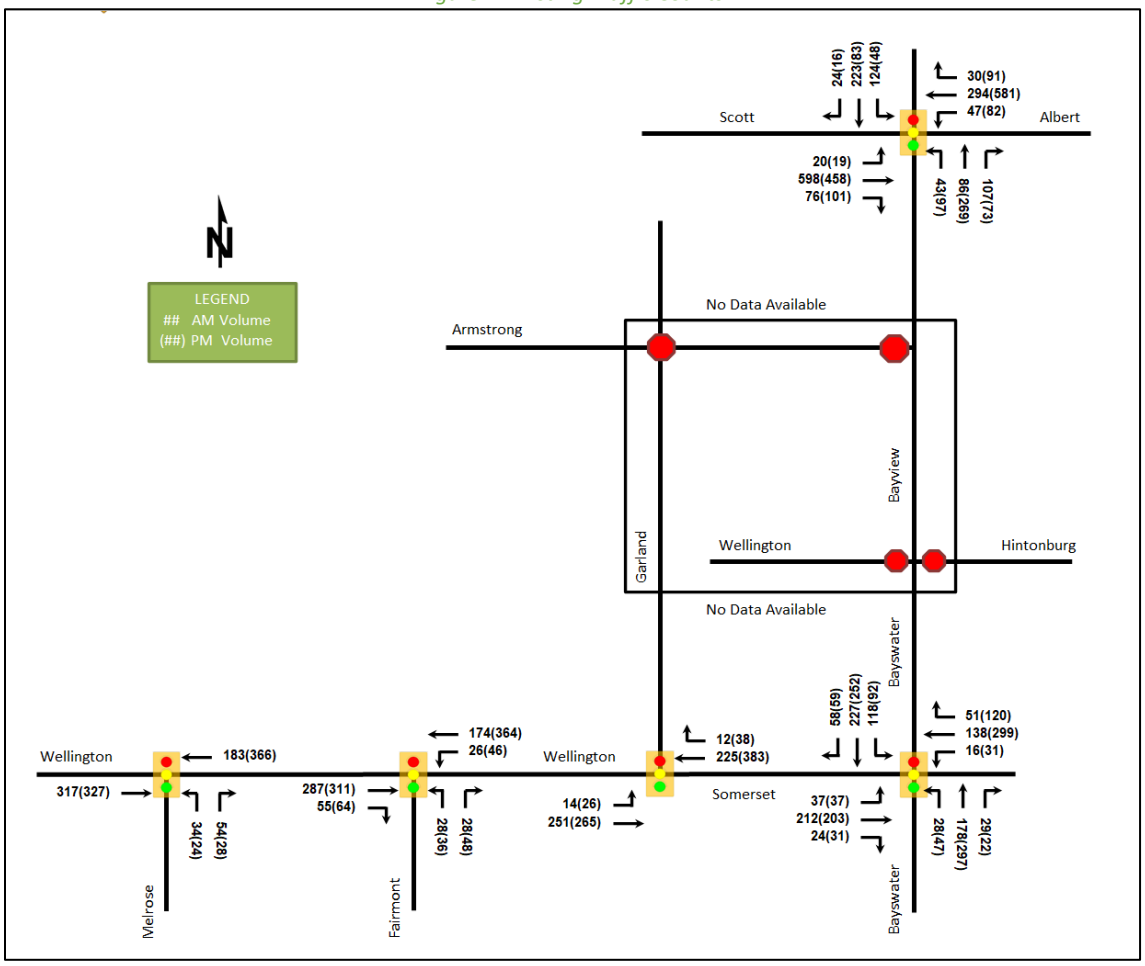


Table 2: Existing Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Albert Street/Scott Street at Bayview Station Road *Signalized*	EBL/T	B	0.61	14.2	117.6	A	0.50	12.7	79.6
	EBR	A	0.09	2.8	6.4	A	0.13	2.0	6.1
	WBL	A	0.15	9.5	9.8	A	0.22	10.3	15.5
	WBT	A	0.29	9.1	42.8	A	0.59	14.4	104.4
	WBR	A	0.04	2.4	3.2	A	0.12	2.5	6.7
	NBL	A	0.34	38.1	17.8	A	0.39	35.8	32.9
	NBT/R	A	0.57	30.1	47.4	D	0.90	61.2	**#117.3**
	SBL	C	0.74	58.9	**#48.0**	A	0.53	53.0	**#24.3**
	SBT/R	C	0.73	46.7	72.8	A	0.26	28.8	29.6
	Overall	**B**	**0.65**	**23.0**	-	**B**	**0.68**	**23.7**	-
Wellington Street W at Melrose Avenue *Signalized*	EBT	A	0.26	4.0	28.5	A	0.27	4.8	29.0
	WBT	A	0.15	3.9	19.5	A	0.31	8.2	46.4
	NBL/R	A	0.43	18.7	15.5	A	0.25	17.9	12.5
	Overall	**A**	**0.27**	**6.2**	-	**A**	**0.30**	**7.4**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Wellington Street W at Fairmont Avenue *Signalized*	EBT/R	A	0.32	5.2	13.9	A	0.37	14.4	72.7
	WBL/T	A	0.20	8.8	30.0	A	0.42	6.2	33.5
	NBL/R	A	0.20	13.4	11.2	A	0.26	13.7	15.1
	Overall	**A**	**0.29**	**7.2**	**-**	**A**	**0.38**	**10.5**	**-**
Wellington Street W/Somerset Street W at Garland Street *Signalized*	EBL/T	A	0.18	0.7	4.4	A	0.24	1.7	8.3
	WBT/R	A	0.16	1.2	13.2	A	0.34	7.0	51.5
	SBL/R	-	-	-	-	-	-	-	-
	Overall	**A**	**0.21**	**0.9**	**-**	**A**	**0.32**	**4.9**	**-**
Somerset Street W at Bayswater Avenue *Signalized*	EBL/T	A	0.41	10.5	12.1	A	0.37	12.5	56.1
	EBR	A	0.05	0.4	0.3	A	0.06	4.6	4.8
	WBL/T	A	0.25	14.3	26.0	A	0.49	16.8	56.5
	WBR	A	0.10	4.3	5.7	A	0.21	3.3	8.4
	NB	A	0.39	15.8	39.1	B	0.67	25.2	75.3
	SBL	A	0.32	16.5	23.1	A	0.35	20.6	22.2
	SBT/R	A	0.45	16.1	46.1	A	0.53	20.3	58.2
	Overall	**A**	**0.42**	**13.7**	**-**	**A**	**0.57**	**17.8**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
PHF = 0.90
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

The study area intersections generally operate well. No capacity issues are noted outside of extended queuing at the intersection of Albert Street/Scott Street at Bayview Station Road on the southbound left movement during the AM peak hour, and on the southbound left and northbound through/right movements during the PM peak hour.

2.2.8 Collision Analysis

Collision data have been acquired from the City of Ottawa open data website (data.ottawa.ca) for five years prior to the commencement of this TIA for the surrounding study are road network. Table 3 summarizes the collisions types and conditions in the study area, Figure 8 illustrates the intersections and segments analyzed, and Table 4 summarizes the total collisions for each of these locations. Collision data are included in Appendix D.

Table 3: Study Area Collision Summary, 2015-2019

		Number	%
Total Collisions		**95**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	19	20%
	Property Damage Only	76	80%
Initial Impact Type	**Approaching**	2	2%
	Angled	12	13%
	Rear end	15	16%
	Sideswipe	9	9%
	Turning Movement	23	24%
	SMV Unattended	17	18%
	SMV Other	11	12%
	Other	6	6%
Road Surface Condition	**Dry**	53	56%
	Wet	16	17%
	Loose Snow	13	14%
	Slush	7	7%

		Number	%
Total Collisions		**95**	**100%**
	Packed Snow	3	3%
	Ice	3	3%
Pedestrian Involved		4	4%
Cyclists Involved		8	8%

Figure 8: Study Area Collision Records – Representation of 2015-2019

Table 4: Summary of Collision Locations, 2015-2019

	Number	%
Intersections / Segments	**95**	**100%**
Scott St/Albert St @ Bayview Rd	25	26%
O'Meara St @ Bayview Rd	1	1%
Armstrong St @ Garland St	2	2%
Armstrong St @ Bayview Rd	4	4%
Wellington St W @ Irving Ave	4	4%
Somerset St W/Wellington St W@ Garland St	7	7%
Wellington St W @ Bayswater Ave/Bayview Rd	4	4%
Somerset St W @ Spadina Ave	4	4%
Somerset St W @ Bayswater Ave	15	16%
Hilda St @ Armstrong St	1	1%
Wellington St W btwn Fairmont Ave & Irving Ave	11	12%
Wellington St W btwn Irving Ave & Garland St	3	3%
Wellington St W btwn Spadina Ave & Bayview Rd	2	2%
Somerset St W btwn Spadina Ave & Bayswater Ave	4	4%
Garland St btwn Armstrong St & Wellington St W	1	1%
Bayview Rd btwn Scott St & O'Meara St	1	1%
Bayview Rd btwn O'Meara St & Armstrong St	1	1%

	Number	%
Intersections / Segments	**95**	**100%**
Bayswater Ave btwn Wellington St W & Somerset St W	2	2%
Hilda St Btwn Armstrong St & Wellington St W	2	2%
Wellington St W btwn Somerset St W & Hilda St	1	1%

Within the study area, the intersections of Scott Street/Albert Street at Bayview Road, Somerset Street West at Bayswater Avenue, and the segment of Wellington Street West between Fairmont Avenue and Irving Avenue are noted to have experienced higher collisions than other locations. Table 5, Table 6, and Table 7 summarize the collision types and conditions for each of the Scott Street/Albert Street at Bayview Road, Somerset Street West at Bayswater Avenue, and Wellington Street West between Fairmont Avenue and Irving Avenue locations.

Table 5: Scott Street/Albert Street at Bayview Road Collision Summary

		Number	%
Total Collisions		**25**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	9	36%
	Property Damage Only	16	64%
Initial Impact Type	**Angle**	3	12%
	Rear end	5	20%
	Sideswipe	2	8%
	Turning Movement	13	52%
	SMV Other	2	8%
Road Surface Condition	**Dry**	15	60%
	Wet	5	20%
	Loose Snow	2	8%
	Slush	2	8%
	Packed Snow	1	4%
Pedestrian Involved		2	8%
Cyclists Involved		3	12%

The Scott Street/Albert Street at Bayview Road intersection had a total of 25 collisions during the 2015-2019 time period, with 16 involving property damage only and the remaining nine having non-fatal injuries. The collision types are most represented by turning movement with 13 collisions, followed by rear end with five, angle with three, and two each for sideswipe and SMV (other). Turning movement collisions, representing right turns, may be influenced by the skewed geometry of the intersection and the right-turn lanes. The addition of no right-turn on red signage may reduce the turning movement collisions at this intersection. Additional pedestrian and cycling related observations, movements, and suggested improvements are provided within the City's Cycling Safety Review of High-Volume Intersections (March 2020). Weather conditions are not considered to affect collisions at this location.

Table 6: Somerset Street West at Bayswater Avenue Collision Summary

		Number	%
Total Collisions		**15**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	4	27%
	Property Damage Only	11	73%
Initial Impact Type	**Angle**	1	7%
	Rear end	4	27%
	Sideswipe	1	7%

		Number	%
Total Collisions		**15**	**100%**
	Turning Movement	2	13%
	SMV Other	4	27%
	Other	3	20%
Road Surface Condition	**Dry**	8	53%
	Wet	2	13%
	Loose Snow	3	20%
	Slush	1	7%
	Ice	1	7%
Pedestrian Involved		2	13%
Cyclists Involved		0	0%

The Somerset Street West at Bayswater Avenue intersection had a total of 15 collisions during the 2015-2019 time period, with 11 involving property damage only and the remaining four having non-fatal injuries. The collision types are most represented by SMV (other) and rear end each with four collisions, followed by other with three, and two or fewer turning movement, angle, and sideswipe. The City's Cycling Safety Review of High-Volume Intersections (March 2020) completed a review of this intersection for pedestrian and cycling related observations, movements, and suggested improvements, which would help address the variety of collisions noted at this intersection. Beyond those improvements recommended within that report, it is noted that weather conditions may affect the collisions at this location.

Table 7: Wellington Street West between Fairmont Avenue and Irving Avenue Collision Summary

		Number	%
Total Collisions		**11**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	1	9%
	Property Damage Only	10	91%
Initial Impact Type	**Sideswipe**	3	27%
	Turning Movement	1	9%
	SMV Unattended	7	64%
Road Surface Condition	**Dry**	6	55%
	Wet	3	27%
	Loose Snow	2	18%
Pedestrian Involved		0	0%
Cyclists Involved		1	9%

The segment of Wellington Street West between Fairmont Avenue and Irving Avenue had a total of 11 collisions during the 2015-2019 time period, with ten involving property damage only and the remaining one having non-fatal injuries. The collision types are most represented by SMV (unattended) with seven, followed by sideswipe with three and turning movement with one. SMV (unattended) and sideswipe collisions may be influenced by exposure to on-street parking and private approach driveways on both sides of the street. No mitigation is recommended for this segment. Weather conditions are not considered to affect collisions at this location.

2.3 Planned Conditions

2.3.1 Changes to the Area Transportation Network

The subject development is within the Scott Street and Wellington Street West CDP Areas. From the Scott Street CDP, a future enhanced crosswalk is identified for the intersection of Scott Street/Albert Street and Bayview

Station Road, future cycletracks are proposed along Scott Street, and future shared-use cycling lanes are proposed along Bayview Station Road continuing along Bayswater Avenue and along Armstrong Street.

Within the Transportation Master Plan, the Rapid Transit and Transit Priority Network's Affordable Network diagram shows isolated transit priority measures on Wellington Street West continuing on Somerset Street West.

From the City's Planned Construction Projects portal, work on the Scott Street cycling routes is planned to commence within one-to-two years.

2.3.2 Other Study Area Developments

27 O'Meara Street

The proposed development application includes a zoning by-law amendment and site plan for a four-storey, eight-unit residential building with zero vehicular parking spaces. No TIA is available for this development.

107 Armstrong Street

The proposed development application includes a minor zoning by-law amendment to add a "one lot for zoning purposes" provision to the existing zone. No TIA is available for this development.

37 Ladouceur Street, 53 Merton Street

The proposed development application includes a zoning by-law amendment to allow the construction of six three-storey townhouses. No TIA is available for this development.

99-103 Pinhey Street

The proposed development application includes site plan for a 26-unit four-storey apartment building with underground parking. No TIA is available for this development.

900 Albert Street

The proposed development application includes site plan for the construction of 1,241 residential dwelling units, 8,124 m^2 of retail space, and 37,745 m^2 of office space. The horizons modeled within the TIA are 2020 and 2025, which anticipates 398 new AM and 613 new PM peak hour two-way auto trips. (Parsons, 2020)

1040 Somerset Street W

The proposed development application includes a site plan for the construction of a 32-storey mixed-use building with 248 residential dwelling units, and 141 m^2 of ground floor commercial space. The development is anticipated to be built out in 2025 and to generate 26 new two-way AM peak hour auto trips and 30 new two-way PM peak hour auto trips assuming a 25% residential transit share. (Novatech, 2021)

1050 Somerset Street W

Last updated in 2012, the proposed development application includes a site plan for the construction of a 23-storey mixed-use building with 195 residential dwelling units, 5,020 sq. ft. of ground floor commercial retail space, 26,100 sq. ft. of commercial office space, and 244 underground parking spaces. Traffic generated by the site has not been explicitly provided in the 2012 traffic analysis. (Novatech, 2012)

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersections of:

- Scott Street/Albert Street at Bayview Station Road
- Armstrong Street at:

    - Garland Street
    - Site Access
    - Bayview Station Road
- Wellington Street West at:
    - Melrose Avenue
    - Fairmont Avenue
    - Somerset Street West and Garland Street
    - Hintonburg Place and Bayview Station Road/Bayswater Avenue
- Somerset Street West at Bayswater Avenue

The boundary roads will be Hilda Street, Armstrong Street, Garland Street, and Wellington Street West. The SL29 screenline intersects the study area at the Scott Street Bridge and Somerset Street bridges and will not be analyzed as part of this study.

3.2 Time Periods

As the proposed development is primarily a residential development with a ground floor commercial component, the AM and PM peak hours will be examined.

3.3 Horizon Years

The anticipated build-out year is 2024. As a result, the full build-out plus five years horizon year is 2029.

4 Exemption Review

Table 8 summarizes the exemptions for this TIA.

Table 8: Exemption Review

Module	Element	Explanation	Exempt/Required
Design Review Component			
4.1 Development Design	4.1.2 Circulation and Access	Only required for site plans	Required
	4.2.3 New Street Networks	Only required for plans of subdivision	Exempt
4.2 Parking	4.2.1 Parking Supply	Only required for site plans	Required
	4.2.2 Spillover Parking	Only required for site plans where parking supply is 15% below unconstrained demand	Exempt
Network Impact Component			
4.5 Transportation Demand Management	All Elements	Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time	Required
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	Required
4.8 Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning	Exempt

5 Development-Generated Travel Demand

5.1 Mode Shares

Examining the mode shares recommended in the TRANS Trip Generation Manual (2020) for the subject district, derived from the most recent National Capital Region Origin-Destination survey (OD Survey), the existing average district mode shares by land use for Ottawa West have been summarized in Table 9.

Table 9: TRANS Trip Generation Manual Recommended Mode Shares – Ottawa West

Travel Mode	Multi-Unit (High-Rise)		Commercial Generator	
	AM	PM	AM	PM
Auto Driver	28%	33%	55%	50%
Auto Passenger	11%	11%	11%	16%
Transit	41%	26%	11%	11%
Cycling	3%	7%	0%	5%
Walking	16%	23%	23%	18%
Total	**100%**	**100%**	**100%**	**100%**

5.2 Trip Generation

This TIA has been prepared using the vehicle and person trip rates for the residential dwellings using the TRANS Trip Generation Manual (2020) and the vehicle trip rates and derived person trip rates for commercial component from the ITE Trip Generation Manual 10th Edition (2017) using the City-prescribed conversion factor of 1.28. Table 10 summarizes the person trip rates for the proposed residential land uses for each peak period and the person trip rates for the non-residential land uses by peak hour.

Table 10: Trip Generation Person Trip Rates by Peak Period

Land Use	Land Use Code	Peak Period	Vehicle Trip Rate	Person Trip Rates
Multi-Unit (High-Rise)	221 & 222 (TRANS)	AM	-	0.80
		PM	-	0.90
Land Use	**Land Use Code**	**Peak Hour**	**Vehicle Trip Rate**	**Person Trip Rates**
Shopping Centre	820 (ITE)	AM	0.94	1.20
		PM	3.81	4.88

Using the above person trip rates, the total person trip generation has been estimated. Table 11 summarizes the total person trip generation for the residential land uses and for the non-residential land uses.

Table 11: Total Residential Person Trip Generation by Peak Period

Land Use	Units	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Multi-Unit (High-Rise)	252	63	139	202	132	95	227
Land Use	**GFA** (sq. ft.)	**AM Peak Hour**			**PM Peak Hour**		
		In	**Out**	**Total**	**In**	**Out**	**Total**
Shopping Centre	8,498	6	4	10	20	21	41

Internal capture rates from the ITE Trip Generation Handbook 3rd Edition have been assigned to the development's retail component for mixed-use developments. The rates summarized in Table 12 represent the percentage of trips to/from the retail use based on the residential component.

Table 12: Internal Capture Rates

Land Use	AM		PM	
	In	Out	In	Out
Residential to/from Shopping Centre	17%	14%	10%	26%

Pass-by reductions applied to the retail trip generation at a rate of 35% have been included, a value taken as a moderately conservative interpretation from the rates presented in the ITE Trip Generation Handbook 3rd Edition.

Using the above mode share targets, the internal capture and pass-by rates, and the person trip rates, the person trips by mode have been projected. Trip generation by peak hour has been forecasted using the prescribed peak period conversion factors presented in the TRANS Trip Generation Manual (2020) for the residential component. Table 13 summarizes the residential trip generation and the non-residential trip generation by mode and peak hour.

Table 13: Trip Generation by Mode

Travel Mode		AM Peak Hour				PM Peak Hour			
		Mode Share	**In**	**Out**	**Total**	**Mode Share**	**In**	**Out**	**Total**
Multi-Unit (High-Rise)	Auto Driver	**28%**	8	19	27	**33%**	19	14	33
	Auto Passenger	**11%**	3	7	10	**11%**	7	4	11
	Transit	**41%**	14	31	45	**26%**	16	12	28
	Cycling	**3%**	1	2	3	**7%**	4	3	8
	Walking	**16%**	6	13	19	**23%**	16	11	27
	Total	**100%**	**32**	**70**	**101**	**100%**	**58**	**42**	**100**
Shopping Centre	Auto Driver	**55%**	2	1	3	**50%**	6	5	11
	Auto Passenger	**11%**	0	0	0	**16%**	2	2	4
	Transit	**11%**	0	0	0	**11%**	1	1	2
	Cycling	**0%**	0	0	0	**5%**	1	1	1
	Walking	**23%**	1	1	1	**18%**	2	2	4
	Internal Capture	***varies***	*-1*	*0*	*-1*	***varies***	*-1*	*-4*	*-5*
	Pass-by	***35%***	*-2*	*-1*	*-4*	***35%***	*-7*	*-7*	*-14*
	Total	**100%**	**3**	**3**	**5**	**100%**	**12**	**10**	**22**
Total	Auto Driver	-	10	20	30	-	25	19	44
	Auto Passenger	-	3	7	10	-	9	6	15
	Transit	-	14	31	45	-	17	13	30
	Cycling	-	1	2	3	-	5	4	9
	Walking	-	7	14	20	-	18	13	31
	Total	-	**35**	**73**	**106**	-	**70**	**52**	**122**

As shown above, a total of 30 AM and 44 PM new peak hour two-way vehicle trips are projected as a result of the proposed development.

5.3 Trip Distribution

To understand the travel patterns of the subject development the OD Survey has been reviewed to determine the travel for the residential component patterns were applied based on the build-out of Ottawa West. Table 14 below summarizes the distributions.

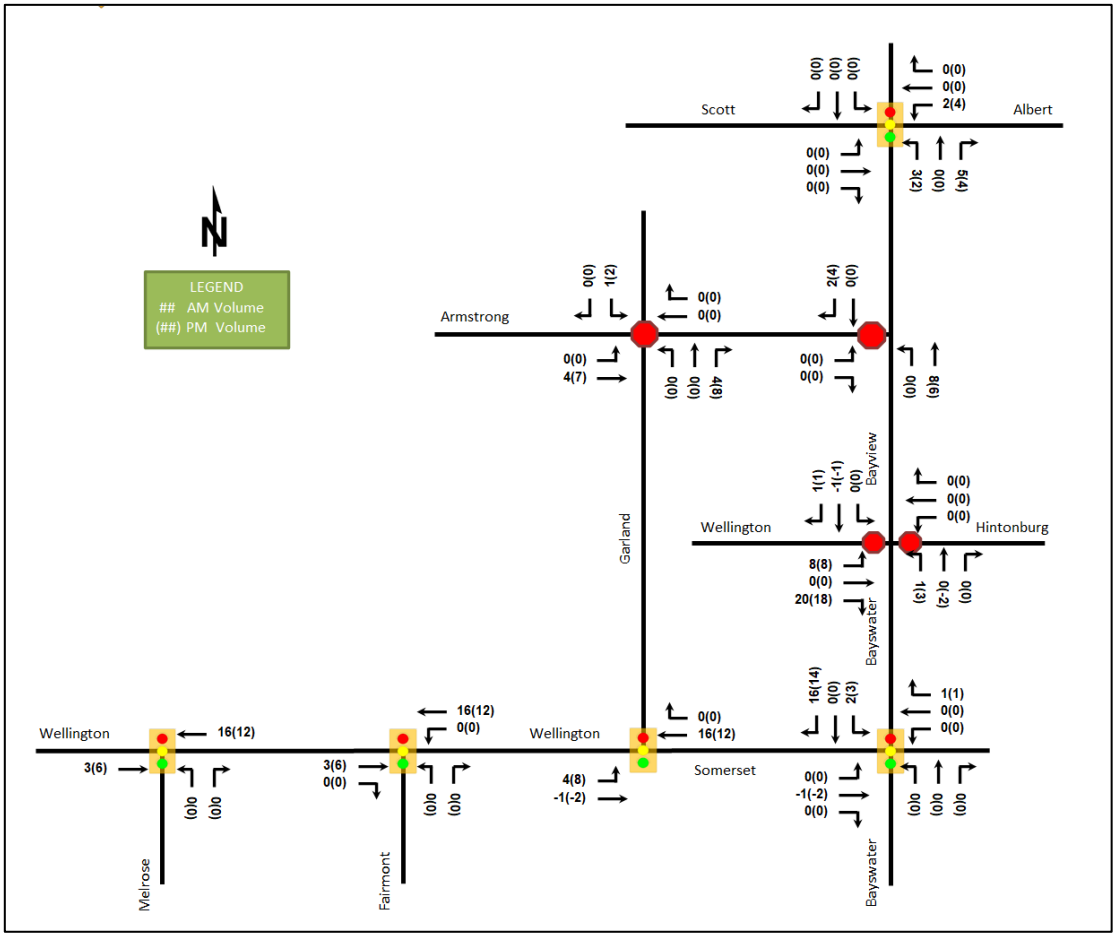
Table 14: OD Survey Distribution – Ottawa West

To/From	Residential % of Trips	Via
North	5%	Albert
South	30%	Armstrong/Wellington/417
East	30%	15% Albert, 5% Somerset, 10% Armstrong/Wellington/417
West	35%	10% Scott, 25% Armstrong/Wellington/417
Total	100%	-

5.4 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the study area road network. Figure 9 illustrates the new site generated and pass-by volumes.

Figure 9: New Site Generation and Pass-By Auto Volumes



6 Background Network Travel Demands

6.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3. None of the listed modifications are considered to have any notable impact on the study area traffic volumes and travel patterns.

6.2 Background Growth

A review of the background projections from the City's TRANS Regional Model for the 2011 and 2031 horizons was completed to determine the background growth for each of the study area roadways. Table 15 summarizes the results of the model, and the projections are provided in Appendix E.

Table 15: TRANS Regional Model Projections – Study Area Growth Rates

Street	Direction Growth Percentage	
	Eastbound	**Westbound**
Scott/Albert	-1.28%	1.81%
Wellington	2.49%	2.12%
Somerset	1.49%	-0.44%
	Northbound	**Southbound**
Bayview Station	-0.44%	1.99%
Bayswater	-1.86%	1.70%

In general, the TRANS projections identify a growth rate range of -1.86% and 2.49%. Appropriate growth rates rounded to the nearest 0.25%, or 0% for negative rates, and applied to the AM peak volumes per the directions noted above and reverse during the PM peak.

6.3 Other Developments

The background developments are discussed in Section 2.3.2. As the only active applications with TIAs, the development-generated volumes from 900 Albert Street and 1040 Somerset Street West TIAs will be explicitly accounted for in the background conditions. Due to inactivity and the age of the file, 1050 Somerset Street West will be excluded from consideration. As the 900 Albert Street TIA does not provide an updated buildout timeline, the volumes are assumed as being present in the 2029 future background conditions. The background development traffic volumes are provided in Appendix F.

7 Demand Rationalization

7.1 2024 Future Background Operations

Figure 10 illustrates the 2024 background volumes and Table 16 summarizes the 2024 background intersection operations. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. The synchro worksheets for the 2024 future background horizon are provided in Appendix G.

Figure 10: 2024 Future Background Volumes

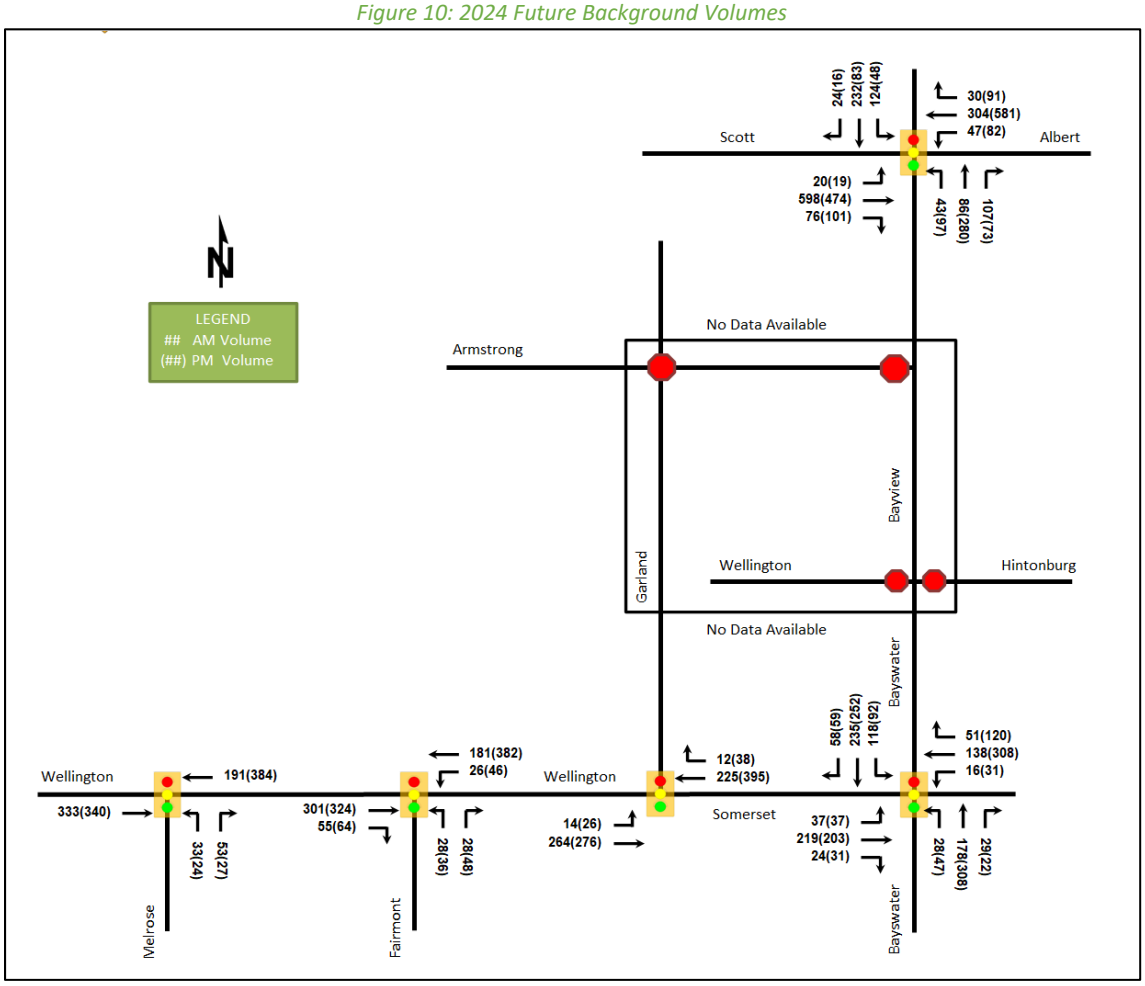


Table 16: 2024 Future Background Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Albert Street/Scott Street at Bayview Station Road ***Signalized***	EBL/T	A	0.55	12.7	98.7	A	0.46	11.7	71.8
	EBR	A	0.09	2.5	5.5	A	0.12	2.0	5.8
	WBL	A	0.12	8.9	8.8	A	0.18	9.6	13.7
	WBT	A	0.27	8.8	39.5	A	0.53	12.7	88.6
	WBR	A	0.03	2.2	2.8	A	0.10	2.0	5.6
	NBL	A	0.29	35.9	16.2	A	0.36	35.2	29.7
	NBT/R	A	0.52	27.4	41.3	D	0.87	57.1	**#104.4**
	SBL	B	0.63	48.7	39.3	A	0.44	45.6	19.3
	SBT/R	B	0.69	44.7	67.5	A	0.25	28.8	26.9
	Overall	**A**	**0.58**	**21.0**	-	**B**	**0.62**	**22.1**	-
Wellington Street W at Melrose Avenue ***Signalized***	EBT	A	0.24	3.9	26.8	A	0.26	4.7	26.9
	WBT	A	0.14	3.8	18.2	A	0.29	8.4	43.9
	NBL/R	A	0.39	18.4	14.2	A	0.22	17.9	11.4
	Overall	**A**	**0.25**	**5.9**	-	**A**	**0.28**	**7.4**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Wellington Street W at Fairmont Avenue *Signalized*	EBT/R	A	0.30	5.0	12.7	A	0.35	13.9	66.5
	WBL/T	A	0.18	8.8	28.5	A	0.39	6.0	32.2
	NBL/R	A	0.18	13.3	10.4	A	0.24	13.6	14.0
	Overall	**A**	**0.27**	**7.0**	**-**	**A**	**0.35**	**10.1**	**-**
Wellington Street W/Somerset Street W at Garland Street *Signalized*	EBL/T	A	0.17	0.7	4.1	A	0.23	1.7	7.7
	WBT/R	A	0.15	1.2	12.5	A	0.32	6.6	46.8
	SBL/R	-	-	-	-	-	-	-	-
	Overall	**A**	**0.19**	**0.9**	**-**	**A**	**0.30**	**4.6**	**-**
Somerset Street W at Bayswater Avenue *Signalized*	EBL/T	A	0.37	10.0	10.9	A	0.33	12.0	51.0
	EBR	A	0.04	0.3	0.2	A	0.06	4.8	4.8
	WBL/T	A	0.22	14.0	23.5	A	0.45	16.2	51.5
	WBR	A	0.09	4.5	5.5	A	0.19	3.4	8.0
	NB	A	0.35	15.1	34.7	B	0.61	23.4	68.1
	SBL	A	0.27	15.7	20.7	A	0.30	19.4	19.8
	SBT/R	A	0.41	15.5	42.3	A	0.48	19.1	51.3
	Overall	**A**	**0.39**	**13.2**	**-**	**A**	**0.52**	**16.9**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
PHF = 1.00
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

During both the AM and PM peak hours, the 2024 future background intersections operate well, and similarly to the existing conditions with operational improvements noted with the peak hour factor moving from 0.90 to 1.00. No new capacity issues are noted.

7.2 2029 Future Background Operations

Figure 11 illustrates the 2029 background volumes and Table 17 summarizes the 2029 background intersection operations. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. The synchro worksheets for the 2029 future background horizon are provided in Appendix H.

Figure 11: 2029 Future Background Volumes

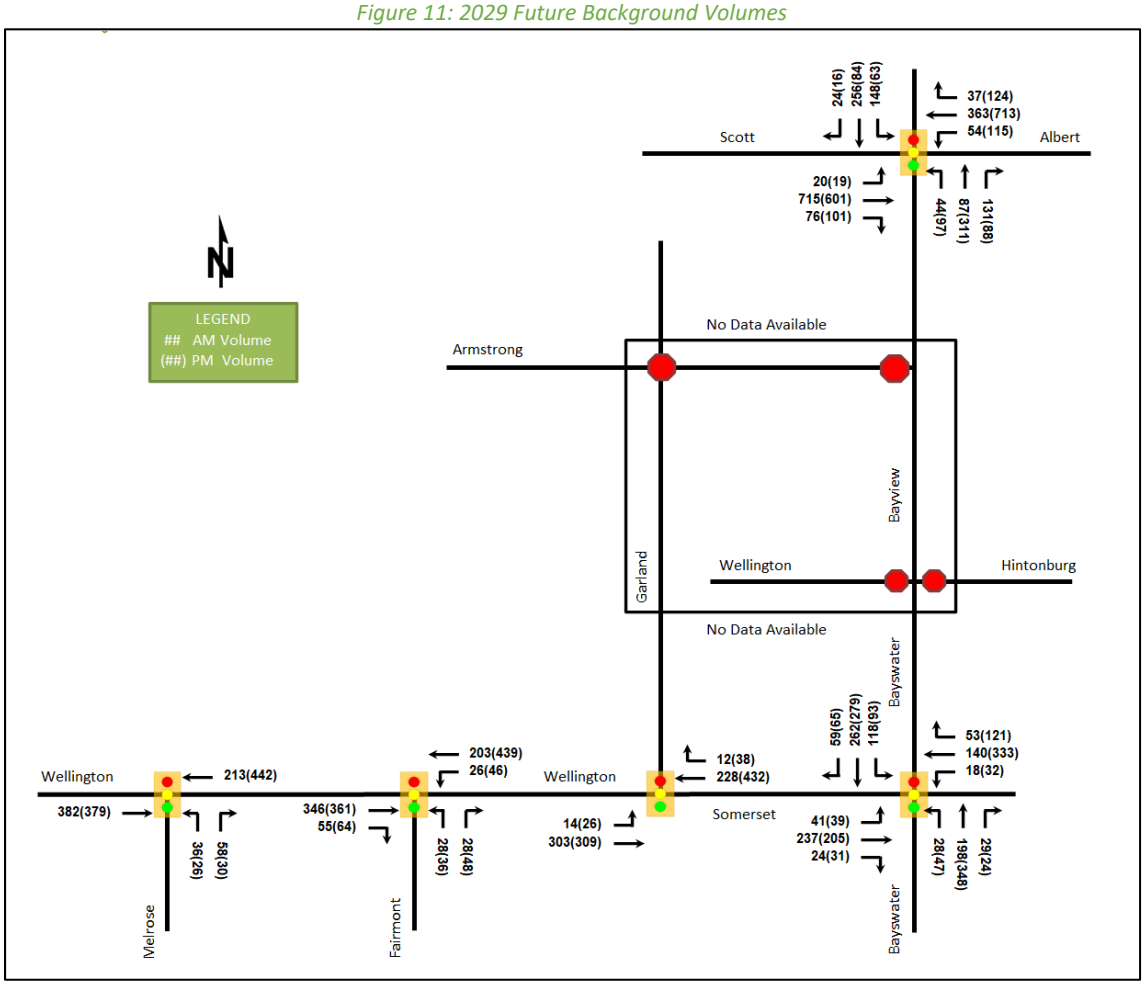


Table 17: 2029 Future Background Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Albert Street/Scott Street at Bayview Station Road ***Signalized***	EBL/T	B	0.66	15.3	132.4	A	0.59	14.6	100.3
	EBR	A	0.09	3.2	6.4	A	0.12	2.4	6.4
	WBL	A	0.17	10.0	10.4	A	0.33	12.6	21.4
	WBT	A	0.32	9.4	48.2	B	0.66	16.2	123.1
	WBR	A	0.04	2.7	3.6	A	0.14	2.8	8.4
	NBL	A	0.32	37.4	16.7	A	0.34	34.2	29.8
	NBT/R	A	0.57	27.9	45.8	E	0.93	64.9	**#125.8**
	SBL	C	0.80	66.5	**#53.4**	B	0.68	71.4	**#32.1**
	SBT/R	C	0.74	47.1	74.3	A	0.23	28.3	27.2
	Overall	**B**	**0.69**	**23.7**	-	**C**	**0.74**	**25.4**	-
Wellington Street W at Melrose Avenue ***Signalized***	EBT	A	0.28	4.1	31.4	A	0.28	4.8	30.5
	WBT	A	0.16	3.9	20.6	A	0.33	9.1	68.3
	NBL/R	A	0.41	18.6	14.9	A	0.24	17.8	12.1
	Overall	**A**	**0.29**	**6.0**	-	**A**	**0.32**	**7.8**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Wellington Street W at Fairmont Avenue *Signalized*	EBT/R	A	0.34	5.2	13.9	A	0.38	14.8	75.9
	WBL/T	A	0.20	8.9	30.8	A	0.44	6.5	36.2
	NBL/R	A	0.18	13.3	10.4	A	0.24	13.6	14.0
	Overall	**A**	**0.30**	**7.1**	**-**	**A**	**0.39**	**10.6**	**-**
Wellington Street W/Somerset Street W at Garland Street *Signalized*	EBL/T	A	0.20	0.6	3.9	A	0.25	1.6	7.6
	WBT/R	A	0.15	1.2	11.9	A	0.34	7.1	51.9
	SBL/R	-	-	-	-	-	-	-	-
	Overall	**A**	**0.22**	**0.9**	**-**	**A**	**0.33**	**4.8**	**-**
Somerset Street W at Bayswater Avenue *Signalized*	EBL/T	A	0.41	9.8	10.1	A	0.34	11.7	52.2
	EBR	A	0.04	0.3	0.2	A	0.06	4.3	4.3
	WBL/T	A	0.23	14.1	24.1	A	0.48	16.7	56.1
	WBR	A	0.09	4.4	5.6	A	0.19	3.4	7.9
	NB	A	0.38	15.6	37.9	B	0.68	25.6	77.9
	SBL	A	0.28	15.9	20.9	A	0.33	20.2	20.5
	SBT/R	A	0.45	16.3	47.0	A	0.53	20.2	57.9
	Overall	**A**	**0.42**	**13.5**	**-**	**A**	**0.57**	**18.0**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
PHF = 1.00
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

During both the AM and PM peak hours, the 2029 future background intersections operate similarly to the existing conditions. No new capacity issues are noted.

7.3 Modal Share Sensitivity

No capacity constraints are demonstrated at the study area intersections. The modal share targets can be reasonably expected to be achieved given access to two LRT lines within 600 m of the site, and transportation demand management measure recommendations will be included in the TIA to support these modal share targets. The proponent and City will need to coordinate the implementation of any measures.

8 Development Design

8.1 Design for Sustainable Modes

Vehicle parking is located within the underground parking levels, and bicycle parking is located both within the first underground parking level and external to the building. Hard surface connections are provided between building entrances and surrounding pedestrian facilities.

Local area bus stops are located within 400 metres of proposed building entrances, with the eastbound Albert Street at Bayview Station Road stop situated approximately a 440-metre-walk. Walking routes to rapid transit are less than 700 metres to/from the proposed building entrances.

8.2 Circulation and Access

Vehicle access is proposed via a single two-way, six-metre-wide access to underground parking on Hilda Street. Permitted movements will be both left- and right-in movements, and the right-out movement. To Hilda Street, inbound connections to the surrounding arterial and collector network are made via Armstrong Street and Garland Street, and via the discontinuous section of Wellington Street West, and all outbound connections are via this section of Wellington Street West due to the directional restrictions at the intersection of Hilda and Armstrong Street.

The site fronts four public roads. As such, emergency service vehicles will be able to access the site via these rights of way.

9 Parking

9.1 Parking Supply

Within the underground parking levels, 119 resident vehicle parking spaces, 22 visitor spaces, and 10 commercial spaces are proposed, for a total of 151 vehicle parking spaces. The development proposes 252 bicycle spaces within the first underground parking level, 20 bicycle spaces exterior to the building, for a total of 272 bicycle parking spaces.

The minimum vehicle parking provision from the zoning by-law is 140 spaces, as all parking is located below grade. The minimum bicycle parking provision from the zoning by-law is 129 spaces. The minimum residential, visitor and commercial vehicle parking and bicycle parking requirements are satisfied.

