1186-1194 Wellington Street West

Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

Step 3 Forecasting Report

Step 4 Strategy Report

Prepared for:

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200-180 Kent Street
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Prepared by:

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June 2021

PN: 2020-62

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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 the TIA Study PM. As shown in the Screening Form, a TIA is required including the Network Impact Component. This report accompanies a zoning by-law amendment/Official Plan amendment.

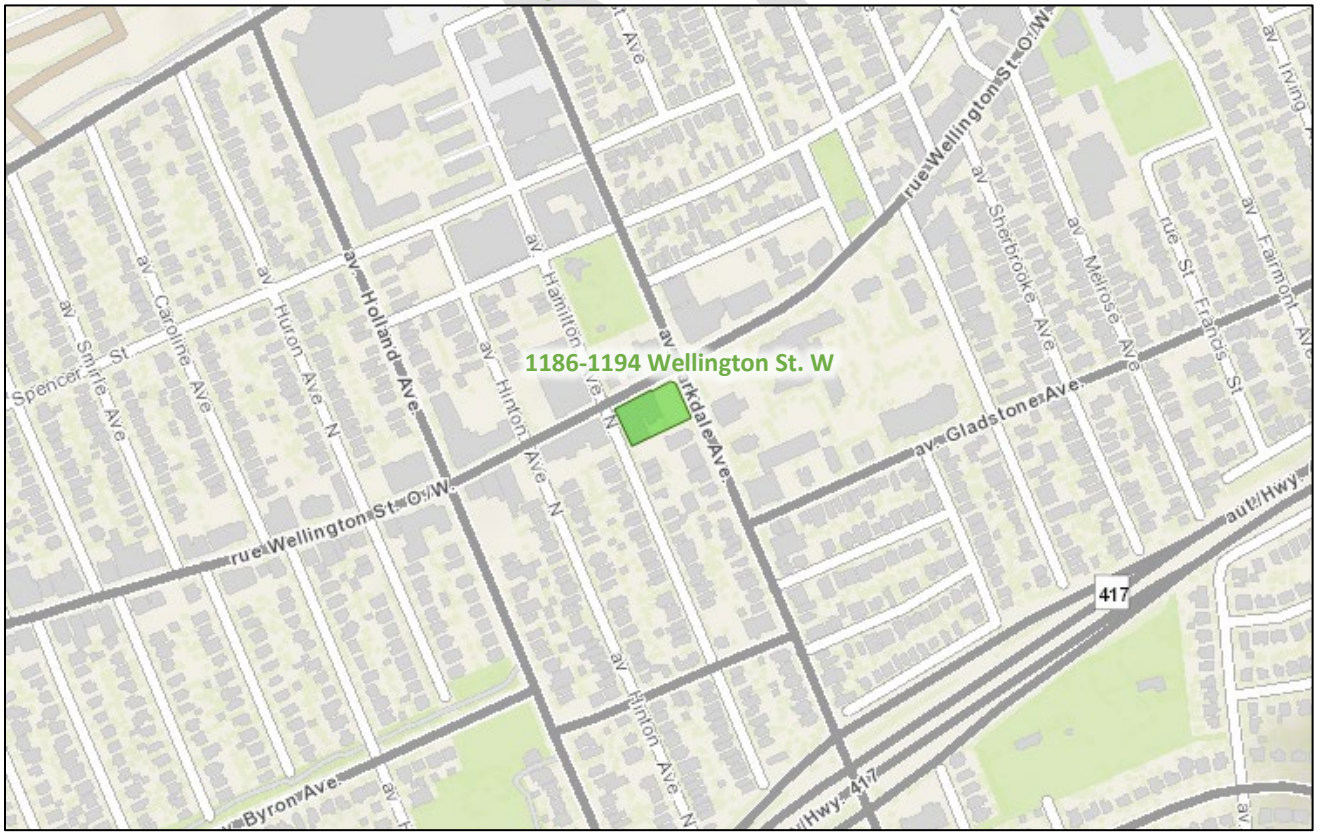
2 Existing and Planned Conditions

2.1 Proposed Development

The existing site, zoned as Traditional Mainstreet (TM11, TM11[18415]), intersecting the Wellington Traditional Mainstreet Design Priority Area (DPA), and within the area considered by the Wellington Street Community Design Plan (CDP) currently includes a drug store, a church, and a surface parking lot. The subject development proposes the construction of an 18-storey mixed-use building on a six-storey podium comprising 240 residential dwelling units 1,172 m^2 of ground floor retail with 139 underground parking spaces. Access to is to be provided via the existing rear lane connecting to Parkdale Avenue and Hamilton Avenue North, restricting the lane to outbound only onto Parkdale Avenue, and build-out is anticipated as occurring in a single phase by 2025.

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: March 29, 2021

PROJECT STATISTICS

1.0 SITE AREA

Overall Site Area

	acres	sq.m.	sq.ft.
Site Area	**0.617022139**	**2,497**	**26,877**

2.0 GROSS FLOOR AREAS (GFA)*

Buildings GFA

	GFA	No. of Levels	sq.m.	sq.ft.
Level Ground (retail)	1,172.0	1	1,172.0	12,615
Level 2	1,314.0	1	1,314.0	14,144
Level 3-6	1,314.0	4	5,256.0	56,575
Level 7	424.0	1	424.0	4,564
Level 8-18	605.0	11	6,655.0	71,634
Total Proposed GFA		**18**	**14,821.0**	**159,532**

3.0 FLOOR SPACE INDEX (FSI)

Total Proposed GFA / Site Area **5.94**

4.0 GROSS SALEABLE AREAS (GSA)**

Buildings GSA

	GSA	No. of Levels	sq.m.	sq.ft.
Level Ground (retail)	1,209.0	1	1,209.0	13,014
Level 2	1,378.0	1	1,378.0	14,833
Level 3-6	1,378.0	4	5,512.0	59,331
Level 7	450.0	1	450.0	4,844
Level 8-18	643.0	11	7,073.0	76,133
Total Proposed GSA		**18**	**15,622.0**	**168,154**

5.0 GROSS BUILDING AREAS (GBA)*

Buildings GBA

	GBA	No. of Levels	sq.m.	sq.ft.
Level Ground	2,010.0	1	2,010.0	21,635
Level 2	1,538.0	1	1,538.0	16,555
Level 3-6	1,538.0	4	6,152.0	66,220
Level 7	690.0	1	690.0	7,427
Level 8-18	750.0	11	8,250.0	88,802
Mech PH	270.0	1	270.0	2,906
Total Proposed GBA		**19**	**18,910.0**	**203,546**

6.0 GROSS CONSTRUCTION AREAS (GCA)**

Buildings GCA

	GCA	No. of Levels	sq.m.	sq.ft.
Level P3	1510.0	1	1,510.0	16,254
Level P2	2265.0	1	2,265.0	24,380
Level P1	2265.0	1	2,265.0	24,380
Level Ground	2,010.0	1	2,010.0	21,635
Level 2	2,040.0	1	2,040.0	21,958
Level 3-6	1,634.0	4	6,536.0	70,353
Level 7	1,590.0	1	1,590.0	17,115
Level 8-18	796.0	11	8,756.0	94,249
Mech PH	270.0	1	270.0	2,906
Total Proposed GCA		**22**	**27,242.0**	**293,230**

7.0 NO. OF RESIDENTIAL UNITS

Residential Units

	Units / Floor	Levels	Units
Level Ground (retail)	0	1	0
Level 2	20	1	20
Level 3-6	20	4	80
Level 7	8	1	8
Level 8-18	12	11	132
Total No. of Units		18	**240**

8.0 AMENITY

Total Amenity Required

	Total
6 sq.m. per dwelling unit	**1,440 sq.m.**

Communal Amenity Required

	Total
50% of total amenity	**720 sq.m.**

Private Amenity Required

	Total
(Private balconies, terraces, patios)	**720 sq.m.**

Indoor Communal Amenity Provided

	Total
Level 1	158 sq.m.
Level 7	135 sq.m.

Outdoor Communal Amenity Provided

	Total
Level 7	445 sq.m.

Total Communal Amenity Provided

	Total
	738 sq.m.