10 Boundary Street Design

Table 18 summarizes the MMLOS analysis for the boundary streets of Hilda Street, Armstrong Street, Garland Street, and Wellington Street West. The site frontage will be upgraded to include a 1.8 metre sidewalk. Where the existing and future conditions will be the same, they are considered in one row. The boundary street analysis is based on the policy area of "Within 600m of a rapid transit station" for all boundary streets. Somerset Street West may also be based upon the land use designation of "within 300 metres of a school" as it is within this distance of Devonshire Community Public School, however the two targets are the same. The MMLOS worksheets has been provided in Appendix I.

Table 18: Boundary Street MMLOS Analysis

Segment	Pedestrian LOS		Bicycle LOS		Transit LOS		Truck LOS	
	PLOS	Target	BLOS	Target	TLOS	Target	TrLOS	Target
Wellington Street W	A	A	A	C	-	-	-	-
Garland Street (existing)	**E**	A	B	B	-	-	-	-
Garland Street (future)	**B**	A	B	B	-	-	-	-
Armstrong Street (existing)	**E**	A	**E**	D	-	-	-	-
Armstrong Street (future)	**B**	A	**E**	D	-	-	-	-
Hilda Street (existing)	**E**	A	B	D	-	-	-	-
Hilda Street (future)	**B**	A	B	D	-	-	-	-

The pedestrian LOS targets will not be met for the boundary streets of Garland Street, Armstrong Street, and Hilda Street at both the existing and future horizons. With the proposed sidewalk upgrades along the frontages of the development, the local boundary roads LOS is forecasted to improve from LOS E to LOS B. Meeting the LOS targets would require increasing boulevard widths to more than two metres. Given the urban context, sidewalks without boulevards are consistent with surrounding facilities and are considered adequate.

The bicycle LOS targets will not be met for Armstrong Street. To meet the targets, a curbside bike lane would be required. Alternatively, if the centreline were removed on Armstrong Street, targets would be met.

11 Access Intersections Design

11.1 Location and Design of Access

The development proposes access to Hilda Street via a full-moves two-way access. The access is proposed being 6.0 metres-wide and proposes a 10.0 % grade for the ramp after a 2.0% grade for the first six metres from the property line.

11.2 Intersection Control

The site access is proposed as being stop-controlled on its approach with Hilda Street operating under free-flow conditions.

11.3 Access Intersection MMLOS

The access intersection is not signalized, therefore no MMLOS analysis is required.

11.3.1 Recommended Design Elements

It is recommended that a "One-Way" sign (OTM Rb-21) be installed opposite the site access on the soft landscaping between the sidewalk and parking lot, and that a "No Left Turn" sign (OTM Rb-12) be installed within the garage next to outbound garage door, space and clearance permitting. Existing one-way signage on the site frontage along Hilda Street may need to shift northward as not to conflict with the site access and adjacent building entrance.

12 Transportation Demand Management

12.1 Context for TDM

The subject site lies at the intersection of the Somerset Traditional Mainstreet and Wellington Traditional Mainstreet design priority areas and is not officially designated as being in a TOD zone.

Modal share targets used within the study are the recommended district shares. While the site is within 800 metres walk of a station servicing two LRT lines, it is noted that the district is generally well-served by transit and that auto mode shares are commensurate with expectations for the development.

Given these factors, the auto mode share target is likely to be achieved. TDM measures can be employed with view to supporting an increased transit mode share.

The total bedroom count for the development is 350 with 162 bachelor or one-bedroom units, 82 two-bedroom units, and eight three-bedroom units, and no age restrictions are noted.

12.2 Need and Opportunity

The subject site has been assumed to rely proportionally on auto travel and transit. The study area intersections are anticipated to have residual capacity and the transit mode shares are unmodified from the recommended shares for the district.

12.3 TDM Program

The "suite of post occupancy TDM measures" has been summarized in the TDM checklists for the residential land use. The checklist is provided in Appendix J. The key TDM measures recommended include:

- Display relevant transit schedules, and route maps at entrances
- Contract with provider to install on-site micromobility station

- Provide a permanent bike repair station adjacent to the main bicycle parking area
- Inclusion of a 1-month Presto card for first time new townhome purchase and apartment rental, with a set time frame for this offer (e.g. 6-months) from the initial opening of the site
- Unbundle parking cost from purchase or rental costs

13 Neighbourhood Traffic Management

The proposed development will connect to the arterial road network via Garland Street (a local road), Armstrong Street (a local road), Hilda Street (a local road), Wellington Street West (a local road), Bayview Station Road (a collector road), and via Bayswater Avenue (a collector road). The TIA guidelines prescribe a classification threshold 300 vehicles per peak hour for collector roads and 120 vehicles per peak hour for local roads, which are considered two-way volumes per City guidance. The existing volumes on Garland Street, Bayview Station Road, and Bayswater Avenue are summarized below and compared to the forecasted site volumes for those links. No historical traffic volumes were available for Armstrong Street, Wellington Street West, and Hilda Street, and due to pandemic-related traffic disruption, none could be collected in support of this study. The results of this analysis are summarized in Table 19.

Table 19: NTM Review

Segment	AM Peak				PM Peak			
	Existing NB	Existing SB	Existing Two-Way	Site Traffic	Existing NB	Existing SB	Existing Two-Way	Site Traffic
Bayswater Avenue	266	403	**669**	21	454	403	**857**	21
Bayview Station Road	236	346	**582**	8	439	266	**705**	6
Garland Steet	26	-	**-**	4	64	-	**-**	8
Hilda Street	-	-	**-**	30	-	-	**-**	44
Segment	**AM Peak**				**PM Peak**			
	Existing EB	**Existing WB**	**Existing Two-Way**	**Site Traffic**	**Existing EB**	**Existing WB**	**Existing Two-Way**	**Site Traffic**
Wellington Street W (east of Hilda Street)	-	-	**-**	30	-	-	**-**	44
Armstrong Street	-	-	**-**	11	-	-	**-**	21

Increases from existing volumes on Bayview Station Road and Bayswater Avenue, which are over even the major collector classification thresholds, amount to 0.7%-3.1%. Increases from existing volumes are 3.3%-6.7% on Garland Street which are below the local classification thresholds. The proportion of the local road thresholds utilized by the forecasted site traffic on Hilda Street and on Wellington Street West are 25.0%-36.7%, which are consistent for the amount of land access these roads provide. The proportion of the local road thresholds utilized by the forecasted site traffic on Armstrong Street are 9.2%-17.5%. None of these volume increases are considered to change the function or classification of these local and collector roads.

14 Transit

14.1 Route Capacity

In Section 5.1 the trip generation by mode was estimated, including an estimate of the number of transit trips that will be generated by the proposed development. Table 20 summarizes the transit trip generation.

Table 20: Trip Generation by Transit Mode

Travel Mode	Mode Share	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Transit	Varies	14	31	45	17	13	30

The proposed development is anticipated to generate an additional 45 AM peak hour transit trips and 30 PM peak hour transit trips. Of these trips, 31 outbound AM trips and 17 inbound PM trips are anticipated. From the trip distribution found in Section 5.2, these values can be further broken down.

It is anticipated that increases in outbound transit ridership generated by the site during the AM peak hour will break down to two trips to the east via Albert Street, nine trips to the east on the LRT Confederation Line, nine trips to the south on the LRT Trillium Line, and 11 trips to the west along Wellington Street West. During the PM peak hour, inbound transit trips are anticipated as numbering one trip westbound along Albert Street, five trips each westbound and northbound to Bayview Station along each LRT line, and six trips eastbound along Wellington Street West. Trips to and from the west may shift to the LRT once the Confederation Line West Expansion, currently planned for 2025, is completed. Given the frequency of routes on Wellington Street West, the ridership increase averages to as few as three riders per bus per peak hour and no service changes are anticipated as being required to accommodate site-generated transit demand.

14.2 Transit Priority

Examining delay, negligible impacts are noted on the transit movements at Albert Street/Scott Street at Bayview Station Road, the Wellington Street West at Fairmont Avenue, and the Wellington Street W/Somerset Street W at Garland Street intersections.

At the intersection of Wellington Street W at Melrose Avenue intersection, the addition of site traffic is forecasted to result in a negligible increase in delay for the eastbound through transit movement, and a forecasted maximum increase in delay of approximately 1.3 seconds for the westbound through transit movement.

At the intersection of Somerset Street W at Bayswater Avenue intersection, the site volumes will result in a forecasted maximum increase in delay of approximately 4.3 seconds for the eastbound shared left-turn/through transit movement and a negligible increase in delay for the westbound shared left-turn/ through, westbound right-turn, and southbound left-turn movements.

No decrease in transit level of service is noted by these impacts.

15 Network Intersection Design

15.1 Network Intersection Control

No change to the existing signalized control is recommended for the network intersections.

15.2 Network Intersection Design

15.2.1 2024 Future Total Network Intersection Operations

The 2024 future total volumes are illustrated in Figure 12 and network intersection operations are summarized in Table 21. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. The synchro worksheets have been provided in Appendix K.

Figure 12: 2024 Future Total Volumes

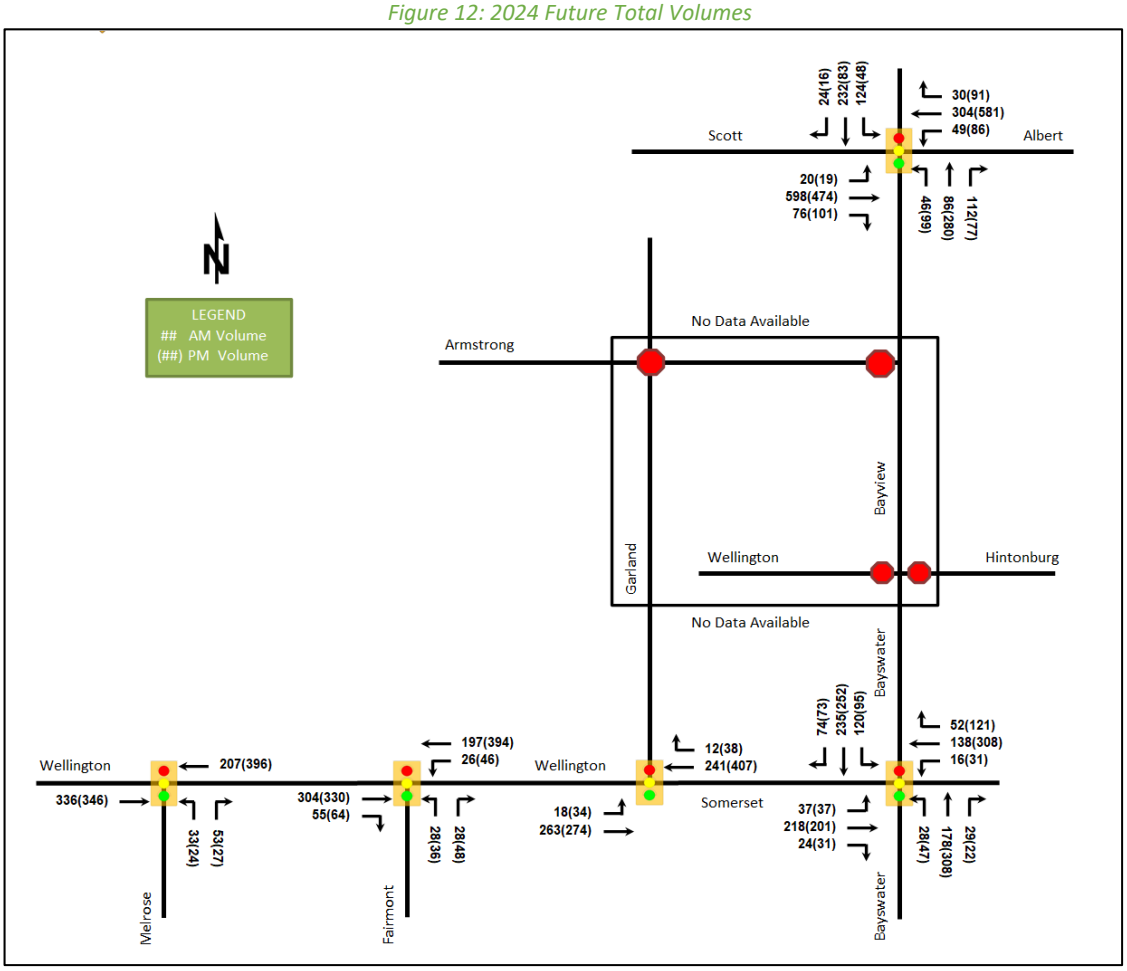


Table 21: 2024 Future Total Network Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Albert Street/Scott Street at Bayview Station Road *Signalized*	EBL/T	A	0.55	12.7	98.7	A	0.46	12.0	71.8
	EBR	A	0.09	2.5	5.6	A	0.13	2.1	5.9
	WBL	A	0.13	9.0	9.0	A	0.20	10.0	14.5
	WBT	A	0.27	8.8	39.5	A	0.53	13.1	88.6
	WBR	A	0.03	2.2	2.8	A	0.11	2.0	5.6
	NBL	A	0.31	36.8	17.2	A	0.37	35.1	30.3
	NBT/R	A	0.53	27.7	42.3	D	0.85	54.7	**#106.6**
	SBL	B	0.64	49.8	39.5	A	0.42	43.5	19.2
	SBT/R	B	0.69	44.7	67.6	A	0.24	28.4	26.9
	Overall	**A**	**0.58**	**21.2**	-	**B**	**0.62**	**21.8**	-
Wellington Street W at Melrose Avenue *Signalized*	EBT	A	0.25	3.9	27.1	A	0.26	4.7	27.4
	WBT	A	0.15	5.2	21.9	A	0.30	8.2	48.2
	NBL/R	A	0.39	18.4	14.2	A	0.22	17.9	11.4
	Overall	**A**	**0.26**	**6.3**	-	**A**	**0.29**	**7.3**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Wellington Street W at Fairmont Avenue *Signalized*	EBT/R	A	0.31	5.0	12.8	A	0.35	14.0	68.1
	WBL/T	A	0.20	8.4	28.6	A	0.40	6.0	33.2
	NBL/R	A	0.18	13.4	10.4	A	0.24	13.6	14.0
	Overall	**A**	**0.28**	**6.9**	**-**	**A**	**0.36**	**10.1**	**-**
Wellington Street W/Somerset Street W at Garland Street *Signalized*	EBL/T	A	0.19	0.9	4.0	A	0.26	1.9	7.7
	WBT/R	A	0.17	2.2	14.1	A	0.35	7.1	46.7
	SBL/R	-	-	-	-	A	0.01	27.0	1.3
	Overall	**A**	**0.20**	**1.5**	**-**	**A**	**0.31**	**5.0**	**-**
Somerset Street W at Bayswater Avenue *Signalized*	EBL/T	A	0.37	9.7	10.8	A	0.33	11.8	50.8
	EBR	A	0.04	0.3	0.2	A	0.06	4.7	4.7
	WBL/T	A	0.22	14.0	23.5	A	0.45	16.2	51.5
	WBR	A	0.09	4.5	5.5	A	0.20	3.4	8.0
	NB	A	0.35	15.2	34.8	B	0.62	23.5	68.2
	SBL	A	0.28	15.8	21.1	A	0.31	19.6	20.4
	SBT/R	A	0.44	15.6	44.2	A	0.50	19.4	53.6
	Overall	**A**	**0.40**	**13.2**	**-**	**A**	**0.52**	**16.9**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
PHF = 1.00
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

The network intersection operations for the 2024 future total horizon operate similarly to the 2024 future background conditions. No new capacity issues are noted.

15.2.2 2029 Future Total Network Intersection Operations

The 2029 future total volumes are illustrated in Figure 13 and network intersection operations are summarized in Table 22. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. The synchro worksheets have been provided in Appendix L.

Figure 13: 2029 Future Total Volumes

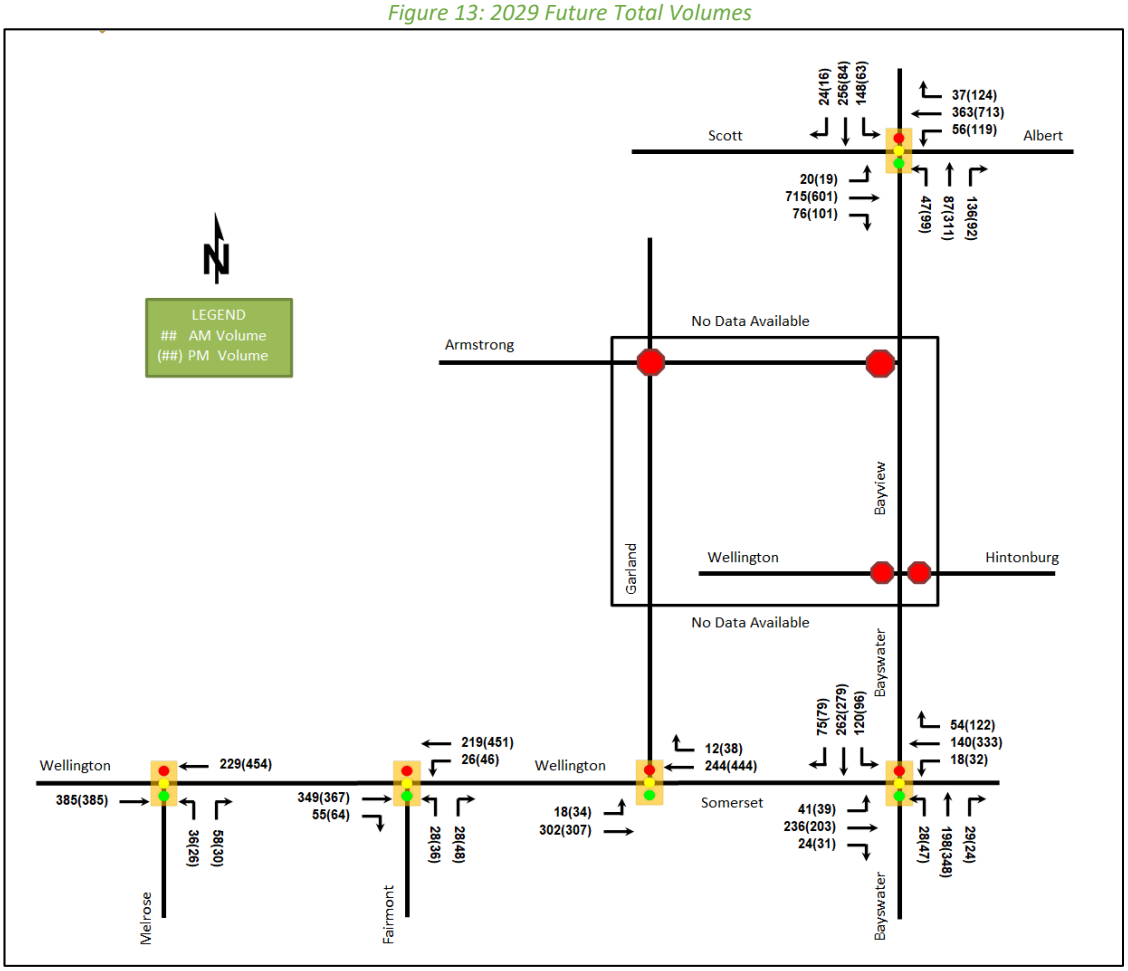


Table 22: 2029 Future Total Network Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Albert Street/Scott Street at Bayview Station Road ***Signalized***	EBL/T	B	0.66	15.3	132.4	A	0.59	14.6	100.3
	EBR	A	0.09	3.2	6.4	A	0.13	2.4	6.5
	WBL	A	0.18	10.1	10.5	A	0.36	13.4	23.4
	WBT	A	0.32	9.4	48.2	B	0.66	16.3	123.1
	WBR	A	0.04	2.7	3.6	A	0.15	2.8	8.4
	NBL	A	0.34	38.2	17.5	A	0.36	34.7	30.7
	NBT/R	A	0.58	28.1	46.4	E	0.94	66.2	**#128.2**
	SBL	D	0.81	68.3	**#54.1**	B	0.69	72.5	**#32.4**
	SBT/R	C	0.74	47.1	74.3	A	0.23	28.2	27.2
	Overall	**B**	**0.70**	**23.9**	-	**C**	**0.74**	**25.8**	-
Wellington Street W at Melrose Avenue ***Signalized***	EBT	A	0.28	4.1	31.6	A	0.29	4.9	31.6
	WBT	A	0.17	5.2	23.6	A	0.35	8.8	74.9
	NBL/R	A	0.41	18.6	14.9	A	0.24	17.8	12.1
	Overall	**A**	**0.29**	**6.4**	-	**A**	**0.33**	**7.7**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Wellington Street W at Fairmont Avenue *Signalized*	EBT/R	A	0.34	5.2	13.9	A	0.39	15.1	79.1
	WBL/T	A	0.21	8.5	30.7	A	0.46	6.4	37.7
	NBL/R	A	0.18	13.4	10.4	A	0.24	13.6	14.0
	Overall	**A**	**0.31**	**7.0**	**-**	**A**	**0.40**	**10.7**	**-**
Wellington Street W/Somerset Street W at Garland Street *Signalized*	EBL/T	A	0.22	0.9	3.9	A	0.29	1.8	7.5
	WBT/R	A	0.17	2.1	12.8	A	0.38	7.8	51.8
	SBL/R	-	-	-	-	A	0.01	27.0	1.3
	Overall	**A**	**0.22**	**1.4**	**-**	**A**	**0.34**	**5.3**	**-**
Somerset Street W at Bayswater Avenue *Signalized*	EBL/T	A	0.41	9.6	10.1	A	0.34	11.4	52.1
	EBR	A	0.04	0.3	0.2	A	0.06	4.2	4.2
	WBL/T	A	0.23	14.1	24.1	A	0.48	16.7	56.1
	WBR	A	0.09	4.5	5.6	A	0.20	3.4	8.0
	NB	A	0.38	15.7	38.0	B	0.68	25.7	78.0
	SBL	A	0.29	15.9	21.1	A	0.33	20.3	20.7
	SBT/R	A	0.47	16.5	48.7	A	0.56	20.7	61.1
	Overall	**A**	**0.44**	**13.5**	**-**	**A**	**0.57**	**18.1**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
PHF = 1.00
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

The network intersection operations for the 2029 future total horizon operate similarly to the 2029 future background conditions. No new capacity issues are noted.

15.2.3 Network Intersection MMLOS

Table 23 summarizes the MMLOS analysis for the network intersections and considers the existing and future conditions in one row where they score the same. The intersection analysis is based on the policy area of "Within 600m of a rapid transit station" for all but the intersection of Wellington Street West and Melrose Avenue, which will be based upon the land use designation of "within 300 metres of a school" as it is within this distance of École élémentaire catholique Saint-François-d'Assise. It is noted that all intersections are additionally within 300 metres of a school, however the targets of such are identical to those within 600 metres of rapid transit. The MMLOS worksheets has been provided in Appendix I.

Table 23: Study Area Intersection MMLOS Analysis

Intersection	Pedestrian LOS		Bicycle LOS		Transit LOS		Truck LOS		Auto LOS	
	PLOS	Target	BLOS	Target	TLOS	Target	TrLOS	Target	ALOS	Target
Albert Street/Scott Street at Bayview Station Road	**F**	A	**F**	C	C	D	**E**	D	B	E
Wellington Street W at Melrose Avenue	A	A	B	C	B	D	-	-	A	E
Wellington Street W at Fairmont Avenue	**C**	A	B	C	C	D	-	-	A	E
Wellington Street W/Somerset Street W at Garland Street	A	A	B	C	B	D	-	-	A	E
Somerset Street W at Bayswater Avenue	**D**	A	**D**	C	C	D	**F**	D	A	E

The MMLOS targets will not be met for pedestrian LOS at all but the intersections of Wellington Street West at Melrose Avenue, and Wellington Street West/Somerset Street West and Garland Street, for bicycle and truck LOS

at the intersections of Albert Street/Scott Street at Bayview Station Road and Somerset Street West at Bayswater Avenue.

The pedestrian level of service would require a maximum of two lanes at a crossing to meet a LOS A. The mixed traffic approaches for cyclists relative to right-turning motorists govern the bicycle LOS at the intersection of Somerset Street West and Bayswater Avenue, where the City may wish to include dedicated cycling facilities to improve LOS at this location. The truck LOS is not met at study area intersections due to small effective corner radii and single receiving lanes throughout however these changes would reduce pedestrian LOS.

15.2.4 Recommended Design Elements

No study area intersection design elements are proposed as part of this study.

16 Summary of Improvements Indicated and Modifications Options

The following summarizes the analysis and results presented in this TIA report:

Proposed Site and Screening

- This TIA is in support of a site plan application
- The proposed site includes 252 apartment units and 8,498 sq. ft. of ground floor retail
- The site access is proposed to be on Hilda Street
- The development is proposed to be completed as a single phase by 2024
- The Trip Generation, Safety, and Location triggers were met for the TIA Screening

Existing Conditions

- Scott Street, Albert Street, Wellington Street West, and Somerset Street West are arterial roads, and Bayview Station Road and Bayswater Avenue are collector roads in the study area
- Sidewalks/MUPS are generally provided on both sides of the study area roadways, and on-street bike lanes on the south side of Scott Street, the west side of Garland Street, and on both sides of Somerset Street West for the length of the LRT overpass
- The intersections of Scott Street/Albert Street at Bayview Station Road and Somerset Street West at Bayswater Avenue are noted to have higher collisions than other study area locations
- The collisions are most predominantly represented by turning movement collisions with half of all study area collisions of this type occurring at the intersection of Scott Street/Albert Street at Bayview Station Road possibly influenced by skewed intersection geometry
- Some extended queues are noted at the Albert Street/Scott Street and Bayview Station Road intersection on the southbound left during both peak hours, and the northbound through/right during the PM peak hour but generally the intersections operate well

Development Generated Travel Demand

- The proposed development is forecasted produce 111 two-way people trips during the AM peak hour and 141 two-way people trips during the PM peak hour
- Of the forecasted people trips, 30 two-way trips will be vehicle trips during the AM peak hour and 44 two-way trips will be vehicle trips during the PM peak hour
- Of the forecasted trips, 5% are anticipated to travel north, 30% to/from each the south and east, and 35% to/from the west

Background Conditions

- The active background developments with recent activity and with TIAs have been included in the background horizons
- Background growth was determined using rounded TRANS rates on the appropriate links along the mainline volumes and major turning movements
- The study area intersections at both future background horizons will operate similarly to the existing conditions

Development Design

- Vehicle parking is located in underground parking levels, and bicycle parking is located both internal and external to the building
- Hard surface connections are provided between building entrances and surrounding pedestrian facilities
- Inbound connections to the surrounding arterial and collector network are made via Armstrong Street and Garland Street, and via the discontinuous section of Wellington Street West, where all outbound connections are via this section of Wellington Street West

Parking

- Secure bicycle parking will be on the first underground parking level
- The site proposes providing 272 bicycle spaces, 151 vehicle parking spaces, satisfying the minimum parking requirements

Boundary Street Design

- The pedestrian LOS targets will not meet the targets along all boundary streets but Wellington Street West, and would require boulevard width to be greater than two metres, and the bicycle LOS targets will not be met for Armstrong Street and would require a curbside bike lane
- The proposed sidewalk configurations are considered adequate

Access Intersections Design

- The development proposes access to Hilda Street via a full-moves two-way access to the underground parking ramp
- The site access is proposed as being stop-controlled on its approach with Hilda Street operating under free-flow conditions
- It is recommended to install a “One-Way” sign opposite the site access and a “No Right Turns” sign inside the garage for outbound vehicles provided space is available

TDM

- Supportive TDM measures to be included within the proposed development should include:
  - Display relevant transit schedules, and route maps at entrances
  - Contract with provider to install on-stie micromobility station
  - Provide a permanent bike repair station adjacent to the main bicycle parking area
  - Inclusion of a 1-month Presto card for first time new townhome purchase and apartment rental, with a set time frame for this offer (e.g. 6-months) from the initial opening of the site
  - Unbundle parking cost from purchase or rental costs

NTM

- The forecasted site traffic would amount to an increase in volumes of 0.8%-3.1% on Bayswater Avenue and Bayview Station Road, whose volumes are above even major collector thresholds, and 3.3 %-6.7% for Garland Street
- The percentage of the local road classification threshold for Hilda Street and Wellington Street West forecasted to be used by site traffic is 25.0%-36.7% for Hilda Street and Wellington Street West, and 9.2 %-17.5% on Armstrong Street
- The forecasted site traffic is not anticipated to change the function or classification of local or collector roads

Transit

- The proposed development is forecasted produce 31 outbound transit trips during the AM peak hour and 17 inbound transit trips during the PM peak hour
- The majority of trips will be accommodated by the two LRT lines within 800 metres walk of the site
- No service changes are anticipated as being required to accommodate site-generated transit
- No decrease in transit level of service is noted from impacts to delay from the addition of site traffic to the network

Network Intersection Design

- Generally, the network intersections will operate similarly to background conditions
- The MMLOS targets will not be met for pedestrian LOS at the intersections of Albert Street/Scott Street at Bayview Station Road, Wellington Street West at Fairmont Avenue, and Somerset Street West at Bayswater Avenue, and for bicycle LOS and truck LOS at the intersections of Albert Street/Scott Street at Bayview Station Road and Somerset Street West at Bayswater Avenue
- Dedicated cycling facilities could help meet the LOS targets but due to the nature of arterials roadways, the pedestrian and transit LOS cannot be met

17 Conclusion

It is recommended that, from a transportation perspective, the proposed development applications proceed.

Prepared By:

John Kingsley, EIT
Transportation Engineering-Intern

Reviewed By:

Andrew Harte, P.Eng.
Senior Transportation Engineer

Appendix A

TIA Screening Form and PM Certification Form

13 Markham Avenue
Ottawa ON K2G 3Z1

City of Ottawa 2017 TIA Guidelines
Step 1 - Screening Form

Date: 23-Jun-20
Project Number: 2020-33
Project Reference: 979 Wellington

1.1 Description of Proposed Development	
Municipal Address	961, 697, 969, 973, & 979 Wellington Street, 26, 36, & 40 Armstrong Street
Description of Location	Existing office, retail, commercial and residential land uses
Land Use Classification	Traditional Mainstreet (TM11 & TM11[2461]) and Fourth Residential (R4T)
Development Size	283 apartment units, 163 parking spaces, 13,618 sq. ft. retail
Accesses	Single Access on Hilda Street
Phase of Development	Single
Buildout Year	2024
TIA Requirement	Full TIA Required

1.2 Trip Generation Trigger		
Land Use Type	Townhomes or apartments	
Development Size	283	Units
Trip Generation Trigger	Yes	

1.3 Location Triggers		
Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Spine Bicycle Networks?	No	
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?	Yes	Somerset and Wellington Traditional Mainstreet DPAs
Location Trigger	Yes	

1.4. Safety Triggers	
Are posted speed limits on a boundary street 80 km/hr or greater?	No
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	No
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	Yes
Is the proposed driveway within auxiliary lanes of an intersection?	No
Does the proposed driveway make use of an existing median break that serves an existing site?	No
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	No
Does the development include a drive-thru facility?	No
Safety Trigger	Yes

TIA Plan Reports

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associated documents) and signing this document, the individual acknowledges that s/he meets the four criteria listed below.

CERTIFICATION

1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;
2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
4. I am either a licensed[1] or registered[2] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering √ or transportation planning □.

[1,2] License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.

City Of Ottawa
Infrastructure Services and Community Sustainability
Planning and Growth Management
110 Laurier Avenue West, 4th fl.
Ottawa, ON K1P 1J1
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Ville d'Ottawa
Services d 'infrastructure et Viabilité des collectivités
Urbanisme et Gestion de la croissance
110, avenue Laurier Ouest
Ottawa (Ontario) K1P 1J1
Tél. : 613-580-2424
Télécopieur: 613-560-6006

Dated at ___Ottawa_____ this __20__ day of _____September_____, 2018.
(City)

Name: _____Andrew Harte_____
(Please Print)

Professional Title: _____Professional Engineer_____

_____
Signature of Individual certifier that s/he meets the above four criteria

Office Contact Information (Please Print)
Address: 13 Markham Avenue
City / Postal Code: Ottawa / K2G 3Z1
Telephone / Extension: (613) 697-3797
E-Mail Address: Andrew.Harte@CGHTransportation.com

Appendix B

Turning Movement Counts

Transportation Services - Traffic Services

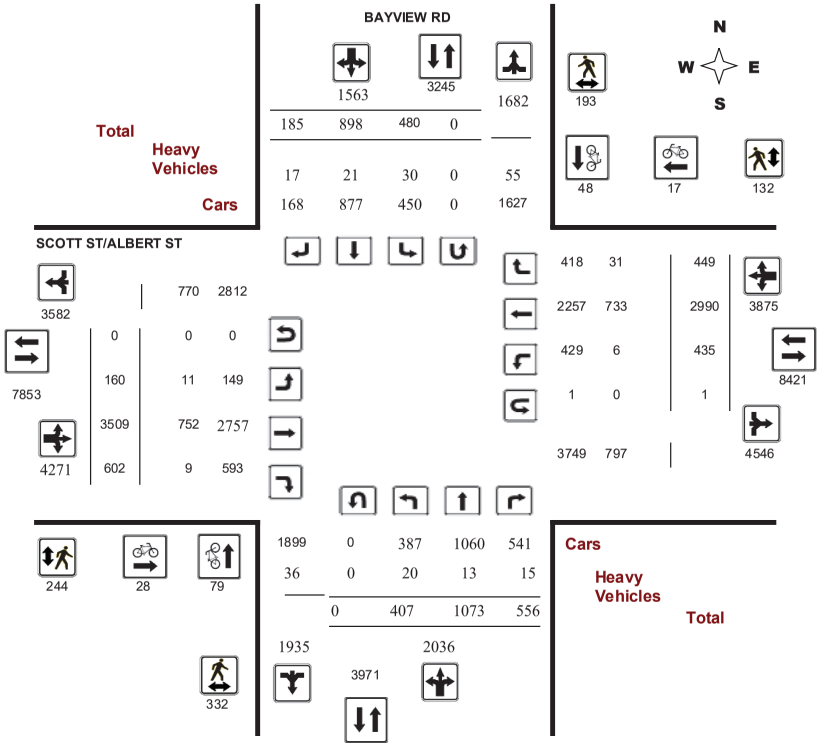
Turning Movement Count - Study Results

BAYVIEW RD @ SCOTT ST/ALBERT ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36277

Start Time: 07:00 **Device:** Miovision

Full Study Diagram



Transportation Services - Traffic Services

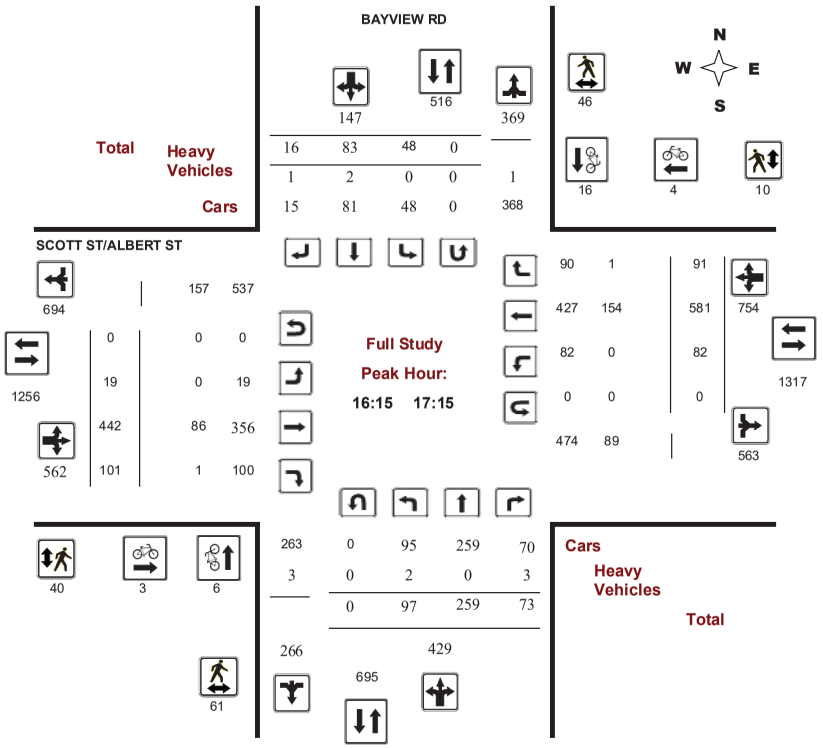
Turning Movement Count - Study Results

BAYVIEW RD @ SCOTT ST/ALBERT ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36277

Start Time: 07:00 **Device:** Miovision

Full Study Peak Hour Diagram



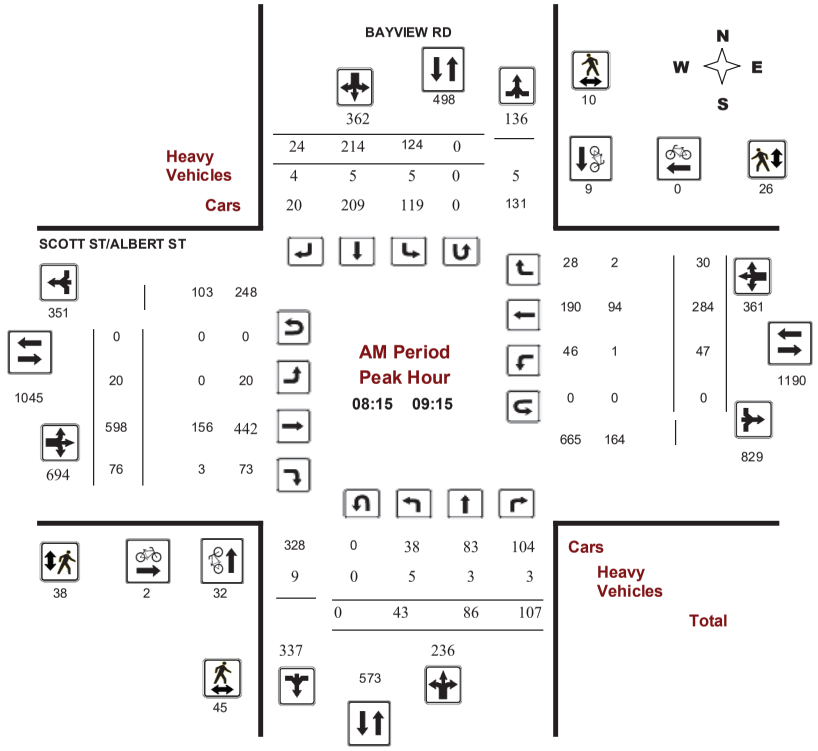
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BAYVIEW RD @ SCOTT ST/ALBERT ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36277

Start Time: 07:00 **Device:** Miovision



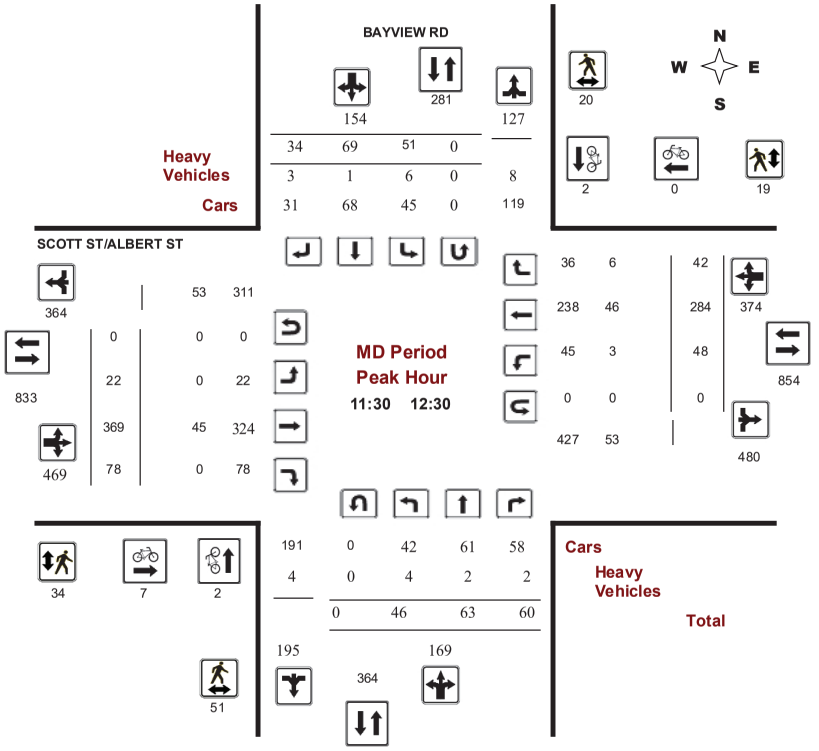
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BAYVIEW RD @ SCOTT ST/ALBERT ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36277

Start Time: 07:00 **Device:** Miovision



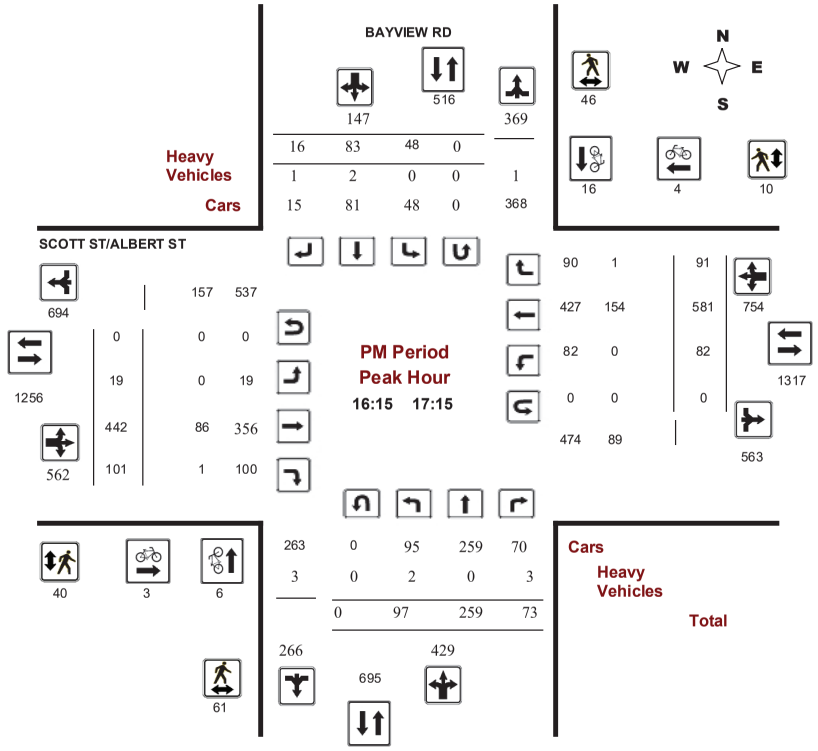
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BAYVIEW RD @ SCOTT ST/ALBERT ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36277

Start Time: 07:00 **Device:** Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BAYVIEW RD @ SCOTT ST/ALBERT ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36277

Start Time: 07:00 **Device:** Miovision

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, September 07, 2016

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 1

AADT Factor 1.00

	BAYVIEW RD								SCOTT ST/ALBERT ST								
	Northbound				Southbound				Eastbound				Westbound				
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	24	49	60	**133**	71	177	17	**265**	**398**	19	453	51	**523**	40	221	37	**298**	**821**	**1219**
08:00 09:00	45	68	116	**229**	126	207	30	**363**	**592**	16	609	76	**701**	45	276	35	**356**	**1057**	**1649**
09:00 10:00	30	65	49	**144**	81	134	24	**239**	**383**	25	443	72	**540**	40	282	42	**364**	**904**	**1287**
11:30 12:30	46	63	60	**169**	51	69	34	**154**	**323**	22	369	78	**469**	48	284	42	**374**	**843**	**1166**
12:30 13:30	42	84	63	**189**	33	53	18	**104**	**293**	24	320	75	**419**	42	275	43	**360**	**779**	**1072**
15:00 16:00	69	263	67	**399**	33	99	26	**158**	**557**	25	449	64	**538**	75	490	90	**655**	**1193**	**1750**
16:00 17:00	83	271	68	**422**	46	87	19	**152**	**574**	20	438	95	**553**	69	580	96	**745**	**1298**	**1872**
17:00 18:00	68	210	73	**351**	39	72	17	**128**	**479**	9	428	91	**528**	76	582	64	**722**	**1250**	**1729**
Sub Total	407	1073	556	**2036**	480	898	185	**1563**	**3599**	160	3509	602	**4271**	435	2990	449	**3874**	**8145**	**11744**
U Turns				**0**				**0**	**0**				**0**				**1**	**1**	**1**
Total	407	1073	556	**2036**	480	898	185	**1563**	**3599**	160	3509	602	**4271**	435	2990	449	**3875**	**8146**	**11745**
EQ 12Hr	566	1491	773	**2830**	667	1248	257	**2173**	**5003**	222	4878	837	**5937**	605	4156	624	**5386**	**11323**	**16326**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	533	1406	728	**2667**	629	1176	242	**2048**	**5003**	210	4597	789	**5595**	570	3917	588	**5076**	**11323**	**16326**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1**					
AVG 24Hr	698	1841	954	**3494**	824	1541	317	**2682**	**6176**	275	6022	1033	**7329**	747	5131	771	**6650**	**13979**	**20155**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BAYVIEW RD @ SCOTT ST/ALBERT ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36277

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute Increments

		BAYVIEW RD									SCOTT ST/ALBERT ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	2	8	4	14	21	39	6	66	5	5	77	7	89	8	57	11	76	5	245
07:15	07:30	12	16	14	42	9	47	3	59	4	4	94	10	108	9	35	10	54	4	263
07:30	07:45	2	12	20	34	23	41	3	67	6	2	135	13	150	12	59	6	77	6	328
07:45	08:00	8	13	22	43	18	50	5	73	3	8	147	21	176	11	70	10	92	3	384
08:00	08:15	14	6	24	44	27	46	8	81	5	4	142	19	165	5	64	11	80	5	370
08:15	08:30	10	17	31	58	25	46	6	77	6	2	145	16	163	15	73	8	96	6	394
08:30	08:45	7	25	39	71	36	44	7	87	8	5	159	17	181	11	69	8	88	8	427
08:45	09:00	14	20	22	56	38	71	9	118	7	5	163	24	192	14	70	8	92	7	458
09:00	09:15	12	24	15	51	25	53	2	80	4	8	131	19	158	7	72	6	85	4	374
09:15	09:30	2	13	16	31	17	33	12	62	3	7	114	24	145	7	75	9	91	3	329
09:30	09:45	9	17	7	33	23	32	4	59	4	5	106	12	123	10	63	16	89	4	304
09:45	10:00	7	11	11	29	16	16	6	38	6	5	92	17	114	16	72	11	99	6	280
11:30	11:45	10	11	12	33	15	17	8	40	4	6	101	23	130	8	68	8	84	4	287
11:45	12:00	12	19	11	42	13	22	10	45	6	3	94	16	113	15	64	10	89	6	289
12:00	12:15	14	19	22	55	12	18	11	41	3	8	84	25	117	14	65	16	95	3	308
12:15	12:30	10	14	15	39	11	12	5	28	5	5	90	14	109	11	87	8	106	5	282
12:30	12:45	12	23	17	52	4	15	3	22	5	8	71	21	100	11	70	7	88	5	262
12:45	13:00	13	22	15	50	10	16	8	34	3	5	93	19	117	8	66	12	86	3	287
13:00	13:15	11	21	16	48	8	8	3	19	2	8	88	17	113	7	74	7	88	2	268
13:15	13:30	6	18	15	39	11	14	4	29	3	3	68	18	89	16	65	17	98	3	255
15:00	15:15	15	40	21	76	10	28	11	49	3	4	115	12	131	17	99	17	133	3	389
15:15	15:30	16	64	13	93	10	25	3	38	2	7	107	17	131	27	126	21	174	2	436
15:30	15:45	19	79	18	116	4	22	8	34	3	8	115	19	142	19	125	23	167	3	459
15:45	16:00	19	80	15	114	9	24	4	37	3	6	112	16	134	12	140	29	181	3	466
16:00	16:15	18	75	19	112	9	28	7	44	1	4	104	24	132	12	140	27	179	1	467
16:15	16:30	20	68	15	103	8	25	4	37	1	7	117	22	146	14	144	22	180	1	466
16:30	16:45	21	58	17	96	20	21	7	48	6	5	100	30	135	28	157	19	204	6	483
16:45	17:00	24	70	17	111	9	13	1	23	0	4	117	19	140	15	139	28	182	0	456
17:00	17:15	32	63	24	119	11	24	4	39	1	3	108	30	141	25	141	22	188	1	487
17:15	17:30	12	53	17	82	10	24	5	39	2	1	103	26	130	20	145	20	185	2	436
17:30	17:45	17	59	20	96	14	11	4	29	1	4	112	18	134	13	158	9	180	1	439
17:45	18:00	7	35	12	54	4	13	4	21	1	1	105	17	123	18	138	13	169	1	367
Total:		407	1073	556	2036	480	898	185	1563	116	160	3509	602	4271	435	2990	449	3875	116	11,745

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BAYVIEW RD @ SCOTT ST/ALBERT ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36277

Start Time: 07:00 **Device:** Miovision

Full Study Cyclist Volume

		BAYVIEW RD			SCOTT ST/ALBERT ST			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	1	1	2	0	0	0	2
07:15	07:30	5	2	7	0	0	0	7
07:30	07:45	6	2	8	0	0	0	8
07:45	08:00	3	1	4	1	1	2	6
08:00	08:15	8	2	10	2	0	2	12
08:15	08:30	11	1	12	0	0	0	12
08:30	08:45	12	0	12	1	0	1	13
08:45	09:00	6	4	10	0	0	0	10
09:00	09:15	3	4	7	1	0	1	8
09:15	09:30	0	0	0	2	1	3	3
09:30	09:45	0	0	0	0	1	1	1
09:45	10:00	1	0	1	0	0	0	1
11:30	11:45	1	0	1	3	0	3	4
11:45	12:00	0	1	1	0	0	0	1
12:00	12:15	0	0	0	1	0	1	1
12:15	12:30	1	1	2	3	0	3	5
12:30	12:45	2	0	2	1	1	2	4
12:45	13:00	0	0	0	2	0	2	2
13:00	13:15	1	0	1	1	0	1	2
13:15	13:30	1	2	3	3	0	3	6
15:00	15:15	0	1	1	0	0	0	1
15:15	15:30	1	3	4	0	4	4	8
15:30	15:45	3	0	3	0	0	0	3
15:45	16:00	4	1	5	1	1	2	7
16:00	16:15	0	0	0	1	0	1	1
16:15	16:30	2	1	3	0	0	0	3
16:30	16:45	0	5	5	0	1	1	6
16:45	17:00	2	8	10	1	0	1	11
17:00	17:15	2	2	4	2	3	5	9
17:15	17:30	1	0	1	0	4	4	5
17:30	17:45	2	4	6	1	0	1	7
17:45	18:00	0	2	2	1	0	1	3
Total		79	48	**127**	28	17	45	172

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BAYVIEW RD @ SCOTT ST/ALBERT ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36277

Start Time: 07:00 **Device:** Miovision

Full Study Pedestrian Volume

	BAYVIEW RD			SCOTT ST/ALBERT ST			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	12	6	**18**	5	6	**11**	**29**
07:15 07:30	5	4	**9**	3	4	**7**	**16**
07:30 07:45	10	11	**21**	4	1	**5**	**26**
07:45 08:00	7	6	**13**	9	5	**14**	**27**
08:00 08:15	16	9	**25**	12	3	**15**	**40**
08:15 08:30	4	3	**7**	10	12	**22**	**29**
08:30 08:45	10	3	**13**	8	10	**18**	**31**
08:45 09:00	11	2	**13**	11	2	**13**	**26**
09:00 09:15	20	2	**22**	9	2	**11**	**33**
09:15 09:30	6	1	**7**	4	1	**5**	**12**
09:30 09:45	6	2	**8**	0	7	**7**	**15**
09:45 10:00	2	1	**3**	2	2	**4**	**7**
11:30 11:45	17	5	**22**	4	4	**8**	**30**
11:45 12:00	7	4	**11**	7	3	**10**	**21**
12:00 12:15	8	1	**9**	9	3	**12**	**21**
12:15 12:30	19	10	**29**	14	9	**23**	**52**
12:30 12:45	22	7	**29**	16	13	**29**	**58**
12:45 13:00	4	1	**5**	7	2	**9**	**14**
13:00 13:15	10	2	**12**	2	3	**5**	**17**
13:15 13:30	3	1	**4**	0	2	**2**	**6**
15:00 15:15	1	6	**7**	11	2	**13**	**20**
15:15 15:30	5	1	**6**	4	3	**7**	**13**
15:30 15:45	8	1	**9**	8	1	**9**	**18**
15:45 16:00	6	3	**9**	3	2	**5**	**14**
16:00 16:15	7	18	**25**	5	7	**12**	**37**
16:15 16:30	17	16	**33**	10	3	**13**	**46**
16:30 16:45	19	9	**28**	11	0	**11**	**39**
16:45 17:00	8	10	**18**	6	0	**6**	**24**
17:00 17:15	17	11	**28**	13	7	**20**	**48**
17:15 17:30	11	16	**27**	10	6	**16**	**43**
17:30 17:45	14	12	**26**	18	3	**21**	**47**
17:45 18:00	20	9	**29**	9	4	**13**	**42**
Total	332	193	**525**	244	132	**376**	**901**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BAYVIEW RD @ SCOTT ST/ALBERT ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36277

Start Time: 07:00 **Device:** Miovision

Full Study Heavy Vehicles

		BAYVIEW RD									SCOTT ST/ALBERT ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	0	**0**	3	0	2	**5**	**5**	2	26	0	**28**	0	15	0	**15**	**43**	**48**
07:15	07:30	2	0	0	**2**	0	1	1	**2**	**4**	0	31	0	**31**	0	21	0	**21**	**52**	**56**
07:30	07:45	0	0	2	**2**	1	2	1	**4**	**6**	0	34	1	**35**	0	22	1	**23**	**58**	**64**
07:45	08:00	0	0	1	**1**	0	1	1	**2**	**3**	0	45	1	**46**	0	25	0	**25**	**71**	**74**
08:00	08:15	0	0	1	**1**	2	2	0	**4**	**5**	1	49	0	**50**	0	23	2	**25**	**75**	**80**
08:15	08:30	2	1	1	**4**	1	1	0	**2**	**6**	0	43	0	**43**	0	23	0	**23**	**66**	**72**
08:30	08:45	2	0	2	**4**	0	2	2	**4**	**8**	0	44	0	**44**	0	21	2	**23**	**67**	**75**
08:45	09:00	0	1	0	**1**	3	2	1	**6**	**7**	0	36	2	**38**	0	29	0	**29**	**67**	**74**
09:00	09:15	1	1	0	**2**	1	0	1	**2**	**4**	0	33	1	**34**	1	21	0	**22**	**56**	**60**
09:15	09:30	0	0	0	**0**	1	1	1	**3**	**3**	3	20	1	**24**	0	22	3	**25**	**49**	**52**
09:30	09:45	1	2	0	**3**	0	0	1	**1**	**4**	2	21	1	**24**	0	18	4	**22**	**46**	**50**
09:45	10:00	1	0	0	**1**	4	0	1	**5**	**6**	0	21	0	**21**	0	20	2	**22**	**43**	**49**
11:30	11:45	1	0	1	**2**	2	0	0	**2**	**4**	0	7	0	**7**	0	11	2	**13**	**20**	**24**
11:45	12:00	2	1	0	**3**	1	1	1	**3**	**6**	0	15	0	**15**	2	9	0	**11**	**26**	**32**
12:00	12:15	1	1	1	**3**	0	0	0	**0**	**3**	0	9	0	**9**	0	15	4	**19**	**28**	**31**
12:15	12:30	0	0	0	**0**	3	0	2	**5**	**5**	0	14	0	**14**	1	11	0	**12**	**26**	**31**
12:30	12:45	0	1	2	**3**	1	1	0	**2**	**5**	2	13	0	**15**	0	13	2	**15**	**30**	**35**
12:45	13:00	1	0	0	**1**	2	0	0	**2**	**3**	0	16	0	**16**	0	9	2	**11**	**27**	**30**
13:00	13:15	0	1	0	**1**	1	0	0	**1**	**2**	0	17	0	**17**	1	12	1	**14**	**31**	**33**
13:15	13:30	1	0	0	**1**	1	1	0	**2**	**3**	0	16	1	**17**	1	10	4	**15**	**32**	**35**
15:00	15:15	0	1	0	**1**	0	1	1	**2**	**3**	0	16	0	**16**	0	23	0	**23**	**39**	**42**
15:15	15:30	0	1	0	**1**	1	0	0	**1**	**2**	0	14	0	**14**	0	24	0	**24**	**38**	**40**
15:30	15:45	1	1	0	**2**	0	1	0	**1**	**3**	1	19	0	**20**	0	35	1	**36**	**56**	**59**
15:45	16:00	1	0	1	**2**	1	0	0	**1**	**3**	0	22	0	**22**	0	25	0	**25**	**47**	**50**
16:00	16:15	0	0	0	**0**	0	1	0	**1**	**1**	0	25	0	**25**	0	31	0	**31**	**56**	**57**
16:15	16:30	0	0	0	**0**	0	1	0	**1**	**1**	0	22	0	**22**	0	35	0	**35**	**57**	**58**
16:30	16:45	2	0	2	**4**	0	1	1	**2**	**6**	0	17	0	**17**	0	44	1	**45**	**62**	**68**
16:45	17:00	0	0	0	**0**	0	0	0	**0**	**0**	0	29	1	**30**	0	34	0	**34**	**64**	**64**
17:00	17:15	0	0	1	**1**	0	0	0	**0**	**1**	0	18	0	**18**	0	41	0	**41**	**59**	**60**
17:15	17:30	0	1	0	**1**	0	1	0	**1**	**2**	0	20	0	**20**	0	31	0	**31**	**51**	**53**
17:30	17:45	0	0	0	**0**	1	0	0	**1**	**1**	0	25	0	**25**	0	34	0	**34**	**59**	**60**
17:45	18:00	1	0	0	**1**	0	0	0	**0**	**1**	0	15	0	**15**	0	26	0	**26**	**41**	**42**
Total:	None	20	13	15	**48**	30	21	17	**68**	**116**	11	752	9	**772**	6	733	31	**770**	**1542**	**1,658**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BAYVIEW RD @ SCOTT ST/ALBERT ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36277

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute U-Turn Total

Time Period		BAYVIEW RD Northbound U-Turn Total	BAYVIEW RD Southbound U-Turn Total	SCOTT ST/ALBERT ST Eastbound U-Turn Total	SCOTT ST/ALBERT ST Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	1	1
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		0	0	0	1	1

Transportation Services - Traffic Services

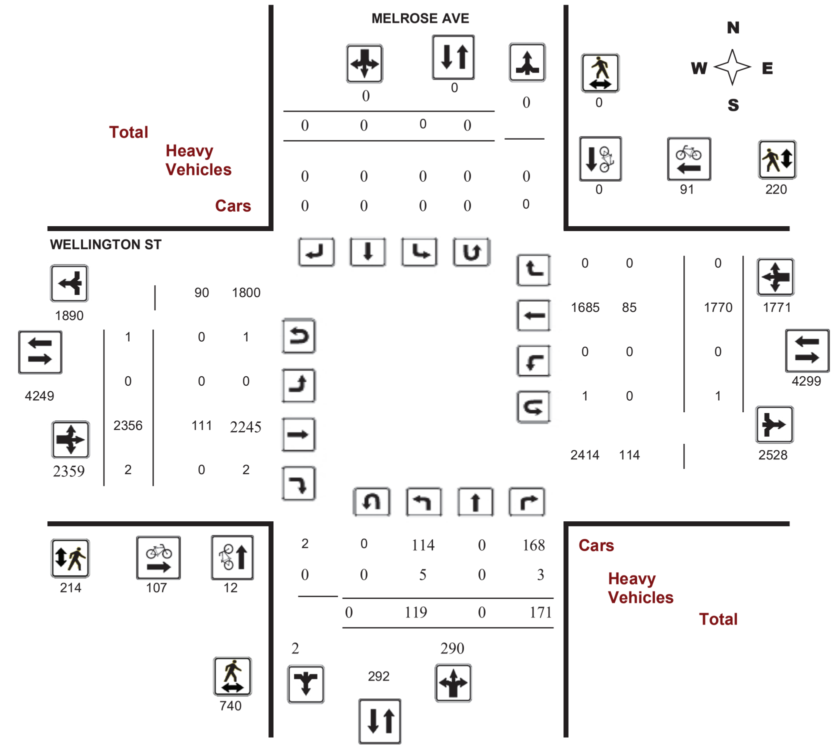
Turning Movement Count - Study Results

MELROSE AVE @ WELLINGTON ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36474

Start Time: 07:00 **Device:** Miovision

Full Study Diagram



Transportation Services - Traffic Services

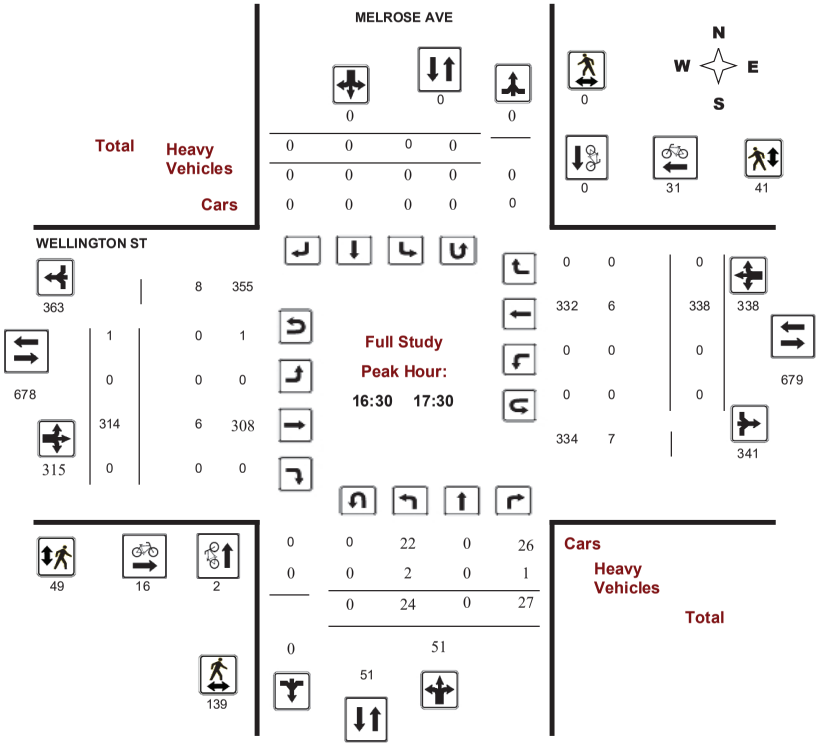
Turning Movement Count - Study Results

MELROSE AVE @ WELLINGTON ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36474

Start Time: 07:00 **Device:** Miovision

Full Study Peak Hour Diagram



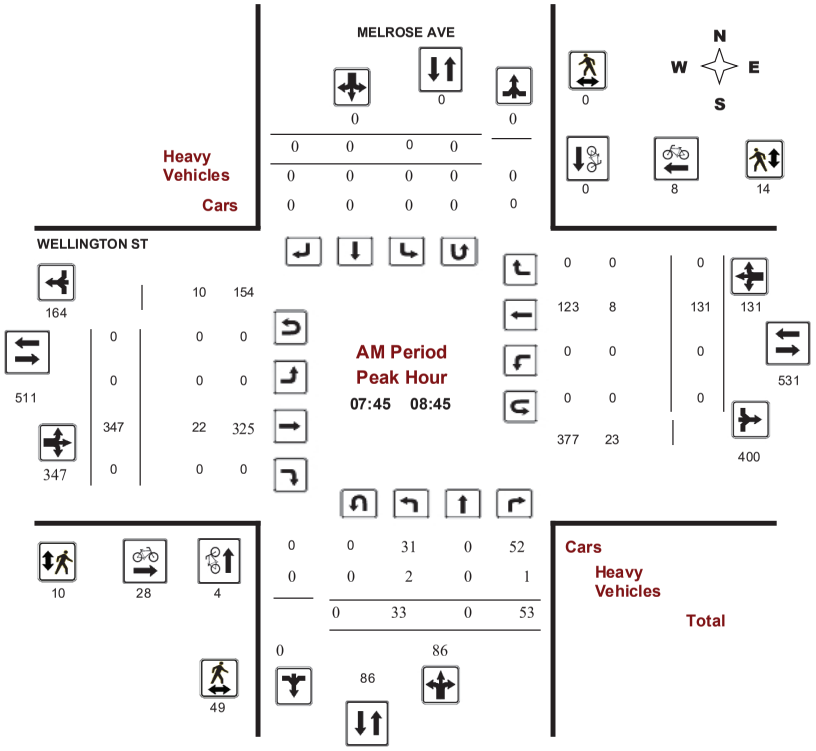
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MELROSE AVE @ WELLINGTON ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36474

Start Time: 07:00 **Device:** Miovision



Comments

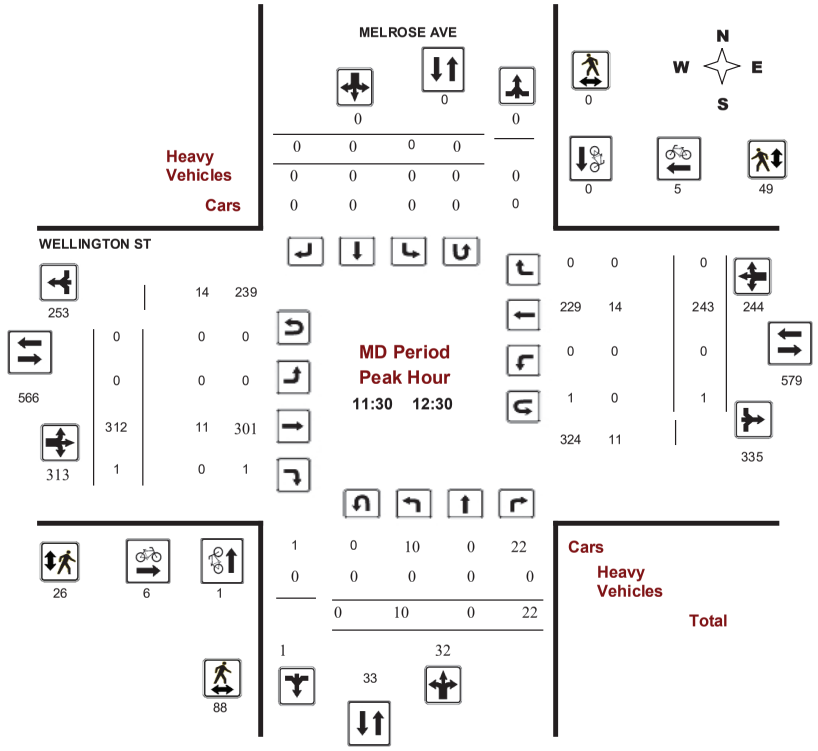
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MELROSE AVE @ WELLINGTON ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36474

Start Time: 07:00 **Device:** Miovision



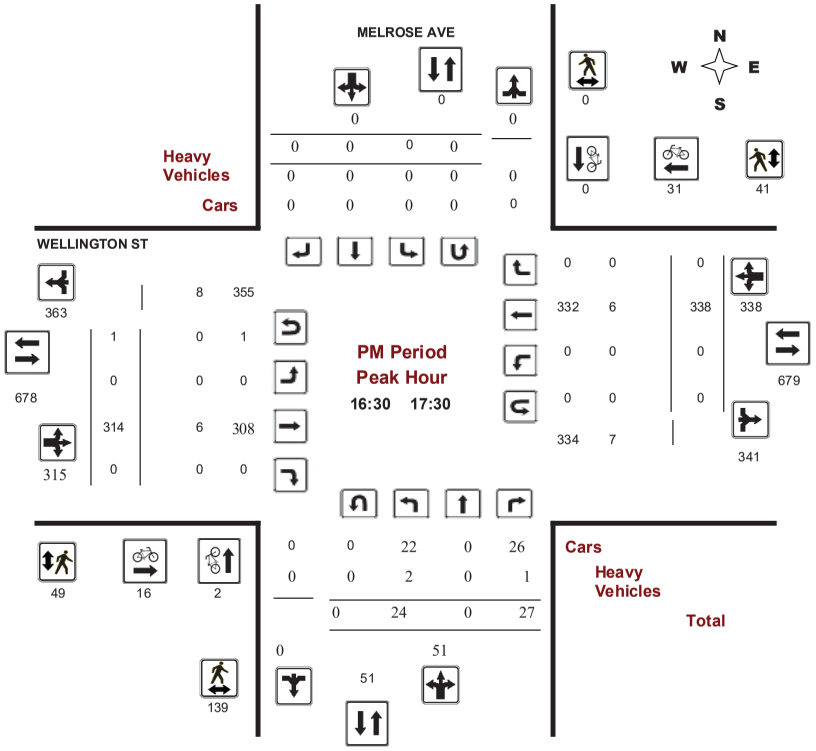
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MELROSE AVE @ WELLINGTON ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36474

Start Time: 07:00 **Device:** Miovision



Transportation Services - Traffic Services

Turning Movement Count - Study Results

MELROSE AVE @ WELLINGTON ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36474

Start Time: 07:00 **Device:** Miovision

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, November 16, 2016

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 1 Westbound: 1

AADT Factor .90

	MELROSE AVE								WELLINGTON ST									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	7	0	19	**26**	0	0	0	**0**	**26**	0	256	0	**256**	0	96	0	**96**	**352**	**378**
08:00 09:00	33	0	49	**82**	0	0	0	**0**	**82**	0	325	0	**325**	0	127	0	**127**	**452**	**534**
09:00 10:00	5	0	13	**18**	0	0	0	**0**	**18**	0	266	0	**266**	0	164	0	**164**	**430**	**448**
11:30 12:30	10	0	22	**32**	0	0	0	**0**	**32**	0	312	1	**313**	0	243	0	**243**	**556**	**588**
12:30 13:30	13	0	14	**27**	0	0	0	**0**	**27**	0	295	1	**296**	0	249	0	**249**	**545**	**572**
15:00 16:00	9	0	14	**23**	0	0	0	**0**	**23**	0	289	0	**289**	0	246	0	**246**	**535**	**558**
16:00 17:00	19	0	20	**39**	0	0	0	**0**	**39**	0	338	0	**338**	0	316	0	**316**	**654**	**693**
17:00 18:00	23	0	20	**43**	0	0	0	**0**	**43**	0	275	0	**275**	0	329	0	**329**	**604**	**647**
Sub Total	119	0	171	**290**	0	0	0	**0**	**290**	0	2356	2	**2358**	0	1770	0	**1770**	**4128**	**4418**
U Turns				**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total	119	0	171	**290**	0	0	0	**0**	**290**	0	2356	2	**2358**	0	1770	0	**1770**	**4128**	**4418**
EQ 12Hr	165	0	238	**403**	0	0	0	**0**	**403**	0	3275	3	**3279**	0	2460	0	**2462**	**5741**	**6144**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	140	0	202	**342**	0	0	0	**0**	**363**	0	2778	2	**2781**	0	2087	0	**2088**	**5167**	**5530**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**0.9**						
AVG 24Hr	184	0	264	**448**	0	0	0	**0**	**448**	0	3639	3	**3643**	0	2734	0	**2735**	**6378**	**6826**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MELROSE AVE @ WELLINGTON ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36474

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute Increments

		MELROSE AVE									WELLINGTON ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	1	1	0	0	0	0	0	0	52	0	52	0	15	0	15	0	68
07:15	07:30	1	0	5	6	0	0	0	0	1	0	48	0	48	0	25	0	25	1	79
07:30	07:45	3	0	2	5	0	0	0	0	0	0	71	0	71	0	23	0	23	0	99
07:45	08:00	3	0	11	14	0	0	0	0	1	0	85	0	85	0	33	0	33	1	132
08:00	08:15	20	0	34	54	0	0	0	0	0	0	76	0	76	0	29	0	29	0	159
08:15	08:30	6	0	4	10	0	0	0	0	1	0	92	0	92	0	34	0	34	1	136
08:30	08:45	4	0	4	8	0	0	0	0	1	0	94	0	94	0	35	0	35	1	137
08:45	09:00	3	0	7	10	0	0	0	0	0	0	63	0	63	0	29	0	29	0	102
09:00	09:15	2	0	2	4	0	0	0	0	0	0	86	0	86	0	40	0	40	0	130
09:15	09:30	1	0	4	5	0	0	0	0	0	0	49	0	49	0	38	0	38	0	92
09:30	09:45	2	0	4	6	0	0	0	0	0	0	62	0	62	0	42	0	42	0	110
09:45	10:00	0	0	3	3	0	0	0	0	0	0	69	0	69	0	44	0	44	0	116
11:30	11:45	3	0	10	13	0	0	0	0	0	0	74	0	74	0	54	0	55	0	142
11:45	12:00	3	0	3	6	0	0	0	0	0	0	80	1	81	0	67	0	67	0	154
12:00	12:15	1	0	5	6	0	0	0	0	0	0	82	0	82	0	58	0	58	0	146
12:15	12:30	3	0	4	7	0	0	0	0	0	0	76	0	76	0	64	0	64	0	147
12:30	12:45	5	0	5	10	0	0	0	0	0	0	65	0	65	0	48	0	48	0	123
12:45	13:00	2	0	4	6	0	0	0	0	0	0	76	0	76	0	56	0	56	0	138
13:00	13:15	1	0	1	2	0	0	0	0	0	0	89	0	89	0	80	0	80	0	171
13:15	13:30	5	0	4	9	0	0	0	0	1	0	65	1	66	0	65	0	65	1	140
15:00	15:15	0	0	5	5	0	0	0	0	0	0	74	0	74	0	62	0	62	0	141
15:15	15:30	3	0	2	5	0	0	0	0	0	0	64	0	64	0	60	0	60	0	129
15:30	15:45	3	0	3	6	0	0	0	0	0	0	83	0	83	0	56	0	56	0	145
15:45	16:00	3	0	4	7	0	0	0	0	0	0	68	0	68	0	68	0	68	0	143
16:00	16:15	4	0	3	7	0	0	0	0	0	0	70	0	70	0	78	0	78	0	155
16:15	16:30	4	0	2	6	0	0	0	0	0	0	86	0	86	0	70	0	70	0	162
16:30	16:45	3	0	3	6	0	0	0	0	1	0	97	0	97	0	86	0	86	1	189
16:45	17:00	8	0	12	20	0	0	0	0	1	0	85	0	86	0	82	0	82	1	188
17:00	17:15	8	0	5	13	0	0	0	0	0	0	59	0	59	0	93	0	93	0	165
17:15	17:30	5	0	7	12	0	0	0	0	1	0	73	0	73	0	77	0	77	1	162
17:30	17:45	5	0	4	9	0	0	0	0	0	0	72	0	72	0	84	0	84	0	165
17:45	18:00	5	0	4	9	0	0	0	0	0	0	71	0	71	0	75	0	75	0	155
Total:		119	0	171	290	0	0	0	0	8	0	2356	2	2359	0	1770	0	1771	8	4,420

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MELROSE AVE @ WELLINGTON ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36474

Start Time: 07:00 **Device:** Miovision

Full Study Cyclist Volume

Time Period		MELROSE AVE			WELLINGTON ST			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	3	0	3	3
07:15	07:30	0	0	0	8	1	9	9
07:30	07:45	0	0	0	5	2	7	7
07:45	08:00	0	0	0	7	2	9	9
08:00	08:15	3	0	3	11	2	13	16
08:15	08:30	0	0	0	3	3	6	6
08:30	08:45	1	0	1	7	1	8	9
08:45	09:00	0	0	0	4	0	4	4
09:00	09:15	1	0	1	3	2	5	6
09:15	09:30	2	0	2	3	4	7	9
09:30	09:45	0	0	0	3	1	4	4
09:45	10:00	0	0	0	1	0	1	1
11:30	11:45	1	0	1	3	0	3	4
11:45	12:00	0	0	0	2	3	5	5
12:00	12:15	0	0	0	0	1	1	1
12:15	12:30	0	0	0	1	1	2	2
12:30	12:45	1	0	1	0	0	0	1
12:45	13:00	0	0	0	1	0	1	1
13:00	13:15	0	0	0	0	0	0	0
13:15	13:30	0	0	0	1	1	2	2
15:00	15:15	0	0	0	1	4	5	5
15:15	15:30	1	0	1	2	3	5	6
15:30	15:45	0	0	0	2	1	3	3
15:45	16:00	0	0	0	4	2	6	6
16:00	16:15	0	0	0	2	4	6	6
16:15	16:30	0	0	0	6	7	13	13
16:30	16:45	0	0	0	1	9	10	10
16:45	17:00	2	0	2	5	7	12	14
17:00	17:15	0	0	0	7	7	14	14
17:15	17:30	0	0	0	3	8	11	11
17:30	17:45	0	0	0	4	4	8	8
17:45	18:00	0	0	0	4	11	15	15
Total		12	0	**12**	107	91	198	210

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MELROSE AVE @ WELLINGTON ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36474

Start Time: 07:00 **Device:** Miovision

Full Study Pedestrian Volume

Time Period	MELROSE AVE			WELLINGTON ST			
	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	7	0	**7**	0	3	**3**	**10**
07:15 07:30	8	0	**8**	1	2	**3**	**11**
07:30 07:45	7	0	**7**	0	2	**2**	**9**
07:45 08:00	8	0	**8**	2	2	**4**	**12**
08:00 08:15	6	0	**6**	4	7	**11**	**17**
08:15 08:30	24	0	**24**	1	4	**5**	**29**
08:30 08:45	11	0	**11**	3	1	**4**	**15**
08:45 09:00	9	0	**9**	1	1	**2**	**11**
09:00 09:15	12	0	**12**	2	1	**3**	**15**
09:15 09:30	10	0	**10**	2	5	**7**	**17**
09:30 09:45	7	0	**7**	2	8	**10**	**17**
09:45 10:00	12	0	**12**	3	3	**6**	**18**
11:30 11:45	18	0	**18**	10	8	**18**	**36**
11:45 12:00	17	0	**17**	4	15	**19**	**36**
12:00 12:15	31	0	**31**	4	16	**20**	**51**
12:15 12:30	22	0	**22**	8	10	**18**	**40**
12:30 12:45	37	0	**37**	5	9	**14**	**51**
12:45 13:00	29	0	**29**	7	5	**12**	**41**
13:00 13:15	23	0	**23**	10	8	**18**	**41**
13:15 13:30	33	0	**33**	13	12	**25**	**58**
15:00 15:15	33	0	**33**	9	6	**15**	**48**
15:15 15:30	58	0	**58**	8	8	**16**	**74**
15:30 15:45	29	0	**29**	9	5	**14**	**43**
15:45 16:00	31	0	**31**	11	8	**19**	**50**
16:00 16:15	24	0	**24**	8	7	**15**	**39**
16:15 16:30	38	0	**38**	16	11	**27**	**65**
16:30 16:45	39	0	**39**	10	11	**21**	**60**
16:45 17:00	43	0	**43**	18	10	**28**	**71**
17:00 17:15	30	0	**30**	11	9	**20**	**50**
17:15 17:30	27	0	**27**	10	11	**21**	**48**
17:30 17:45	32	0	**32**	13	4	**17**	**49**
17:45 18:00	25	0	**25**	9	8	**17**	**42**
Total	740	0	**740**	214	220	**434**	**1174**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MELROSE AVE @ WELLINGTON ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36474

Start Time: 07:00 **Device:** Miovision

Full Study Heavy Vehicles

		MELROSE AVE									WELLINGTON ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	2	0	**2**	**5**	**5**
07:15	07:30	0	0	1	**1**	0	0	0	**0**	**1**	0	5	0	**5**	0	5	0	**5**	**10**	**11**
07:30	07:45	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	1	0	**1**	**2**	**2**
07:45	08:00	1	0	0	**1**	0	0	0	**0**	**1**	0	5	0	**5**	0	1	0	**1**	**6**	**7**
08:00	08:15	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	1	0	**1**	**5**	**5**
08:15	08:30	0	0	1	**1**	0	0	0	**0**	**1**	0	8	0	**8**	0	3	0	**3**	**11**	**12**
08:30	08:45	1	0	0	**1**	0	0	0	**0**	**1**	0	5	0	**5**	0	3	0	**3**	**8**	**9**
08:45	09:00	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	1	0	**1**	**5**	**5**
09:00	09:15	0	0	0	**0**	0	0	0	**0**	**0**	0	6	0	**6**	0	5	0	**5**	**11**	**11**
09:15	09:30	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	4	0	**4**	**7**	**7**
09:30	09:45	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**5**	0	6	0	**6**	**11**	**11**
09:45	10:00	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	3	0	**3**	**7**	**7**
11:30	11:45	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	5	0	**5**	**6**	**6**
11:45	12:00	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	3	0	**3**	**6**	**6**
12:00	12:15	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	2	0	**2**	**5**	**5**
12:15	12:30	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	4	0	**4**	**8**	**8**
12:30	12:45	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	2	0	**2**	**6**	**6**
12:45	13:00	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	1	0	**1**	**4**	**4**
13:00	13:15	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	7	0	**7**	**11**	**11**
13:15	13:30	1	0	0	**1**	0	0	0	**0**	**1**	0	1	0	**1**	0	2	0	**2**	**3**	**4**
15:00	15:15	0	0	0	**0**	0	0	0	**0**	**0**	0	6	0	**6**	0	3	0	**3**	**9**	**9**
15:15	15:30	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	3	0	**3**	**5**	**5**
15:30	15:45	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	0	0	**0**	**4**	**4**
15:45	16:00	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	4	0	**4**	**7**	**7**
16:00	16:15	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**5**	0	4	0	**4**	**9**	**9**
16:15	16:30	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	2	0	**2**	**6**	**6**
16:30	16:45	1	0	0	**1**	0	0	0	**0**	**1**	0	2	0	**2**	0	0	0	**0**	**2**	**3**
16:45	17:00	1	0	0	**1**	0	0	0	**0**	**1**	0	1	0	**1**	0	4	0	**4**	**5**	**6**
17:00	17:15	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	0	0	**0**	**2**	**2**
17:15	17:30	0	0	1	**1**	0	0	0	**0**	**1**	0	1	0	**1**	0	2	0	**2**	**3**	**4**
17:30	17:45	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	2	0	**2**	**3**	**3**
17:45	18:00	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	0	0	**0**	**4**	**4**
Total:	None	5	0	3	**8**	0	0	0	**0**	**8**	0	111	0	**111**	0	85	0	**85**	**196**	**204**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MELROSE AVE @ WELLINGTON ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36474

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute U-Turn Total

		MELROSE AVE	MELROSE AVE	WELLINGTON ST	WELLINGTON ST	
Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	1	1
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	1	0	1
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		0	0	1	1	2