Total Private Amenity Provided

	Total
(Private balconies, terraces, patios)	**>720 sq.m.**

Total Amenity Provided

	Total
Total Communal + Total Private	**>1,458 sq.m.**

9.0 PARKING

Parking Required		
Residential	0.5 per dwelling unit after first 12 units, minus 10 percent if all located below grade in same building	**103**
Visitor	0.1 per dwelling unit after first 12 units	**23**
Retail	1.25 per 100 m2 of GFA	**15**
Total Parking Required		**141**

Parking Proposed		
Residential	0.6 per dwelling unit after first 12 units	**114**
Visitor	0.1 per dwelling unit after first 12 units	**23**
Retail	0 per 100 m2 of GFA	**0**
Total Parking Proposed		**137**

Parking Provided	Residential	Visitor	Retail	
Level P3	37			
Level P2	60			
Level P1	19	23	0	**42**
Total Parking Provided	**116**	**23**	**0**	**139**

10.0 BICYCLE PARKING

Total Residential Bicycle Spaces Required

	Total
0.5. per dwelling unit	**120**

Total Retail Bicycle Spaces Required

	Total
1 per 250 sq.m. of gross floor area	**5**

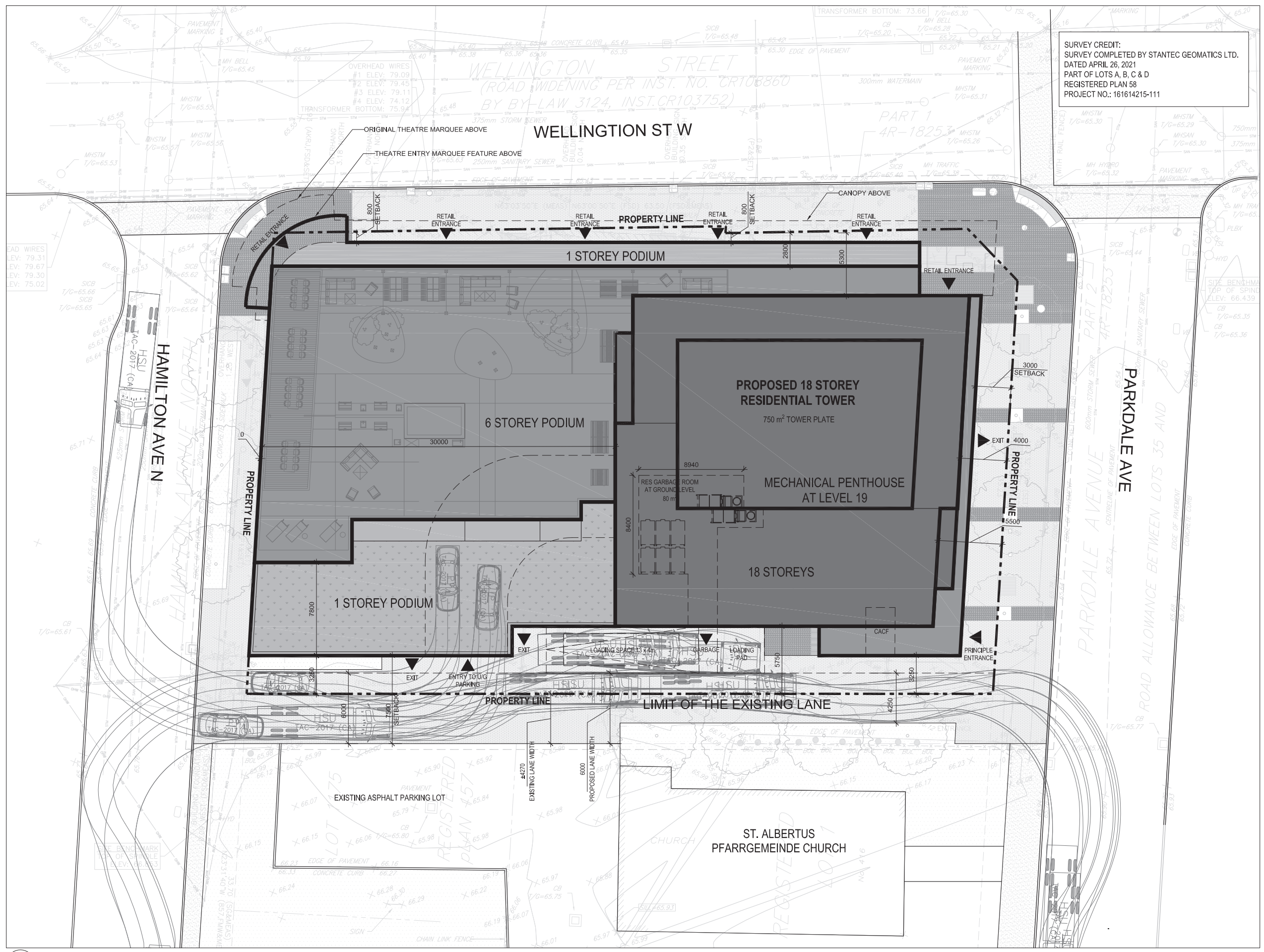
Total Residential Bicycle Spaces Provided

	Total
Level P3	**60**
Level P2	**90**
Level P1	**30**
Level 1	**60**
Total Retail	**240**

Total Retail Bicycle Spaces Provided

	Total
At Grade	**5**

2 CONTEXT PLAN
RZ-03 SCALE: 1:1250



1 SITE PLAN
RZ-03 SCALE: 1:150

DIALOG

ISSUED FOR

1 2021-06-25 ISSUED FOR OPA/ZBLA

METRIC

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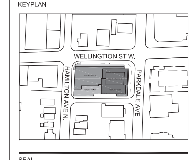
KEYPLAN



SEAL

PROJECT NORTH

1186-1194
WELLINGTON ST W

OTTAWA, ON M5V 1G8

SITE PLAN, CONTEXT & STATISTICS

DRAWN:
PLOT DATE:
CHECKED:

RZ-03

ON100020-WELLINGTON

2.2 Existing Conditions

2.2.1 Area Road Network

Highway 417: Highway 417 is a provincially owned urban freeway with a divided eight-lane cross-section with a posted speed limit of 100 km/h within the study area. Highway 417 is a truck route.

Parkdale Avenue: Parkdale Avenue is a City of Ottawa arterial road with a two-lane urban cross-section including sidewalks on both sides of the road. On-street parking is permitted on the west side of the road along the Parkdale Market frontage and on the west side of the road north of Oxford Street (no stopping weekdays 3:30PM-5:30PM) within the study area. The posted speed limit is 40 km/h and the Ottawa Official Plan reserves a 26.0-metre right of way to the north and the measured right of way is 20.0 metres to the south of Wellington Street West within the study area.

Wellington Street West: Wellington Street West is a City of Ottawa arterial road with an urban cross-section including two travel lanes, and on-street parking lanes and sidewalks on both sides of the road. No stopping provisions are in place 7:00AM-9:00AM on the south side of the road between Hamilton Avenue North and Parkdale Avenue, and on-street parking is not permitted on the on the south side of the road between Huron Avenue North and Holland Avenue and on the north side of the road between Holland Avenue between Hinton Avenue North. Sharrow pavement markings are present between Holland Avenue and Parkdale Avenue. Between Huron Avenue and Hamilton Avenue West, the posted speed limit is 40 km/h and the unposted speed limit is assumed to be 50 km/h outside of this segment. The Ottawa Official Plan reserves a 20.0-metre right of way within the study area. Wellington Street West is a truck route.

Holland Avenue: Holland Avenue is a City of Ottawa major collector road with a four-lane urban cross-section to the north and a two-lane urban cross-section to the south of Byron Avenue, each including sidewalks on both sides of the road. South of Tyndall Street, bike lanes are on both sides of the road, and on-street parking is permitted on the west side of the road for 40 metres midblock between Tyndall Street and the Fisher Park Public School access. Between Byron Avenue and Wellington Street West, on-street parking is permitted on the east side of the road (no stopping weekdays 7:00AM-9:00AM) and the west side of the road (no-stopping weekdays 3:30PM-5:30PM). Between Wellington Street West and Armstrong Street, on-street parking is permitted on the east side of the road and the west side of the road (no-stopping weekdays 3:30PM-5:30PM), and north of Holland Avenue, within the study area, on-street parking is permitted on the east side of the road. Twenty-five metres south of Tyndall Street, the posted speed limit is 30 km/h and the unposted speed limit is assumed to be 50 km/h to the north. The Ottawa Official Plan reserves a 26.0-metre right of way within the study area. Holland Avenue is a truck route.

Gladstone Avenue: Gladstone Avenue is a City of Ottawa major collector road with a two-lane urban cross-section including sidewalks on both sides of the road. Within the study area, the posted speed limit is 40 km/h and the measured right of way varies between 15.5 metres and 17.5 metres.

Tyndall Street: Tyndall Street is a City of Ottawa collector road with a two-lane urban cross-section including sidewalks on both sides of the road. The unposted speed limit is assumed to be 50 km/h and the measured right of way is 18.0 metres.

Carruthers Avenue: Carruthers Avenue is a southbound one-way City of Ottawa local road with a one-lane urban cross-section sidewalks on both sides of the road. Between Wellington Street West and Armstrong Street, on-street parking is permitted on the west side of the road and north of Armstrong Street within the study area, on-

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street parking is permitted on the east side of the road. The posted speed limit is 40 km/h and the measured right of way is 12.5 metres.

Spencer Street: Spencer Street is a City of Ottawa local road with a two-lane urban cross-section including sidewalks on both sides of the road. On-street parking is provided on the north side of the road between Holland Avenue and Hinton Avenue North, on the south side of the road between Hinton Avenue North and Hamilton Avenue North, and on both sides of the road east of Hamilton Avenue North. The posted speed limit is 40 km/h and the measured right of way is 18.0 metres.