Transportation Services - Traffic Services

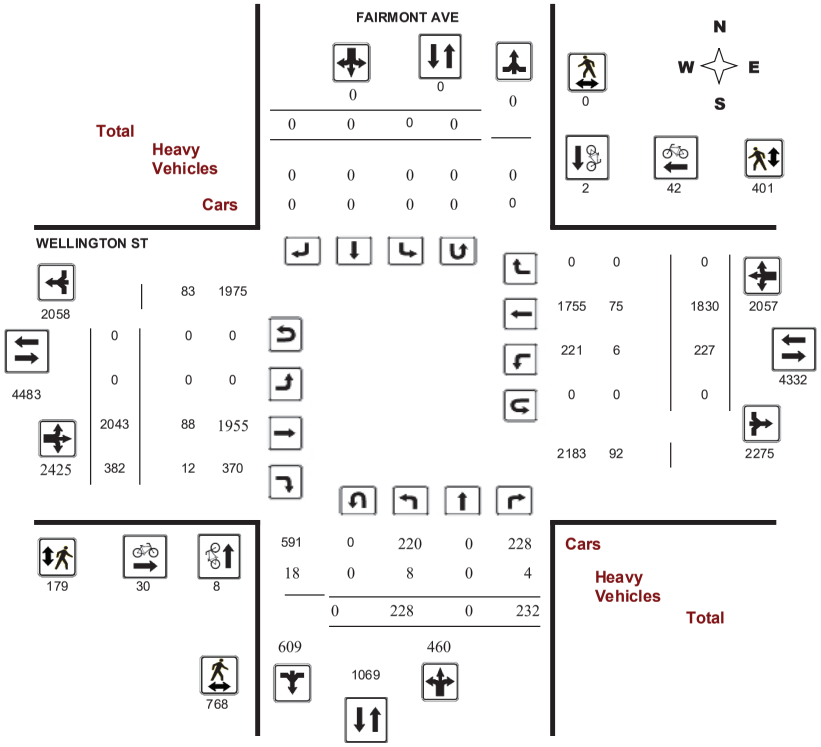
Turning Movement Count - Study Results

FAIRMONT AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37566

Start Time: 07:00 **Device:** Miovision

Full Study Diagram



Transportation Services - Traffic Services

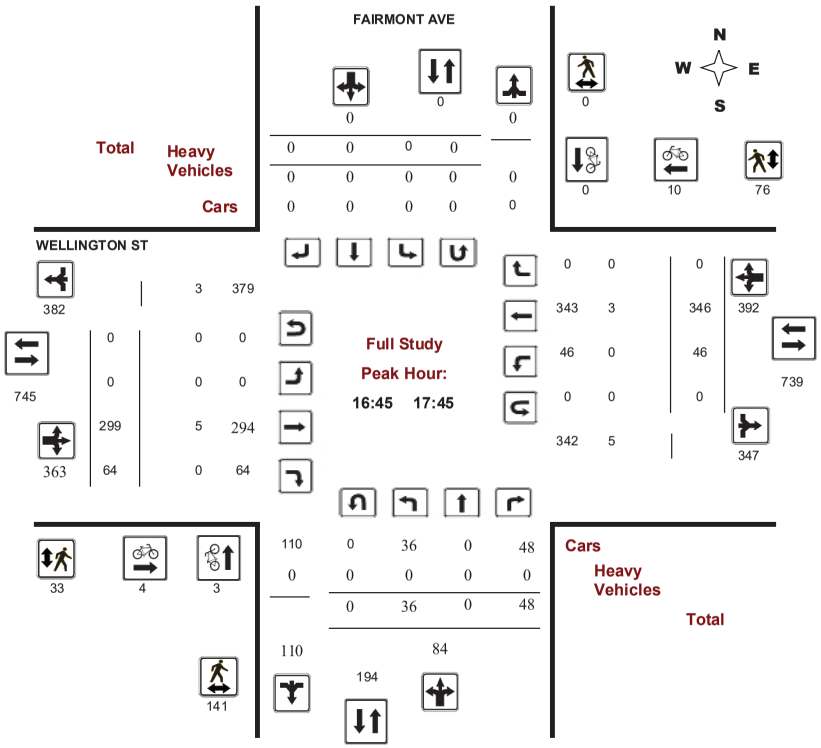
Turning Movement Count - Study Results

FAIRMONT AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37566

Start Time: 07:00 **Device:** Miovision

Full Study Peak Hour Diagram



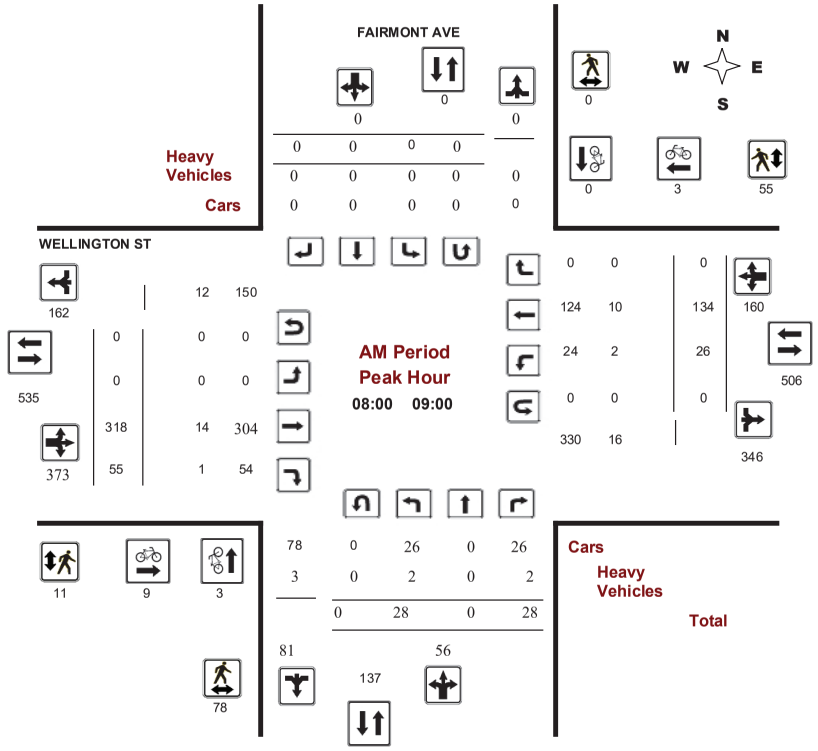
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

FAIRMONT AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37566

Start Time: 07:00 **Device:** Miovision



Comments

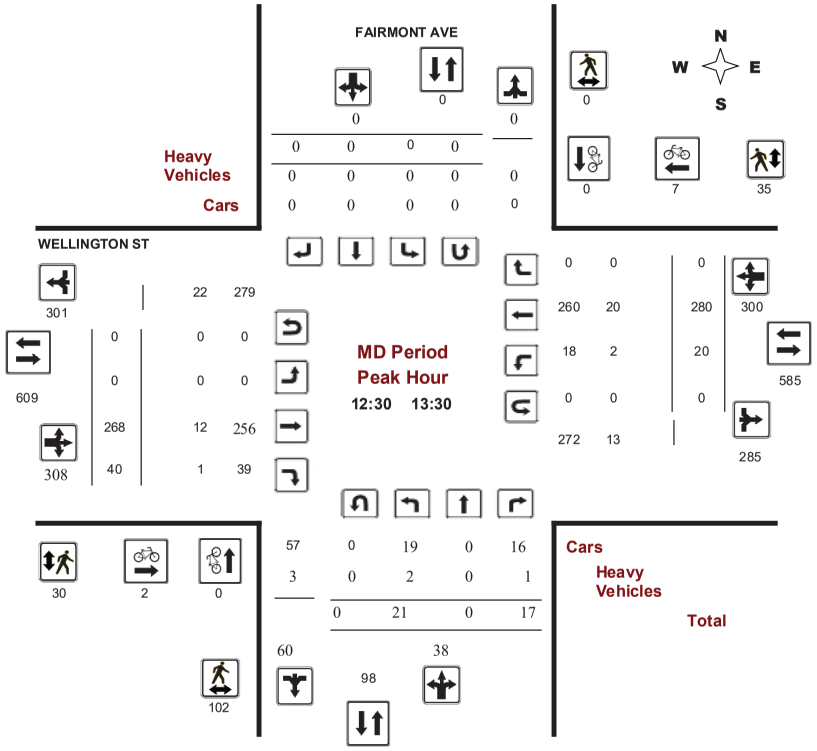
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

FAIRMONT AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37566

Start Time: 07:00 **Device:** Miovision



Comments

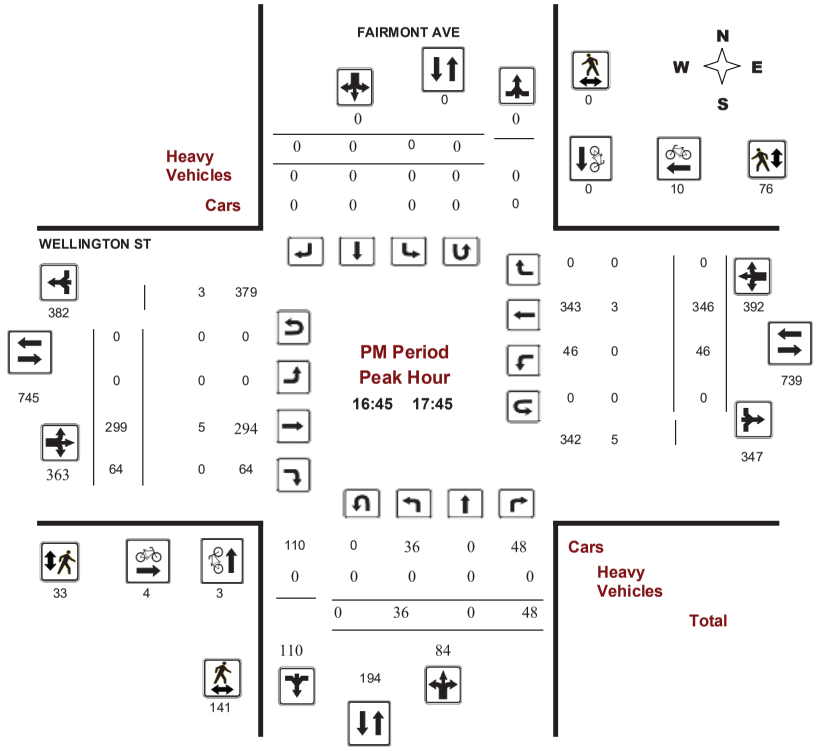
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

FAIRMONT AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37566

Start Time: 07:00 **Device:** Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

FAIRMONT AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37566

Start Time: 07:00 **Device:** Miovision

Full Study Summary (8 HR Standard)

Survey Date: Thursday, February 22, 2018

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor .90

	FAIRMONT AVE								WELLINGTON ST									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	11	0	12	**23**	0	0	0	**0**	**23**	0	194	26	**220**	28	115	0	**143**	**363**	**386**
08:00 09:00	28	0	28	**56**	0	0	0	**0**	**56**	0	318	55	**373**	26	134	0	**160**	**533**	**589**
09:00 10:00	15	0	34	**49**	0	0	0	**0**	**49**	0	201	27	**228**	17	169	0	**186**	**414**	**463**
11:30 12:30	34	0	26	**60**	0	0	0	**0**	**60**	0	280	46	**326**	18	220	0	**238**	**564**	**624**
12:30 13:30	21	0	17	**38**	0	0	0	**0**	**38**	0	268	40	**308**	20	280	0	**300**	**608**	**646**
15:00 16:00	38	0	37	**75**	0	0	0	**0**	**75**	0	221	63	**284**	29	262	0	**291**	**575**	**650**
16:00 17:00	49	0	28	**77**	0	0	0	**0**	**77**	0	280	67	**347**	47	315	0	**362**	**709**	**786**
17:00 18:00	32	0	50	**82**	0	0	0	**0**	**82**	0	281	58	**339**	42	335	0	**377**	**716**	**798**
Sub Total	228	0	232	**460**	0	0	0	**0**	**460**	0	2043	382	**2425**	227	1830	0	**2057**	**4482**	**4942**
U Turns				**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total	228	0	232	**460**	0	0	0	**0**	**460**	0	2043	382	**2425**	227	1830	0	**2057**	**4482**	**4942**
EQ 12Hr	317	0	322	**639**	0	0	0	**0**	**639**	0	2840	531	**3371**	316	2544	0	**2859**	**6230**	**6869**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	269	0	274	**542**	0	0	0	**0**	**575**	0	2409	450	**2859**	268	2158	0	**2425**	**5607**	**6182**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**0.9**					
AVG 24Hr	352	0	358	**710**	0	0	0	**0**	**710**	0	3155	590	**3745**	351	2826	0	**3177**	**6922**	**7632**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

FAIRMONT AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37566

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute Increments

		FAIRMONT AVE									WELLINGTON ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	1	0	1	2	0	0	0	0	0	0	36	3	39	4	27	0	31	0	72
07:15	07:30	1	0	1	2	0	0	0	0	0	0	44	6	50	5	27	0	32	0	84
07:30	07:45	2	0	3	5	0	0	0	0	0	0	51	5	56	9	28	0	37	0	98
07:45	08:00	7	0	7	14	0	0	0	0	1	0	63	12	75	10	33	0	43	1	132
08:00	08:15	8	0	7	15	0	0	0	0	0	0	88	19	107	6	26	0	32	0	154
08:15	08:30	4	0	6	10	0	0	0	0	2	0	79	20	99	2	43	0	45	2	154
08:30	08:45	7	0	5	12	0	0	0	0	1	0	80	8	88	7	38	0	45	1	145
08:45	09:00	9	0	10	19	0	0	0	0	1	0	71	8	79	11	27	0	38	1	136
09:00	09:15	2	0	11	13	0	0	0	0	0	0	48	6	54	2	45	0	47	0	114
09:15	09:30	4	0	7	11	0	0	0	0	0	0	50	9	59	5	43	0	48	0	118
09:30	09:45	4	0	3	7	0	0	0	0	0	0	58	6	64	5	40	0	45	0	116
09:45	10:00	5	0	13	18	0	0	0	0	0	0	45	6	51	5	41	0	46	0	115
11:30	11:45	10	0	7	17	0	0	0	0	0	0	71	10	81	3	55	0	58	0	156
11:45	12:00	6	0	10	16	0	0	0	0	0	0	68	11	79	7	55	0	62	0	157
12:00	12:15	13	0	3	16	0	0	0	0	1	0	63	14	77	4	57	0	61	1	154
12:15	12:30	5	0	6	11	0	0	0	0	0	0	78	11	89	4	53	0	57	0	157
12:30	12:45	2	0	6	8	0	0	0	0	1	0	52	8	60	6	75	0	81	1	149
12:45	13:00	6	0	5	11	0	0	0	0	0	0	76	14	90	4	71	0	75	0	176
13:00	13:15	9	0	5	14	0	0	0	0	1	0	58	11	69	7	64	0	71	1	154
13:15	13:30	4	0	1	5	0	0	0	0	1	0	82	7	89	3	70	0	73	1	167
15:00	15:15	11	0	8	19	0	0	0	0	1	0	57	18	75	5	49	0	54	1	148
15:15	15:30	9	0	12	21	0	0	0	0	0	0	53	10	63	6	64	0	70	0	154
15:30	15:45	12	0	12	24	0	0	0	0	1	0	46	18	64	11	77	0	88	1	176
15:45	16:00	6	0	5	11	0	0	0	0	1	0	65	17	82	7	72	0	79	1	172
16:00	16:15	15	0	9	24	0	0	0	0	0	0	68	21	89	14	79	0	93	0	206
16:15	16:30	12	0	4	16	0	0	0	0	0	0	65	17	82	10	65	0	75	0	173
16:30	16:45	11	0	8	19	0	0	0	0	0	0	70	17	87	10	81	0	91	0	197
16:45	17:00	11	0	7	18	0	0	0	0	0	0	77	12	89	13	90	0	103	0	210
17:00	17:15	13	0	14	27	0	0	0	0	0	0	67	14	81	11	83	0	94	0	202
17:15	17:30	3	0	15	18	0	0	0	0	0	0	80	13	93	16	84	0	100	0	211
17:30	17:45	9	0	12	21	0	0	0	0	0	0	75	25	100	6	89	0	95	0	216
17:45	18:00	7	0	9	16	0	0	0	0	0	0	59	6	65	9	79	0	88	0	169
Total:		228	0	232	460	0	0	0	0	12	0	2043	382	2425	227	1830	0	2057	12	4,942

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

FAIRMONT AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37566

Start Time: 07:00 **Device:** Miovision

Full Study Cyclist Volume

		FAIRMONT AVE			WELLINGTON ST			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	2	0	2	2
07:15	07:30	0	0	0	1	1	2	2
07:30	07:45	0	0	0	3	0	3	3
07:45	08:00	1	0	1	2	1	3	4
08:00	08:15	1	0	1	4	1	5	6
08:15	08:30	1	0	1	3	1	4	5
08:30	08:45	0	0	0	1	1	2	2
08:45	09:00	1	0	1	1	0	1	2
09:00	09:15	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0
09:30	09:45	0	0	0	1	0	1	1
09:45	10:00	0	0	0	1	0	1	1
11:30	11:45	0	0	0	0	1	1	1
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	1	0	1	1
12:15	12:30	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	1	1	1
12:45	13:00	0	0	0	1	2	3	3
13:00	13:15	0	0	0	1	2	3	3
13:15	13:30	0	0	0	0	2	2	2
15:00	15:15	0	2	2	1	2	3	5
15:15	15:30	0	0	0	1	2	3	3
15:30	15:45	0	0	0	0	3	3	3
15:45	16:00	0	0	0	0	1	1	1
16:00	16:15	0	0	0	0	6	6	6
16:15	16:30	1	0	1	1	1	2	3
16:30	16:45	0	0	0	1	0	1	1
16:45	17:00	0	0	0	0	1	1	1
17:00	17:15	1	0	1	1	2	3	4
17:15	17:30	0	0	0	1	5	6	6
17:30	17:45	2	0	2	2	2	4	6
17:45	18:00	0	0	0	0	4	4	4
Total		8	2	**10**	30	42	72	82

Transportation Services - Traffic Services

Turning Movement Count - Study Results

FAIRMONT AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37566

Start Time: 07:00 **Device:** Miovision

Full Study Pedestrian Volume

Time Period	FAIRMONT AVE NB Approach (E or W Crossing)	FAIRMONT AVE SB Approach (E or W Crossing)	FAIRMONT AVE Total	WELLINGTON ST EB Approach (N or S Crossing)	WELLINGTON ST WB Approach (N or S Crossing)	WELLINGTON ST Total	Grand Total
07:00 07:15	9	0	**9**	3	8	**11**	**20**
07:15 07:30	15	0	**15**	4	16	**20**	**35**
07:30 07:45	25	0	**25**	2	11	**13**	**38**
07:45 08:00	14	0	**14**	4	8	**12**	**26**
08:00 08:15	25	0	**25**	2	14	**16**	**41**
08:15 08:30	19	0	**19**	3	9	**12**	**31**
08:30 08:45	16	0	**16**	4	16	**20**	**36**
08:45 09:00	18	0	**18**	2	16	**18**	**36**
09:00 09:15	11	0	**11**	4	11	**15**	**26**
09:15 09:30	7	0	**7**	2	12	**14**	**21**
09:30 09:45	14	0	**14**	0	15	**15**	**29**
09:45 10:00	13	0	**13**	5	7	**12**	**25**
11:30 11:45	22	0	**22**	3	7	**10**	**32**
11:45 12:00	21	0	**21**	4	12	**16**	**37**
12:00 12:15	24	0	**24**	12	19	**31**	**55**
12:15 12:30	13	0	**13**	6	11	**17**	**30**
12:30 12:45	24	0	**24**	7	12	**19**	**43**
12:45 13:00	19	0	**19**	10	4	**14**	**33**
13:00 13:15	37	0	**37**	11	10	**21**	**58**
13:15 13:30	22	0	**22**	2	9	**11**	**33**
15:00 15:15	29	0	**29**	4	8	**12**	**41**
15:15 15:30	53	0	**53**	4	14	**18**	**71**
15:30 15:45	31	0	**31**	9	7	**16**	**47**
15:45 16:00	22	0	**22**	7	11	**18**	**40**
16:00 16:15	35	0	**35**	8	11	**19**	**54**
16:15 16:30	29	0	**29**	6	19	**25**	**54**
16:30 16:45	29	0	**29**	9	20	**29**	**58**
16:45 17:00	24	0	**24**	10	20	**30**	**54**
17:00 17:15	35	0	**35**	9	23	**32**	**67**
17:15 17:30	46	0	**46**	8	18	**26**	**72**
17:30 17:45	36	0	**36**	6	15	**21**	**57**
17:45 18:00	31	0	**31**	9	8	**17**	**48**
Total	768	0	**768**	179	401	**580**	**1348**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

FAIRMONT AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37566

Start Time: 07:00 **Device:** Miovision

Full Study Heavy Vehicles

Time Period		FAIRMONT AVE Northbound LT	ST	RT	N TOT	FAIRMONT AVE Southbound LT	ST	RT	S TOT	STR TOT	WELLINGTON ST Eastbound LT	ST	RT	E TOT	WELLINGTON ST Westbound LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	3	0	**3**	**7**	**7**
07:15	07:30	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	1	0	**1**	**3**	**3**
07:30	07:45	0	0	0	**0**	0	0	0	**0**	**0**	0	1	1	**2**	0	2	0	**2**	**4**	**4**
07:45	08:00	1	0	0	**1**	0	0	0	**0**	**1**	0	3	2	**5**	1	3	0	**4**	**9**	**10**
08:00	08:15	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**5**	0	2	0	**2**	**7**	**7**
08:15	08:30	1	0	1	**2**	0	0	0	**0**	**2**	0	3	0	**3**	0	2	0	**2**	**5**	**7**
08:30	08:45	1	0	0	**1**	0	0	0	**0**	**1**	0	1	0	**1**	0	4	0	**4**	**5**	**6**
08:45	09:00	0	0	1	**1**	0	0	0	**0**	**1**	0	5	1	**6**	2	2	0	**4**	**10**	**11**
09:00	09:15	0	0	0	**0**	0	0	0	**0**	**0**	0	2	1	**3**	0	4	0	**4**	**7**	**7**
09:15	09:30	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	3	0	**3**	**6**	**6**
09:30	09:45	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	0	0	**0**	**4**	**4**
09:45	10:00	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	0	0	**0**	**4**	**4**
11:30	11:45	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**5**	0	1	0	**1**	**6**	**6**
11:45	12:00	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	3	0	**3**	**5**	**5**
12:00	12:15	1	0	0	**1**	0	0	0	**0**	**1**	0	4	2	**6**	1	4	0	**5**	**11**	**12**
12:15	12:30	0	0	0	**0**	0	0	0	**0**	**0**	0	9	0	**9**	0	4	0	**4**	**13**	**13**
12:30	12:45	1	0	0	**1**	0	0	0	**0**	**1**	0	2	0	**2**	1	4	0	**5**	**7**	**8**
12:45	13:00	0	0	0	**0**	0	0	0	**0**	**0**	0	3	1	**4**	0	6	0	**6**	**10**	**10**
13:00	13:15	0	0	1	**1**	0	0	0	**0**	**1**	0	1	0	**1**	1	8	0	**9**	**10**	**11**
13:15	13:30	1	0	0	**1**	0	0	0	**0**	**1**	0	6	0	**6**	0	2	0	**2**	**8**	**9**
15:00	15:15	1	0	0	**1**	0	0	0	**0**	**1**	0	1	1	**2**	0	2	0	**2**	**4**	**5**
15:15	15:30	0	0	0	**0**	0	0	0	**0**	**0**	0	2	1	**3**	0	1	0	**1**	**4**	**4**
15:30	15:45	1	0	0	**1**	0	0	0	**0**	**1**	0	2	0	**2**	0	1	0	**1**	**3**	**4**
15:45	16:00	0	0	1	**1**	0	0	0	**0**	**1**	0	2	1	**3**	0	4	0	**4**	**7**	**8**
16:00	16:15	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	0	0	**0**	**2**	**2**
16:15	16:30	0	0	0	**0**	0	0	0	**0**	**0**	0	2	1	**3**	0	1	0	**1**	**4**	**4**
16:30	16:45	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	1	0	**1**	**2**	**2**
16:45	17:00	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	0	0	**0**	**3**	**3**
17:00	17:15	0	0	0	**0**	0	0	0	**0**	**0**	0	0	0	**0**	0	0	0	**0**	**0**	**0**
17:15	17:30	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	1	0	**1**	**3**	**3**
17:30	17:45	0	0	0	**0**	0	0	0	**0**	**0**	0	0	0	**0**	0	2	0	**2**	**2**	**2**
17:45	18:00	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	4	0	**4**	**6**	**6**
Total:	None	8	0	4	**12**	0	0	0	**0**	**12**	0	88	12	**100**	6	75	0	**81**	**181**	**193**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

FAIRMONT AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37566

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute U-Turn Total

Time Period		FAIRMONT AVE Northbound U-Turn Total	FAIRMONT AVE Southbound U-Turn Total	WELLINGTON ST Eastbound U-Turn Total	WELLINGTON ST Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		0	0	0	0	0

Transportation Services - Traffic Services

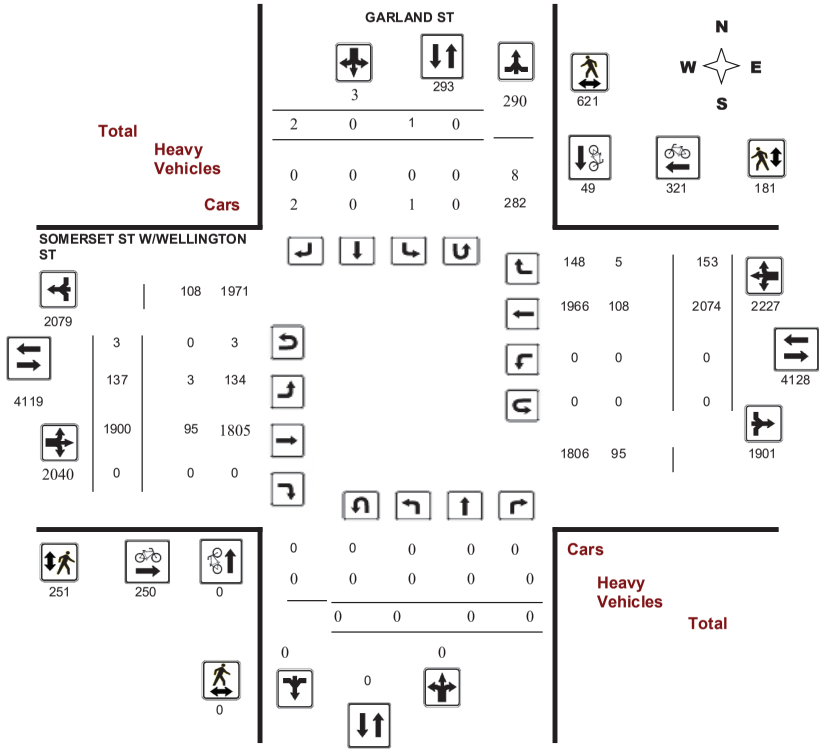
Turning Movement Count - Study Results

GARLAND ST @ SOMERSET ST W/WELLINGTON ST

Survey Date: Wednesday, August 12, 2015 **WO No:** 35244

Start Time: 07:00 **Device:** Miovision

Full Study Diagram



Transportation Services - Traffic Services

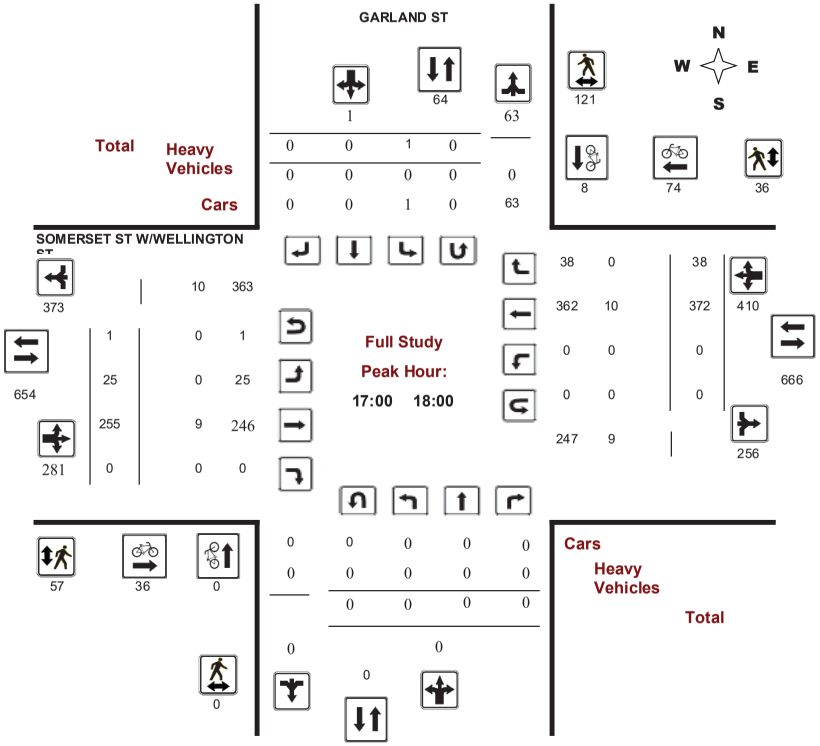
Turning Movement Count - Study Results

GARLAND ST @ SOMERSET ST W/WELLINGTON ST

Survey Date: Wednesday, August 12, 2015 **WO No:** 35244

Start Time: 07:00 **Device:** Miovision

Full Study Peak Hour Diagram



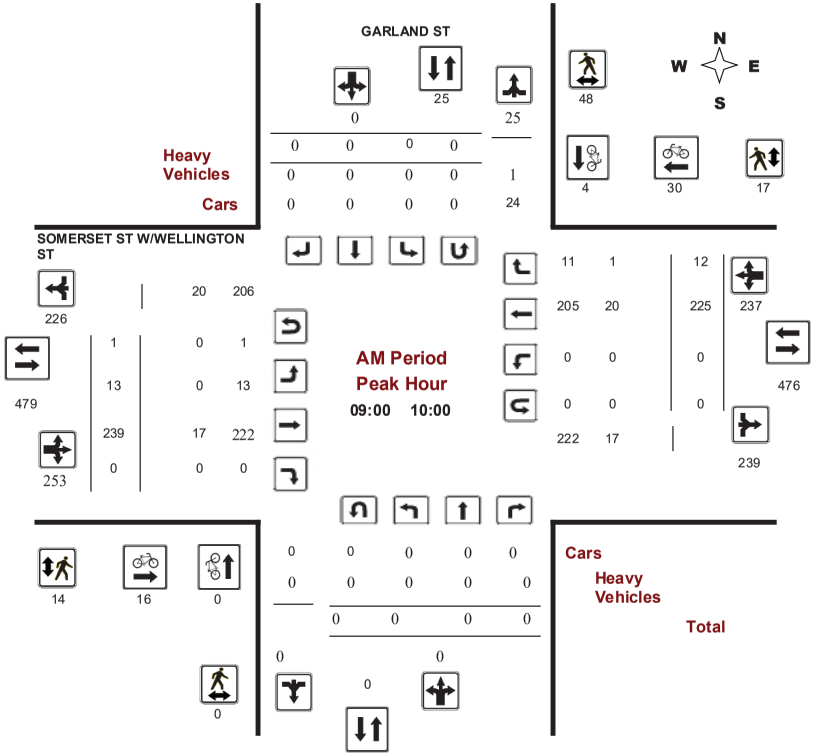
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

GARLAND ST @ SOMERSET ST W/WELLINGTON ST

Survey Date: Wednesday, August 12, 2015 **WO No:** 35244

Start Time: 07:00 **Device:** Miovision



Comments

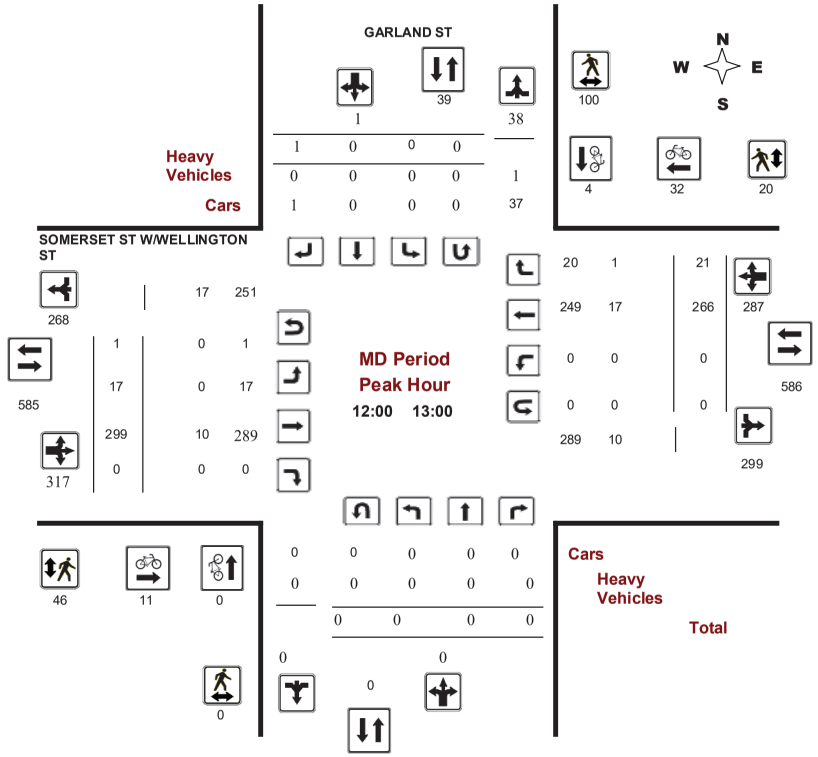
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

GARLAND ST @ SOMERSET ST W/WELLINGTON ST

Survey Date: Wednesday, August 12, 2015 **WO No:** 35244

Start Time: 07:00 **Device:** Miovision



Comments

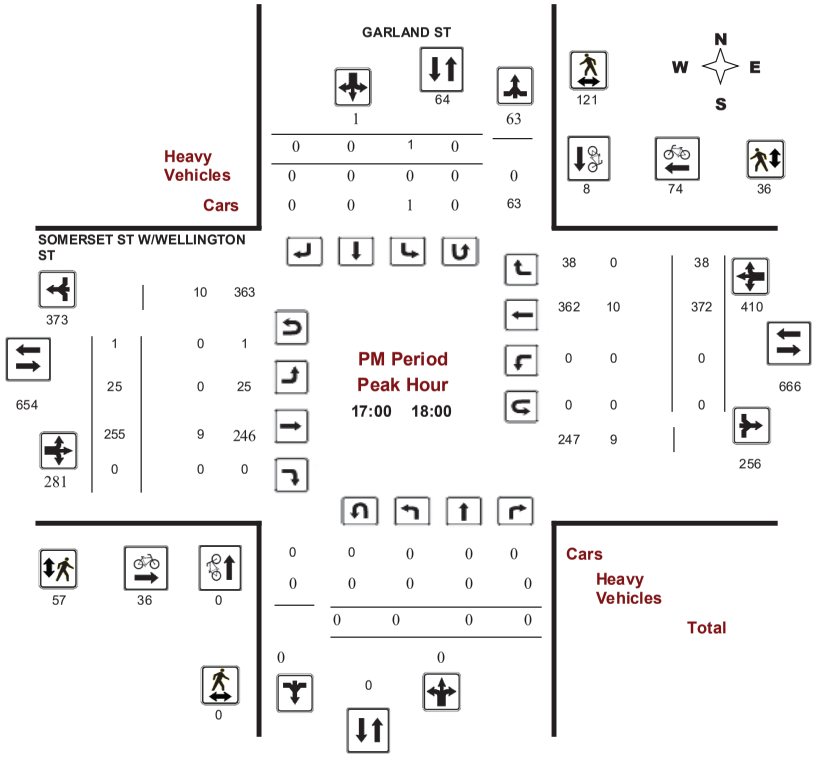
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

GARLAND ST @ SOMERSET ST W/WELLINGTON ST

Survey Date: Wednesday, August 12, 2015 **WO No:** 35244

Start Time: 07:00 **Device:** Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

GARLAND ST @ SOMERSET ST W/WELLINGTON ST

Survey Date: Wednesday, August 12, 2015 **WO No:** 35244

Start Time: 07:00 **Device:** Miovision

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, August 12, 2015

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 3 Westbound: 0

AADT Factor .90

	GARLAND ST									SOMERSET ST W/WELLINGTON ST									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	0	0	0	**0**	0	0	0	**0**	**0**	13	162	0	**175**	0	143	4	**147**	**322**	**322**
08:00 09:00	0	0	0	**0**	0	0	0	**0**	**0**	19	248	0	**267**	0	186	4	**190**	**457**	**457**
09:00 10:00	0	0	0	**0**	0	0	0	**0**	**0**	13	239	0	**252**	0	225	12	**237**	**489**	**489**
11:30 12:30	0	0	0	**0**	0	0	1	**1**	**1**	17	248	0	**265**	0	279	22	**301**	**566**	**567**
12:30 13:30	0	0	0	**0**	0	0	0	**0**	**0**	13	293	0	**306**	0	274	16	**290**	**596**	**596**
15:00 16:00	0	0	0	**0**	0	0	0	**0**	**0**	19	223	0	**242**	0	264	20	**284**	**526**	**526**
16:00 17:00	0	0	0	**0**	0	0	1	**1**	**1**	18	232	0	**250**	0	331	37	**368**	**618**	**619**
17:00 18:00	0	0	0	**0**	1	0	0	**1**	**1**	25	255	0	**280**	0	372	38	**410**	**690**	**691**
Sub Total	0	0	0	**0**	1	0	2	**3**	**3**	137	1900	0	**2037**	0	2074	153	**2227**	**4264**	**4267**
U Turns				**0**				**0**	**0**				**3**				**0**	**3**	**3**
Total	0	0	0	**0**	1	0	2	**3**	**3**	137	1900	0	**2040**	0	2074	153	**2227**	**4267**	**4270**
EQ 12Hr	0	0	0	**0**	1	0	3	**4**	**4**	190	2641	0	**2836**	0	2883	213	**3096**	**5931**	**5935**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													**1.39**						
AVG 12Hr	0	0	0	**0**	1	0	2	**4**	**4**	162	2240	0	**2405**	0	2445	180	**2626**	**5338**	**5342**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													**0.9**						
AVG 24Hr	0	0	0	**0**	2	0	3	**5**	**5**	212	2935	0	**3151**	0	3203	236	**3440**	**6591**	**6596**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													**1.31**						

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

GARLAND ST @ SOMERSET ST W/WELLINGTON ST

Survey Date: Wednesday, August 12, 2015 **WO No:** 35244

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute Increments

		GARLAND ST									SOMERSET ST W/WELLINGTON ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
09:00	09:15	0	0	0	0	0	0	0	0	0	3	55	0	58	0	49	3	52	0	110
09:15	09:30	0	0	0	0	0	0	0	0	0	5	57	0	62	0	37	2	39	0	101
09:30	09:45	0	0	0	0	0	0	0	0	0	1	61	0	62	0	67	3	70	0	132
09:45	10:00	0	0	0	0	0	0	0	0	0	4	66	0	71	0	72	4	76	0	147
11:30	11:45	0	0	0	0	0	0	0	0	0	4	62	0	66	0	74	6	80	0	146
11:45	12:00	0	0	0	0	0	0	0	0	0	4	52	0	56	0	71	5	76	0	132
12:00	12:15	0	0	0	0	0	0	1	1	0	4	62	0	66	0	76	5	81	0	148
12:15	12:30	0	0	0	0	0	0	0	0	0	5	72	0	78	0	58	6	64	0	142
12:30	12:45	0	0	0	0	0	0	0	0	0	2	82	0	84	0	64	4	68	0	152
12:45	13:00	0	0	0	0	0	0	0	0	0	6	83	0	89	0	68	6	74	0	163
13:00	13:15	0	0	0	0	0	0	0	0	0	4	67	0	71	0	68	2	70	0	141
13:15	13:30	0	0	0	0	0	0	0	0	0	1	61	0	62	0	74	4	78	0	140
15:00	15:15	0	0	0	0	0	0	0	0	0	2	58	0	60	0	67	5	72	0	132
15:15	15:30	0	0	0	0	0	0	0	0	0	5	62	0	67	0	61	6	67	0	134
15:30	15:45	0	0	0	0	0	0	0	0	0	7	52	0	59	0	59	5	64	0	123
15:45	16:00	0	0	0	0	0	0	0	0	0	5	51	0	56	0	77	4	81	0	137
16:00	16:15	0	0	0	0	0	0	1	1	0	3	72	0	75	0	92	9	101	0	177
16:15	16:30	0	0	0	0	0	0	0	0	0	8	61	0	69	0	74	9	83	0	152
16:30	16:45	0	0	0	0	0	0	0	0	0	3	50	0	53	0	84	8	92	0	145
16:45	17:00	0	0	0	0	0	0	0	0	0	4	49	0	53	0	81	11	92	0	145
17:00	17:15	0	0	0	0	0	0	0	0	0	7	60	0	68	0	95	10	105	0	173
17:15	17:30	0	0	0	0	0	0	0	0	0	7	72	0	79	0	100	11	111	0	190
17:30	17:45	0	0	0	0	1	0	0	1	0	6	59	0	65	0	86	11	97	0	163
17:45	18:00	0	0	0	0	0	0	0	0	0	5	64	0	69	0	91	6	97	0	166
08:45	09:00	0	0	0	0	0	0	0	0	0	4	58	0	62	0	51	2	53	0	115
07:00	07:15	0	0	0	0	0	0	0	0	0	2	31	0	33	0	37	0	37	0	70
07:15	07:30	0	0	0	0	0	0	0	0	0	2	41	0	43	0	36	0	36	0	79
07:30	07:45	0	0	0	0	0	0	0	0	0	6	44	0	50	0	35	3	38	0	88
07:45	08:00	0	0	0	0	0	0	0	0	0	3	46	0	49	0	35	1	36	0	85
08:00	08:15	0	0	0	0	0	0	0	0	0	4	64	0	68	0	42	1	43	0	111
08:15	08:30	0	0	0	0	0	0	0	0	0	5	59	0	64	0	44	1	45	0	109
08:30	08:45	0	0	0	0	0	0	0	0	0	6	67	0	73	0	49	0	49	0	122
Total:		0	0	0	0	1	0	2	3	0	137	1900	0	2040	0	2074	153	2227	0	4,270

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

GARLAND ST @ SOMERSET ST W/WELLINGTON ST

Survey Date: Wednesday, August 12, 2015 **WO No:** 35244

Start Time: 07:00 **Device:** Miovision

Full Study Cyclist Volume

Time Period		GARLAND ST			SOMERSET ST W/WELLINGTON ST			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
09:00	09:15	0	2	2	6	8	14	16
09:15	09:30	0	0	0	4	11	15	15
09:30	09:45	0	1	1	2	5	7	8
09:45	10:00	0	1	1	4	6	10	11
11:30	11:45	0	0	0	5	4	9	9
11:45	12:00	0	0	0	5	3	8	8
12:00	12:15	0	0	0	3	6	9	9
12:15	12:30	0	0	0	5	11	16	16
12:30	12:45	0	1	1	1	6	7	8
12:45	13:00	0	3	3	2	9	11	14
13:00	13:15	0	0	0	3	5	8	8
13:15	13:30	0	0	0	8	11	19	19
15:00	15:15	0	2	2	10	8	18	20
15:15	15:30	0	1	1	7	9	16	17
15:30	15:45	0	3	3	8	10	18	21
15:45	16:00	0	3	3	4	13	17	20
16:00	16:15	0	0	0	10	15	25	25
16:15	16:30	0	3	3	9	8	17	20
16:30	16:45	0	2	2	13	19	32	34
16:45	17:00	0	2	2	11	31	42	44
17:00	17:15	0	0	0	9	22	31	31
17:15	17:30	0	3	3	14	18	32	35
17:30	17:45	0	4	4	3	23	26	30
17:45	18:00	0	1	1	10	11	21	22
08:45	09:00	0	2	2	14	8	22	24
07:00	07:15	0	0	0	1	5	6	6
07:15	07:30	0	1	1	10	1	11	12
07:30	07:45	0	0	0	9	5	14	14
07:45	08:00	0	2	2	7	8	15	17
08:00	08:15	0	1	1	13	7	20	21
08:15	08:30	0	4	4	18	5	23	27
08:30	08:45	0	7	7	22	10	32	39
Total		0	49	**49**	250	321	571	620

Transportation Services - Traffic Services

Turning Movement Count - Study Results

GARLAND ST @ SOMERSET ST W/WELLINGTON ST

Survey Date: Wednesday, August 12, 2015 **WO No:** 35244

Start Time: 07:00 **Device:** Miovision

Full Study Pedestrian Volume

Time Period	GARLAND ST			SOMERSET ST W/WELLINGTON ST			
	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
09:00 09:15	0	9	**9**	1	3	**4**	**13**
09:15 09:30	0	13	**13**	1	3	**4**	**17**
09:30 09:45	0	9	**9**	5	2	**7**	**16**
09:45 10:00	0	17	**17**	7	9	**16**	**33**
11:30 11:45	0	18	**18**	7	8	**15**	**33**
11:45 12:00	0	19	**19**	9	2	**11**	**30**
12:00 12:15	0	20	**20**	11	7	**18**	**38**
12:15 12:30	0	30	**30**	19	6	**25**	**55**
12:30 12:45	0	17	**17**	9	4	**13**	**30**
12:45 13:00	0	33	**33**	7	3	**10**	**43**
13:00 13:15	0	25	**25**	7	6	**13**	**38**
13:15 13:30	0	23	**23**	4	7	**11**	**34**
15:00 15:15	0	11	**11**	4	4	**8**	**19**
15:15 15:30	0	28	**28**	8	2	**10**	**38**
15:30 15:45	0	18	**18**	8	4	**12**	**30**
15:45 16:00	0	19	**19**	7	11	**18**	**37**
16:00 16:15	0	17	**17**	13	6	**19**	**36**
16:15 16:30	0	33	**33**	11	10	**21**	**54**
16:30 16:45	0	42	**42**	19	8	**27**	**69**
16:45 17:00	0	34	**34**	12	8	**20**	**54**
17:00 17:15	0	38	**38**	11	11	**22**	**60**
17:15 17:30	0	30	**30**	7	10	**17**	**47**
17:30 17:45	0	25	**25**	19	8	**27**	**52**
17:45 18:00	0	28	**28**	20	7	**27**	**55**
08:45 09:00	0	14	**14**	4	5	**9**	**23**
07:00 07:15	0	2	**2**	0	1	**1**	**3**
07:15 07:30	0	3	**3**	0	2	**2**	**5**
07:30 07:45	0	3	**3**	6	3	**9**	**12**
07:45 08:00	0	6	**6**	2	2	**4**	**10**
08:00 08:15	0	16	**16**	6	6	**12**	**28**
08:15 08:30	0	11	**11**	4	6	**10**	**21**
08:30 08:45	0	10	**10**	3	7	**10**	**20**
Total	0	621	**621**	251	181	**432**	**1053**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

GARLAND ST @ SOMERSET ST W/WELLINGTON ST

Survey Date: Wednesday, August 12, 2015 **WO No:** 35244

Start Time: 07:00 **Device:** Miovision

Full Study Heavy Vehicles

		GARLAND ST									SOMERSET ST W/WELLINGTON ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
09:00	09:15	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**5**	0	4	0	**4**	**9**	**9**
09:15	09:30	0	0	0	**0**	0	0	0	**0**	**0**	0	7	0	**7**	0	3	0	**3**	**10**	**10**
09:30	09:45	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	10	0	**10**	**11**	**11**
09:45	10:00	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	3	1	**4**	**8**	**8**
11:30	11:45	0	0	0	**0**	0	0	0	**0**	**0**	1	5	0	**6**	0	3	0	**3**	**9**	**9**
11:45	12:00	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	4	0	**4**	**7**	**7**
12:00	12:15	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	3	1	**4**	**8**	**8**
12:15	12:30	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	5	0	**5**	**6**	**6**
12:30	12:45	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	4	0	**4**	**7**	**7**
12:45	13:00	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	5	0	**5**	**7**	**7**
13:00	13:15	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	3	0	**3**	**4**	**4**
13:15	13:30	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	3	1	**4**	**8**	**8**
15:00	15:15	0	0	0	**0**	0	0	0	**0**	**0**	1	2	0	**3**	0	2	0	**2**	**5**	**5**
15:15	15:30	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	2	0	**2**	**4**	**4**
15:30	15:45	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	3	0	**3**	**6**	**6**
15:45	16:00	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	2	0	**2**	**4**	**4**
16:00	16:15	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	1	0	**1**	**3**	**3**
16:15	16:30	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	3	0	**3**	**5**	**5**
16:30	16:45	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	3	0	**3**	**5**	**5**
16:45	17:00	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	1	0	**1**	**3**	**3**
17:00	17:15	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	7	0	**7**	**10**	**10**
17:15	17:30	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	1	0	**1**	**4**	**4**
17:30	17:45	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	0	0	**0**	**1**	**1**
17:45	18:00	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	2	0	**2**	**4**	**4**
08:45	09:00	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	5	0	**5**	**9**	**9**
07:00	07:15	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	5	0	**5**	**8**	**8**
07:15	07:30	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	2	0	**2**	**6**	**6**
07:30	07:45	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	3	1	**4**	**8**	**8**
07:45	08:00	0	0	0	**0**	0	0	0	**0**	**0**	1	3	0	**4**	0	1	0	**1**	**5**	**5**
08:00	08:15	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	5	1	**6**	**9**	**9**
08:15	08:30	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**5**	0	4	0	**4**	**9**	**9**
08:30	08:45	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	6	0	**6**	**9**	**9**
Total:	None	0	0	0	**0**	0	0	0	**0**	**0**	3	95	0	**98**	0	108	5	**113**	**211**	**211**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

GARLAND ST @ SOMERSET ST W/WELLINGTON ST

Survey Date: Wednesday, August 12, 2015 **WO No:** 35244

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute U-Turn Total

		GARLAND ST	SOMERSET ST W/WELLINGTON ST			
Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	1	0	1
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	1	0	1
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	1	0	1
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
08:45	09:00	0	0	0	0	0
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
Total		0	0	3	0	3

Transportation Services - Traffic Services

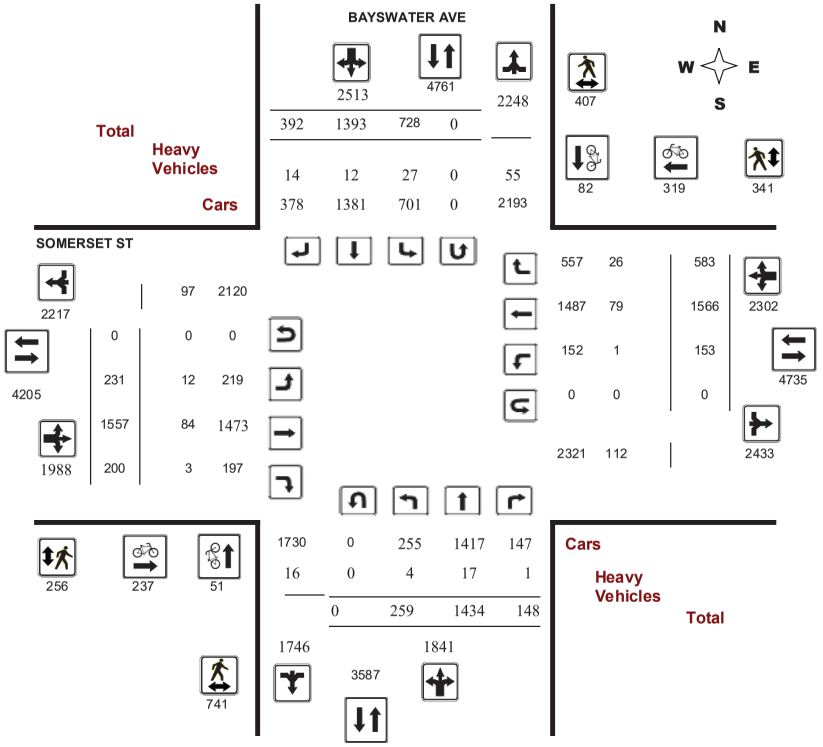
Turning Movement Count - Study Results

BAYSWATER AVE @ SOMERSET ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36276

Start Time: 07:00 **Device:** Miovision

Full Study Diagram



Transportation Services - Traffic Services

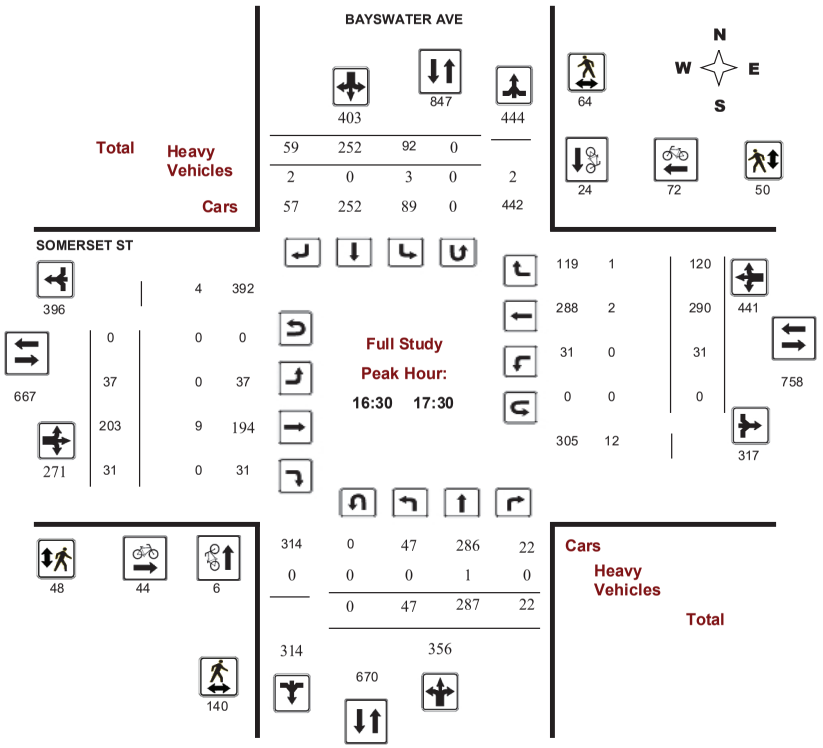
Turning Movement Count - Study Results

BAYSWATER AVE @ SOMERSET ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36276

Start Time: 07:00 **Device:** Miovision

Full Study Peak Hour Diagram



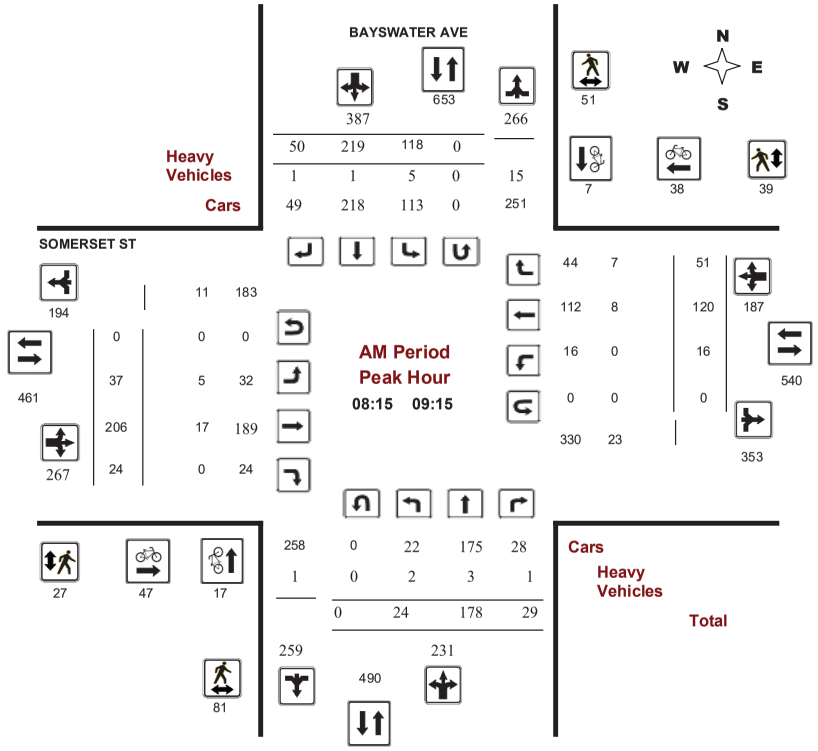
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BAYSWATER AVE @ SOMERSET ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36276

Start Time: 07:00 **Device:** Miovision



Comments

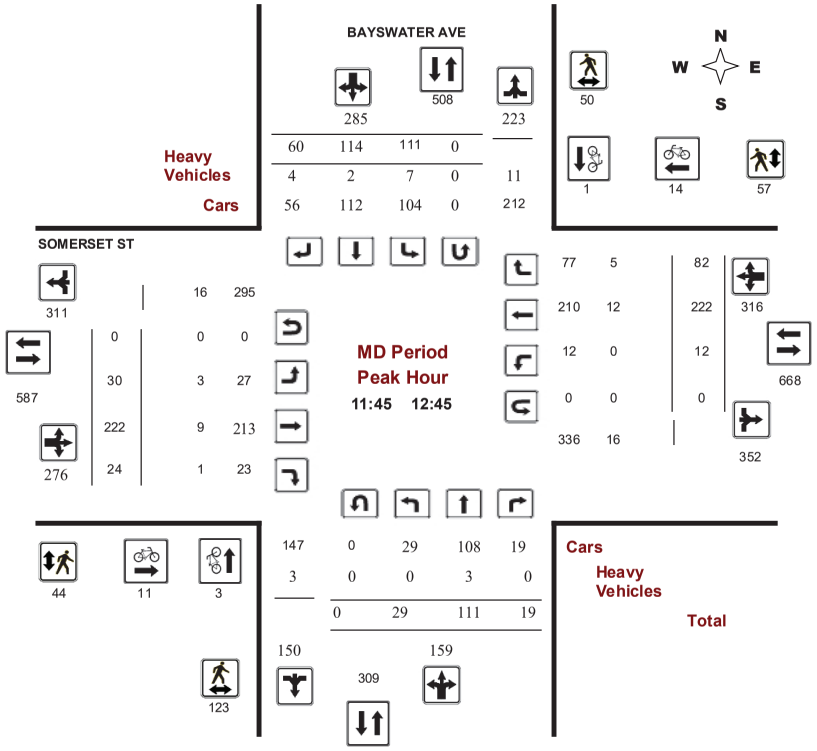
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BAYSWATER AVE @ SOMERSET ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36276

Start Time: 07:00 **Device:** Miovision



Comments

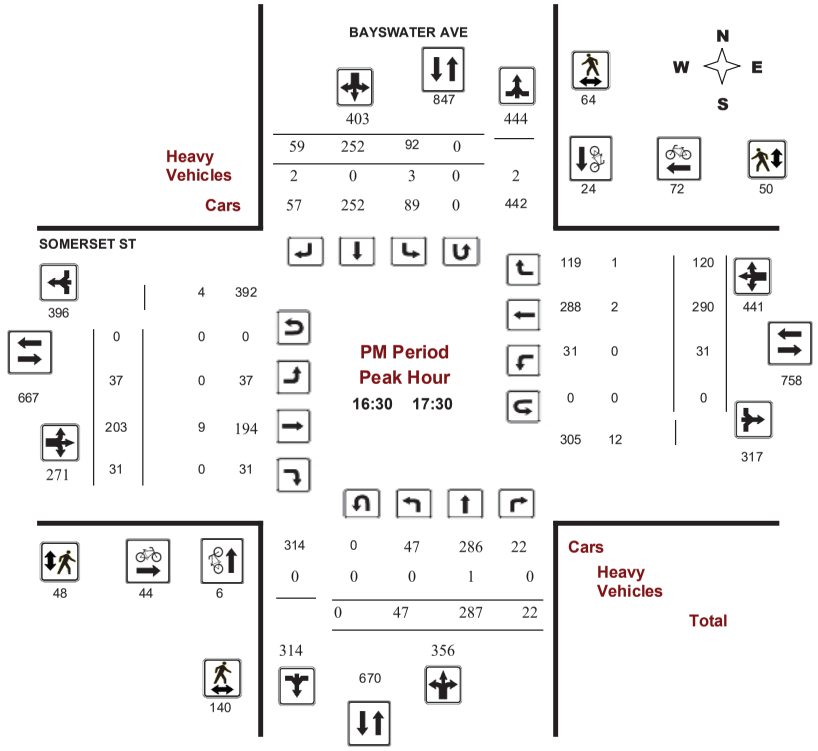
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BAYSWATER AVE @ SOMERSET ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36276

Start Time: 07:00 **Device:** Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BAYSWATER AVE @ SOMERSET ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36276

Start Time: 07:00 **Device:** Miovision

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, September 07, 2016

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor 1.00

	BAYSWATER AVE								SOMERSET ST									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	22	99	14	**135**	70	198	34	**302**	**437**	22	150	17	**189**	2	89	33	**124**	**313**	**750**
08:00 09:00	23	168	26	**217**	120	217	45	**382**	**599**	45	201	30	**276**	16	114	54	**184**	**460**	**1059**
09:00 10:00	23	106	23	**152**	88	152	40	**280**	**432**	24	184	30	**238**	12	151	44	**207**	**445**	**877**
11:30 12:30	31	101	16	**148**	112	107	61	**280**	**428**	22	221	24	**267**	18	233	75	**326**	**593**	**1021**
12:30 13:30	34	93	11	**138**	84	112	52	**248**	**386**	30	206	21	**257**	17	223	71	**311**	**568**	**954**
15:00 16:00	34	315	16	**365**	85	180	54	**319**	**684**	25	182	20	**227**	21	216	94	**331**	**558**	**1242**
16:00 17:00	49	328	16	**393**	97	219	48	**364**	**757**	32	222	33	**287**	24	260	111	**395**	**682**	**1439**
17:00 18:00	43	224	26	**293**	72	208	58	**338**	**631**	31	191	25	**247**	43	280	101	**424**	**671**	**1302**
Sub Total	259	1434	148	**1841**	728	1393	392	**2513**	**4354**	231	1557	200	**1988**	153	1566	583	**2302**	**4290**	**8644**
U Turns				**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total	259	1434	148	**1841**	728	1393	392	**2513**	**4354**	231	1557	200	**1988**	153	1566	583	**2302**	**4290**	**8644**
EQ 12Hr	360	1993	206	**2559**	1012	1936	545	**3493**	**6052**	321	2164	278	**2763**	213	2177	810	**3200**	**5963**	**12015**

Note: These values are calculated by multiplying the totals by the appropriate expansion factor. **1.39**

AVG 12Hr	339	1879	194	**2412**	954	1825	514	**3292**	**6052**	303	2040	262	**2604**	200	2051	764	**3016**	**5963**	**12015**

Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **1**

AVG 24Hr	444	2461	254	**3159**	1249	2391	673	**4313**	**7472**	396	2672	343	**3412**	263	2687	1000	**3950**	**7362**	**14834**

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. **1.31**

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BAYSWATER AVE @ SOMERSET ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36276

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute Increments

		BAYSWATER AVE									SOMERSET ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	6	12	2	20	13	42	4	59	0	4	28	4	36	0	23	6	29	0	144
07:15	07:30	4	23	5	32	15	45	7	67	1	6	23	1	30	1	20	5	26	1	155
07:30	07:45	5	27	1	33	16	62	10	88	2	5	41	4	50	1	22	12	35	2	206
07:45	08:00	7	37	6	50	26	49	13	88	1	7	58	8	73	0	24	10	34	1	245
08:00	08:15	4	30	4	38	27	49	6	82	5	15	43	10	68	4	31	14	49	5	237
08:15	08:30	9	42	7	58	30	55	12	97	4	13	51	10	74	3	19	12	34	4	263
08:30	08:45	6	49	9	64	27	50	10	87	3	9	60	4	73	5	32	16	53	3	277
08:45	09:00	4	47	6	57	36	63	17	116	1	8	47	6	61	4	32	12	48	1	282
09:00	09:15	5	40	7	52	25	51	11	87	5	7	48	4	59	4	37	11	52	5	250
09:15	09:30	3	18	5	26	25	40	11	76	5	6	40	6	52	2	32	11	45	5	199
09:30	09:45	7	22	5	34	22	32	11	65	3	7	43	15	65	2	34	13	49	3	213
09:45	10:00	8	26	6	40	16	29	7	52	1	4	53	5	62	4	48	9	61	1	215
11:30	11:45	6	19	2	27	21	27	16	64	3	2	49	5	56	9	60	13	82	3	229
11:45	12:00	12	29	5	46	29	26	13	68	6	4	63	6	73	5	55	21	81	6	268
12:00	12:15	7	23	6	36	34	37	17	88	4	9	53	11	73	2	58	22	82	4	279
12:15	12:30	6	30	3	39	28	17	15	60	3	7	56	2	65	2	60	19	81	3	245
12:30	12:45	4	29	5	38	20	34	15	69	3	10	50	5	65	3	49	20	72	3	244
12:45	13:00	14	22	4	40	24	24	15	63	3	8	59	5	72	4	59	19	82	3	257
13:00	13:15	9	25	1	35	21	22	13	56	4	7	48	4	59	5	59	20	84	4	234
13:15	13:30	7	17	1	25	19	32	9	60	2	5	49	7	61	5	56	12	73	2	219
15:00	15:15	3	64	10	77	20	43	16	79	2	5	42	4	51	7	50	22	79	2	286
15:15	15:30	10	63	3	76	28	50	10	88	1	4	49	7	60	5	58	22	85	1	309
15:30	15:45	14	88	2	104	22	39	13	74	4	9	45	2	56	4	48	25	77	4	311
15:45	16:00	7	100	1	108	15	48	15	78	0	7	46	7	60	5	60	25	90	0	336
16:00	16:15	11	83	5	99	22	58	14	94	0	8	58	12	78	6	61	31	98	0	369
16:15	16:30	15	84	4	103	24	47	8	79	2	4	53	5	62	6	60	20	86	2	330
16:30	16:45	9	80	3	92	31	62	12	105	2	9	60	6	75	2	67	26	95	2	367
16:45	17:00	14	81	4	99	20	52	14	86	0	11	51	10	72	10	72	34	116	0	373
17:00	17:15	9	66	8	83	21	81	15	117	2	8	41	7	56	13	69	35	117	2	373
17:15	17:30	15	60	7	82	20	57	18	95	2	9	51	8	68	6	82	25	113	2	358
17:30	17:45	11	58	7	76	12	38	14	64	0	10	48	3	61	17	61	21	99	0	300
17:45	18:00	8	40	4	52	19	32	11	62	1	4	51	7	62	7	68	20	95	1	271
Total:		259	1434	148	1841	728	1393	392	2513	75	231	1557	200	1988	153	1566	583	2302	75	8,644

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BAYSWATER AVE @ SOMERSET ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36276

Start Time: 07:00 **Device:** Miovision

Full Study Cyclist Volume

		BAYSWATER AVE			SOMERSET ST			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	2	1	3	8	4	12	15
07:15	07:30	2	3	5	6	3	9	14
07:30	07:45	5	2	7	8	11	19	26
07:45	08:00	1	4	5	19	5	24	29
08:00	08:15	5	2	7	18	6	24	31
08:15	08:30	6	0	6	23	9	32	38
08:30	08:45	5	2	7	16	12	28	35
08:45	09:00	4	2	6	5	12	17	23
09:00	09:15	2	3	5	3	5	8	13
09:15	09:30	1	1	2	4	5	9	11
09:30	09:45	0	2	2	1	11	12	14
09:45	10:00	0	1	1	3	10	13	14
11:30	11:45	0	1	1	5	3	8	9
11:45	12:00	1	0	1	5	4	9	10
12:00	12:15	0	0	0	1	2	3	3
12:15	12:30	1	0	1	3	3	6	7
12:30	12:45	1	1	2	2	5	7	9
12:45	13:00	0	3	3	3	8	11	14
13:00	13:15	2	1	3	3	9	12	15
13:15	13:30	0	0	0	2	6	8	8
15:00	15:15	0	2	2	5	14	19	21
15:15	15:30	1	2	3	6	15	21	24
15:30	15:45	1	0	1	4	7	11	12
15:45	16:00	0	3	3	12	11	23	26
16:00	16:15	2	5	7	4	11	15	22
16:15	16:30	0	3	3	5	14	19	22
16:30	16:45	0	4	4	10	20	30	34
16:45	17:00	1	13	14	8	18	26	40
17:00	17:15	4	2	6	13	18	31	37
17:15	17:30	1	5	6	13	16	29	35
17:30	17:45	1	9	10	8	22	30	40
17:45	18:00	2	5	7	11	20	31	38
Total		51	82	**133**	237	319	556	689

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BAYSWATER AVE @ SOMERSET ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36276

Start Time: 07:00 **Device:** Miovision

Full Study Pedestrian Volume

	BAYSWATER AVE			SOMERSET ST			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	8	2	**10**	2	3	**5**	**15**
07:15 07:30	9	10	**19**	6	6	**12**	**31**
07:30 07:45	7	6	**13**	2	7	**9**	**22**
07:45 08:00	21	11	**32**	10	4	**14**	**46**
08:00 08:15	24	18	**42**	12	12	**24**	**66**
08:15 08:30	25	28	**53**	13	14	**27**	**80**
08:30 08:45	22	5	**27**	4	9	**13**	**40**
08:45 09:00	17	14	**31**	5	7	**12**	**43**
09:00 09:15	17	4	**21**	5	9	**14**	**35**
09:15 09:30	6	8	**14**	8	5	**13**	**27**
09:30 09:45	13	10	**23**	1	12	**13**	**36**
09:45 10:00	12	4	**16**	4	11	**15**	**31**
11:30 11:45	16	13	**29**	6	8	**14**	**43**
11:45 12:00	27	11	**38**	10	10	**20**	**58**
12:00 12:15	20	14	**34**	10	9	**19**	**53**
12:15 12:30	29	13	**42**	7	10	**17**	**59**
12:30 12:45	47	12	**59**	17	28	**45**	**104**
12:45 13:00	22	12	**34**	4	14	**18**	**52**
13:00 13:15	15	9	**24**	2	15	**17**	**41**
13:15 13:30	36	17	**53**	6	10	**16**	**69**
15:00 15:15	44	13	**57**	18	8	**26**	**83**
15:15 15:30	18	10	**28**	7	9	**16**	**44**
15:30 15:45	13	9	**22**	5	14	**19**	**41**
15:45 16:00	31	11	**42**	8	8	**16**	**58**
16:00 16:15	21	11	**32**	7	11	**18**	**50**
16:15 16:30	30	20	**50**	8	17	**25**	**75**
16:30 16:45	33	7	**40**	9	15	**24**	**64**
16:45 17:00	23	16	**39**	10	3	**13**	**52**
17:00 17:15	35	25	**60**	9	18	**27**	**87**
17:15 17:30	49	16	**65**	20	14	**34**	**99**
17:30 17:45	31	20	**51**	13	12	**25**	**76**
17:45 18:00	20	28	**48**	8	9	**17**	**65**
Total	741	407	**1148**	256	341	**597**	**1745**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BAYSWATER AVE @ SOMERSET ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36276

Start Time: 07:00 **Device:** Miovision

Full Study Heavy Vehicles

		BAYSWATER AVE									SOMERSET ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	3	0	**3**	**4**	**4**
07:15	07:30	0	0	0	**0**	1	0	0	**1**	**1**	1	3	0	**4**	0	2	0	**2**	**6**	**7**
07:30	07:45	0	0	0	**0**	0	2	0	**2**	**2**	0	2	0	**2**	0	6	1	**7**	**9**	**11**
07:45	08:00	0	1	0	**1**	0	0	0	**0**	**1**	0	6	0	**6**	0	2	1	**3**	**9**	**10**
08:00	08:15	0	2	0	**2**	2	1	0	**3**	**5**	0	2	0	**2**	0	5	1	**6**	**8**	**13**
08:15	08:30	2	1	0	**3**	0	1	0	**1**	**4**	2	3	0	**5**	0	2	2	**4**	**9**	**13**
08:30	08:45	0	1	0	**1**	2	0	0	**2**	**3**	1	6	0	**7**	0	2	4	**6**	**13**	**16**
08:45	09:00	0	0	0	**0**	1	0	0	**1**	**1**	2	3	0	**5**	0	2	1	**3**	**8**	**9**
09:00	09:15	0	1	1	**2**	2	0	1	**3**	**5**	0	5	0	**5**	0	2	0	**2**	**7**	**12**
09:15	09:30	0	0	0	**0**	4	0	1	**5**	**5**	0	5	0	**5**	0	3	1	**4**	**9**	**14**
09:30	09:45	0	2	0	**2**	1	0	0	**1**	**3**	0	3	0	**3**	0	6	1	**7**	**10**	**13**
09:45	10:00	0	0	0	**0**	0	0	1	**1**	**1**	0	2	0	**2**	0	1	1	**2**	**4**	**5**
11:30	11:45	0	1	0	**1**	1	1	0	**2**	**3**	0	2	0	**2**	0	2	1	**3**	**5**	**8**
11:45	12:00	0	1	0	**1**	4	0	1	**5**	**6**	0	3	0	**3**	0	3	2	**5**	**8**	**14**
12:00	12:15	0	1	0	**1**	2	1	0	**3**	**4**	1	2	0	**3**	0	5	2	**7**	**10**	**14**
12:15	12:30	0	0	0	**0**	1	1	1	**3**	**3**	0	3	0	**3**	0	0	0	**0**	**3**	**6**
12:30	12:45	0	1	0	**1**	0	0	2	**2**	**3**	2	1	1	**4**	0	4	1	**5**	**9**	**12**
12:45	13:00	0	0	0	**0**	0	2	1	**3**	**3**	0	4	0	**4**	0	4	1	**5**	**9**	**12**
13:00	13:15	0	0	0	**0**	1	1	2	**4**	**4**	0	2	0	**2**	0	5	1	**6**	**8**	**12**
13:15	13:30	1	0	0	**1**	0	0	1	**1**	**2**	0	1	1	**2**	0	3	1	**4**	**6**	**8**
15:00	15:15	0	1	0	**1**	0	1	0	**1**	**2**	0	3	0	**3**	0	2	1	**3**	**6**	**8**
15:15	15:30	0	1	0	**1**	0	0	0	**0**	**1**	0	1	1	**2**	0	0	1	**1**	**3**	**4**
15:30	15:45	1	1	0	**2**	1	0	1	**2**	**4**	1	2	0	**3**	1	3	0	**4**	**7**	**11**
15:45	16:00	0	0	0	**0**	0	0	0	**0**	**0**	2	2	0	**4**	0	1	0	**1**	**5**	**5**
16:00	16:15	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	1	1	**2**	**6**	**6**
16:15	16:30	0	0	0	**0**	1	1	0	**2**	**2**	0	2	0	**2**	0	1	0	**1**	**3**	**5**
16:30	16:45	0	0	0	**0**	2	0	0	**2**	**2**	0	2	0	**2**	0	1	0	**1**	**3**	**5**
16:45	17:00	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	0	0	**0**	**4**	**4**
17:00	17:15	0	1	0	**1**	0	0	1	**1**	**2**	0	1	0	**1**	0	0	1	**1**	**2**	**4**
17:15	17:30	0	0	0	**0**	1	0	1	**2**	**2**	0	2	0	**2**	0	1	0	**1**	**3**	**5**
17:30	17:45	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	3	0	**3**	**5**	**5**
17:45	18:00	0	1	0	**1**	0	0	0	**0**	**1**	0	0	0	**0**	0	4	0	**4**	**4**	**5**
Total:	None	4	17	1	**22**	27	12	14	**53**	**75**	12	84	3	**99**	1	79	26	**106**	**205**	**280**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BAYSWATER AVE @ SOMERSET ST

Survey Date: Wednesday, September 07, 2016 **WO No:** 36276

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute U-Turn Total

Time Period		BAYSWATER AVE Northbound U-Turn Total	BAYSWATER AVE Southbound U-Turn Total	SOMERSET ST Eastbound U-Turn Total	SOMERSET ST Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		0	0	0	0	0

Appendix C

Synchro Intersection Worksheets – Existing Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	598	76	47	294	30	43	86	107	124	223	24
Future Volume (vph)	20	598	76	47	294	30	43	86	107	124	223	24
Satd. Flow (prot)	0	1742	1483	1658	1745	1483	1658	1501	0	1658	1701	0
Flt Permitted		0.983		0.311			0.385			0.505		
Satd. Flow (perm)	0	1715	1326	531	1745	1426	642	1501	0	851	1701	0
Satd. Flow (RTOR)			71			37		60			5	
Lane Group Flow (vph)	0	686	84	52	327	33	48	215	0	138	275	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	32.4	32.4		32.4	32.4	
Total Split (s)	67.6	67.6	67.6	67.6	67.6	67.6	32.4	32.4		32.4	32.4	
Total Split (%)	67.6%	67.6%	67.6%	67.6%	67.6%	67.6%	32.4%	32.4%		32.4%	32.4%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1		3.1	3.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5	6.5	6.5	6.5	6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		65.1	65.1	65.1	65.1	65.1	22.0	22.0		22.0	22.0	
Actuated g/C Ratio		0.65	0.65	0.65	0.65	0.65	0.22	0.22		0.22	0.22	
v/c Ratio		0.61	0.09	0.15	0.29	0.04	0.34	0.57		0.74	0.73	
Control Delay		14.2	2.8	9.5	9.1	2.4	38.2	30.1		58.9	46.7	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		14.2	2.8	9.5	9.1	2.4	38.2	30.1		58.9	46.7	
LOS		B	A	A	A	A	D	C		E	D	
Approach Delay		12.9			8.6			31.6			50.8	
Approach LOS		B			A			C			D	
Queue Length 50th (m)		79.4	0.9	4.0	27.9	0.0	7.5	25.1		23.7	46.2	
Queue Length 95th (m)		117.6	6.4	9.8	42.8	3.2	17.8	47.4		#48.0	72.8	
Internal Link Dist (m)		378.4			472.1			159.3			298.3	
Turn Bay Length (m)			40.0	62.0		40.0	52.0			42.0		
Base Capacity (vph)		1116	888	345	1136	941	166	434		221	445	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.61	0.09	0.15	0.29	0.04	0.29	0.50		0.62	0.62	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74
Intersection Signal Delay: 23.0 Intersection LOS: C
Intersection Capacity Utilization 94.3% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Bayview Station Rd & Scott St/Albert St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	317	0	0	183	34	54
Future Volume (vph)	317	0	0	183	34	54
Satd. Flow (prot)	1745	0	0	1745	1511	0
Flt Permitted					0.981	
Satd. Flow (perm)	1745	0	0	1745	1496	0
Satd. Flow (RTOR)					60	
Lane Group Flow (vph)	352	0	0	203	98	0
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Detector Phase	2			6	8	
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	
Minimum Split (s)	30.3			23.3	19.1	
Total Split (s)	50.9			50.9	19.1	
Total Split (%)	72.7%			72.7%	27.3%	
Yellow Time (s)	3.3			3.3	3.0	
All-Red Time (s)	2.0			2.0	2.1	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.3			5.3	5.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max			C-Max	None	
Act Effct Green (s)	54.6			54.6	8.2	
Actuated g/C Ratio	0.78			0.78	0.12	
v/c Ratio	0.26			0.15	0.43	
Control Delay	4.0			3.9	18.7	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.0			3.9	18.7	
LOS	A			A	B	
Approach Delay	4.0			3.9	18.7	
Approach LOS	A			A	B	
Queue Length 50th (m)	10.8			2.8	4.7	
Queue Length 95th (m)	28.5			19.5	15.5	
Internal Link Dist (m)	162.3			139.1	142.7	
Turn Bay Length (m)						
Base Capacity (vph)	1360			1360	350	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.26			0.15	0.28	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 53 (76%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.43

Intersection Signal Delay: 6.2	Intersection LOS: A
Intersection Capacity Utilization 34.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Melrose Ave & Wellington St W

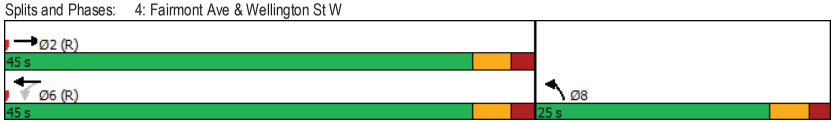
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	287	55	26	174	28	28
Future Volume (vph)	287	55	26	174	28	28
Satd. Flow (prot)	1661	0	0	1735	1490	0
Flt Permitted				0.932	0.976	
Satd. Flow (perm)	1661	0	0	1610	1475	0
Satd. Flow (RTOR)	23				31	
Lane Group Flow (vph)	380	0	0	222	62	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	
Minimum Split (s)	24.4		15.4	15.4	24.2	
Total Split (s)	45.0		45.0	45.0	25.0	
Total Split (%)	64.3%		64.3%	64.3%	35.7%	
Yellow Time (s)	3.3		3.3	3.3	3.3	
All-Red Time (s)	2.1		2.1	2.1	1.9	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.4			5.4	5.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	None	
Act Effct Green (s)	49.0			49.0	13.6	
Actuated g/C Ratio	0.70			0.70	0.19	
v/c Ratio	0.32			0.20	0.20	
Control Delay	5.2			8.8	13.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	5.2			8.8	13.4	
LOS	A			A	B	
Approach Delay	5.2			8.8	13.4	
Approach LOS	A			A	B	
Queue Length 50th (m)	24.9			18.0	3.0	
Queue Length 95th (m)	13.9			30.0	11.2	
Internal Link Dist (m)	139.1			146.4	73.7	
Turn Bay Length (m)						
Base Capacity (vph)	1170			1127	443	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.32			0.20	0.14	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 65 (93%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.32

Intersection Signal Delay: 7.2	Intersection LOS: A
Intersection Capacity Utilization 55.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Fairmont Ave & Wellington St W



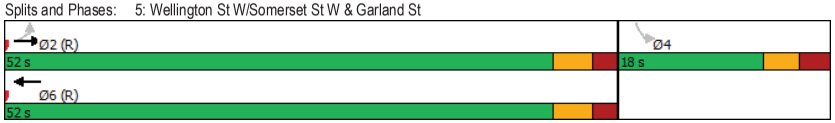
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	251	225	12	0	0
Future Volume (vph)	14	251	225	12	0	0
Satd. Flow (prot)	0	1740	1723	0	1745	0
Flt Permitted		0.982				
Satd. Flow (perm)	0	1708	1723	0	1745	0
Satd. Flow (RTOR)			8			
Lane Group Flow (vph)	0	295	263	0	0	0
Turn Type	Perm	NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases	2				4	
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		5.0	
Minimum Split (s)	15.5	15.5	25.5		17.7	
Total Split (s)	52.0	52.0	52.0		18.0	
Total Split (%)	74.3%	74.3%	74.3%		25.7%	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.2	2.2	2.2		2.7	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.7	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	
Act Effct Green (s)		65.4	65.4			
Actuated g/C Ratio		0.93	0.93			
v/c Ratio		0.18	0.16			
Control Delay		0.7	1.2			
Queue Delay		0.0	0.0			
Total Delay		0.7	1.2			
LOS		A	A			
Approach Delay		0.7	1.2			
Approach LOS		A	A			
Queue Length 50th (m)		0.0	0.0			
Queue Length 95th (m)		4.4	13.2			
Internal Link Dist (m)		146.4	155.9		49.6	
Turn Bay Length (m)						
Base Capacity (vph)		1595	1609			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.18	0.16			

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 7 (10%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.18

Intersection Signal Delay: 0.9	Intersection LOS: A
Intersection Capacity Utilization 41.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Wellington St W/Somerset St W & Garland St



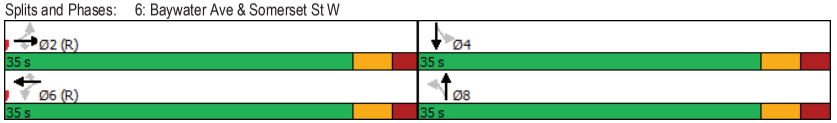
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	212	24	16	138	51	28	178	29	118	227	58
Future Volume (vph)	37	212	24	16	138	51	28	178	29	118	227	58
Satd. Flow (prot)	0	1733	1483	0	1736	1483	0	1686	0	1658	1670	0
Flt Permitted		0.938			0.956			0.935		0.594		
Satd. Flow (perm)	0	1623	1234	0	1655	1304	0	1581	0	997	1670	0
Satd. Flow (RTOR)			45			57		12			22	
Lane Group Flow (vph)	0	277	27	0	171	57	0	261	0	131	316	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	33.5	33.5	33.5	33.5	33.5	33.5	29.9	29.9		29.9	29.9	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)		5.5	5.5		5.5	5.5		5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	
Act Effct Green (s)		29.5	29.5		29.5	29.5		29.1		29.1	29.1	
Actuated g/C Ratio		0.42	0.42		0.42	0.42		0.42		0.42	0.42	
v/c Ratio		0.41	0.05		0.25	0.10		0.39		0.32	0.45	
Control Delay		10.5	0.4		14.3	4.3		15.8		16.5	16.1	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Delay		10.5	0.4		14.3	4.3		15.8		16.5	16.1	
LOS		B	A		B	A		B		B	B	
Approach Delay		9.6			11.8			15.8			16.2	
Approach LOS		A			B			B			B	
Queue Length 50th (m)		10.5	0.0		13.9	0.0		21.8		11.1	26.4	
Queue Length 95th (m)		12.1	0.3		26.0	5.7		39.1		23.1	46.1	
Internal Link Dist (m)		155.9			373.3			144.7			165.1	
Turn Bay Length (m)			33.0			40.0				58.0		
Base Capacity (vph)		683	546		697	582		664		414	707	
Starvation Cap Reductn		0	0		0	0		0		0	0	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.41	0.05		0.25	0.10		0.39		0.32	0.45	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 19 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.45

Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 91.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Baywater Ave & Somerset St W



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	458	101	82	581	91	97	269	73	48	83	16
Future Volume (vph)	19	458	101	82	581	91	97	269	73	48	83	16
Satd. Flow (prot)	0	1742	1483	1658	1745	1483	1658	1672	0	1658	1669	0
Flt Permitted		0.965		0.399			0.686			0.236		
Satd. Flow (perm)	0	1682	1281	664	1745	1322	1118	1672	0	408	1669	0
Satd. Flow (RTOR)			112			91		13			10	
Lane Group Flow (vph)	0	530	112	91	646	101	108	380	0	53	110	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	32.4	32.4		32.4	32.4	
Total Split (s)	67.6	67.6	67.6	67.6	67.6	67.6	32.4	32.4		32.4	32.4	
Total Split (%)	67.6%	67.6%	67.6%	67.6%	67.6%	67.6%	32.4%	32.4%		32.4%	32.4%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1		3.1	3.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5	6.5	6.5	6.5	6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		62.5	62.5	62.5	62.5	62.5	24.6	24.6		24.6	24.6	
Actuated g/C Ratio		0.62	0.62	0.62	0.62	0.62	0.25	0.25		0.25	0.25	
v/c Ratio		0.50	0.13	0.22	0.59	0.12	0.39	0.90		0.53	0.26	
Control Delay		12.7	2.0	10.3	14.4	2.5	35.8	61.2		53.0	28.8	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		12.7	2.0	10.3	14.4	2.5	35.8	61.2		53.0	28.8	
LOS		B	A	B	B	A	D	E		D	C	
Approach Delay		10.8			12.5			55.6			36.7	
Approach LOS		B			B			E			D	
Queue Length 50th (m)		53.8	0.0	7.3	71.3	0.7	17.2	68.1		8.8	15.3	
Queue Length 95th (m)		79.6	6.1	15.5	104.4	6.7	32.9	#117.3		#24.3	29.6	
Internal Link Dist (m)		378.4			472.1			159.3			298.3	
Turn Bay Length (m)			40.0	62.0		40.0	52.0			42.0		
Base Capacity (vph)		1051	842	414	1090	860	290	444		106	441	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.50	0.13	0.22	0.59	0.12	0.37	0.86		0.50	0.25	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 65 (65%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90
Intersection Signal Delay: 23.7 Intersection LOS: C
Intersection Capacity Utilization 109.0% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Bayview Station Rd & Scott St/Albert St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	327	0	0	366	24	28
Future Volume (vph)	327	0	0	366	24	28
Satd. Flow (prot)	1745	0	0	1745	1471	0
Flt Permitted					0.977	
Satd. Flow (perm)	1745	0	0	1745	1381	0
Satd. Flow (RTOR)					31	
Lane Group Flow (vph)	363	0	0	407	58	0
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Detector Phase	2			6	8	
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	
Minimum Split (s)	30.3			23.3	19.1	
Total Split (s)	55.9			55.9	19.1	
Total Split (%)	74.5%			74.5%	25.5%	
Yellow Time (s)	3.3			3.3	3.0	
All-Red Time (s)	2.0			2.0	2.1	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.3			5.3	5.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max			C-Max	None	
Act Effct Green (s)	57.2			57.2	10.6	
Actuated g/C Ratio	0.76			0.76	0.14	
v/c Ratio	0.27			0.31	0.25	
Control Delay	4.8			8.2	17.9	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.8			8.2	17.9	
LOS	A			A	B	
Approach Delay	4.8			8.2	17.9	
Approach LOS	A			A	B	
Queue Length 50th (m)	17.8			27.3	3.2	
Queue Length 95th (m)	29.0			46.4	12.5	
Internal Link Dist (m)	162.3			139.1	142.7	
Turn Bay Length (m)						
Base Capacity (vph)	1330			1330	299	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.27			0.31	0.19	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 55 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.31