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

Hamilton Avenue North: Hamilton Avenue North is a City of Ottawa local road with a two-lane urban cross-section including sidewalks on both sides of the road. On-street parking is permitted on the east side of the road south of Tyndall Street, on the west side of the road between Tyndall Street and Wellington Street West, on the west side of the road north of Wellington Street West and on the east side of the road via angle parking along the Parkdale Park frontage. On-street parking is further permitted on both sides of the road between Armstrong Street and Spencer Street and on the west side of the road via both parallel and angle parking to the north within the study area. The posted speed limit is 40 km/h and the measured right of way is 18.5 metres.

2.2.2 Existing Intersections

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

Holland Avenue & Spencer Street	The intersection of Holland Avenue & Spencer Street is a signalized intersection. The northbound and southbound approaches each consist of a shared left-turn/through lane and a shared through/right-turn lane. The eastbound and westbound approaches each consist of a shared all-movements lane. No turn restrictions were noted.
Holland Avenue & Wellington Street W	The intersection of Holland Avenue & Wellington Street W is a signalized intersection. The northbound and southbound approaches each consist of a shared left-turn/through lane and a shared through/right-turn lane. The eastbound and westbound approaches each consist of an auxiliary left-turn lane and a shared through/right-turn lane. Right turns on red all prohibited on all approaches at this intersection weekdays between 7:00AM and 7:00PM.
Holland Avenue & Tyndall Street	The intersection of Holland Avenue & Tyndall Street is a signalized intersection. The northbound approach consists of an auxiliary through lane, a shared through/right-turn lane, and a bike lane and the southbound consists of a left-turn lane and a through lane. The westbound approach consists of a shared left-turn/right-turn lane and a pocket bike lane with a bike box. Westbound right turns on red are prohibited.
Parkdale Avenue & Armstrong Street	The intersection of Parkdale Avenue & Armstrong Street is a signalized intersection. All approaches consist of shared all-movements lanes. No turn restrictions were noted.

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Parkdale Avenue & Wellington Street W	The intersection of Parkdale Avenue & Wellington Street W is a signalized intersection. The northbound and southbound approaches each consist of an auxiliary left-turn lane and a shared through/right-turn lane and the eastbound and westbound approaches each consist of a shared left-turn/through lane and a parking lane that operate as an auxiliary through/right-turn lane through the intersection. Right turns on red all prohibited on all approaches at this intersection weekdays between 7:00AM and 7:00PM.
Parkdale Avenue & Gladstone Avenue	The intersection of Parkdale Avenue & Gladstone Avenue is a signalized t-intersection. The northbound approach consists of a shared through/right-turn lane and the southbound consists of an auxiliary left-turn lane and a through lane. The westbound approach consists of a shared left-turn/right-turn lane and includes a bike box. Northbound and westbound right-turns on red are prohibited.
Parkdale Avenue & Highway 417 WB OR	The intersection of Parkdale Avenue & Highway 417 westbound off-ramp/on-ramp is a signalized intersection. The northbound approach consists of a left-turn lane and a through lane and the southbound consists of a shared through/right-turn lane. The westbound approach consists of a left-turn lane and a shared through/right-turn lane. Westbound through movements are prohibited weekdays 7:00AM- 9:00AM and 3:30PM- 5:30PM.
Carruthers Avenue & Wellington Street W	The intersection of Carruthers Avenue & Wellington Street W is a signalized intersection. The southbound consists of a left-turn lane and an auxiliary right-turn lane and the eastbound and the westbound approaches each consist of a through lane. No turn restrictions were noted.

2.2.3 Existing Driveways

The existing site driveway onto Wellington Street West is proposed as being decommissioned as part of the redevelopment. The rear lane additionally provides access to another church's parking lot to the south.

South of Wellington Street West along Hamilton Avenue North, a driveway accessing the rear parking and loading for the commercial strip on the south side of Wellington Street West opposite the subject site is present, and a driveway to a church parking lot and numerous driveways accessing attached and detached residential dwellings are present within 200 metres of the site access. On the north side of Wellington Street West along Hamilton Avenue North, driveways to commercial land uses, to a single detached dwelling, and to a mid-rise residential building are present on the west side of the road.

On Wellington Street West, driveways to a salon parking lot, to a gas station, and to a commercial parking lot are present on the north side of the road and a driveway to a mid-rise mixed-use building is present on the south side of the road.

South of Wellington Street West on Parkdale Avenue, driveways to commercial land uses, detached residential dwellings, to a high-rise residential building, to a postal station, to a seniors' residence and parking lot, and to a church are present. North of Wellington Street West on Parkdale Avenue, a municipal lane accessing the Parkdale Market and Parkdale Park, and driveways to a gas station, to a midrise residential building, to a commercial building, and to detached residential dwellings are present.

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2.2.4 Cycling and Pedestrian Facilities

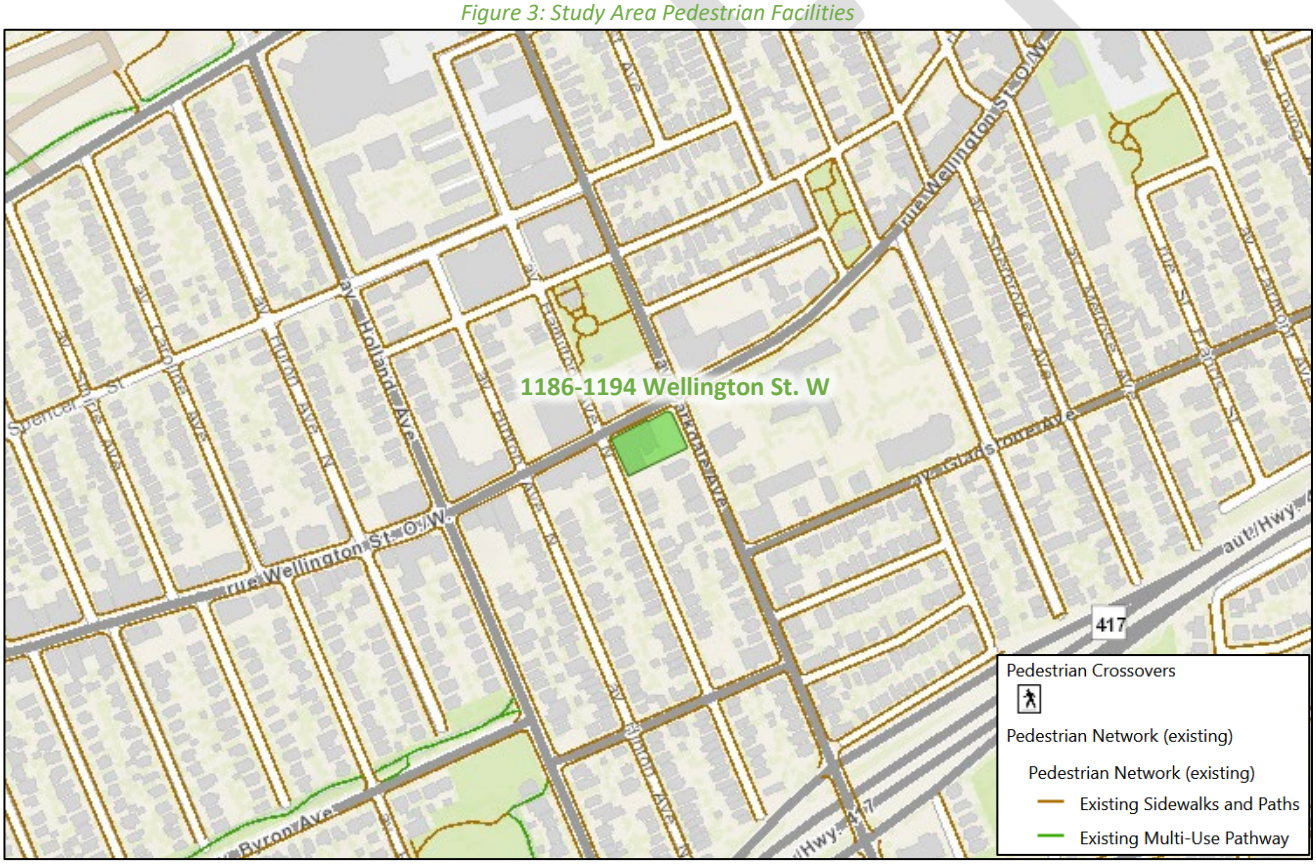
Figure 3 illustrates the pedestrian facilities in the study area and Figure 4 illustrates the cycling facilities.

Sidewalks are provided along both sides of all study area roadways excluding the interchange ramps.

Cycling facilities include a westbound bike lane on Byron Avenue and a mixed-use path (MUP) north of Byron Avenue, a MUP west of Holland Avenue South of Tyndall Street, an eastbound buffered bike lane on Scott Street, and a MUP on the north side of Scott Street. Additional cycling facilities include sharrows along Wellington Street West between Holland Avenue and Parkdale Avenue, with buffered dooring zone pavement markings along the parking lanes for this section of roadway.

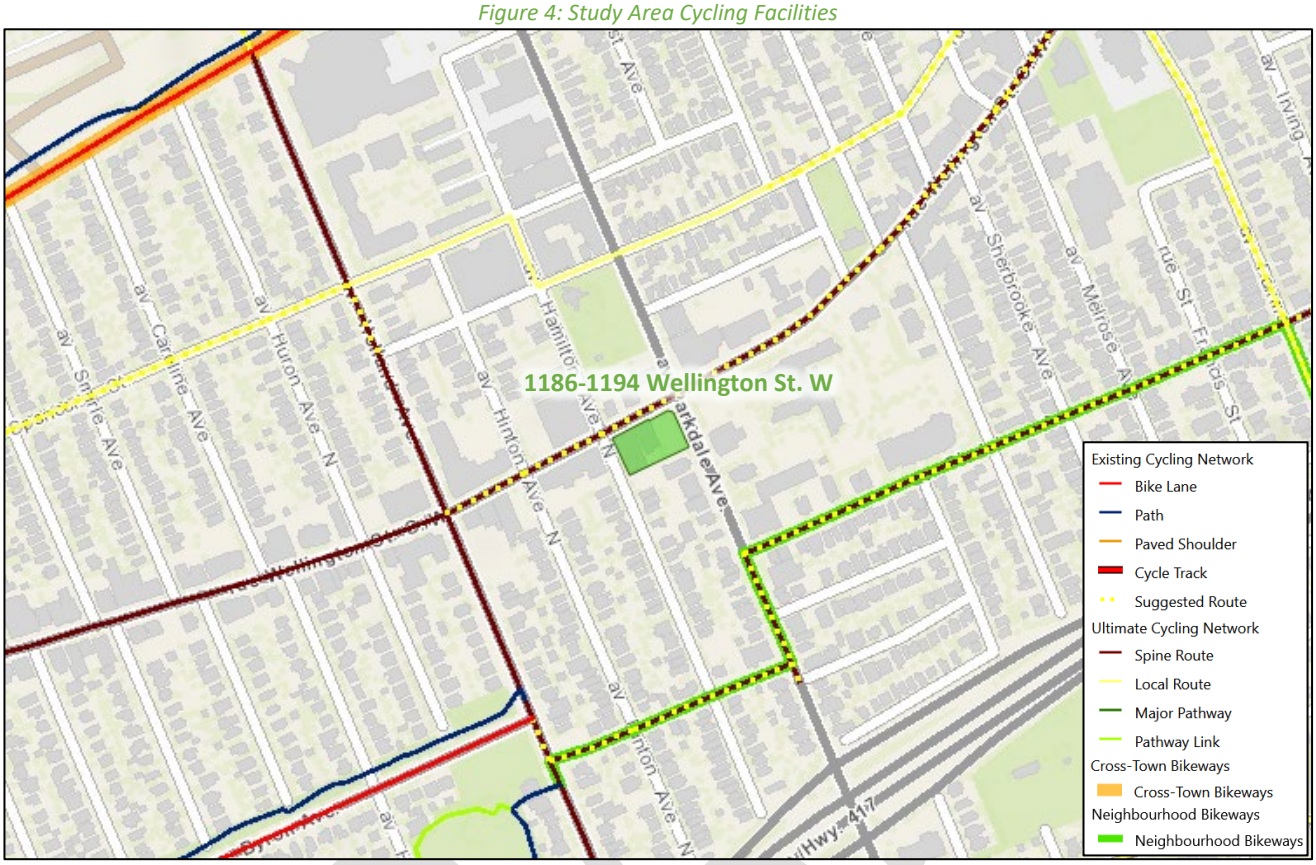
Holland Avenue, Parkdale Avenue between Gladstone Avenue and Tyndall Street, Scott Street, Wellington Street West, Tyndall Street, and Gladstone Avenue are spine cycling routes. Local routes include Tunney's Pasture Driveway, Hamilton Avenue North between Spencer Street and Armstrong Street, Fairmont Avenue, Spencer Street west of Hamilton Avenue North, Armstrong Street east of Hamilton Avenue North, and Byron Avenue. Scott Street is a cross-town bikeway, and the corridor from the pathway west of Holland Avenue, north to Holland Avenue, east to Tyndall Street, north to Parkdale Avenue, east to Gladstone Avenue and south to Fairmont Street is a neighbourhood bikeway.

Figure 3: Study Area Pedestrian Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: March 29, 2021

Figure 4: Study Area Cycling Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: March 29, 2021

Pedestrian and cyclist volumes included in study area intersection counts, presented in Section 2.2.7, have been compiled and are illustrated in Figure 5 and Figure 6 respectively.

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Figure 5: Existing Pedestrian Volumes

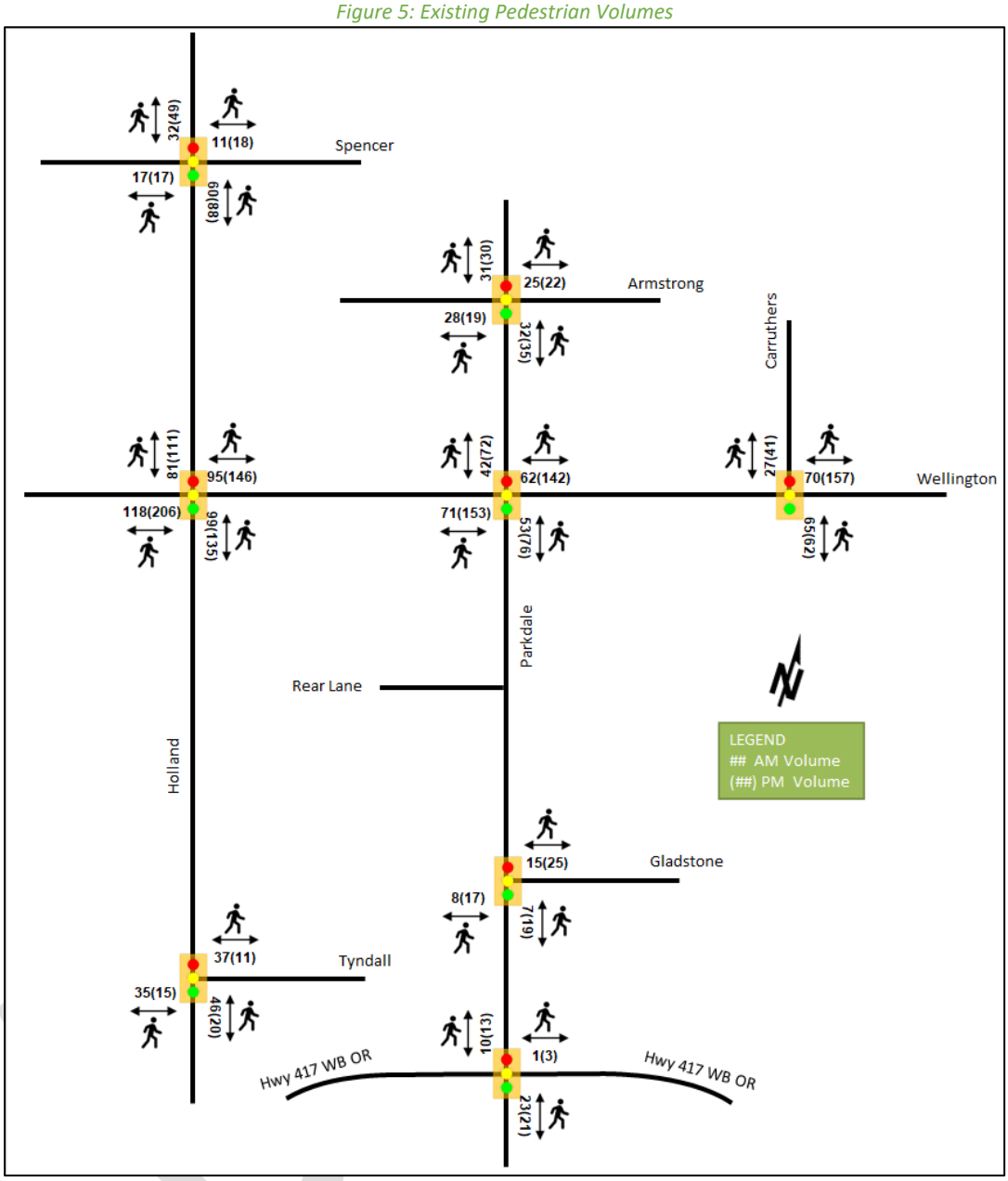
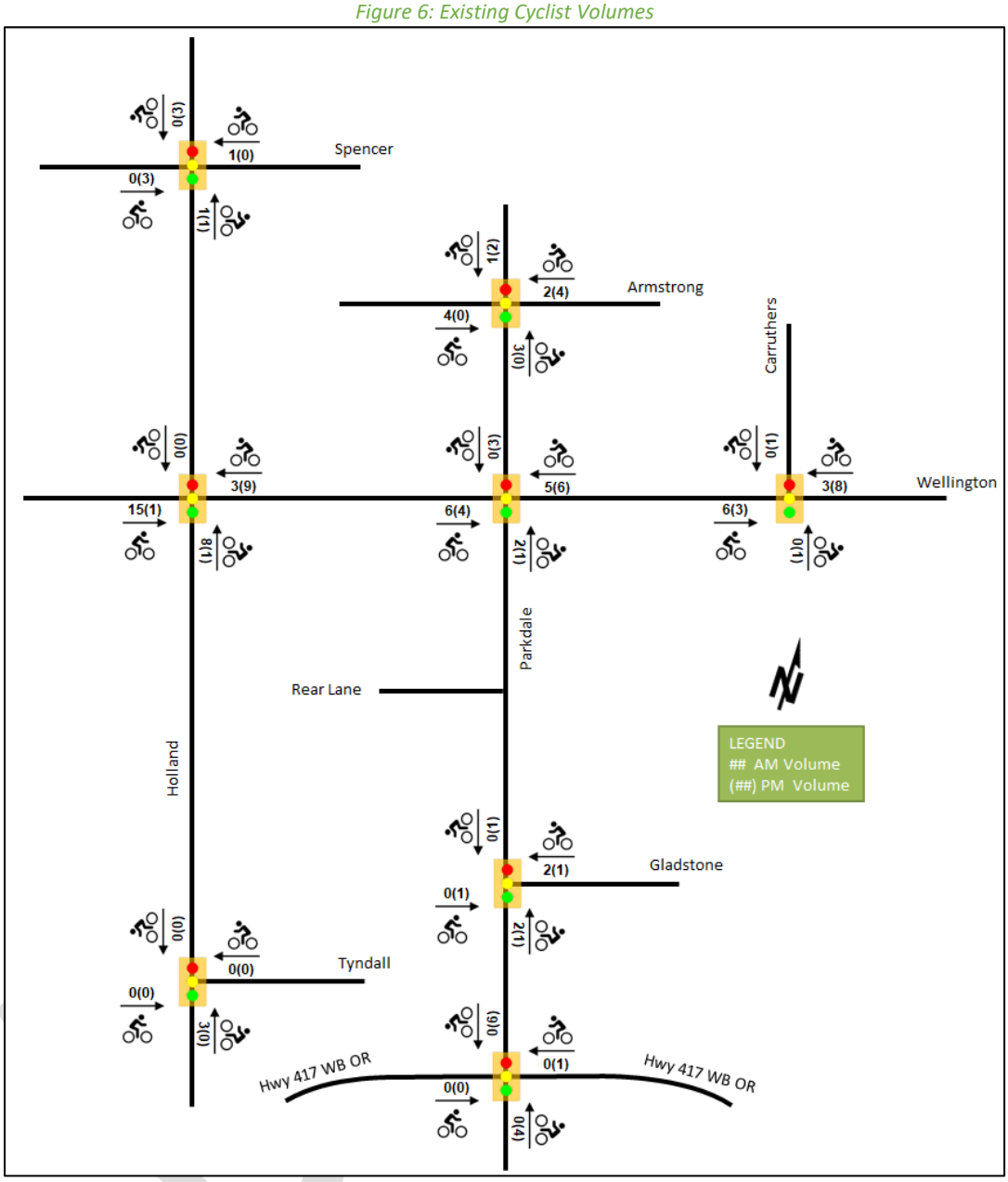