Intersection Signal Delay: 7.4	Intersection LOS: A
Intersection Capacity Utilization 39.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Melrose Ave & Wellington St W

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	311	64	46	364	36	48
Future Volume (vph)	311	64	46	364	36	48
Satd. Flow (prot)	1619	0	0	1735	1424	0
Flt Permitted				0.922	0.979	
Satd. Flow (perm)	1619	0	0	1584	1384	0
Satd. Flow (RTOR)	24				53	
Lane Group Flow (vph)	417	0	0	455	93	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	
Minimum Split (s)	24.4		15.4	15.4	24.2	
Total Split (s)	50.0		50.0	50.0	25.0	
Total Split (%)	66.7%		66.7%	66.7%	33.3%	
Yellow Time (s)	3.3		3.3	3.3	3.3	
All-Red Time (s)	2.1		2.1	2.1	1.9	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.4			5.4	5.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	None	
Act Effct Green (s)	51.3			51.3	16.3	
Actuated g/C Ratio	0.68			0.68	0.22	
v/c Ratio	0.37			0.42	0.26	
Control Delay	14.4			6.2	13.7	
Queue Delay	0.0			0.0	0.0	
Total Delay	14.4			6.2	13.7	
LOS	B			A	B	
Approach Delay	14.4			6.2	13.7	
Approach LOS	B			A	B	
Queue Length 50th (m)	43.3			28.1	4.3	
Queue Length 95th (m)	72.7			33.5	15.1	
Internal Link Dist (m)	139.1			146.4	73.7	
Turn Bay Length (m)						
Base Capacity (vph)	1115			1083	414	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.37			0.42	0.22	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 24 (32%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.42

Intersection Signal Delay: 10.5	Intersection LOS: B
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Fairmont Ave & Wellington St W

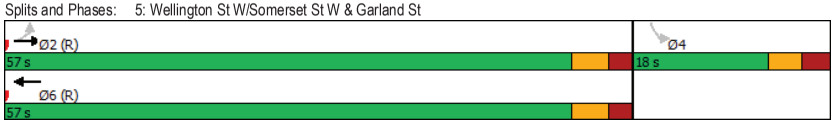
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	265	383	38	0	0
Future Volume (vph)	26	265	383	38	0	0
Satd. Flow (prot)	0	1738	1682	0	1745	0
Flt Permitted		0.944				
Satd. Flow (perm)	0	1631	1682	0	1745	0
Satd. Flow (RTOR)			15			
Lane Group Flow (vph)	0	323	468	0	0	0
Turn Type	Perm	NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases	2				4	
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		5.0	
Minimum Split (s)	15.5	15.5	25.5		17.7	
Total Split (s)	57.0	57.0	57.0		18.0	
Total Split (%)	76.0%	76.0%	76.0%		24.0%	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.2	2.2	2.2		2.7	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.7	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	
Act Effct Green (s)		61.1	61.1			
Actuated g/C Ratio		0.81	0.81			
v/c Ratio		0.24	0.34			
Control Delay		1.7	7.0			
Queue Delay		0.0	0.0			
Total Delay		1.7	7.0			
LOS		A	A			
Approach Delay		1.7	7.0			
Approach LOS		A	A			
Queue Length 50th (m)		4.4	28.2			
Queue Length 95th (m)		8.3	51.5			
Internal Link Dist (m)		146.4	155.9		49.6	
Turn Bay Length (m)						
Base Capacity (vph)		1328	1372			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.24	0.34			

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 32 (43%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 4.9	Intersection LOS: A
Intersection Capacity Utilization 56.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Wellington St W/Somerset St W & Garland St

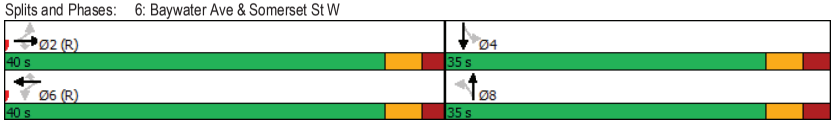


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	203	31	31	299	120	47	297	22	92	252	59
Future Volume (vph)	37	203	31	31	299	120	47	297	22	92	252	59
Satd. Flow (prot)	0	1731	1483	0	1736	1483	0	1710	0	1658	1656	0
Flt Permitted		0.906			0.953			0.912		0.447		
Satd. Flow (perm)	0	1568	1107	0	1641	1236	0	1560	0	751	1656	0
Satd. Flow (RTOR)			42			133		5			18	
Lane Group Flow (vph)	0	267	34	0	366	133	0	406	0	102	346	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	30.5	30.5	30.5	30.5	30.5	30.5	28.9	28.9		28.9	28.9	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	35.0	35.0		35.0	35.0	
Total Split (%)	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%		46.7%	46.7%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)		5.5	5.5		5.5	5.5		5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	
Act Effct Green (s)		34.5	34.5		34.5	34.5		29.1		29.1	29.1	
Actuated g/C Ratio		0.46	0.46		0.46	0.46		0.39		0.39	0.39	
v/c Ratio		0.37	0.06		0.49	0.21		0.67		0.35	0.53	
Control Delay		12.5	4.6		16.8	3.3		25.2		20.6	20.3	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Delay		12.5	4.6		16.8	3.3		25.2		20.6	20.3	
LOS		B	A		B	A		C		C	C	
Approach Delay		11.6			13.2			25.2			20.4	
Approach LOS		B			B			C			C	
Queue Length 50th (m)		34.6	1.6		34.4	0.0		45.6		10.0	34.6	
Queue Length 95th (m)		56.2	4.8		56.5	8.4		75.3		22.2	58.2	
Internal Link Dist (m)		155.9			373.3			144.7			165.1	
Turn Bay Length (m)			33.0			40.0				58.0		
Base Capacity (vph)		721	531		754	640		608		291	653	
Starvation Cap Reductn		0	0		0	0		0		0	0	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.37	0.06		0.49	0.21		0.67		0.35	0.53	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 63 (84%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 17.8	Intersection LOS: B
Intersection Capacity Utilization 99.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Baywater Ave & Somerset St W



Appendix D

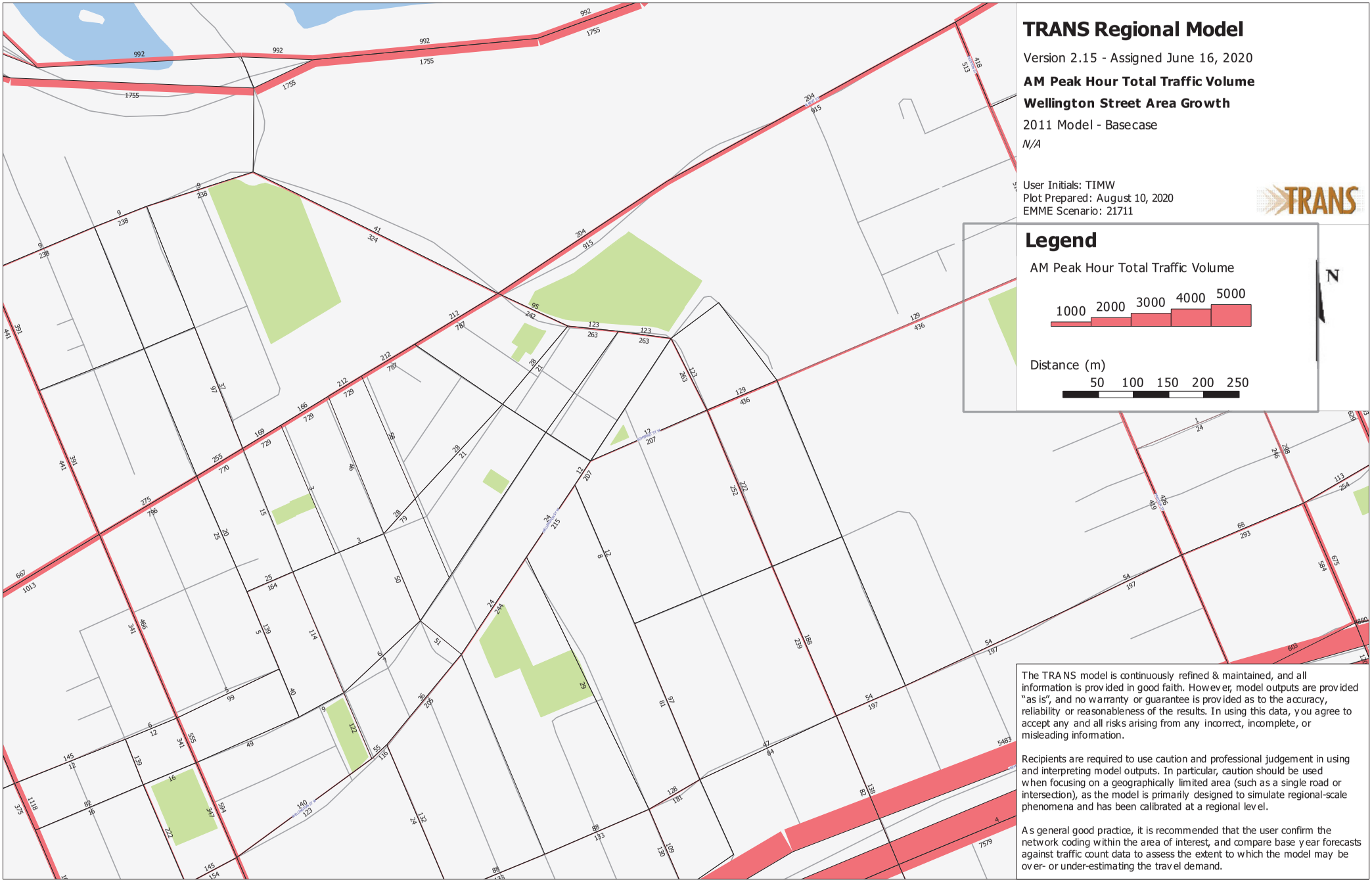
Collision Data

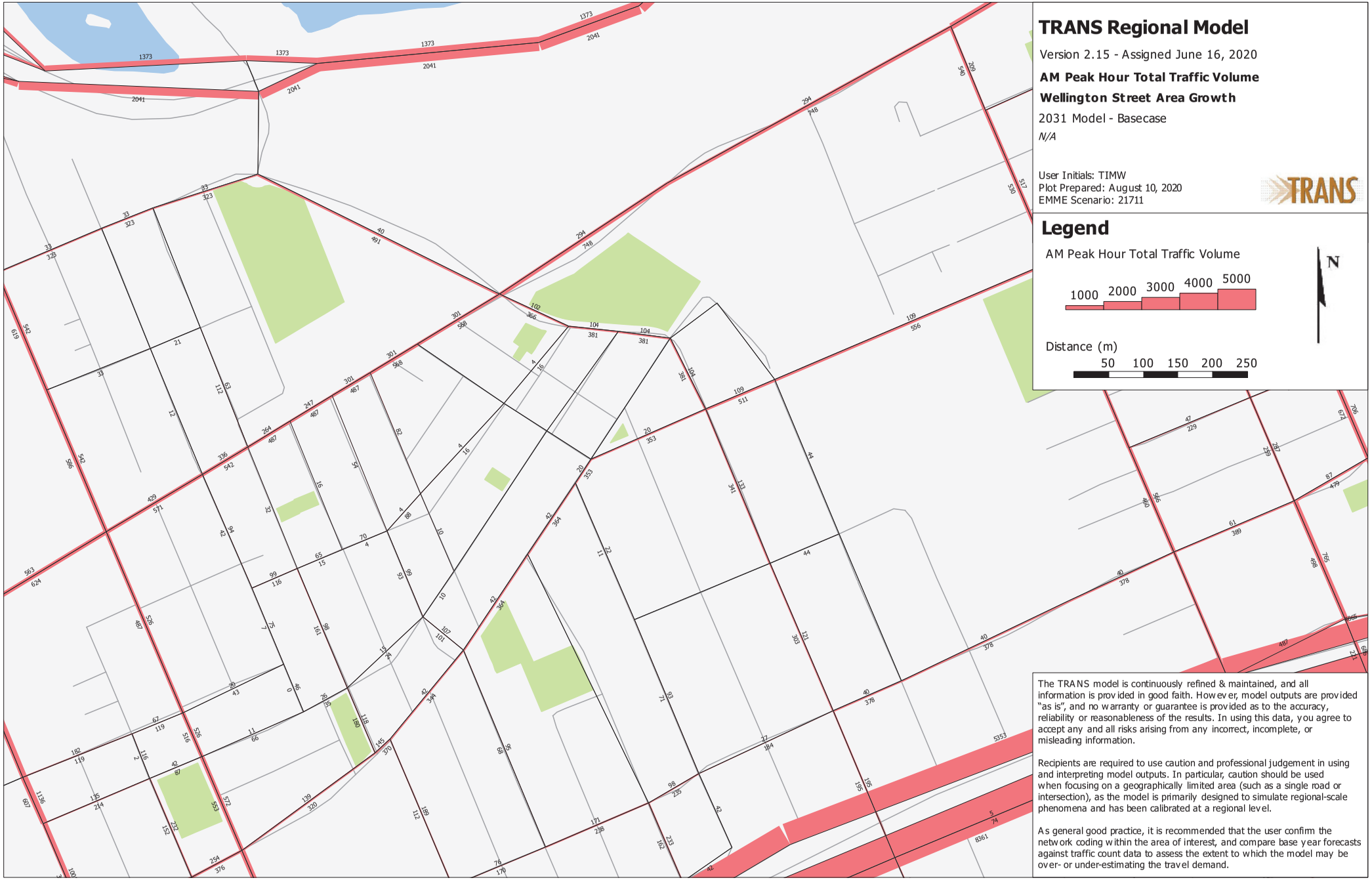
CGH TRANSPORTATION

Accident Date	Accident Year	Accident Time	Location	Environment Condition	Light	Traffic Control	Traffic Control Condition	Classification Of Accident	Initial Impact Type	Road Surface Condition
2015-02-21	2015	12:42	ARMSTRONG ST @ BAYVIEW RD	03 - Snow	01 - Daylight	02 - Stop sign		02 - Non-fatal injury	01 - Approaching	03 - Loose snow
2016-08-31	2016	9:40	ARMSTRONG ST @ BAYVIEW RD	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	99 - Other	01 - Dry
2017-07-27	2017	17:39	ARMSTRONG ST @ BAYVIEW RD	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	05 - Turning movement	01 - Dry
2017-02-10	2017	12:25	ARMSTRONG ST @ GARLAND ST	01 - Clear	01 - Daylight	0		03 - P.D. only	07 - SMV other	06 - Ice
2014-02-14	2014	15:15	BAYSWATER AVE @ SOMERSET ST	03 - Snow	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	07 - SMV other	02 - Wet
2014-05-30	2014	8:59	BAYSWATER AVE @ SOMERSET ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	05 - Turning movement	01 - Dry
2014-07-13	2014	23:03	BAYSWATER AVE @ SOMERSET ST	01 - Clear	07 - Dark	01 - Traffic signal		02 - Non-fatal injury	02 - Angle	01 - Dry
2014-09-24	2014	14:07	BAYSWATER AVE @ SOMERSET ST	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	07 - SMV other	01 - Dry
2014-10-03	2014	19:46	BAYSWATER AVE @ SOMERSET ST	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	05 - Turning movement	01 - Dry
2015-03-22	2015	14:11	BAYSWATER AVE @ SOMERSET ST	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	07 - SMV other	01 - Dry
2015-10-18	2015	17:57	BAYSWATER AVE @ SOMERSET ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	99 - Other	01 - Dry
2016-04-06	2016	19:49	BAYSWATER AVE @ SOMERSET ST	03 - Snow	07 - Dark	01 - Traffic signal		03 - P.D. only	07 - SMV other	03 - Loose snow
2016-08-27	2016	11:09	BAYSWATER AVE @ SOMERSET ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2016-12-18	2016	17:41	BAYSWATER AVE @ SOMERSET ST	03 - Snow	07 - Dark	01 - Traffic signal		03 - P.D. only	99 - Other	03 - Loose snow
2016-12-20	2016	19:05	BAYSWATER AVE @ SOMERSET ST	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	05 - Turning movement	04 - Slush
2017-02-15	2017	10:15	BAYSWATER AVE @ SOMERSET ST	03 - Snow	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	03 - Loose snow
2017-10-30	2017	7:36	BAYSWATER AVE @ SOMERSET ST	02 - Rain	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	07 - SMV other	02 - Wet
2017-12-27	2017	11:04	BAYSWATER AVE @ SOMERSET ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	05 - Turning movement	06 - Ice
2018-05-10	2018	11:14	BAYSWATER AVE @ SOMERSET ST (0006486)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	07 - SMV other	01 - Dry
2018-12-04	2018	18:28	BAYSWATER AVE @ SOMERSET ST (0006486)	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2016-01-14	2016	9:57	BAYSWATER AVE btwn WELLINGTON ST W & SOMERSET ST W	03 - Snow	01 - Daylight	10 - No control		03 - P.D. only	07 - SMV other	03 - Loose snow
2017-10-30	2017	17:06	BAYSWATER AVE btwn WELLINGTON ST W & SOMERSET ST W	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2015-01-17	2015	13:56	BAYVIEW RD @ O'MEARA ST	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	07 - SMV other	05 - Packed snow
2014-01-03	2014	13:43	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	02 - Angle	06 - Ice
2014-02-07	2014	20:40	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	02 - Angle	01 - Dry
2014-03-27	2014	17:00	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2014-04-15	2014	8:32	BAYVIEW RD @ SCOTT ST/ALBERT ST	02 - Rain	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	02 - Wet
2014-11-03	2014	15:05	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2014-12-10	2014	16:46	BAYVIEW RD @ SCOTT ST/ALBERT ST	03 - Snow	05 - Dusk	01 - Traffic signal		03 - P.D. only	05 - Turning movement	03 - Loose snow
2015-01-07	2015	17:20	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	05 - Dusk	01 - Traffic signal		03 - P.D. only	05 - Turning movement	05 - Packed snow
2015-02-13	2015	9:25	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	02 - Wet
2015-03-15	2015	16:49	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2015-06-29	2015	10:53	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	02 - Angle	02 - Wet
2015-07-02	2015	19:46	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	07 - SMV other	01 - Dry
2015-08-28	2015	7:30	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	05 - Turning movement	01 - Dry
2016-02-10	2016	8:11	BAYVIEW RD @ SCOTT ST/ALBERT ST	03 - Snow	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	05 - Turning movement	04 - Slush
2016-03-02	2016	18:24	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	05 - Dusk	01 - Traffic signal		02 - Non-fatal injury	07 - SMV other	02 - Wet
2016-06-16	2016	8:38	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	05 - Turning movement	01 - Dry
2016-08-02	2016	19:13	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	05 - Turning movement	01 - Dry
2016-08-18	2016	7:50	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2016-09-15	2016	13:14	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	05 - Turning movement	01 - Dry
2016-12-15	2016	17:07	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	05 - Turning movement	03 - Loose snow
2016-12-20	2016	9:07	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	02 - Angle	04 - Slush
2017-03-21	2017	20:01	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	07 - Dark	01 - Traffic signal		02 - Non-fatal injury	05 - Turning movement	01 - Dry
2017-07-13	2017	18:10	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2017-07-13	2017	21:54	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	02 - Angle	01 - Dry
2017-09-26	2017	14:16	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	05 - Turning movement	01 - Dry
2017-12-22	2017	14:42	BAYVIEW RD @ SCOTT ST/ALBERT ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	05 - Turning movement	03 - Loose snow
2018-07-10	2018	23:22	BAYVIEW RD @ SCOTT ST/ALBERT ST (0005646)	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	05 - Turning movement	01 - Dry
2018-10-19	2018	13:48	BAYVIEW RD @ SCOTT ST/ALBERT ST (0005646)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2018-11-02	2018	8:54	BAYVIEW RD @ SCOTT ST/ALBERT ST (0005646)	02 - Rain	01 - Daylight	01 - Traffic signal		03 - P.D. only	05 - Turning movement	02 - Wet
2018-11-22	2018	12:42	BAYVIEW RD @ SCOTT ST/ALBERT ST (0005646)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2018-08-01	2018	18:18	BAYVIEW RD btwn O'MEARA ST & ARMSTRONG ST (__3ZA32R)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	05 - Turning movement	01 - Dry
2018-02-23	2018	22:50	BAYVIEW RD btwn SCOTT ST & O'MEARA ST (__3ZA32S)	04 - Freezing Rain	07 - Dark	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	06 - Ice
2018-01-03	2018	10:29	GARLAND ST @ LADOUCEUR ST (0005965)	03 - Snow	01 - Daylight	10 - No control		03 - P.D. only	05 - Turning movement	03 - Loose snow
2016-12-21	2016	8:54	GARLAND ST @ LOWREY ST	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	02 - Angle	05 - Packed snow
2018-05-17	2018	7:51	GARLAND ST @ SCOTT ST (0006458)	01 - Clear	01 - Daylight	02 - Stop sign		02 - Non-fatal injury	02 - Angle	01 - Dry
2015-01-13	2015	18:50	GARLAND ST @ SOMERSET ST W/WELLINGTON ST	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	99 - Other	04 - Slush
2015-11-16	2015	19:15	GARLAND ST @ SOMERSET ST W/WELLINGTON ST	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	02 - Angle	01 - Dry
2017-02-13	2017	0:00	GARLAND ST @ SOMERSET ST W/WELLINGTON ST	03 - Snow	00 - Unknown	01 - Traffic signal		03 - P.D. only	06 - SMV unattended vehicle	04 - Slush
2018-06-20	2018	13:33	GARLAND ST @ SOMERSET ST W/WELLINGTON ST (0006483)	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	04 - Sideswipe	01 - Dry
2018-07-03	2018	16:30	GARLAND ST @ SOMERSET ST W/WELLINGTON ST (0006483)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2018-07-12	2018	13:21	GARLAND ST btwn ARMSTRONG ST & WELLINGTON ST W (__3ZBOM6)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2015-05-20	2015	18:26	IRVING AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	02 - Stop sign		02 - Non-fatal injury	05 - Turning movement	01 - Dry
2016-09-12	2016	6:01	IRVING AVE @ WELLINGTON ST	01 - Clear	03 - Dawn	02 - Stop sign		02 - Non-fatal injury	05 - Turning movement	01 - Dry
2017-11-01	2017	9:10	IRVING AVE @ WELLINGTON ST	02 - Rain	01 - Daylight	02 - Stop sign		03 - P.D. only	05 - Turning movement	02 - Wet
2015-05-14	2015	11:52	SOMERSET ST W btwn SPADINA AVE & BAYSWATER AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2016-05-02	2016	14:35	SOMERSET ST W btwn SPADINA AVE & BAYSWATER AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2016-12-18	2016	12:02	SOMERSET ST W btwn SPADINA AVE & BAYSWATER AVE	03 - Snow	01 - Daylight	10 - No control		03 - P.D. only	04 - Sideswipe	04 - Slush
2014-07-29	2014	10:49	SOMERSET ST W btwn WELLINGTON ST W & SPADINA AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	07 - SMV other	01 - Dry
2014-11-02	2014	18:15	SOMERSET ST W btwn WELLINGTON ST W & SPADINA AVE	01 - Clear	07 - Dark	10 - No control		02 - Non-fatal injury	02 - Angle	01 - Dry
2015-02-21	2015	13:00	SOMERSET ST @ SPADINA AVE	03 - Snow	01 - Daylight	02 - Stop sign		03 - P.D. only	01 - Approaching	03 - Loose snow
2015-07-28	2015	18:18	SOMERSET ST @ SPADINA AVE	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	02 - Angle	01 - Dry
2015-08-08	2015	14:04	SOMERSET ST @ SPADINA AVE	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	05 - Turning movement	01 - Dry
2017-02-11	2017	15:50	SOMERSET ST @ SPADINA AVE	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	99 - Other	03 - Loose snow
2014-02-18	2014	0:00	WELLINGTON ST W btwn FAIRMONT AVE & IRVING AVE	03 - Snow	00 - Unknown	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	03 - Loose snow
2015-10-19	2015	12:07	WELLINGTON ST W btwn FAIRMONT AVE & IRVING AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2016-01-11	2016	9:47	WELLINGTON ST W btwn FAIRMONT AVE & IRVING AVE	02 - Rain	01 - Daylight	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	02 - Wet
2016-07-22	2016	11:14	WELLINGTON ST W btwn FAIRMONT AVE & IRVING AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	04 - Sideswipe	01 - Dry
2017-12-14	2017	15:09	WELLINGTON ST W btwn FAIRMONT AVE & IRVING AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	04 - Sideswipe	01 - Dry
2017-12-27	2017	19:03	WELLINGTON ST W btwn FAIRMONT AVE & IRVING AVE	01 - Clear	07 - Dark	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	03 - Loose snow
2018-01-05	2018	9:06	WELLINGTON ST W btwn FAIRMONT AVE & IRVING AVE (__3ZA31T)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	02 - Wet
2018-03-07	2018	18:04	WELLINGTON ST W btwn FAIRMONT AVE & IRVING AVE (__3ZA31T)	01 - Clear	05 - Dusk	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2018-04-09	2018	13:20	WELLINGTON ST W btwn FAIRMONT AVE & IRVING AVE (__3ZA31T)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	05 - Turning movement	01 - Dry
2018-07-21	2018	16:20	WELLINGTON ST W btwn FAIRMONT AVE & IRVING AVE (__3ZA31T)	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	04 - Sideswipe	01 - Dry
2016-01-09	2016	10:30	WELLINGTON ST W btwn IRVING AVE & GARLAND ST	04 - Freezing Rain	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	04 - Slush
2017-03-10	2017	6:26	WELLINGTON ST W btwn IRVING AVE & GARLAND ST	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2017-04-12	2017	13:07	WELLINGTON ST W btwn SPADINA AVE & BAYVIEW RD	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	02 - Angle	01 - Dry
2015-01-07	2015	9:00	WELLINGTON ST @ BAYSWATER AVE/BAYVIEW RD	03 - Snow	01 - Daylight	02 - Stop sign		02 - Non-fatal injury	03 - Rear end	05 - Packed snow
2017-07-24	2017	22:18	WELLINGTON ST @ BAYSWATER AVE/BAYVIEW RD	02 - Rain	07 - Dark	02 - Stop sign		03 - P.D. only	03 - Rear end	02 - Wet
2017-11-01	2017	14:10	WELLINGTON ST @ BAYSWATER AVE/BAYVIEW RD	02 - Rain	01 - Daylight	02 - Stop sign		03 - P.D. only	05 - Turning movement	02 - Wet
2017-11-24	2017	18:35	WELLINGTON ST @ BAYSWATER AVE/BAYVIEW RD	01 - Clear	07 - Dark	02 - Stop sign		03 - P.D. only	02 - Angle	01 - Dry

Appendix E

TRANS Model Plots


TRANS Regional Model
Version 2.15 - Assigned June 16, 2020
AM Peak Hour Total Traffic Volume
Wellington Street Area Growth
2011 Model - Basecase
N/A
User Initials: TIMW
Plot Prepared: August 10, 2020
EMME Scenario: 21711
TRANS
Legend
AM Peak Hour Total Traffic Volume
1000 2000 3000 4000 5000
Distance (m)
50 100 150 200 250
N
The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and all risks arising from any incorrect, incomplete, or misleading information.
Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena and has been calibrated at a regional level.
As general good practice, it is recommended that the user confirm the network coding within the area of interest, and compare base year forecasts against traffic count data to assess the extent to which the model may be over- or under-estimating the travel demand.



TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Wellington Street Area Growth

2031 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: August 10, 2020
EMME Scenario: 21711

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

Distance (m)

50 100 150 200 250

N

Appendix F

Background Development Traffic

CGH TRANSPORTATION

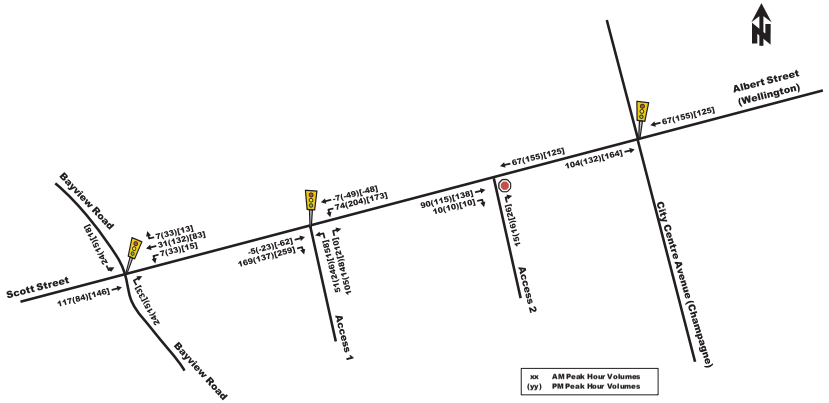
PARSONS

5. SYNCHRO ANALYSIS

5.1. SITE-GENERATED TRAFFIC VOLUMES

Based on the new site statistics shown in Table 1, trip generation of the development was updated to reflect the anticipated new site-generated traffic volumes, as illustrated in Figure 10. Please note that Access 2 intersection is analyzed as an unsignalized intersection with stop control on the south leg as this will approximate the operation of the suggested signal control described in section 4.2.

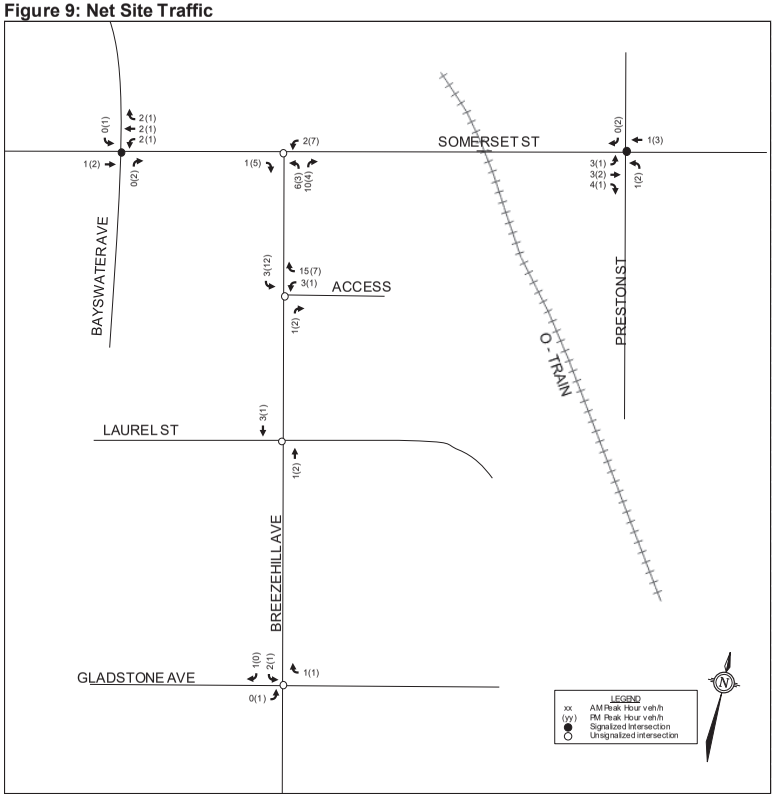
Figure 10: New and Pass-by Site-Generated Traffic Volumes - 2025



5.2. TOTAL PROJECTED 2020 CONDITIONS

The total projected 2020 traffic volumes were derived by superimposing the site-generated traffic volumes in Figure 10 onto projected 2020 background traffic volumes. The resulting total projected traffic volumes are illustrated in Figure 11.

Figure 9: Net Site Traffic



Appendix G

Synchro Intersection Worksheets – 2024 Future Background Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	598	76	47	304	30	43	86	107	124	232	24
Future Volume (vph)	20	598	76	47	304	30	43	86	107	124	232	24
Satd. Flow (prot)	0	1742	1483	1658	1745	1483	1658	1501	0	1658	1704	0
Flt Permitted		0.985		0.355			0.417			0.547		
Satd. Flow (perm)	0	1718	1326	603	1745	1426	695	1501	0	920	1704	0
Satd. Flow (RTOR)			71			37		61			5	
Lane Group Flow (vph)	0	618	76	47	304	30	43	193	0	124	256	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	32.4	32.4		32.4	32.4	
Total Split (s)	67.6	67.6	67.6	67.6	67.6	67.6	32.4	32.4		32.4	32.4	
Total Split (%)	67.6%	67.6%	67.6%	67.6%	67.6%	67.6%	32.4%	32.4%		32.4%	32.4%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1		3.1	3.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5	6.5	6.5	6.5	6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		65.5	65.5	65.5	65.5	65.5	21.6	21.6		21.6	21.6	
Actuated g/C Ratio		0.66	0.66	0.66	0.66	0.66	0.22	0.22		0.22	0.22	
v/c Ratio		0.55	0.09	0.12	0.27	0.03	0.29	0.52		0.63	0.69	
Control Delay		12.7	2.5	8.9	8.8	2.2	35.9	27.4		48.7	44.7	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		12.7	2.5	8.9	8.8	2.2	35.9	27.4		48.7	44.7	
LOS		B	A	A	A	A	D	C		D	D	
Approach Delay		11.5			8.3			28.9			46.0	
Approach LOS		B			A			C			D	
Queue Length 50th (m)		67.1	0.4	3.5	25.6	0.0	6.6	20.8		20.6	42.3	
Queue Length 95th (m)		98.7	5.5	8.8	39.5	2.8	16.2	41.3		39.3	67.5	
Internal Link Dist (m)		378.4			472.1			159.3			298.3	
Turn Bay Length (m)			40.0	62.0		40.0	52.0			42.0		
Base Capacity (vph)		1125	893	395	1143	947	180	435		239	446	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.55	0.09	0.12	0.27	0.03	0.24	0.44		0.52	0.57	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69
Intersection Signal Delay: 21.0 Intersection LOS: C
Intersection Capacity Utilization 94.4% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 2: Bayview Station Rd & Scott St/Albert St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	333	0	0	191	33	53
Future Volume (vph)	333	0	0	191	33	53
Satd. Flow (prot)	1745	0	0	1745	1510	0
Flt Permitted					0.981	
Satd. Flow (perm)	1745	0	0	1745	1496	0
Satd. Flow (RTOR)					53	
Lane Group Flow (vph)	333	0	0	191	86	0
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Detector Phase	2			6	8	
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	
Minimum Split (s)	30.3			23.3	19.1	
Total Split (s)	50.9			50.9	19.1	
Total Split (%)	72.7%			72.7%	27.3%	
Yellow Time (s)	3.3			3.3	3.0	
All-Red Time (s)	2.0			2.0	2.1	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.3			5.3	5.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max			C-Max	None	
Act Effct Green (s)	54.7			54.7	8.1	
Actuated g/C Ratio	0.78			0.78	0.12	
v/c Ratio	0.24			0.14	0.39	
Control Delay	3.9			3.8	18.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	3.9			3.8	18.4	
LOS	A			A	B	
Approach Delay	3.9			3.8	18.4	
Approach LOS	A			A	B	
Queue Length 50th (m)	10.0			2.3	4.1	
Queue Length 95th (m)	26.8			18.2	14.2	
Internal Link Dist (m)	162.3			139.1	142.7	
Turn Bay Length (m)						
Base Capacity (vph)	1362			1362	344	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.24			0.14	0.25	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 53 (76%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.39

Intersection Signal Delay: 5.9	Intersection LOS: A
Intersection Capacity Utilization 35.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Melrose Ave & Wellington St W

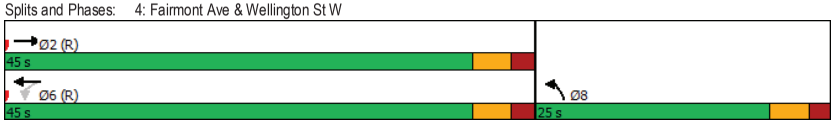
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	301	55	26	181	28	28
Future Volume (vph)	301	55	26	181	28	28
Satd. Flow (prot)	1665	0	0	1735	1490	0
Flt Permitted				0.940	0.976	
Satd. Flow (perm)	1665	0	0	1623	1475	0
Satd. Flow (RTOR)	22				28	
Lane Group Flow (vph)	356	0	0	207	56	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	
Minimum Split (s)	24.4		15.4	15.4	24.2	
Total Split (s)	45.0		45.0	45.0	25.0	
Total Split (%)	64.3%		64.3%	64.3%	35.7%	
Yellow Time (s)	3.3		3.3	3.3	3.3	
All-Red Time (s)	2.1		2.1	2.1	1.9	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.4			5.4	5.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	None	
Act Effct Green (s)	49.0			49.0	13.6	
Actuated g/C Ratio	0.70			0.70	0.19	
v/c Ratio	0.30			0.18	0.18	
Control Delay	5.0			8.8	13.3	
Queue Delay	0.0			0.0	0.0	
Total Delay	5.0			8.8	13.3	
LOS	A			A	B	
Approach Delay	5.0			8.8	13.3	
Approach LOS	A			A	B	
Queue Length 50th (m)	22.9			16.7	2.7	
Queue Length 95th (m)	12.7			28.5	10.4	
Internal Link Dist (m)	139.1			146.4	73.7	
Turn Bay Length (m)						
Base Capacity (vph)	1172			1136	441	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.30			0.18	0.13	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 65 (93%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.30

Intersection Signal Delay: 7.0	Intersection LOS: A
Intersection Capacity Utilization 56.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Fairmont Ave & Wellington St W



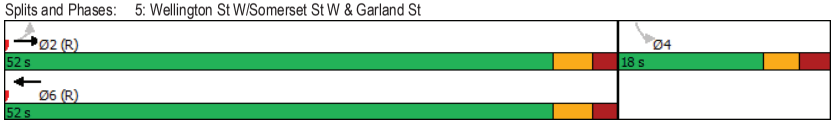
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	264	225	12	0	0
Future Volume (vph)	14	264	225	12	0	0
Satd. Flow (prot)	0	1740	1723	0	1745	0
Flt Permitted		0.985				
Satd. Flow (perm)	0	1714	1723	0	1745	0
Satd. Flow (RTOR)			8			
Lane Group Flow (vph)	0	278	237	0	0	0
Turn Type	Perm	NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases	2				4	
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		5.0	
Minimum Split (s)	15.5	15.5	25.5		17.7	
Total Split (s)	52.0	52.0	52.0		18.0	
Total Split (%)	74.3%	74.3%	74.3%		25.7%	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.2	2.2	2.2		2.7	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.7	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	
Act Effct Green (s)		65.4	65.4			
Actuated g/C Ratio		0.93	0.93			
v/c Ratio		0.17	0.15			
Control Delay		0.7	1.2			
Queue Delay		0.0	0.0			
Total Delay		0.7	1.2			
LOS		A	A			
Approach Delay		0.7	1.2			
Approach LOS		A	A			
Queue Length 50th (m)		0.0	0.0			
Queue Length 95th (m)		4.1	12.5			
Internal Link Dist (m)		146.4	155.9		49.6	
Turn Bay Length (m)						
Base Capacity (vph)		1600	1609			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.17	0.15			

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 7 (10%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.17

Intersection Signal Delay: 0.9	Intersection LOS: A
Intersection Capacity Utilization 42.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Wellington St W/Somerset St W & Garland St

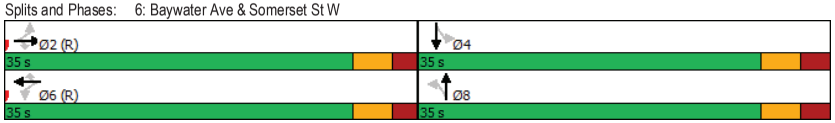


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	219	24	16	138	51	28	178	29	118	235	58
Future Volume (vph)	37	219	24	16	138	51	28	178	29	118	235	58
Satd. Flow (prot)	0	1733	1483	0	1736	1483	0	1686	0	1658	1671	0
Flt Permitted		0.943			0.960			0.939		0.620		
Satd. Flow (perm)	0	1632	1234	0	1662	1304	0	1588	0	1039	1671	0
Satd. Flow (RTOR)			45			51		12			22	
Lane Group Flow (vph)	0	256	24	0	154	51	0	235	0	118	293	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	33.5	33.5	33.5	33.5	33.5	33.5	29.9	29.9		29.9	29.9	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)		5.5	5.5		5.5	5.5		5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	
Act Effct Green (s)		29.5	29.5		29.5	29.5		29.1		29.1	29.1	
Actuated g/C Ratio		0.42	0.42		0.42	0.42		0.42		0.42	0.42	
v/c Ratio		0.37	0.04		0.22	0.09		0.35		0.27	0.41	
Control Delay		10.0	0.3		14.0	4.5		15.1		15.7	15.5	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Delay		10.0	0.3		14.0	4.5		15.1		15.7	15.5	
LOS		A	A		B	A		B		B	B	
Approach Delay		9.1			11.6			15.1			15.5	
Approach LOS		A			B			B			B	
Queue Length 50th (m)		9.3	0.0		12.4	0.0		19.2		9.8	23.9	
Queue Length 95th (m)		10.9	0.2		23.5	5.5		34.7		20.7	42.3	
Internal Link Dist (m)		155.9			373.3			144.7			91.9	
Turn Bay Length (m)			33.0			40.0				58.0		
Base Capacity (vph)		687	546		700	579		667		431	707	
Starvation Cap Reductn		0	0		0	0		0		0	0	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.37	0.04		0.22	0.09		0.35		0.27	0.41	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 19 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.41	
Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 92.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Baywater Ave & Somerset St W