Figure 6: Existing Cyclist Volumes



2.2.5 Existing Transit

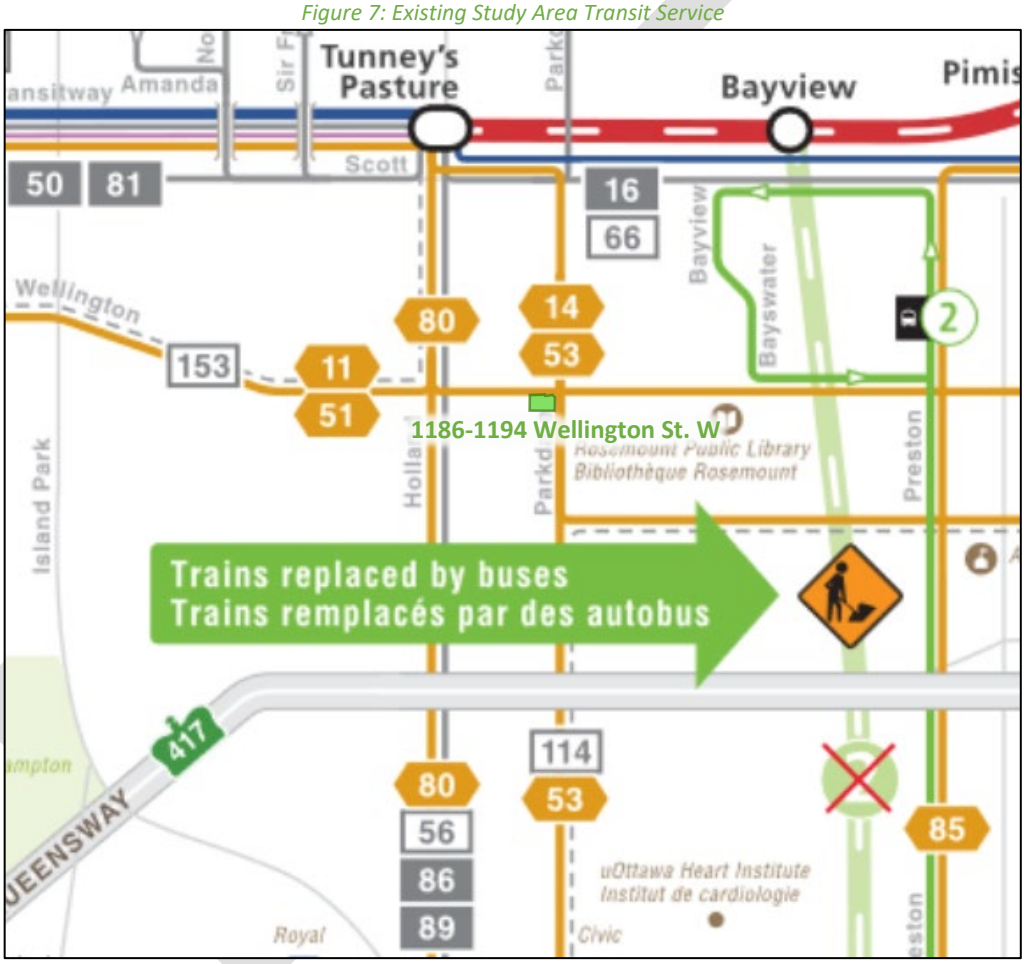
Within the study area, the routes #11, #51, #153 travel along Wellington Street West, with the routes # 11 and #153 continuing along Holland Avenue, the routes #56, #80, #86, #89 travel along Holland Avenue, and the routes #14, #53, and #114 travel along Parkdale Avenue, with the routes #14 and #144 continuing along Gladstone Avenue. The frequency of these routes within proximity of the proposed site currently are:

- Route # 11 – 15-minute daytime service, 20-30-minute service after 7:00PM
- Route # 14 – 15-minute daytime service, 30-minute service after 6:00PM
- Route # 51 – 15-minute daytime service, 30-minute service after 7:00PM
- Route # 53 – 15-minute daytime service, 20-minute service after 7:00PM, 30-minute service after 9:30PM

- Route # 56 – operating during peak periods only, 15-20-minute service in the peak direction, 30-minute service in the off-peak direction
- Route # 80 – 15-minute daytime service, 30-minute service after 7:00PM
- Route # 86 – 30-minute service all day, 15-minute service during peak periods
- Route # 89 – 30-minute service all day, 12-15-minute service in the peak direction/period
- Route # 114 – two buses per direction per day

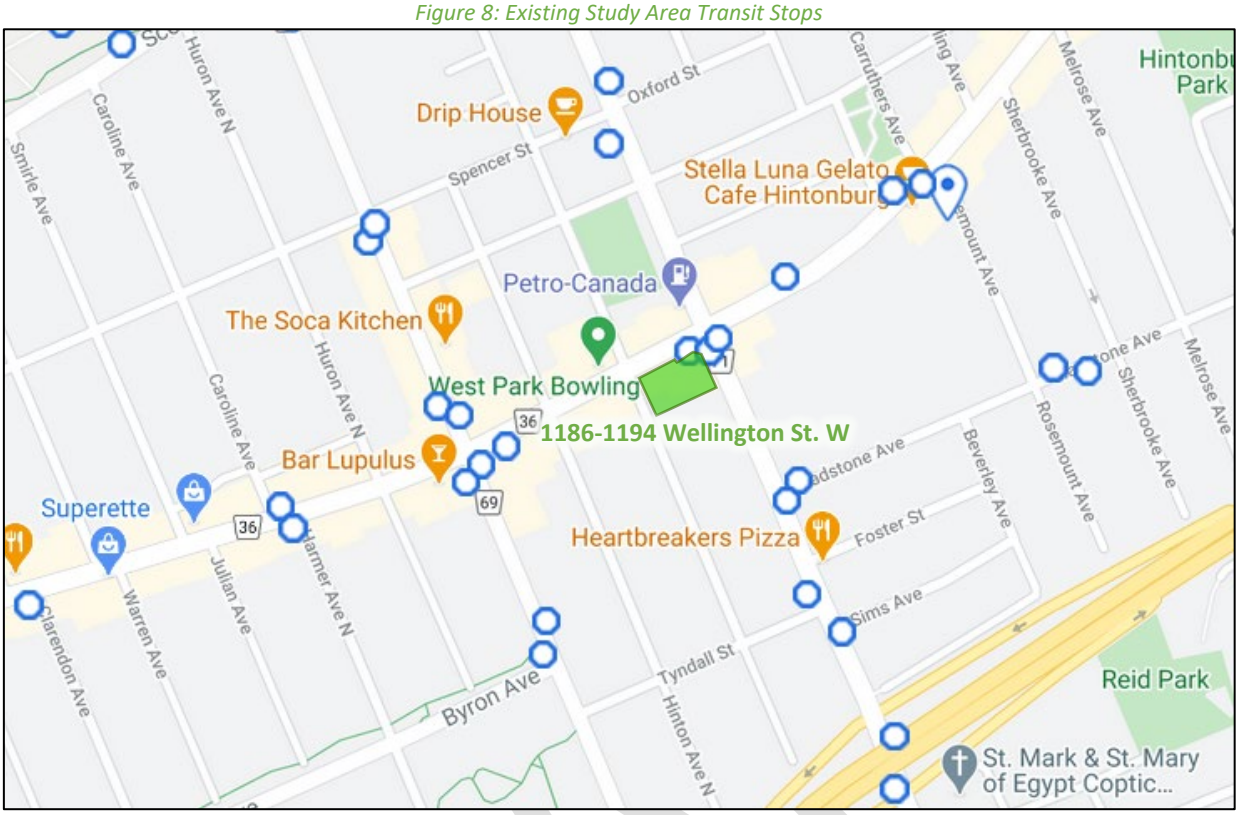
Figure 7 illustrates the transit system map in the study area and Figure 8 illustrates nearby transit stops. The transit information summarized within the TIA is a representative transit service, as OC Transpo changes service routines multiple times a year.

Figure 7: Existing Study Area Transit Service



Source: http://www.octranspo.com/ Accessed: March 29, 2021

Figure 8: Existing Study Area Transit Stops



Source: http://www.octranspo.com/ Accessed: March 29, 2021

2.2.6 Existing Area Traffic Management Measures

Extensive use of bulb-outs along the Wellington Street West at local road intersections, including those framing parking lanes, and extensive use of on-street parking are present throughout the study area. Speed humps are present on Spencer Street and Tyndall Street and on-road speed limit messaging is present on Spencer Street.

2.2.7 Existing Peak Hour Travel Demand

Existing turning movement counts were acquired from the City of Ottawa for the existing study area intersections. Table 1 summarizes the intersection count dates.

Table 1: Intersection Count Date

Intersection	Count Date
Holland Avenue & Spencer Street	Wednesday, January 11, 2017
Holland Avenue & Wellington Street W	Wednesday, November 22, 2017
Holland Avenue & Tyndall Street	Wednesday, January 11, 2017
Parkdale Avenue & Armstrong Street	Wednesday, November 20, 2019
Parkdale Avenue & Wellington Street W	Tuesday, March 10, 2020
Parkdale Avenue & Gladstone Avenue	Thursday, December 5, 2019
Parkdale Avenue & Highway 417 WB OR	Thursday, April 5, 2018
Carruthers Avenue & Wellington Street W	Thursday, February 22, 2018

Figure 9 illustrates the existing traffic counts, balanced along Parkdale Avenue, and Table 2 summarizes the existing intersection operations. The level of service for signalized intersections is based on HCM 2010 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 9: Existing Traffic Counts