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	474	101	82	581	91	97	280	73	48	83	16
Future Volume (vph)	19	474	101	82	581	91	97	280	73	48	83	16
Satd. Flow (prot)	0	1742	1483	1658	1745	1483	1658	1674	0	1658	1671	0
Flt Permitted		0.971		0.428			0.693			0.266		
Satd. Flow (perm)	0	1693	1281	710	1745	1322	1128	1674	0	460	1671	0
Satd. Flow (RTOR)			101			91		13			9	
Lane Group Flow (vph)	0	493	101	82	581	91	97	353	0	48	99	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	32.4	32.4		32.4	32.4	
Total Split (s)	67.6	67.6	67.6	67.6	67.6	67.6	32.4	32.4		32.4	32.4	
Total Split (%)	67.6%	67.6%	67.6%	67.6%	67.6%	67.6%	32.4%	32.4%		32.4%	32.4%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1		3.1	3.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5	6.5	6.5	6.5	6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		63.4	63.4	63.4	63.4	63.4	23.7	23.7		23.7	23.7	
Actuated g/C Ratio		0.63	0.63	0.63	0.63	0.63	0.24	0.24		0.24	0.24	
v/c Ratio		0.46	0.12	0.18	0.53	0.10	0.36	0.87		0.44	0.25	
Control Delay		11.7	2.0	9.6	12.7	2.0	35.2	57.1		45.6	28.8	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		11.7	2.0	9.6	12.7	2.0	35.2	57.1		45.6	28.8	
LOS		B	A	A	B	A	D	E		D	C	
Approach Delay		10.1			11.1			52.4			34.3	
Approach LOS		B			B			D			C	
Queue Length 50th (m)		48.4	0.0	6.4	60.7	0.0	15.2	61.7		7.7	13.7	
Queue Length 95th (m)		71.8	5.8	13.7	88.6	5.6	29.7	#104.4		19.3	26.9	
Internal Link Dist (m)		378.4			472.1			159.3			298.3	
Turn Bay Length (m)			40.0	62.0		40.0	52.0			42.0		
Base Capacity (vph)		1073	848	449	1106	871	293	444		119	441	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.46	0.12	0.18	0.53	0.10	0.33	0.80		0.40	0.22	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 65 (65%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87
Intersection Signal Delay: 22.1 Intersection LOS: C
Intersection Capacity Utilization 110.3% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Bayview Station Rd & Scott St/Albert St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	340	0	0	384	24	27
Future Volume (vph)	340	0	0	384	24	27
Satd. Flow (prot)	1745	0	0	1745	1474	0
Flt Permitted					0.977	
Satd. Flow (perm)	1745	0	0	1745	1383	0
Satd. Flow (RTOR)					27	
Lane Group Flow (vph)	340	0	0	384	51	0
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Detector Phase	2			6	8	
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	
Minimum Split (s)	30.3			23.3	19.1	
Total Split (s)	55.9			55.9	19.1	
Total Split (%)	74.5%			74.5%	25.5%	
Yellow Time (s)	3.3			3.3	3.0	
All-Red Time (s)	2.0			2.0	2.1	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.3			5.3	5.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max			C-Max	None	
Act Effct Green (s)	57.2			57.2	10.6	
Actuated g/C Ratio	0.76			0.76	0.14	
v/c Ratio	0.26			0.29	0.22	
Control Delay	4.7			8.4	17.9	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.7			8.4	17.9	
LOS	A			A	B	
Approach Delay	4.7			8.4	17.9	
Approach LOS	A			A	B	
Queue Length 50th (m)	16.5			28.7	2.8	
Queue Length 95th (m)	26.9			43.9	11.4	
Internal Link Dist (m)	162.3			139.1	142.7	
Turn Bay Length (m)						
Base Capacity (vph)	1330			1330	297	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.26			0.29	0.17	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 55 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.29

Intersection Signal Delay: 7.4	Intersection LOS: A
Intersection Capacity Utilization 40.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Melrose Ave & Wellington St W

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	324	64	46	382	36	48
Future Volume (vph)	324	64	46	382	36	48
Satd. Flow (prot)	1624	0	0	1736	1423	0
Flt Permitted				0.931	0.979	
Satd. Flow (perm)	1624	0	0	1599	1383	0
Satd. Flow (RTOR)	23				48	
Lane Group Flow (vph)	388	0	0	428	84	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	
Minimum Split (s)	24.4		15.4	15.4	24.2	
Total Split (s)	50.0		50.0	50.0	25.0	
Total Split (%)	66.7%		66.7%	66.7%	33.3%	
Yellow Time (s)	3.3		3.3	3.3	3.3	
All-Red Time (s)	2.1		2.1	2.1	1.9	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.4			5.4	5.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	None	
Act Effct Green (s)	51.3			51.3	16.3	
Actuated g/C Ratio	0.68			0.68	0.22	
v/c Ratio	0.35			0.39	0.24	
Control Delay	13.9			6.0	13.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	13.9			6.0	13.6	
LOS	B			A	B	
Approach Delay	13.9			6.0	13.6	
Approach LOS	B			A	B	
Queue Length 50th (m)	38.9			28.1	3.9	
Queue Length 95th (m)	66.5			32.2	14.0	
Internal Link Dist (m)	139.1			146.4	73.7	
Turn Bay Length (m)						
Base Capacity (vph)	1118			1093	411	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.35			0.39	0.20	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 24 (32%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.39

Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 75.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Fairmont Ave & Wellington St W

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	276	395	38	1	0
Future Volume (vph)	26	276	395	38	1	0
Satd. Flow (prot)	0	1738	1683	0	1658	0
Flt Permitted		0.951			0.950	
Satd. Flow (perm)	0	1643	1683	0	1471	0
Satd. Flow (RTOR)			15			
Lane Group Flow (vph)	0	302	433	0	1	0
Turn Type	Perm	NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases	2				4	
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		5.0	
Minimum Split (s)	15.5	15.5	25.5		17.7	
Total Split (s)	57.0	57.0	57.0		18.0	
Total Split (%)	76.0%	76.0%	76.0%		24.0%	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.2	2.2	2.2		2.7	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.7	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	
Act Effct Green (s)		61.1	61.1		9.4	
Actuated g/C Ratio		0.81	0.81		0.13	
v/c Ratio		0.23	0.32		0.01	
Control Delay		1.7	6.6		27.0	
Queue Delay		0.0	0.0		0.0	
Total Delay		1.7	6.6		27.0	
LOS		A	A		C	
Approach Delay		1.7	6.6		27.0	
Approach LOS		A	A		C	
Queue Length 50th (m)		4.0	23.3		0.1	
Queue Length 95th (m)		7.7	46.8		1.3	
Internal Link Dist (m)		146.4	155.9		49.6	
Turn Bay Length (m)						
Base Capacity (vph)		1338	1373		241	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.23	0.32		0.00	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 32 (43%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.32

Intersection Signal Delay: 4.6	Intersection LOS: A
Intersection Capacity Utilization 56.6%	ICU Level of Service B
Analysis Period (min) 15	

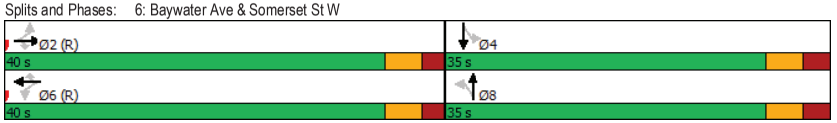
Splits and Phases: 5: Wellington St W/Somerset St W & Garland St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	203	31	31	308	120	47	308	22	92	252	59
Future Volume (vph)	37	203	31	31	308	120	47	308	22	92	252	59
Satd. Flow (prot)	0	1731	1483	0	1736	1483	0	1710	0	1658	1658	0
Flt Permitted		0.913			0.958			0.922		0.469		
Satd. Flow (perm)	0	1580	1107	0	1649	1236	0	1577	0	786	1658	0
Satd. Flow (RTOR)			42			120		5			18	
Lane Group Flow (vph)	0	240	31	0	339	120	0	377	0	92	311	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	30.5	30.5	30.5	30.5	30.5	30.5	28.9	28.9		28.9	28.9	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	35.0	35.0		35.0	35.0	
Total Split (%)	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%		46.7%	46.7%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)		5.5	5.5		5.5	5.5		5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	
Act Effct Green (s)		34.5	34.5		34.5	34.5		29.1		29.1	29.1	
Actuated g/C Ratio		0.46	0.46		0.46	0.46		0.39		0.39	0.39	
v/c Ratio		0.33	0.06		0.45	0.19		0.61		0.30	0.48	
Control Delay		12.0	4.8		16.2	3.4		23.4		19.4	19.1	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Delay		12.0	4.8		16.2	3.4		23.4		19.4	19.1	
LOS		B	A		B	A		C		B	B	
Approach Delay		11.2			12.8			23.4			19.2	
Approach LOS		B			B			C			B	
Queue Length 50th (m)		30.6	1.3		31.1	0.0		41.1		8.8	30.1	
Queue Length 95th (m)		51.0	4.8		51.5	8.0		68.1		19.8	51.3	
Internal Link Dist (m)		155.9			373.3			144.7			91.3	
Turn Bay Length (m)			33.0			40.0				58.0		
Base Capacity (vph)		726	531		758	633		614		304	654	
Starvation Cap Reductn		0	0		0	0		0		0	0	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.33	0.06		0.45	0.19		0.61		0.30	0.48	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 63 (84%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 99.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Baywater Ave & Somerset St W



Appendix H

Synchro Intersection Worksheets – 2029 Future Background Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	715	76	54	363	37	44	87	131	148	256	24
Future Volume (vph)	20	715	76	54	363	37	44	87	131	148	256	24
Satd. Flow (prot)	0	1743	1483	1658	1745	1483	1658	1481	0	1658	1707	0
Flt Permitted		0.985		0.282			0.375			0.499		
Satd. Flow (perm)	0	1718	1326	483	1745	1426	627	1481	0	841	1707	0
Satd. Flow (RTOR)			60			37		73			5	
Lane Group Flow (vph)	0	735	76	54	363	37	44	218	0	148	280	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	32.4	32.4		32.4	32.4	
Total Split (s)	67.6	67.6	67.6	67.6	67.6	67.6	32.4	32.4		32.4	32.4	
Total Split (%)	67.6%	67.6%	67.6%	67.6%	67.6%	67.6%	32.4%	32.4%		32.4%	32.4%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1		3.1	3.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5	6.5	6.5	6.5	6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		65.1	65.1	65.1	65.1	65.1	22.0	22.0		22.0	22.0	
Actuated g/C Ratio		0.65	0.65	0.65	0.65	0.65	0.22	0.22		0.22	0.22	
v/c Ratio		0.66	0.09	0.17	0.32	0.04	0.32	0.57		0.80	0.74	
Control Delay		15.3	3.2	10.0	9.4	2.7	37.4	27.9		66.5	47.1	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		15.3	3.2	10.0	9.4	2.7	37.4	27.9		66.5	47.1	
LOS		B	A	A	A	A	D	C		E	D	
Approach Delay		14.2			9.0			29.5			53.8	
Approach LOS		B			A			C			D	
Queue Length 50th (m)		89.3	1.1	4.2	31.8	0.0	6.8	23.3		25.8	47.1	
Queue Length 95th (m)		132.4	6.4	10.4	48.2	3.6	16.7	45.8		#53.4	74.3	
Internal Link Dist (m)		378.4			472.1			159.3			298.3	
Turn Bay Length (m)			40.0	62.0		40.0	52.0			42.0		
Base Capacity (vph)		1117	883	314	1135	940	163	439		218	447	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.66	0.09	0.17	0.32	0.04	0.27	0.50		0.68	0.63	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80
Intersection Signal Delay: 23.7 Intersection LOS: C
Intersection Capacity Utilization 101.2% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Bayview Station Rd & Scott St/Albert St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	382	0	0	213	36	58
Future Volume (vph)	382	0	0	213	36	58
Satd. Flow (prot)	1745	0	0	1745	1510	0
Flt Permitted					0.981	
Satd. Flow (perm)	1745	0	0	1745	1496	0
Satd. Flow (RTOR)					58	
Lane Group Flow (vph)	382	0	0	213	94	0
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Detector Phase	2			6	8	
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	
Minimum Split (s)	30.3			23.3	19.1	
Total Split (s)	50.9			50.9	19.1	
Total Split (%)	72.7%			72.7%	27.3%	
Yellow Time (s)	3.3			3.3	3.0	
All-Red Time (s)	2.0			2.0	2.1	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.3			5.3	5.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max			C-Max	None	
Act Effct Green (s)	54.6			54.6	8.2	
Actuated g/C Ratio	0.78			0.78	0.12	
v/c Ratio	0.28			0.16	0.41	
Control Delay	4.1			3.9	18.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.1			3.9	18.6	
LOS	A			A	B	
Approach Delay	4.1			3.9	18.6	
Approach LOS	A			A	B	
Queue Length 50th (m)	11.9			3.0	4.4	
Queue Length 95th (m)	31.4			20.6	14.9	
Internal Link Dist (m)	162.3			139.1	142.7	
Turn Bay Length (m)						
Base Capacity (vph)	1361			1361	348	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.28			0.16	0.27	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 53 (76%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 38.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Melrose Ave & Wellington St W

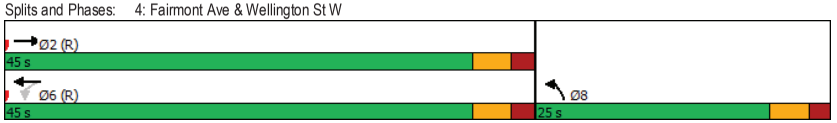
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	346	55	26	203	28	28
Future Volume (vph)	346	55	26	203	28	28
Satd. Flow (prot)	1673	0	0	1735	1490	0
Flt Permitted				0.940	0.976	
Satd. Flow (perm)	1673	0	0	1626	1475	0
Satd. Flow (RTOR)	19				28	
Lane Group Flow (vph)	401	0	0	229	56	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	
Minimum Split (s)	24.4		15.4	15.4	24.2	
Total Split (s)	45.0		45.0	45.0	25.0	
Total Split (%)	64.3%		64.3%	64.3%	35.7%	
Yellow Time (s)	3.3		3.3	3.3	3.3	
All-Red Time (s)	2.1		2.1	2.1	1.9	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.4			5.4	5.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	None	
Act Effct Green (s)	49.0			49.0	13.6	
Actuated g/C Ratio	0.70			0.70	0.19	
v/c Ratio	0.34			0.20	0.18	
Control Delay	5.2			8.9	13.3	
Queue Delay	0.0			0.0	0.0	
Total Delay	5.2			8.9	13.3	
LOS	A			A	B	
Approach Delay	5.2			8.9	13.3	
Approach LOS	A			A	B	
Queue Length 50th (m)	27.0			18.6	2.7	
Queue Length 95th (m)	13.9			30.8	10.4	
Internal Link Dist (m)	139.1			146.4	73.7	
Turn Bay Length (m)						
Base Capacity (vph)	1177			1138	441	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.34			0.20	0.13	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 65 (93%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 7.1	Intersection LOS: A
Intersection Capacity Utilization 57.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Fairmont Ave & Wellington St W



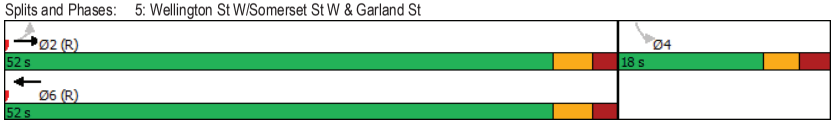
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	303	228	12	0	0
Future Volume (vph)	14	303	228	12	0	0
Satd. Flow (prot)	0	1742	1723	0	1745	0
Flt Permitted		0.986				
Satd. Flow (perm)	0	1716	1723	0	1745	0
Satd. Flow (RTOR)			8			
Lane Group Flow (vph)	0	317	240	0	0	0
Turn Type	Perm	NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases	2				4	
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		5.0	
Minimum Split (s)	15.5	15.5	25.5		17.7	
Total Split (s)	52.0	52.0	52.0		18.0	
Total Split (%)	74.3%	74.3%	74.3%		25.7%	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.2	2.2	2.2		2.7	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.7	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	
Act Effct Green (s)		65.4	65.4			
Actuated g/C Ratio		0.93	0.93			
v/c Ratio		0.20	0.15			
Control Delay		0.6	1.2			
Queue Delay		0.0	0.0			
Total Delay		0.6	1.2			
LOS		A	A			
Approach Delay		0.6	1.2			
Approach LOS		A	A			
Queue Length 50th (m)		0.0	0.0			
Queue Length 95th (m)		3.9	11.9			
Internal Link Dist (m)		146.4	155.9		49.6	
Turn Bay Length (m)						
Base Capacity (vph)		1602	1609			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.20	0.15			

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 7 (10%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.20

Intersection Signal Delay: 0.9	Intersection LOS: A
Intersection Capacity Utilization 44.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Wellington St W/Somerset St W & Garland St

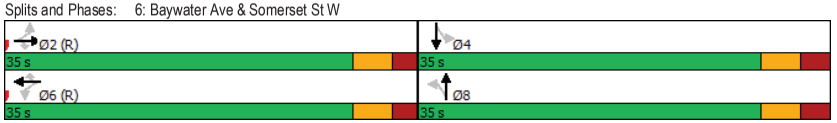


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	237	24	18	140	53	28	198	29	118	262	59
Future Volume (vph)	41	237	24	18	140	53	28	198	29	118	262	59
Satd. Flow (prot)	0	1733	1483	0	1735	1483	0	1692	0	1658	1676	0
Flt Permitted		0.940			0.952			0.941		0.599		
Satd. Flow (perm)	0	1626	1234	0	1647	1304	0	1596	0	1005	1676	0
Satd. Flow (RTOR)			45			53		11			20	
Lane Group Flow (vph)	0	278	24	0	158	53	0	255	0	118	321	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	33.5	33.5	33.5	33.5	33.5	33.5	29.9	29.9		29.9	29.9	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)		5.5	5.5		5.5	5.5		5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	
Act Effct Green (s)		29.5	29.5		29.5	29.5		29.1		29.1	29.1	
Actuated g/C Ratio		0.42	0.42		0.42	0.42		0.42		0.42	0.42	
v/c Ratio		0.41	0.04		0.23	0.09		0.38		0.28	0.45	
Control Delay		9.8	0.3		14.1	4.4		15.6		15.9	16.3	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Delay		9.8	0.3		14.1	4.4		15.6		15.9	16.3	
LOS		A	A		B	A		B		B	B	
Approach Delay		9.0			11.7			15.6			16.2	
Approach LOS		A			B			B			B	
Queue Length 50th (m)		8.9	0.0		12.7	0.0		21.3		9.9	27.1	
Queue Length 95th (m)		10.1	0.2		24.1	5.6		37.9		20.9	47.0	
Internal Link Dist (m)		155.9			373.3			144.7			90.3	
Turn Bay Length (m)			33.0			40.0				58.0		
Base Capacity (vph)		685	546		694	580		669		417	708	
Starvation Cap Reductn		0	0		0	0		0		0	0	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.41	0.04		0.23	0.09		0.38		0.28	0.45	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 19 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 13.5	Intersection LOS: B
Intersection Capacity Utilization 94.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Baywater Ave & Somerset St W



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	601	101	115	713	124	97	311	88	63	84	16
Future Volume (vph)	19	601	101	115	713	124	97	311	88	63	84	16
Satd. Flow (prot)	0	1742	1483	1658	1745	1483	1658	1670	0	1658	1671	0
Flt Permitted		0.971		0.336			0.692			0.213		
Satd. Flow (perm)	0	1693	1281	565	1745	1322	1127	1670	0	369	1671	0
Satd. Flow (RTOR)			94			101		14			9	
Lane Group Flow (vph)	0	620	101	115	713	124	97	399	0	63	100	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	32.4	32.4		32.4	32.4	
Total Split (s)	67.6	67.6	67.6	67.6	67.6	67.6	32.4	32.4		32.4	32.4	
Total Split (%)	67.6%	67.6%	67.6%	67.6%	67.6%	67.6%	32.4%	32.4%		32.4%	32.4%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1		3.1	3.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5	6.5	6.5	6.5	6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		62.0	62.0	62.0	62.0	62.0	25.1	25.1		25.1	25.1	
Actuated g/C Ratio		0.62	0.62	0.62	0.62	0.62	0.25	0.25		0.25	0.25	
v/c Ratio		0.59	0.12	0.33	0.66	0.14	0.34	0.93		0.68	0.23	
Control Delay		14.6	2.4	12.6	16.2	2.8	34.2	64.9		71.4	28.3	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		14.6	2.4	12.6	16.2	2.8	34.2	64.9		71.4	28.3	
LOS		B	A	B	B	A	C	E		E	C	
Approach Delay		12.9			14.0			58.9			44.9	
Approach LOS		B			B			E			D	
Queue Length 50th (m)		68.0	0.5	10.1	83.8	1.6	15.2	72.4		10.9	13.8	
Queue Length 95th (m)		100.3	6.4	21.4	123.1	8.4	29.8	#125.8		#32.1	27.2	
Internal Link Dist (m)		378.4			472.1			159.3			298.3	
Turn Bay Length (m)			40.0	62.0		40.0	52.0			42.0		
Base Capacity (vph)		1049	829	350	1081	857	293	444		95	441	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.59	0.12	0.33	0.66	0.14	0.33	0.90		0.66	0.23	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 65 (65%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93
Intersection Signal Delay: 25.4 Intersection LOS: C
Intersection Capacity Utilization 127.1% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Bayview Station Rd & Scott St/Albert St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	379	0	0	442	26	30
Future Volume (vph)	379	0	0	442	26	30
Satd. Flow (prot)	1745	0	0	1745	1471	0
Flt Permitted					0.977	
Satd. Flow (perm)	1745	0	0	1745	1381	0
Satd. Flow (RTOR)					30	
Lane Group Flow (vph)	379	0	0	442	56	0
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Detector Phase	2			6	8	
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	
Minimum Split (s)	30.3			23.3	19.1	
Total Split (s)	55.9			55.9	19.1	
Total Split (%)	74.5%			74.5%	25.5%	
Yellow Time (s)	3.3			3.3	3.0	
All-Red Time (s)	2.0			2.0	2.1	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.3			5.3	5.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max			C-Max	None	
Act Effct Green (s)	57.2			57.2	10.6	
Actuated g/C Ratio	0.76			0.76	0.14	
v/c Ratio	0.28			0.33	0.24	
Control Delay	4.8			9.1	17.8	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.8			9.1	17.8	
LOS	A			A	B	
Approach Delay	4.8			9.1	17.8	
Approach LOS	A			A	B	
Queue Length 50th (m)	18.8			44.0	3.1	
Queue Length 95th (m)	30.5			68.3	12.1	
Internal Link Dist (m)	162.3			139.1	142.7	
Turn Bay Length (m)						
Base Capacity (vph)	1330			1330	298	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.28			0.33	0.19	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 55 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.33

Intersection Signal Delay: 7.8	Intersection LOS: A
Intersection Capacity Utilization 43.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Melrose Ave & Wellington St W

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	361	64	46	439	36	48
Future Volume (vph)	361	64	46	439	36	48
Satd. Flow (prot)	1634	0	0	1736	1423	0
Flt Permitted				0.934	0.979	
Satd. Flow (perm)	1634	0	0	1609	1383	0
Satd. Flow (RTOR)	21				48	
Lane Group Flow (vph)	425	0	0	485	84	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	
Minimum Split (s)	24.4		15.4	15.4	24.2	
Total Split (s)	50.0		50.0	50.0	25.0	
Total Split (%)	66.7%		66.7%	66.7%	33.3%	
Yellow Time (s)	3.3		3.3	3.3	3.3	
All-Red Time (s)	2.1		2.1	2.1	1.9	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.4			5.4	5.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	None	
Act Effct Green (s)	51.3			51.3	16.3	
Actuated g/C Ratio	0.68			0.68	0.22	
v/c Ratio	0.38			0.44	0.24	
Control Delay	14.8			6.5	13.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	14.8			6.5	13.6	
LOS	B			A	B	
Approach Delay	14.8			6.5	13.6	
Approach LOS	B			A	B	
Queue Length 50th (m)	45.3			30.6	3.9	
Queue Length 95th (m)	75.9			36.2	14.0	
Internal Link Dist (m)	139.1			146.4	73.7	
Turn Bay Length (m)						
Base Capacity (vph)	1124			1100	411	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.38			0.44	0.20	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 24 (32%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.44

Intersection Signal Delay: 10.6	Intersection LOS: B
Intersection Capacity Utilization 80.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Fairmont Ave & Wellington St W

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	309	432	38	1	0
Future Volume (vph)	26	309	432	38	1	0
Satd. Flow (prot)	0	1738	1688	0	1658	0
Flt Permitted		0.953			0.950	
Satd. Flow (perm)	0	1649	1688	0	1471	0
Satd. Flow (RTOR)			13			
Lane Group Flow (vph)	0	335	470	0	1	0
Turn Type	Perm	NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases	2				4	
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		5.0	
Minimum Split (s)	15.5	15.5	25.5		17.7	
Total Split (s)	57.0	57.0	57.0		18.0	
Total Split (%)	76.0%	76.0%	76.0%		24.0%	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.2	2.2	2.2		2.7	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.7	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	
Act Effct Green (s)		61.1	61.1		9.4	
Actuated g/C Ratio		0.81	0.81		0.13	
v/c Ratio		0.25	0.34		0.01	
Control Delay		1.6	7.1		27.0	
Queue Delay		0.0	0.0		0.0	
Total Delay		1.6	7.1		27.0	
LOS		A	A		C	
Approach Delay		1.6	7.1		27.0	
Approach LOS		A	A		C	
Queue Length 50th (m)		4.0	28.4		0.1	
Queue Length 95th (m)		7.6	51.9		1.3	
Internal Link Dist (m)		146.4	155.9		49.6	
Turn Bay Length (m)						
Base Capacity (vph)		1342	1377		241	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.25	0.34		0.00	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 32 (43%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 4.8	Intersection LOS: A
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Wellington St W/Somerset St W & Garland St

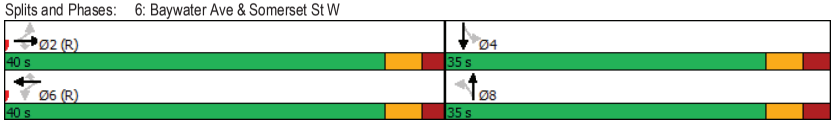
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	205	31	32	333	121	47	348	24	93	279	65
Future Volume (vph)	39	205	31	32	333	121	47	348	24	93	279	65
Satd. Flow (prot)	0	1731	1483	0	1738	1483	0	1710	0	1658	1658	0
Flt Permitted		0.904			0.959			0.924		0.435		
Satd. Flow (perm)	0	1564	1107	0	1652	1236	0	1582	0	732	1658	0
Satd. Flow (RTOR)			42			121		5			18	
Lane Group Flow (vph)	0	244	31	0	365	121	0	419	0	93	344	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	30.5	30.5	30.5	30.5	30.5	30.5	28.9	28.9		28.9	28.9	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	35.0	35.0		35.0	35.0	
Total Split (%)	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%		46.7%	46.7%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)		5.5	5.5		5.5	5.5		5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	
Act Effct Green (s)		34.5	34.5		34.5	34.5		29.1		29.1	29.1	
Actuated g/C Ratio		0.46	0.46		0.46	0.46		0.39		0.39	0.39	
v/c Ratio		0.34	0.06		0.48	0.19		0.68		0.33	0.53	
Control Delay		11.7	4.3		16.7	3.4		25.6		20.2	20.2	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Delay		11.7	4.3		16.7	3.4		25.6		20.2	20.2	
LOS		B	A		B	A		C		C	C	
Approach Delay		10.9			13.4			25.6			20.2	
Approach LOS		B			B			C			C	
Queue Length 50th (m)		31.8	1.3		34.1	0.0		47.4		9.0	34.4	
Queue Length 95th (m)		52.2	4.3		56.1	7.9		77.9		20.5	57.9	
Internal Link Dist (m)		155.9			373.3			144.7			90.4	
Turn Bay Length (m)			33.0			40.0				58.0		
Base Capacity (vph)		719	531		759	633		616		284	654	
Starvation Cap Reductn		0	0		0	0		0		0	0	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.34	0.06		0.48	0.19		0.68		0.33	0.53	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 63 (84%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 18.0	Intersection LOS: B
Intersection Capacity Utilization 104.9%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 6: Baywater Ave & Somerset St W



Appendix I

MMLOS Analysis

Multi-Modal Level of Service - Segments Form

Consultant	**CGH Transportation**	**Project**	**2020-33**
Scenario	**Existing/Future**	**Date**	**2022-01-14**
Comments			

SEGMENTS		**Street A**	Wellington St W - btwn Garland St and Spadina Ave	Garland St - btwn Armstrong St and Somerset St	Armstrong St - btwn Garland St and Hilda St	Hilda Street - South of Armstrong St	Garland St - btwn Armstrong St and Somerset St	Armstrong St - btwn Garland St and Hilda St	Hilda Street - South of Armstrong St
			Ex./Fut.	Ex.	Ex.	Ex.	Fut.	Fut.	Fut.
Pedestrian	Sidewalk Width Boulevard Width	-	≥ 2 m > 2 m	1.5 m < 0.5 m	1.5 m < 0.5 m	1.5 m < 0.5 m	1.8 m < 0.5 m	1.8 m < 0.5 m	1.8 m < 0.5 m
	Avg Daily Curb Lane Traffic Volume		≤ 3000	≤ 3000	≤ 3000	≤ 3000	≤ 3000	≤ 3000	≤ 3000
	Operating Speed On-Street Parking		≤ 30 km/h no	> 30 to 50 km/h yes	> 30 to 50 km/h no	> 30 to 50 km/h yes	> 30 to 50 km/h yes	> 30 to 50 km/h no	> 30 to 50 km/h yes
	Exposure to Traffic PLoS		**A**	**E**	**E**	**E**	**B**	**B**	**B**
	Effective Sidewalk Width								
	Pedestrian Volume								
	Crowding PLoS		-	-	-	-	-	-	-
	Level of Service		-	-	-	-	-	-	-
Bicycle	Type of Cycling Facility	E	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic
	Number of Travel Lanes		≤ 2 (no centreline)	≤ 2 (no centreline)	2-3 lanes total	≤ 2 (no centreline)	≤ 2 (no centreline)	2-3 lanes total	≤ 2 (no centreline)
	Operating Speed		≤ 40 km/h	>40 to <50 km/h	≥ 50 to 60 km/h	>40 to <50 km/h	>40 to <50 km/h	≥ 50 to 60 km/h	>40 to <50 km/h
	# of Lanes & Operating Speed LoS		**A**	**B**	**E**	**B**	**B**	**E**	**B**
	Bike Lane (+ Parking Lane) Width								
	Bike Lane Width LoS		-	-	-	-	-	-	-
	Bike Lane Blockages								
	Blockage LoS		-	-	-	-	-	-	-
	Median Refuge Width (no median = < 1.8 m)		< 1.8 m refuge	< 1.8 m refuge	< 1.8 m refuge	< 1.8 m refuge	< 1.8 m refuge	< 1.8 m refuge	< 1.8 m refuge
	No. of Lanes at Unsignalized Crossing		≤ 3 lanes	≤ 3 lanes	≤ 3 lanes	≤ 3 lanes	≤ 3 lanes	≤ 3 lanes	≤ 3 lanes
	Sidestreet Operating Speed		≤ 40 km/h	≤ 40 km/h	≤ 40 km/h	≤ 40 km/h	≤ 40 km/h	≤ 40 km/h	≤ 40 km/h
	Unsignalized Crossing - Lowest LoS		**A**	**A**	**A**	**A**	**A**	**A**	**A**
	Level of Service		**A**	**B**	**E**	**B**	**B**	**E**	**B**
Transit	Facility Type	-							
	Friction or Ratio Transit:Posted Speed								
	Level of Service		-	-	-	-	-	-	-
Truck	Truck Lane Width	-							
	Travel Lanes per Direction								
	Level of Service		-	-	-	-	-	-	-

Multi-Modal Level of Service - Intersections Form

Consultant	**CGH Transportation**	**Project**	**2020-33**
Scenario	**Present/Future**	**Date**	**2021-01-14**
Comments			

Unlocked Rows for Replicating

	INTERSECTIONS	Albert/Scott Street at Bayview Station Rd (Present)				Wellington Street W at Melrose Avenue				Wellington Street W at Fairmont Avenue			
	Crossing Side	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pedestrian	Lanes	6	5	6	6		0 - 2	0 - 2	0 - 2		3	0 - 2	0 - 2
	Median	No Median - 2.4 m	Median > 2.4 m	No Median - 2.4 m	No Median - 2.4 m		No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m		No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m
	Conflicting Left Turns	Permissive	Permissive	Permissive	Permissive		No left turn / Prohib.	No left turn / Prohib.	Permissive		Permissive	No left turn / Prohib.	Permissive
	Conflicting Right Turns	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control		Permissive or yield control	Permissive or yield control	No right turn		Permissive or yield control	Permissive or yield control	No right turn
	Right Turns on Red (RToR) ?	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed		RTOR allowed	RTOR prohibited	RTOR allowed		RTOR allowed	RTOR prohibited	RTOR allowed
	Ped Signal Leading Interval?	No	No	No	No		No	No	No		No	No	No
	Right Turn Channel	No Channel	No Channel	Conv'tl without Receiving Lane	No Channel		No Channel	No Channel	No Right Turn		No Channel	No Right Turn	No Channel
	Corner Radius	5-10m	5-10m	10-15m	5-10m		3-5m	5-10m	No Right Turn		5-10m	No Right Turn	5-10m
	Crosswalk Type	Std transverse markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings		Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement		Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement
	PETSI Score	**21**	**44**	**27**	**24**		**98**	**100**	**103**		**74**	**109**	**94**
	Ped. Exposure to Traffic LoS	**F**	**E**	**F**	**F**	**-**	**A**	**A**	**A**	**-**	**C**	**A**	**A**
	Cycle Length												
	Effective Walk Time												
	Average Pedestrian Delay												
	Pedestrian Delay LoS	-	-	-	-	-	-	-	-	-	-	-	-
	Level of Service	**F**	**E**	**F**	**F**	**-**	**A**	**A**	**A**	**-**	**C**	**A**	**A**
		F				**A**				**C**			
	Approach From	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Bicycle	Bicycle Lane Arrangement on Approach												
	Right Turn Lane Configuration												
	Right Turning Speed												
	Cyclist relative to RT motorists	**A**	**A**	**A**	**A**	**-**	**A**	**A**	**A**	**-**	**A**	**A**	**-**
	Separated or Mixed Traffic	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**-**	**Mixed Traffic**	**Mixed Traffic**	**-**	**-**	**Mixed Traffic**	**Mixed Traffic**	**-**
	Left Turn Approach	No lane crossed	No lane crossed	One lane crossed	One lane crossed		No lane crossed	No lane crossed			No lane crossed	No lane crossed	
	Operating Speed	> 50 to < 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h		≤ 40 km/h	> 40 to ≤ 50 km/h			≤ 40 km/h	> 40 to ≤ 50 km/h	
	Left Turning Cyclist	**C**	**C**	**E**	**E**	**-**	**B**	**B**	**A**	**-**	**B**	**B**	**-**
	Level of Service	**C**	**C**	**E**	**E**	**-**	**B**	**B**	**A**	**-**	**B**	**B**	**-**
		E				**B**				**B**			
Transit	Average Signal Delay			≤ 20 sec	≤ 20 sec			≤ 10 sec	≤ 10 sec			≤ 10 sec	≤ 20 sec
	Level of Service	**-**	**-**	**C**	**C**	**-**	**-**	**B**	**B**	**-**	**-**	**B**	**C**
		C				**B**				**C**			
Truck	Effective Corner Radius	< 10 m	10 - 15 m	10 - 15 m	10 - 15 m			< 10 m					< 10 m
	Number of Receiving Lanes on Departure from Intersection	≥ 2	≥ 2	1	1			1					1
	Level of Service	**D**	**B**	**E**	**E**	**-**	**-**	**F**	**-**	**-**	**-**	**-**	**F**
		E				**F**				**F**			
Auto	Volume to Capacity Ratio	0.61 - 0.70				0.0 - 0.60				0.0 - 0.60			
	Level of Service	**B**				**A**				**A**			

Wellington Street W/Somerset Street W at Garland Street				Somerset Street W at Bayswater Avenue				Albert/Scott Street at Bayview Station Rd (FUTURE)			
NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
0 - 2		3	0 - 2	3	0 - 2	4	4	6	5	6	6
No Median - 2.4 m		No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	Median > 2.4 m	No Median - 2.4 m	No Median - 2.4 m
Permissive		No left turn / Prohib.	No left turn / Prohib.	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Permissive or yield control		No right turn	No right turn	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control
RTOR prohibited		RTOR allowed	RTOR prohibited	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed
No		No	No	No	No	No	No	No	No	No	No
No Channel		No Right Turn	No Right Turn	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	Conv'tl without Receiving Lane	No Channel
5-10m		5-10m	5-10m	5-10m	3-5m	5-10m	5-10m	5-10m	5-10m	10-15m	5-10m
Textured/coloured pavement		Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement	Std transverse markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings
92		**91**	**109**	**74**	**90**	**57**	**57**	**21**	**44**	**27**	**24**
A	**-**	**A**	**A**	**C**	**A**	**D**	**D**	**F**	**E**	**F**	**F**
-	-	-	-	-	-	-	-	-	-	-	-
A	**-**	**A**	**A**	**C**	**A**	**D**	**D**	**F**	**E**	**F**	**F**
A				**D**				**F**			
NORTH	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**
						Mixed Traffic	Mixed Traffic				
						≤ 50 m	≤ 50 m				
						≤ 25 km/h	≤ 25 km/h				
A	**-**	**-**	**A**	**-**	**-**	**D**	**D**	**A**	**A**	**A**	**A**
Mixed Traffic	**-**	**-**	**Mixed Traffic**	**-**	**-**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**
No lane crossed			No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	One lane crossed	One lane crossed
> 40 to ≤ 50 km/h			> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h
B	**-**	**A**	**B**	**B**	**B**	**B**	**B**	**C**	**C**	**E**	**E**
B	**-**	**-**	**B**	**-**	**-**	**D**	**D**	**C**	**C**	**E**	**E**
B				**D**				**E**			
		≤ 10 sec	≤ 10 sec			≤ 20 sec	≤ 20 sec			≤ 20 sec	≤ 20 sec
-	**-**	**B**	**B**	**-**	**-**	**C**	**C**	**-**	**-**	**C**	**C**
B				**C**				**C**			
		< 10 m		< 10 m	< 10 m	< 10 m	< 10 m	< 10 m	10 - 15 m	10 - 15 m	10 - 15 m
		1		1	1	1	1	≥ 2	≥ 2	1	1
-	**-**	**F**	**-**	**F**	**F**	**F**	**F**	**D**	**B**	**E**	**E**
F				**F**				**E**			
0.0 - 0.60				0.0 - 0.60				0.61 - 0.70			
A				**A**				**B**			

Appendix J

TDM Worksheets

CGH TRANSPORTATION

TDM Measures Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

BASIC — The measure is generally feasible and effective, and in most cases would benefit the development and its users

BETTER — The measure could maximize support for users of sustainable modes, and optimize development performance

★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		1. TDM PROGRAM MANAGEMENT	
		1.1 Program coordinator	
BASIC	★	1.1.1 Designate an internal coordinator, or contract with an external coordinator	☐
		1.2 Travel surveys	
BETTER		1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
		2. WALKING AND CYCLING	
		2.1 Information on walking/cycling routes & destinations	
BASIC		2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances	☑
		2.2 Bicycle skills training	
		Commuter travel	
BETTER	★	2.2.1 Offer on-site cycling courses for commuters, or subsidize off-site courses	☐
		2.3 Valet bike parking	
		Visitor travel	
BETTER		2.3.1 Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	☐

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		3. TRANSIT	
		3.1 Transit information	
BASIC		3.1.1 Display relevant transit schedules and route maps at entrances	☑
BASIC		3.1.2 Provide online links to OC Transpo and STO information	☐
BETTER		3.1.3 Provide real-time arrival information display at entrances	☐
		3.2 Transit fare incentives	
		Commuter travel	
BETTER		3.2.1 Offer preloaded PRESTO cards to encourage commuters to use transit	☐
BETTER	★	3.2.2 Subsidize or reimburse monthly transit pass purchases by employees	☐
		Visitor travel	
BETTER		3.2.3 Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games)	☐
		3.3 Enhanced public transit service	
		Commuter travel	
BETTER		3.3.1 Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends)	☐
		Visitor travel	
BETTER		3.3.2 Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games)	☐
		3.4 Private transit service	
		Commuter travel	
BETTER		3.4.1 Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends)	☐
		Visitor travel	
BETTER		3.4.2 Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		4.	**RIDESHARING**	
		4.1	**Ridematching service**	
			Commuter travel	
BASIC	★	4.1.1	Provide a dedicated ridematching portal at OttawaRideMatch.com	☐
		4.2	**Carpool parking price incentives**	
			Commuter travel	
BETTER		4.2.1	Provide discounts on parking costs for registered carpools	☐
		4.3	**Vanpool service**	
			Commuter travel	
BETTER		4.3.1	Provide a vanpooling service for long-distance commuters	☐
		5.	**CARSHARING & BIKESHARING**	
		5.1	**Bikeshare stations & memberships**	
BETTER		5.1.1	Contract with provider to install on-site bikeshare station for use by commuters and visitors	☐
			Commuter travel	
BETTER		5.1.2	Provide employees with bikeshare memberships for local business travel	☐
		5.2	**Carshare vehicles & memberships**	
			Commuter travel	
BETTER		5.2.1	Contract with provider to install on-site carshare vehicles and promote their use by tenants	☐
BETTER		5.2.2	Provide employees with carshare memberships for local business travel	☐
		6.	**PARKING**	
		6.1	**Priced parking**	
			Commuter travel	
BASIC	★	6.1.1	Charge for long-term parking (daily, weekly, monthly)	☑
BASIC		6.1.2	Unbundle parking cost from lease rates at multi-tenant sites	☑
			Visitor travel	
BETTER		6.1.3	Charge for short-term parking (hourly)	☐

TDM Measures Checklist **City of Ottawa**
Version 1.0 (30 June 2017)