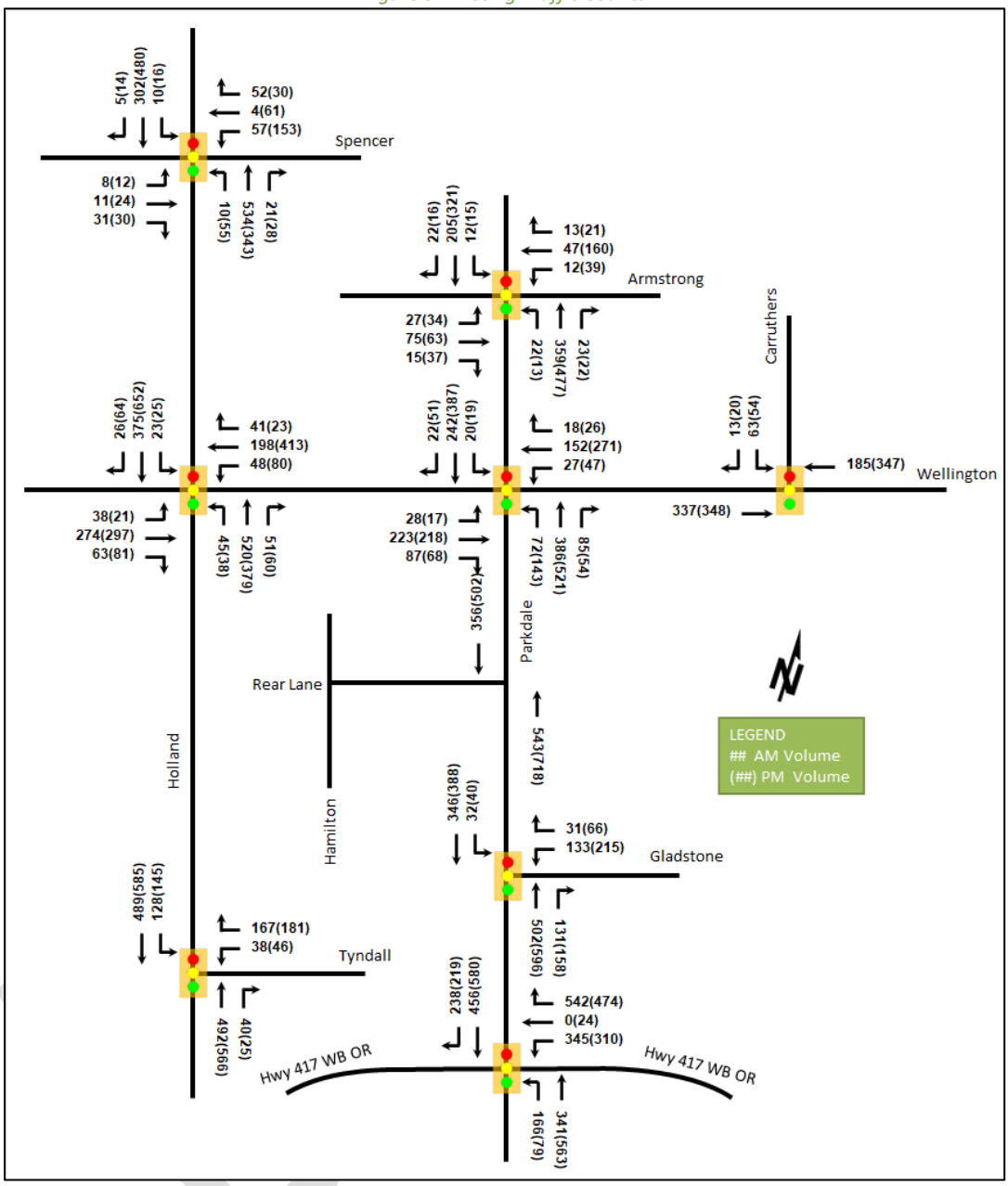


Table 2: Existing Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Holland Avenue & Spencer Street *Signalized*	EB	A	0.24	20.7	13.7	A	0.20	19.4	16.8
	WB	A	0.58	38.3	32.5	D	0.87	62.4	**#87.3**
	NB	A	0.27	0.7	3.3	A	0.27	1.3	2.6
	SB	A	0.15	3.9	14.7	A	0.28	7.8	31.4
	Overall	**A**	**0.30**	**6.7**	-	**A**	**0.43**	**16.9**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Holland Avenue & Wellington Street W ***Signalized***	EBL	A	0.13	20.8	12.4	A	0.13	21.8	8.4
	EBT/R	A	0.58	28.4	85.4	B	0.68	31.7	100.2
	WBL	A	0.21	20.6	14.0	A	0.42	20.2	m15.6
	WBT/R	A	0.41	21.5	51.3	C	0.72	22.2	63.0
	NB	B	0.62	27.0	73.6	A	0.55	17.8	36.2
	SB	A	0.41	20.0	39.4	C	0.71	25.8	79.1
	Overall	**A**	**0.56**	**24.4**	-	**B**	**0.67**	**24.1**	-
Holland Avenue & Tyndall Street ***Signalized***	WB	C	0.73	40.6	49.1	C	0.77	51.6	66.6
	NBT/R	A	0.32	9.6	34.2	A	0.32	10.4	47.6
	SBL	A	0.36	13.4	25.2	A	0.40	7.8	m12.2
	SBT	A	0.55	13.9	81.1	A	0.60	8.1	44.2
	Overall	**A**	**0.57**	**16.2**	-	**B**	**0.62**	**15.3**	-
Parkdale Avenue & Armstrong Street ***Signalized***	EB	A	0.39	35.8	37.7	A	0.34	26.6	36.2
	WB	A	0.23	30.3	23.6	A	0.52	33.6	62.3
	NB	A	0.39	3.4	4.4	A	0.56	8.2	69.1
	SB	A	0.23	6.5	26.6	A	0.39	11.9	55.2
	Overall	**A**	**0.39**	**11.2**	-	**A**	**0.54**	**15.9**	-
Parkdale Avenue & Wellington Street W ***Signalized***	EB	A	0.41	13.8	18.0	A	0.46	48.0	46.7
	WB	A	0.23	24.1	24.7	A	0.52	33.0	47.1
	NBL	A	0.16	3.5	m3.1	A	0.38	11.3	m18.6
	NBT/R	A	0.60	8.5	53.7	B	0.64	15.2	m88.7
	SBL	A	0.07	16.2	m6.1	A	0.07	12.8	m4.7
	SBT/R	A	0.41	19.2	46.1	B	0.64	19.6	65.3
	Overall	**A**	**0.58**	**14.0**	-	**B**	**0.67**	**24.8**	-
Parkdale Avenue & Gladstone Avenue ***Signalized***	WBL/R	A	0.46	35.9	50.2	D	0.81	53.1	**#99.0**
	NBT/R	B	0.67	12.7	m84.5	C	0.80	17.4	m121.9
	SBL	A	0.12	9.8	7.0	A	0.20	7.5	m3.6
	SBT	A	0.35	11.2	53.3	A	0.39	7.1	27.7
	Overall	**B**	**0.61**	**15.4**	-	**C**	**0.80**	**21.2**	-
Parkdale Avenue & Highway 417 WB OR ***Signalized***	WBL	E	0.98	**81.6**	**#131.1**	D	0.88	62.5	**#113.2**
	WBT/R	D	0.86	22.8	**#91.5**	E	0.99	56.8	**#128.6**
	NBL	A	0.59	25.6	20.6	A	0.38	18.0	10.8
	NBT	A	0.34	9.0	45.1	A	0.55	12.1	88.7
	SBT/R	D	0.89	41.4	**#209.2**	E	0.95	41.8	**#251.7**
	Overall	**D**	**0.89**	**36.7**	-	**E**	**0.96**	**39.7**	-
Carruthers Avenue & Wellington Street W ***Signalized***	EBT	A	0.37	9.6	41.3	A	0.29	4.6	28.5
	WBT	A	0.20	8.0	22.0	A	0.29	4.6	28.5
	SBL	A	0.15	21.9	16.8	A	0.24	30.5	17.4
	SBR	A	0.04	10.8	3.9	A	0.11	13.4	5.7
	Overall	**A**	**0.30**	**10.4**	-	**A**	**0.30**	**6.7**	-

Notes: Saturation flow rate of 1800 veh/h/lane
PHF = 0.90
m = metered queue
# = queue exceeds storage or mid-block length

During both the AM and PM peak hours, the study area intersections are modelled as operating adequately.

The intersection of Parkdale Avenue and the Highway 417 westbound ramps is expected to experience queuing across multiple movements during both peak hours. During the AM peak hour, the westbound left movement is near capacity with potential for high delays and extended queues and the westbound through/right and southbound through/right movements may experience extended queueing. During the PM peak hour, the

westbound through/right and southbound through/right are nearing capacity and these movements along with the westbound left may exhibit extended queuing.

Additionally, within the study area, extended queuing may be observed on the westbound movement at the intersection of Holland Avenue and Spencer Street and on the westbound left/right movement at the intersection of Parkdale Avenue and Gladstone Avenue.

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 collision types and conditions in the study area, Figure 10 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		89	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	13	15%
	Property Damage Only	76	85%
Initial Impact Type	**Approaching**	1	1%
	Angle	19	21%
	Rear end	24	27%
	Sideswipe	21	24%
	Turning Movement	10	11%
	SMV Unattended	8	9%
	SMV Other	1	1%
	Other	5	6%
Road Surface Condition	**Dry**	61	69%
	Wet	14	16%
	Loose Snow	4	4%
	Slush	7	8%
	Packed Snow	1	1%
	Ice	2	2%
Pedestrian Involved		0	0%
Cyclists Involved		2	2%

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Figure 10: Study Area Collision Records – Representation of 2015-2019

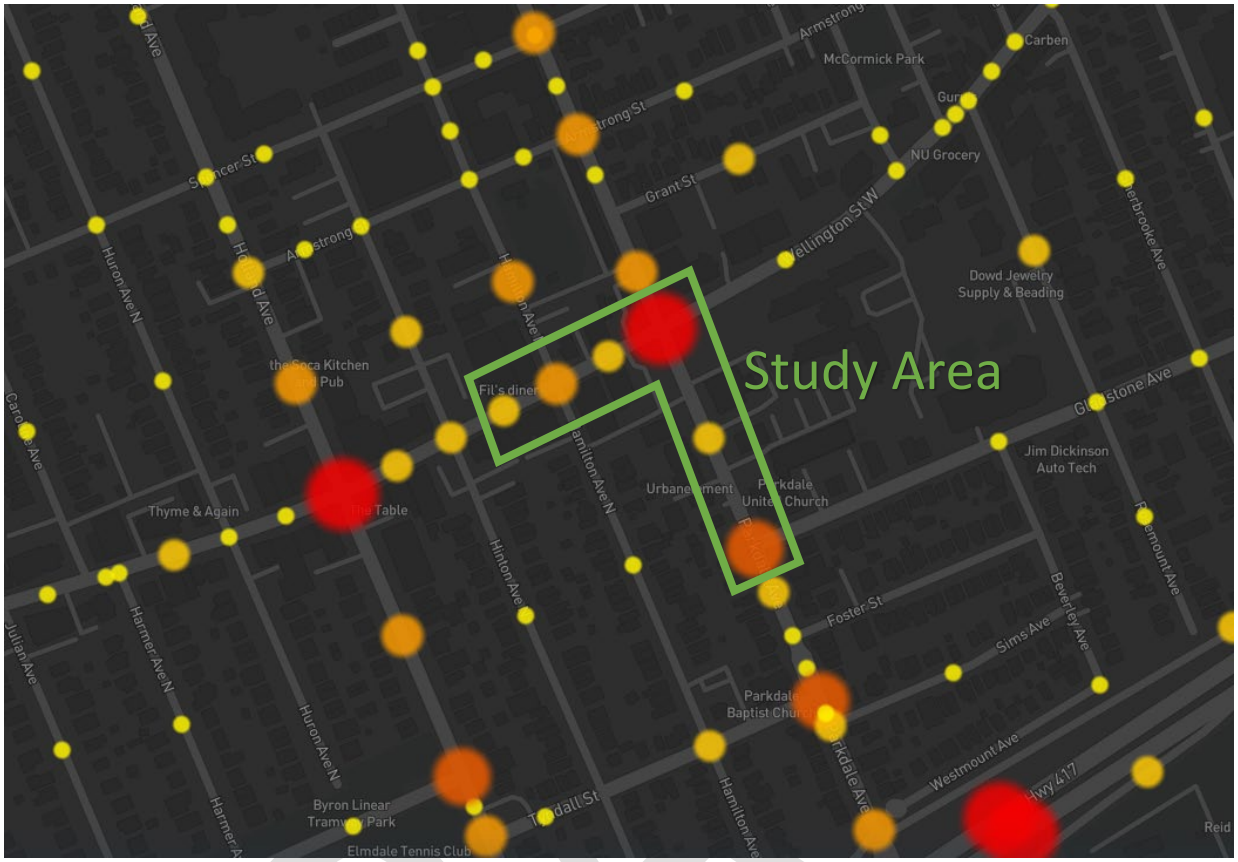

Table 4: Summary of Collision Locations, 2015-2019

	Number	%
Intersections / Segments	**89**	**100%**
Hamilton Ave N @ Wellington St W	13	15%
Parkdale Ave @ Wellington St W	37	42%
Parkdale Ave @ Gladstone Ave	20	22%
Wellington St W between Hinton Ave N & Hamilton Ave N	6	7%
Wellington St W between Hamilton Ave N & Parkdale Ave	6	7%
Parkdale Ave between Wellington St W & Gladstone Ave	7	8%

Within the study area, the intersections of Hamilton Avenue North at Wellington Street West, Parkdale Avenue at Wellington Street West, and Parkdale Avenue at Gladstone Avenue are noted to have experienced higher collisions than other locations. Table 5 and Table 6 summarize the collision types and conditions for each of the Hamilton Avenue North at Wellington Street West, Parkdale Avenue at Wellington Street West, and Parkdale Avenue at Gladstone Avenue intersections.

Table 5: Hamilton Avenue North at Wellington Street West Collision Summary

		Number	%
Total Collisions		**13**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	2	15%
	Property Damage Only	11	85%
Initial Impact Type	**Angle**	6	46%
	Rear end	1	8%
	Sideswipe	2	15%
	Turning Movement	2	15%
	Other	2	15%
Road Surface Condition	**Dry**	9	69%
	Wet	3	23%
	Packed Snow	1	8%
Pedestrian Involved		0	0%
Cyclists Involved		0	0%

The Hamilton Avenue North at Wellington Street West intersection had a total of 13 collisions during the 2015-2019 time period, with 11 involving property damage only and the remaining two having non-fatal injuries. The collision types are most represented by angle with six collisions, followed by sideswipe, turning movement, and other with two each, and rear end with one. Angle collisions may be influenced by northbound left-turning vehicles pushing gaps in the east-west traffic stream. Weather conditions do not affect collisions at this location. No mitigation is recommended for this intersection as part of this study.