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		7.	**TDM MARKETING & COMMUNICATIONS**	
		7.1	**Multimodal travel information**	
			Commuter travel	
BASIC	★	7.1.1	Provide a multimodal travel option information package to new/relocating employees and students	☑
			Visitor travel	
BETTER	★	7.1.2	Include multimodal travel option information in invitations or advertising that attract visitors or customers (e.g. for festivals, concerts, games)	☐
		7.2	**Personalized trip planning**	
			Commuter travel	
BETTER	★	7.2.1	Offer personalized trip planning to new/relocating employees	☐
		7.3	**Promotions**	
			Commuter travel	
BETTER		7.3.1	Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes	☐
		8.	**OTHER INCENTIVES & AMENITIES**	
		8.1	**Emergency ride home**	
			Commuter travel	
BETTER	★	8.1.1	Provide emergency ride home service to non-driving commuters	☐
		8.2	**Alternative work arrangements**	
			Commuter travel	
BASIC	★	8.2.1	Encourage flexible work hours	☐
BETTER		8.2.2	Encourage compressed workweeks	☐
BETTER	★	8.2.3	Encourage telework	☐
		8.3	**Local business travel options**	
			Commuter travel	
BASIC	★	8.3.1	Provide local business travel options that minimize the need for employees to bring a personal car to work	☐
		8.4	**Commuter incentives**	
			Commuter travel	
BETTER		8.4.1	Offer employees a taxable, mode-neutral commuting allowance	☐
		8.5	**On-site amenities**	
			Commuter travel	
BETTER		8.5.1	Provide on-site amenities/services to minimize mid-day or mid-commute errands	☐

TDM Measures Checklist:
Residential Developments (multi-family, condominium or subdivision)

Legend

BASIC — The measure is generally feasible and effective, and in most cases would benefit the development and its users

BETTER — The measure could maximize support for users of sustainable modes, and optimize development performance

★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

		TDM measures: *Residential developments*	Check if proposed & add descriptions
	1.	**TDM PROGRAM MANAGEMENT**	
	1.1	**Program coordinator**	
BASIC ★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☐
	1.2	**Travel surveys**	
BETTER	1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
	2.	**WALKING AND CYCLING**	
	2.1	**Information on walking/cycling routes & destinations**	
BASIC	2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances *(multi-family, condominium)*	☑
	2.2	**Bicycle skills training**	
BETTER	2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	☐

		TDM measures: *Residential developments*	Check if proposed & add descriptions
	3.	**TRANSIT**	
	3.1	**Transit information**	
BASIC	3.1.1	Display relevant transit schedules and route maps at entrances *(multi-family, condominium)*	☑
BETTER	3.1.2	Provide real-time arrival information display at entrances *(multi-family, condominium)*	☐
	3.2	**Transit fare incentives**	
BASIC ★	3.2.1	Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	☑
BETTER	3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in	☐
	3.3	**Enhanced public transit service**	
BETTER ★	3.3.1	Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels *(subdivision)*	☐
	3.4	**Private transit service**	
BETTER	3.4.1	Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	☐
	4.	**CARSHARING & BIKESHARING**	
	4.1	**Bikeshare stations & memberships**	
BETTER	4.1.1	Contract with provider to install on-site bikeshare station (*multi-family)*	☑
BETTER	4.1.2	Provide residents with bikeshare memberships, either free or subsidized *(multi-family)*	☐
	4.2	**Carshare vehicles & memberships**	
BETTER	4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	☐
BETTER	4.2.2	Provide residents with carshare memberships, either free or subsidized	☐
	5.	**PARKING**	
	5.1	**Priced parking**	
BASIC ★	5.1.1	Unbundle parking cost from purchase price *(condominium)*	☑
BASIC ★	5.1.2	Unbundle parking cost from monthly rent *(multi-family)*	☑

			TDM measures: *Residential developments*	Check if proposed & add descriptions
		6.	**TDM MARKETING & COMMUNICATIONS**	
		6.1	**Multimodal travel information**	
BASIC	★	6.1.1	Provide a multimodal travel option information package to new residents	☑
		6.2	**Personalized trip planning**	
BETTER	★	6.2.1	Offer personalized trip planning to new residents	☐

TDM-Supportive Development Design and Infrastructure Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

			TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
		1.	**WALKING & CYCLING: ROUTES**	
		1.1	**Building location & access points**	
BASIC		1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☑
BASIC		1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑
BASIC		1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑
		1.2	**Facilities for walking & cycling**	
REQUIRED		1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☐
REQUIRED		1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☑
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☐
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☐
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	☐
BETTER	2.1.5	Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☐
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	☐
	2.3	**Shower & change facilities**	
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters	☐
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	☐
	2.4	**Bicycle repair station**	
BETTER	2.4.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	4.2	**Carpool parking**	
BASIC	4.2.1	Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	☐
BETTER	4.2.2	At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☑
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	☐
	7.	**OTHER**	
	7.1	**On-site amenities to minimize off-site trips**	
BETTER	7.1.1	Provide on-site amenities to minimize mid-day or mid-commute errands	☐

TDM-Supportive Development Design and Infrastructure Checklist:
Residential Developments (multi-family or condominium)

Legend

REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☑
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☐
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☑
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☐
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☐
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☑
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☐
	2.3	**Bicycle repair station**	
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☑
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐

TDM-Supportive Development Design and Infrastructure Checklist **City of Ottawa**
Version 1.0 (30 June 2017)

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☑
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☑
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	☐

Appendix K

Synchro Intersection Worksheets – 2024 Future Total Conditions

CGH TRANSPORTATION

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	598	76	49	304	30	46	86	112	124	232	24
Future Volume (vph)	20	598	76	49	304	30	46	86	112	124	232	24
Satd. Flow (prot)	0	1742	1483	1658	1745	1483	1658	1493	0	1658	1701	0
Flt Permitted		0.985		0.355			0.417			0.537		
Satd. Flow (perm)	0	1718	1256	594	1745	1426	687	1493	0	903	1701	0
Satd. Flow (RTOR)			71			37		63			5	
Lane Group Flow (vph)	0	618	76	49	304	30	46	198	0	124	256	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	32.4	32.4		32.4	32.4	
Total Split (s)	67.6	67.6	67.6	67.6	67.6	67.6	32.4	32.4		32.4	32.4	
Total Split (%)	67.6%	67.6%	67.6%	67.6%	67.6%	67.6%	32.4%	32.4%		32.4%	32.4%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1		3.1	3.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5	6.5	6.5	6.5	6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		65.5	65.5	65.5	65.5	65.5	21.6	21.6		21.6	21.6	
Actuated g/C Ratio		0.66	0.66	0.66	0.66	0.66	0.22	0.22		0.22	0.22	
v/c Ratio		0.55	0.09	0.13	0.27	0.03	0.31	0.53		0.64	0.69	
Control Delay		12.7	2.5	9.0	8.8	2.2	36.8	27.7		49.8	44.7	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		12.7	2.5	9.0	8.8	2.2	36.8	27.7		49.8	44.7	
LOS		B	A	A	A	A	D	C		D	D	
Approach Delay		11.5			8.3			29.4			46.4	
Approach LOS		B			A			C			D	
Queue Length 50th (m)		67.1	0.4	3.7	25.6	0.0	7.1	21.5		20.7	42.3	
Queue Length 95th (m)		98.7	5.6	9.0	39.5	2.8	17.2	42.3		39.5	67.6	
Internal Link Dist (m)		378.4			472.1			159.3			298.3	
Turn Bay Length (m)			40.0	62.0		40.0	52.0			42.0		
Base Capacity (vph)		1125	847	388	1143	946	178	434		234	445	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.55	0.09	0.13	0.27	0.03	0.26	0.46		0.53	0.58	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 21.2	Intersection LOS: C
Intersection Capacity Utilization 94.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 2: Bayview Station Rd & Scott St/Albert St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	336	0	0	207	33	53
Future Volume (vph)	336	0	0	207	33	53
Satd. Flow (prot)	1745	0	0	1745	1510	0
Flt Permitted					0.981	
Satd. Flow (perm)	1745	0	0	1745	1496	0
Satd. Flow (RTOR)					53	
Lane Group Flow (vph)	336	0	0	207	86	0
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Detector Phase	2			6	8	
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	
Minimum Split (s)	30.3			23.3	19.1	
Total Split (s)	50.9			50.9	19.1	
Total Split (%)	72.7%			72.7%	27.3%	
Yellow Time (s)	3.3			3.3	3.0	
All-Red Time (s)	2.0			2.0	2.1	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.3			5.3	5.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max			C-Max	None	
Act Effct Green (s)	54.7			54.7	8.1	
Actuated g/C Ratio	0.78			0.78	0.12	
v/c Ratio	0.25			0.15	0.39	
Control Delay	3.9			5.2	18.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	3.9			5.2	18.4	
LOS	A			A	B	
Approach Delay	3.9			5.2	18.4	
Approach LOS	A			A	B	
Queue Length 50th (m)	10.1			2.9	4.1	
Queue Length 95th (m)	27.1			21.9	14.2	
Internal Link Dist (m)	162.3			139.1	142.7	
Turn Bay Length (m)						
Base Capacity (vph)	1362			1362	344	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.25			0.15	0.25	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 53 (76%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.39

Intersection Signal Delay: 6.3	Intersection LOS: A
Intersection Capacity Utilization 35.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Melrose Ave & Wellington St W

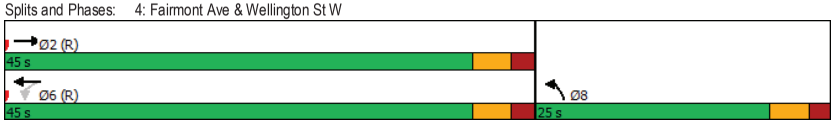
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	304	55	26	197	28	28
Future Volume (vph)	304	55	26	197	28	28
Satd. Flow (prot)	1665	0	0	1735	1484	0
Flt Permitted				0.943	0.976	
Satd. Flow (perm)	1665	0	0	1630	1469	0
Satd. Flow (RTOR)	21				28	
Lane Group Flow (vph)	359	0	0	223	56	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	
Minimum Split (s)	24.4		15.4	15.4	24.2	
Total Split (s)	45.0		45.0	45.0	25.0	
Total Split (%)	64.3%		64.3%	64.3%	35.7%	
Yellow Time (s)	3.3		3.3	3.3	3.3	
All-Red Time (s)	2.1		2.1	2.1	1.9	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.4			5.4	5.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	None	
Act Effct Green (s)	49.0			49.0	13.6	
Actuated g/C Ratio	0.70			0.70	0.19	
v/c Ratio	0.31			0.20	0.18	
Control Delay	5.0			8.4	13.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	5.0			8.4	13.4	
LOS	A			A	B	
Approach Delay	5.0			8.4	13.4	
Approach LOS	A			A	B	
Queue Length 50th (m)	23.1			17.0	2.7	
Queue Length 95th (m)	12.8			28.6	10.4	
Internal Link Dist (m)	139.1			146.4	73.7	
Turn Bay Length (m)						
Base Capacity (vph)	1172			1141	439	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.31			0.20	0.13	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 65 (93%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.31

Intersection Signal Delay: 6.9	Intersection LOS: A
Intersection Capacity Utilization 57.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Fairmont Ave & Wellington St W



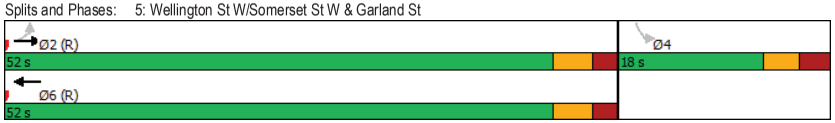
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	18	263	241	12	0	0
Future Volume (vph)	18	263	241	12	0	0
Satd. Flow (prot)	0	1740	1719	0	1745	0
Flt Permitted		0.978				
Satd. Flow (perm)	0	1695	1719	0	1745	0
Satd. Flow (RTOR)			8			
Lane Group Flow (vph)	0	281	253	0	0	0
Turn Type	Perm	NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases	2				4	
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		5.0	
Minimum Split (s)	15.5	15.5	25.5		17.7	
Total Split (s)	52.0	52.0	52.0		18.0	
Total Split (%)	74.3%	74.3%	74.3%		25.7%	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.2	2.2	2.2		2.7	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.7	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	
Act Effct Green (s)		60.7	60.7			
Actuated g/C Ratio		0.87	0.87			
v/c Ratio		0.19	0.17			
Control Delay		0.9	2.2			
Queue Delay		0.0	0.0			
Total Delay		0.9	2.2			
LOS		A	A			
Approach Delay		0.9	2.2			
Approach LOS		A	A			
Queue Length 50th (m)		0.0	0.0			
Queue Length 95th (m)		4.0	14.1			
Internal Link Dist (m)		146.4	155.9		49.6	
Turn Bay Length (m)						
Base Capacity (vph)		1470	1492			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.19	0.17			

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 7 (10%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.19

Intersection Signal Delay: 1.5	Intersection LOS: A
Intersection Capacity Utilization 47.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Wellington St W/Somerset St W & Garland St



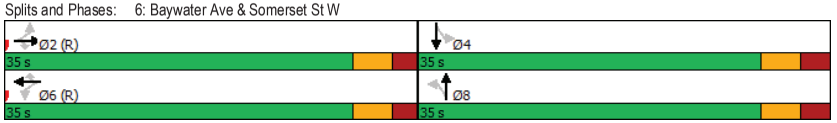
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	218	24	16	138	52	28	178	29	120	235	74
Future Volume (vph)	37	218	24	16	138	52	28	178	29	120	235	74
Satd. Flow (prot)	0	1733	1483	0	1736	1483	0	1686	0	1658	1653	0
Flt Permitted		0.943			0.960			0.937		0.620		
Satd. Flow (perm)	0	1628	1229	0	1662	1274	0	1584	0	1039	1653	0
Satd. Flow (RTOR)			45			52		12			28	
Lane Group Flow (vph)	0	255	24	0	154	52	0	235	0	120	309	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	33.5	33.5	33.5	33.5	33.5	33.5	29.9	29.9		29.9	29.9	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)		5.5	5.5		5.5	5.5		5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	
Act Effct Green (s)		29.5	29.5		29.5	29.5		29.1		29.1	29.1	
Actuated g/C Ratio		0.42	0.42		0.42	0.42		0.42		0.42	0.42	
v/c Ratio		0.37	0.04		0.22	0.09		0.35		0.28	0.44	
Control Delay		9.7	0.3		14.0	4.5		15.2		15.8	15.6	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Delay		9.7	0.3		14.0	4.5		15.2		15.8	15.6	
LOS		A	A		B	A		B		B	B	
Approach Delay		8.9			11.6			15.2			15.7	
Approach LOS		A			B			B			B	
Queue Length 50th (m)		9.2	0.0		12.4	0.0		19.2		10.0	25.0	
Queue Length 95th (m)		10.8	0.2		23.5	5.5		34.8		21.1	44.2	
Internal Link Dist (m)		155.9			373.3			144.7			91.9	
Turn Bay Length (m)			33.0			40.0				58.0		
Base Capacity (vph)		686	543		700	566		665		431	703	
Starvation Cap Reductn		0	0		0	0		0		0	0	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.37	0.04		0.22	0.09		0.35		0.28	0.44	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 19 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.44

Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 92.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Baywater Ave & Somerset St W



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	474	101	86	581	91	99	280	77	48	83	16
Future Volume (vph)	19	474	101	86	581	91	99	280	77	48	83	16
Satd. Flow (prot)	0	1742	1483	1658	1745	1483	1658	1671	0	1658	1665	0
Flt Permitted		0.971		0.425			0.693			0.272		
Satd. Flow (perm)	0	1693	1191	685	1745	1320	1104	1671	0	470	1665	0
Satd. Flow (RTOR)			101			91		13			9	
Lane Group Flow (vph)	0	493	101	86	581	91	99	357	0	48	99	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	32.4	32.4		32.4	32.4	
Total Split (s)	67.6	67.6	67.6	67.6	67.6	67.6	32.4	32.4		32.4	32.4	
Total Split (%)	67.6%	67.6%	67.6%	67.6%	67.6%	67.6%	32.4%	32.4%		32.4%	32.4%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1		3.1	3.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5	6.5	6.5	6.5	6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		62.7	62.7	62.7	62.7	62.7	24.4	24.4		24.4	24.4	
Actuated g/C Ratio		0.63	0.63	0.63	0.63	0.63	0.24	0.24		0.24	0.24	
v/c Ratio		0.46	0.13	0.20	0.53	0.11	0.37	0.85		0.42	0.24	
Control Delay		12.0	2.1	10.0	13.1	2.0	35.1	54.7		43.5	28.4	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		12.0	2.1	10.0	13.1	2.0	35.1	54.7		43.5	28.4	
LOS		B	A	B	B	A	D	D		D	C	
Approach Delay		10.3			11.4			50.4			33.3	
Approach LOS		B			B			D			C	
Queue Length 50th (m)		48.4	0.0	6.8	60.7	0.0	15.6	62.6		7.7	13.7	
Queue Length 95th (m)		71.8	5.9	14.5	88.6	5.6	30.3	#106.6		19.2	26.9	
Internal Link Dist (m)		378.4			472.1			159.3			298.3	
Turn Bay Length (m)			40.0	62.0		40.0	52.0			42.0		
Base Capacity (vph)		1061	783	429	1094	861	287	444		122	439	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.46	0.13	0.20	0.53	0.11	0.34	0.80		0.39	0.23	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 65 (65%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 21.8	Intersection LOS: C
Intersection Capacity Utilization 110.5%	ICU Level of Service H
Analysis Period (min) 15	

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

Splits and Phases: 2: Bayview Station Rd & Scott St/Albert St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	346	0	0	396	24	27
Future Volume (vph)	346	0	0	396	24	27
Satd. Flow (prot)	1745	0	0	1745	1474	0
Flt Permitted					0.977	
Satd. Flow (perm)	1745	0	0	1745	1383	0
Satd. Flow (RTOR)					27	
Lane Group Flow (vph)	346	0	0	396	51	0
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Detector Phase	2			6	8	
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	
Minimum Split (s)	30.3			23.3	19.1	
Total Split (s)	55.9			55.9	19.1	
Total Split (%)	74.5%			74.5%	25.5%	
Yellow Time (s)	3.3			3.3	3.0	
All-Red Time (s)	2.0			2.0	2.1	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.3			5.3	5.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max			C-Max	None	
Act Effct Green (s)	57.2			57.2	10.6	
Actuated g/C Ratio	0.76			0.76	0.14	
v/c Ratio	0.26			0.30	0.22	
Control Delay	4.7			8.2	17.9	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.7			8.2	17.9	
LOS	A			A	B	
Approach Delay	4.7			8.2	17.9	
Approach LOS	A			A	B	
Queue Length 50th (m)	16.8			30.0	2.8	
Queue Length 95th (m)	27.4			48.2	11.4	
Internal Link Dist (m)	162.3			139.1	142.7	
Turn Bay Length (m)						
Base Capacity (vph)	1330			1330	297	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.26			0.30	0.17	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 55 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.30

Intersection Signal Delay: 7.3	Intersection LOS: A
Intersection Capacity Utilization 40.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Melrose Ave & Wellington St W

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	330	64	46	394	36	48
Future Volume (vph)	330	64	46	394	36	48
Satd. Flow (prot)	1625	0	0	1736	1415	0
Flt Permitted				0.932	0.979	
Satd. Flow (perm)	1625	0	0	1601	1375	0
Satd. Flow (RTOR)	23				48	
Lane Group Flow (vph)	394	0	0	440	84	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	
Minimum Split (s)	24.4		15.4	15.4	24.2	
Total Split (s)	50.0		50.0	50.0	25.0	
Total Split (%)	66.7%		66.7%	66.7%	33.3%	
Yellow Time (s)	3.3		3.3	3.3	3.3	
All-Red Time (s)	2.1		2.1	2.1	1.9	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.4			5.4	5.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	None	
Act Effct Green (s)	51.3			51.3	16.3	
Actuated g/C Ratio	0.68			0.68	0.22	
v/c Ratio	0.35			0.40	0.24	
Control Delay	14.0			6.0	13.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	14.0			6.0	13.6	
LOS	B			A	B	
Approach Delay	14.0			6.0	13.6	
Approach LOS	B			A	B	
Queue Length 50th (m)	39.9			28.6	3.9	
Queue Length 95th (m)	68.1			33.2	14.0	
Internal Link Dist (m)	139.1			146.4	73.7	
Turn Bay Length (m)						
Base Capacity (vph)	1119			1095	408	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.35			0.40	0.21	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 24 (32%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.40

Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 76.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Fairmont Ave & Wellington St W

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	34	274	407	38	1	0
Future Volume (vph)	34	274	407	38	1	0
Satd. Flow (prot)	0	1736	1676	0	1658	0
Flt Permitted		0.931			0.950	
Satd. Flow (perm)	0	1599	1676	0	1383	0
Satd. Flow (RTOR)			14			
Lane Group Flow (vph)	0	308	445	0	1	0
Turn Type	Perm	NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases	2				4	
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		5.0	
Minimum Split (s)	15.5	15.5	25.5		17.7	
Total Split (s)	57.0	57.0	57.0		18.0	
Total Split (%)	76.0%	76.0%	76.0%		24.0%	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.2	2.2	2.2		2.7	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.7	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	
Act Effct Green (s)		56.4	56.4		10.7	
Actuated g/C Ratio		0.75	0.75		0.14	
v/c Ratio		0.26	0.35		0.01	
Control Delay		1.9	7.1		27.0	
Queue Delay		0.0	0.0		0.0	
Total Delay		1.9	7.1		27.0	
LOS		A	A		C	
Approach Delay		1.9	7.1		27.0	
Approach LOS		A	A		C	
Queue Length 50th (m)		4.1	23.4		0.1	
Queue Length 95th (m)		7.7	46.7		1.3	
Internal Link Dist (m)		146.4	155.9		49.6	
Turn Bay Length (m)						
Base Capacity (vph)		1203	1264		226	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.26	0.35		0.00	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 32 (43%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.35

Intersection Signal Delay: 5.0	Intersection LOS: A
Intersection Capacity Utilization 64.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Wellington St W/Somerset St W & Garland St

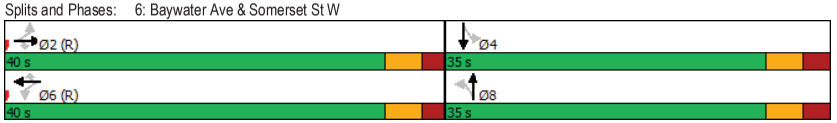
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	201	31	31	308	121	47	308	22	95	252	73
Future Volume (vph)	37	201	31	31	308	121	47	308	22	95	252	73
Satd. Flow (prot)	0	1731	1483	0	1736	1483	0	1710	0	1658	1638	0
Flt Permitted		0.912			0.958			0.920		0.469		
Satd. Flow (perm)	0	1575	1104	0	1649	1200	0	1573	0	786	1638	0
Satd. Flow (RTOR)			42			121		5			23	
Lane Group Flow (vph)	0	238	31	0	339	121	0	377	0	95	325	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	30.5	30.5	30.5	30.5	30.5	30.5	28.9	28.9		28.9	28.9	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	35.0	35.0		35.0	35.0	
Total Split (%)	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%		46.7%	46.7%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)		5.5	5.5		5.5	5.5		5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	
Act Effct Green (s)		34.5	34.5		34.5	34.5		29.1		29.1	29.1	
Actuated g/C Ratio		0.46	0.46		0.46	0.46		0.39		0.39	0.39	
v/c Ratio		0.33	0.06		0.45	0.20		0.62		0.31	0.50	
Control Delay		11.8	4.7		16.2	3.4		23.5		19.6	19.4	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Delay		11.8	4.7		16.2	3.4		23.5		19.6	19.4	
LOS		B	A		B	A		C		B	B	
Approach Delay		11.0			12.8			23.5			19.4	
Approach LOS		B			B			C			B	
Queue Length 50th (m)		30.4	1.3		31.1	0.0		41.1		9.1	31.4	
Queue Length 95th (m)		50.8	4.7		51.5	8.0		68.2		20.4	53.6	
Internal Link Dist (m)		155.9			373.3			144.7			91.3	
Turn Bay Length (m)			33.0			40.0				58.0		
Base Capacity (vph)		724	530		758	617		613		304	649	
Starvation Cap Reductn		0	0		0	0		0		0	0	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.33	0.06		0.45	0.20		0.62		0.31	0.50	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 63 (84%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 100.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Baywater Ave & Somerset St W



Appendix L

Synchro Intersection Worksheets – 2029 Future Total Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	715	76	56	363	37	47	87	136	148	256	24
Future Volume (vph)	20	715	76	56	363	37	47	87	136	148	256	24
Satd. Flow (prot)	0	1743	1483	1658	1745	1483	1658	1475	0	1658	1705	0
Flt Permitted		0.985		0.282			0.375			0.489		
Satd. Flow (perm)	0	1718	1256	478	1745	1426	620	1475	0	824	1705	0
Satd. Flow (RTOR)			60			37		76			5	
Lane Group Flow (vph)	0	735	76	56	363	37	47	223	0	148	280	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	32.4	32.4		32.4	32.4	
Total Split (s)	67.6	67.6	67.6	67.6	67.6	67.6	32.4	32.4		32.4	32.4	
Total Split (%)	67.6%	67.6%	67.6%	67.6%	67.6%	67.6%	32.4%	32.4%		32.4%	32.4%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1		3.1	3.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5	6.5	6.5	6.5	6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		65.1	65.1	65.1	65.1	65.1	22.0	22.0		22.0	22.0	
Actuated g/C Ratio		0.65	0.65	0.65	0.65	0.65	0.22	0.22		0.22	0.22	
v/c Ratio		0.66	0.09	0.18	0.32	0.04	0.35	0.58		0.82	0.74	
Control Delay		15.3	3.2	10.1	9.4	2.7	38.5	28.1		69.1	47.1	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		15.3	3.2	10.1	9.4	2.7	38.5	28.1		69.1	47.1	
LOS		B	A	B	A	A	D	C		E	D	
Approach Delay		14.2			9.0			29.9			54.7	
Approach LOS		B			A			C			D	
Queue Length 50th (m)		89.3	1.1	4.4	31.8	0.0	7.3	23.8		25.9	47.1	
Queue Length 95th (m)		132.4	6.4	10.8	48.2	3.6	18.0	46.5		#54.3	74.3	
Internal Link Dist (m)		378.4			472.1			159.3			298.3	
Turn Bay Length (m)			40.0	62.0		40.0	52.0			42.0		
Base Capacity (vph)		1117	837	311	1135	940	161	439		214	447	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.66	0.09	0.18	0.32	0.04	0.29	0.51		0.69	0.63	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82
Intersection Signal Delay: 24.0 Intersection LOS: C
Intersection Capacity Utilization 101.6% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Bayview Station Rd & Scott St/Albert St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	385	0	0	229	36	58
Future Volume (vph)	385	0	0	229	36	58
Satd. Flow (prot)	1745	0	0	1745	1510	0
Flt Permitted					0.981	
Satd. Flow (perm)	1745	0	0	1745	1496	0
Satd. Flow (RTOR)					58	
Lane Group Flow (vph)	385	0	0	229	94	0
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Detector Phase	2			6	8	
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	
Minimum Split (s)	30.3			23.3	19.1	
Total Split (s)	50.9			50.9	19.1	
Total Split (%)	72.7%			72.7%	27.3%	
Yellow Time (s)	3.3			3.3	3.0	
All-Red Time (s)	2.0			2.0	2.1	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.3			5.3	5.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max			C-Max	None	
Act Effct Green (s)	54.6			54.6	8.2	
Actuated g/C Ratio	0.78			0.78	0.12	
v/c Ratio	0.28			0.17	0.41	
Control Delay	4.1			5.3	18.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.1			5.3	18.6	
LOS	A			A	B	
Approach Delay	4.1			5.3	18.6	
Approach LOS	A			A	B	
Queue Length 50th (m)	12.0			3.8	4.4	
Queue Length 95th (m)	31.6			24.2	14.9	
Internal Link Dist (m)	162.3			139.1	142.7	
Turn Bay Length (m)						
Base Capacity (vph)	1361			1361	348	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.28			0.17	0.27	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 53 (76%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 6.4	Intersection LOS: A
Intersection Capacity Utilization 38.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Melrose Ave & Wellington St W

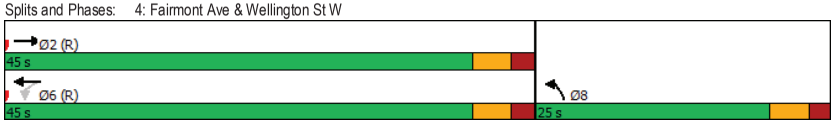
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	349	55	26	219	28	28
Future Volume (vph)	349	55	26	219	28	28
Satd. Flow (prot)	1675	0	0	1736	1484	0
Flt Permitted				0.944	0.976	
Satd. Flow (perm)	1675	0	0	1634	1469	0
Satd. Flow (RTOR)	19				28	
Lane Group Flow (vph)	404	0	0	245	56	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	
Minimum Split (s)	24.4		15.4	15.4	24.2	
Total Split (s)	45.0		45.0	45.0	25.0	
Total Split (%)	64.3%		64.3%	64.3%	35.7%	
Yellow Time (s)	3.3		3.3	3.3	3.3	
All-Red Time (s)	2.1		2.1	2.1	1.9	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.4			5.4	5.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	None	
Act Effct Green (s)	49.0			49.0	13.6	
Actuated g/C Ratio	0.70			0.70	0.19	
v/c Ratio	0.34			0.21	0.18	
Control Delay	5.2			8.5	13.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	5.2			8.5	13.4	
LOS	A			A	B	
Approach Delay	5.2			8.5	13.4	
Approach LOS	A			A	B	
Queue Length 50th (m)	27.1			18.8	2.7	
Queue Length 95th (m)	14.0			30.8	10.4	
Internal Link Dist (m)	139.1			146.4	73.7	
Turn Bay Length (m)						
Base Capacity (vph)	1178			1144	439	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.34			0.21	0.13	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 65 (93%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 7.0	Intersection LOS: A
Intersection Capacity Utilization 58.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Fairmont Ave & Wellington St W



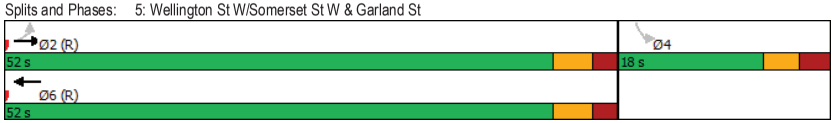
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	18	302	244	12	0	0
Future Volume (vph)	18	302	244	12	0	0
Satd. Flow (prot)	0	1740	1719	0	1745	0
Flt Permitted		0.980				
Satd. Flow (perm)	0	1700	1719	0	1745	0
Satd. Flow (RTOR)			8			
Lane Group Flow (vph)	0	320	256	0	0	0
Turn Type	Perm	NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases	2				4	
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		5.0	
Minimum Split (s)	15.5	15.5	25.5		17.7	
Total Split (s)	52.0	52.0	52.0		18.0	
Total Split (%)	74.3%	74.3%	74.3%		25.7%	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.2	2.2	2.2		2.7	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.7	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	
Act Effct Green (s)		60.7	60.7			
Actuated g/C Ratio		0.87	0.87			
v/c Ratio		0.22	0.17			
Control Delay		0.9	2.1			
Queue Delay		0.0	0.0			
Total Delay		0.9	2.1			
LOS		A	A			
Approach Delay		0.9	2.1			
Approach LOS		A	A			
Queue Length 50th (m)		0.0	0.0			
Queue Length 95th (m)		3.9	13.1			
Internal Link Dist (m)		146.4	155.9		49.6	
Turn Bay Length (m)						
Base Capacity (vph)		1474	1492			
Starvation Cap Reductn		0	0			
Spillback Cap Reductn		0	0			
Storage Cap Reductn		0	0			
Reduced v/c Ratio		0.22	0.17			

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 7 (10%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.22

Intersection Signal Delay: 1.4	Intersection LOS: A
Intersection Capacity Utilization 49.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Wellington St W/Somerset St W & Garland St



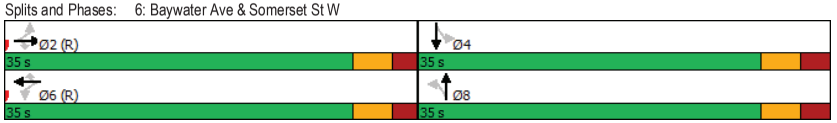
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	236	24	18	140	54	28	198	29	120	262	75
Future Volume (vph)	41	236	24	18	140	54	28	198	29	120	262	75
Satd. Flow (prot)	0	1733	1483	0	1735	1483	0	1692	0	1658	1660	0
Flt Permitted		0.940			0.952			0.939		0.599		
Satd. Flow (perm)	0	1623	1229	0	1647	1274	0	1592	0	1005	1660	0
Satd. Flow (RTOR)			45			54		11			25	
Lane Group Flow (vph)	0	277	24	0	158	54	0	255	0	120	337	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	33.5	33.5	33.5	33.5	33.5	33.5	29.9	29.9		29.9	29.9	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)		5.5	5.5		5.5	5.5		5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	
Act Effct Green (s)		29.5	29.5		29.5	29.5		29.1		29.1	29.1	
Actuated g/C Ratio		0.42	0.42		0.42	0.42		0.42		0.42	0.42	
v/c Ratio		0.41	0.04		0.23	0.10		0.38		0.29	0.48	
Control Delay		9.6	0.3		14.1	4.5		15.7		16.0	16.5	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Delay		9.6	0.3		14.1	4.5		15.7		16.0	16.5	
LOS		A	A		B	A		B		B	B	
Approach Delay		8.8			11.6			15.7			16.4	
Approach LOS		A			B			B			B	
Queue Length 50th (m)		8.9	0.0		12.7	0.0		21.3		10.0	28.5	
Queue Length 95th (m)		10.1	0.2		24.1	5.6		38.0		21.3	49.5	
Internal Link Dist (m)		155.9			373.3			144.7			90.3	
Turn Bay Length (m)			33.0			40.0				58.0		
Base Capacity (vph)		683	543		694	568		668		417	704	
Starvation Cap Reductn		0	0		0	0		0		0	0	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.41	0.04		0.23	0.10		0.38		0.29	0.48	

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 19 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 95.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Baywater Ave & Somerset St W



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	601	101	119	713	124	99	311	92	63	84	16
Future Volume (vph)	19	601	101	119	713	124	99	311	92	63	84	16
Satd. Flow (prot)	0	1742	1483	1658	1745	1483	1658	1667	0	1658	1665	0
Flt Permitted		0.971		0.335			0.692			0.211		
Satd. Flow (perm)	0	1693	1191	552	1745	1320	1103	1667	0	365	1665	0
Satd. Flow (RTOR)			94			101		14			9	
Lane Group Flow (vph)	0	620	101	119	713	124	99	403	0	63	100	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	32.4	32.4		32.4	32.4	
Total Split (s)	67.6	67.6	67.6	67.6	67.6	67.6	32.4	32.4		32.4	32.4	
Total Split (%)	67.6%	67.6%	67.6%	67.6%	67.6%	67.6%	32.4%	32.4%		32.4%	32.4%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1		3.1	3.1	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5	6.5	6.5	6.5	6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		61.8	61.8	61.8	61.8	61.8	25.3	25.3		25.3	25.3	
Actuated g/C Ratio		0.62	0.62	0.62	0.62	0.62	0.25	0.25		0.25	0.25	
v/c Ratio		0.59	0.13	0.35	0.66	0.15	0.36	0.94		0.69	0.23	
Control Delay		14.6	2.4	13.2	16.3	2.8	34.6	66.2		72.2	28.2	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		14.6	2.4	13.2	16.3	2.8	34.6	66.2		72.2	28.2	
LOS		B	A	B	B	A	C	E		E	C	
Approach Delay		12.9			14.2			60.0			45.3	
Approach LOS		B			B			E			D	
Queue Length 50th (m)		68.0	0.5	10.6	83.8	1.6	15.6	73.4		10.9	13.8	
Queue Length 95th (m)		100.3	6.5	22.5	123.1	8.4	30.3	#128.1		#32.3	27.2	
Internal Link Dist (m)		378.4			472.1			159.3			298.3	
Turn Bay Length (m)			40.0	62.0		40.0	52.0			42.0		
Base Capacity (vph)		1047	772	341	1079	854	286	443		94	439	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.59	0.13	0.35	0.66	0.15	0.35	0.91		0.67	0.23	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 65 (65%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94
Intersection Signal Delay: 25.8 Intersection LOS: C
Intersection Capacity Utilization 127.4% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Bayview Station Rd & Scott St/Albert St

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	385	0	0	454	26	30
Future Volume (vph)	385	0	0	454	26	30
Satd. Flow (prot)	1745	0	0	1745	1471	0
Flt Permitted					0.977	
Satd. Flow (perm)	1745	0	0	1745	1381	0
Satd. Flow (RTOR)					30	
Lane Group Flow (vph)	385	0	0	454	56	0
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Detector Phase	2			6	8	
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	
Minimum Split (s)	30.3			23.3	19.1	
Total Split (s)	55.9			55.9	19.1	
Total Split (%)	74.5%			74.5%	25.5%	
Yellow Time (s)	3.3			3.3	3.0	
All-Red Time (s)	2.0			2.0	2.1	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.3			5.3	5.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max			C-Max	None	
Act Effct Green (s)	57.2			57.2	10.6	
Actuated g/C Ratio	0.76			0.76	0.14	
v/c Ratio	0.29			0.34	0.24	
Control Delay	4.9			8.8	17.8	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.9			8.8	17.8	
LOS	A			A	B	
Approach Delay	4.9			8.8	17.8	
Approach LOS	A			A	B	
Queue Length 50th (m)	19.2			46.8	3.1	
Queue Length 95th (m)	31.1			73.1	12.1	
Internal Link Dist (m)	162.3			139.1	142.7	
Turn Bay Length (m)						
Base Capacity (vph)	1330			1330	298	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.29			0.34	0.19	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 55 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 7.7	Intersection LOS: A
Intersection Capacity Utilization 43.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Melrose Ave & Wellington St W

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	367	64	46	451	36	48
Future Volume (vph)	367	64	46	451	36	48
Satd. Flow (prot)	1635	0	0	1736	1415	0
Flt Permitted				0.935	0.979	
Satd. Flow (perm)	1635	0	0	1611	1375	0
Satd. Flow (RTOR)	21				48	
Lane Group Flow (vph)	431	0	0	497	84	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	
Minimum Split (s)	24.4		15.4	15.4	24.2	
Total Split (s)	50.0		50.0	50.0	25.0	
Total Split (%)	66.7%		66.7%	66.7%	33.3%	
Yellow Time (s)	3.3		3.3	3.3	3.3	
All-Red Time (s)	2.1		2.1	2.1	1.9	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.4			5.4	5.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	None	
Act Effct Green (s)	51.3			51.3	16.3	
Actuated g/C Ratio	0.68			0.68	0.22	
v/c Ratio	0.38			0.45	0.24	
Control Delay	14.9			6.4	13.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	14.9			6.4	13.6	
LOS	B			A	B	
Approach Delay	14.9			6.4	13.6	
Approach LOS	B			A	B	
Queue Length 50th (m)	46.4			31.0	3.9	
Queue Length 95th (m)	77.5			37.3	14.0	
Internal Link Dist (m)	139.1			146.4	73.7	
Turn Bay Length (m)						
Base Capacity (vph)	1125			1102	408	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.38			0.45	0.21	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 24 (32%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.45

Intersection Signal Delay: 10.6	Intersection LOS: B
Intersection Capacity Utilization 81.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Fairmont Ave & Wellington St W

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	34	307	444	38	1	0
Future Volume (vph)	34	307	444	38	1	0
Satd. Flow (prot)	0	1736	1681	0	1658	0
Flt Permitted		0.933			0.950	
Satd. Flow (perm)	0	1606	1681	0	1383	0
Satd. Flow (RTOR)			13			
Lane Group Flow (vph)	0	341	482	0	1	0
Turn Type	Perm	NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases	2				4	
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		5.0	
Minimum Split (s)	15.5	15.5	25.5		17.7	
Total Split (s)	57.0	57.0	57.0		18.0	
Total Split (%)	76.0%	76.0%	76.0%		24.0%	
Yellow Time (s)	3.3	3.3	3.3		3.0	
All-Red Time (s)	2.2	2.2	2.2		2.7	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.7	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	
Act Effct Green (s)		56.4	56.4		10.7	
Actuated g/C Ratio		0.75	0.75		0.14	
v/c Ratio		0.28	0.38		0.01	
Control Delay		1.8	7.9		27.0	
Queue Delay		0.0	0.0		0.0	
Total Delay		1.8	7.9		27.0	
LOS		A	A		C	
Approach Delay		1.8	7.9		27.0	
Approach LOS		A	A		C	
Queue Length 50th (m)		4.0	28.4		0.1	
Queue Length 95th (m)		7.6	51.6		1.3	
Internal Link Dist (m)		146.4	155.9		49.6	
Turn Bay Length (m)						
Base Capacity (vph)		1208	1268		226	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.28	0.38		0.00	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 32 (43%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.38

Intersection Signal Delay: 5.4	Intersection LOS: A
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Wellington St W/Somerset St W & Garland St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	203	31	32	333	122	47	348	24	96	279	79
Future Volume (vph)	39	203	31	32	333	122	47	348	24	96	279	79
Satd. Flow (prot)	0	1731	1483	0	1738	1483	0	1710	0	1658	1641	0
Flt Permitted		0.904			0.959			0.922		0.435		
Satd. Flow (perm)	0	1561	1104	0	1652	1200	0	1578	0	732	1641	0
Satd. Flow (RTOR)			42			122		5			22	
Lane Group Flow (vph)	0	242	31	0	365	122	0	419	0	96	358	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	2	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	30.5	30.5	30.5	30.5	30.5	30.5	28.9	28.9		28.9	28.9	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	35.0	35.0		35.0	35.0	
Total Split (%)	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%		46.7%	46.7%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.6		2.6	2.6	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)		5.5	5.5		5.5	5.5		5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max		Max	Max	
Act Effct Green (s)		34.5	34.5		34.5	34.5		29.1		29.1	29.1	
Actuated g/C Ratio		0.46	0.46		0.46	0.46		0.39		0.39	0.39	
v/c Ratio		0.34	0.06		0.48	0.20		0.68		0.34	0.55	
Control Delay		11.5	4.3		16.7	3.4		25.7		20.4	20.6	
Queue Delay		0.0	0.0		0.0	0.0		0.0		0.0	0.0	
Total Delay		11.5	4.3		16.7	3.4		25.7		20.4	20.6	
LOS		B	A		B	A		C		C	C	
Approach Delay		10.7			13.4			25.7			20.6	
Approach LOS		B			B			C			C	
Queue Length 50th (m)		31.6	1.3		34.1	0.0		47.4		9.3	35.9	
Queue Length 95th (m)		51.8	4.2		56.1	8.0		78.0		21.2	60.6	
Internal Link Dist (m)		155.9			373.3			144.7			90.4	
Turn Bay Length (m)			33.0			40.0				58.0		
Base Capacity (vph)		718	530		759	617		615		284	650	
Starvation Cap Reductn		0	0		0	0		0		0	0	
Spillback Cap Reductn		0	0		0	0		0		0	0	
Storage Cap Reductn		0	0		0	0		0		0	0	
Reduced v/c Ratio		0.34	0.06		0.48	0.20		0.68		0.34	0.55	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 63 (84%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 106.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 6: Baywater Ave & Somerset St W