Table 6: Parkdale Avenue at Wellington Street West Collision Summary

		Number	%
Total Collisions		**37**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	3	8%
	Property Damage Only	34	92%
Initial Impact Type	**Approaching**	1	3%
	Angle	6	16%
	Rear end	7	19%
	Sideswipe	11	30%
	Turning Movement	8	22%
	SMV Other	1	3%
	Other	3	8%
Road Surface Condition	**Dry**	27	73%
	Wet	6	16%
	Loose Snow	2	5%
	Slush	1	3%
	Ice	1	3%
Pedestrian Involved		0	0%
Cyclists Involved		1	3%

The Parkdale Avenue at Wellington Street West intersection had a total of 37 collisions during the 2015-2019 time period, with 34 involving property damage only and the remaining three having non-fatal injuries. The collision types are most represented by sideswipe with 11 collisions, followed by turning movement with eight, rear end with seven, angle with six, other with three, and two each for SMV (other) and approaching. Sideswipe collisions may be influenced be east and westbound drivers weaving around left-turning vehicles in the shared left-

turn/through lane on each approach. Turning movement and angle collisions may be influenced by the gas station occupying the northwest quadrant of the intersection which introduces movements on the southbound approach and the westbound departure. Weather conditions do not affect collisions at this location. No mitigation is recommended for this intersection as part of this study.

Table 7: Parkdale Avenue at Gladstone Avenue Collision Summary

		Number	%
Total Collisions		**20**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	7	35%
	Property Damage Only	13	65%
Initial Impact Type	**Angle**	4	20%
	Rear end	11	55%
	Sideswipe	5	25%
Road Surface Condition	**Dry**	12	60%
	Wet	3	15%
	Loose Snow	1	5%
	Slush	3	15%
	Ice	1	5%
Pedestrian Involved		0	0%
Cyclists Involved		1	5%

The Parkdale Avenue at Gladstone Avenue intersection had a total of 20 collisions during the 2015-2019 time period, with 13 involving property damage only and the remaining seven having non-fatal injuries. The collision types are most represented by rear end with 11, followed by sideswipe with five and angle with four. Rear end collisions are typically associated with congestion, but no patterns were noted for the collisions. Weather conditions are not considered to affect collisions at this location. No mitigation is recommended for this intersection as part of this study.

2.3 Planned Conditions

2.3.1 Changes to the Area Transportation Network

The subject development is within the Wellington Street CDP Area, however no relevant policies from this document are noted with respect to study area transportation.

Within the Transportation Master Plan, the Rapid Transit and Transit Priority (RTTP) Network's Network Concept diagram shows continuous transit priority measures along Holland Avenue, however the Affordable Network diagram only includes isolated measures along Holland Avenue, and both diagrams include isolated measures along Wellington Street West.

From the Planned Construction Projects portal, traffic safety improvements are targeted to be implemented on the Byron Avenue-Tyndall Street-Gladstone Avenue corridor within four-to-seven years. These improvements have been confirmed by City staff to be erroneously depicted on the portal and are not scheduled.

2.3.2 Other Study Area Developments

3 Grant Street

The proposed development application includes a demolition application for a garage. No TIA is available for this development.

177-179 Armstrong Street, 268 Carruthers Avenue
The proposed development application includes a zoning amendment to allow the construction of a three-storey 33-unit apartment building. No TIA is available for this development.

83 Hinton Avenue North
The proposed development application includes a site plan for the construction of a new seven-storey mixed-use building comprising 30 residential units with ground floor commercial space. No TIA is available for this development.

16, 20 Hamilton Avenue North
The proposed development application includes a site plan for the construction of an eight-storey, 75-unit mixed-use building including 260 m^2 of office space and 120 m^2 of commercial space. The development was completed by 2020 and was anticipated to generate 23 new AM and PM peak hour two-way auto trips and to have minimal impact on the transportation network. (Parsons, 2018)

166 Huron Avenue North
The proposed development application includes a zoning amendment to allow "library" as a permitted land use. No TIA is available for this development.

157 Holland Avenue
The proposed development application includes site plan for the construction of a three-storey 12-unit apartment building. No TIA is available for this development.

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersections of:

- Holland Avenue at:
    - Spencer Street
    - Wellington Street West
    - Tyndall Street
- Parkdale Avenue at:
    - Armstrong Street
    - Wellington Street West
    - Rear lane (future conditions)
    - Gladstone Avenue
    - Highway 417 Westbound On/Off-Ramp
- Carruthers Avenue at Wellington Street West

The boundary roads will be Hamilton Avenue, Parkdale Avenue, and Wellington Street West, and no screenlines are present within proximity to the site.

3.2 Time Periods

As the proposed development is composed primarily of residential units the AM and PM peak hours will be examined.

3.3 Horizon Years

The anticipated build-out year is 2025. As a result, the full build-out plus five years horizon year is 2030.

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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	Exempt – Required at Site Plan
	4.1.3 New Street Networks	Only required for plans of subdivision	Exempt
4.2 Parking	4.2.1 Parking Supply	Only required for site plans	Exempt – Required at Site Plan
	4.2.2 Spillover Parking	Only required for site plans where parking supply is 15% below unconstrained demand	Exempt – May be required at Site Plan
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 Trip Generation and Mode Shares

This TIA has been prepared using the vehicle and person trip rates for the residential component using the TRANS Trip Generation Study Report (2009) and the vehicle trip rates and derived person trip rates for retail component from the ITE Trip Generation Manual 10th Edition (2017) using the City-prescribed conversion factor of 1.28. Table 9 summarizes the person trip rates for the proposed land uses.

Table 9: Trip Generation Person Trip Rates

Land Use	Land Use Code	Peak Hour	Vehicle Trip Rate	Person Trip Rates
High-rise Apartments	222 (TRANS)	AM	0.24	0.65
		PM	0.27	0.68
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 estimates. Table 10 below summarizes the total person trip generation for the site land uses.

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Table 10: Total Person Trip Generation

Land Use	Units / GFA	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
High-rise Apartments	240	37	119	156	101	62	163
Shopping Centre	12,615	9	6	15	30	32	62

Using the most recent National Capital Region Origin-Destination survey (OD Survey), the existing mode shares for Ottawa West have been determined and compared to various modes share breakdowns identified by City Staff as potential interpretations of the data. Additionally, as the development is within an 800-metre-walk of Tunney's Pasture LRT station, a mode share split with increased transit reliance is presented. Table 11 summarizes these modal shares.

Table 11: Mode Shares – Ottawa West

Travel Mode	Ottawa West (average)	Ottawa West (AM from/within)	Ottawa West (PM to/within)	Within 800 m Walk of LRT (AM)	Within 800 m Walk of LRT (PM)
Auto Driver	50%	45%	45%	35%	35%
Auto Passenger	15%	10%	15%	10%	15%
Transit	20%	25%	15%	35%	25%
Cycling	5%	5%	5%	5%	5%
Walking	10%	15%	20%	15%	20%
Total	100%	100%	100%	100%	100%

Given the proximity to the LRT station, the 800-metre walking distance modal splits are recommended for this site.

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%

Using the AM and PM modal shares for a site within an 800-metre walking from an LRT station presented in Table 11, and incorporating the above internal capture rates, the person trips by mode have been projected. Table 13 summarizes the trip generation by mode.

Table 13: Trip Generation by Mode

Travel Mode	Mode Share AM	AM Peak Hour			Mode Share PM	PM Peak Hour		
		In	Out	Total		In	Out	Total
Auto Driver	35%	15	43	58	35%	41	28	69
Auto Passenger	10%	5	12	17	15%	18	11	29
Transit	35%	15	43	58	25%	29	20	49
Cycling	5%	2	6	8	5%	6	4	10
Walking	15%	7	18	24	20%	23	15	40
Internal Capture	*(varies)*	*-1*	*-1*	*-2*	*(varies)*	*-2*	*-5*	*-7*
Pass-by	*35%*	*-3*	*-2*	*-5*	*35%*	*-11*	*-11*	*-22*
Total	**100%**	**43**	**121**	**164**	**100%**	**118**	**78**	**196**

As shown above, 58 AM and 69 PM new peak hour two-way vehicle trips are projected as a result of the proposed development.

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5.2 Trip Distribution

To understand the travel for the subject development, the OD Survey has been reviewed to determine the travel patterns for the residential component, which were then applied to the development 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	10%	5% Parkdale Ave, 5% Wellington St W (W)
South	30%	10% Holland Ave, 5% Parkdale, 15% Hwy 417
East	30%	5% Wellington St W, 5% Gladstone Ave, 5% Holland Ave (N), 15% Hwy 417
West	30%	20% Wellington St W, 5% Holland Ave (N), 5% Hwy 417
Total	100%	

5.3 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 11 illustrates the new site generated and pass-by auto volumes.

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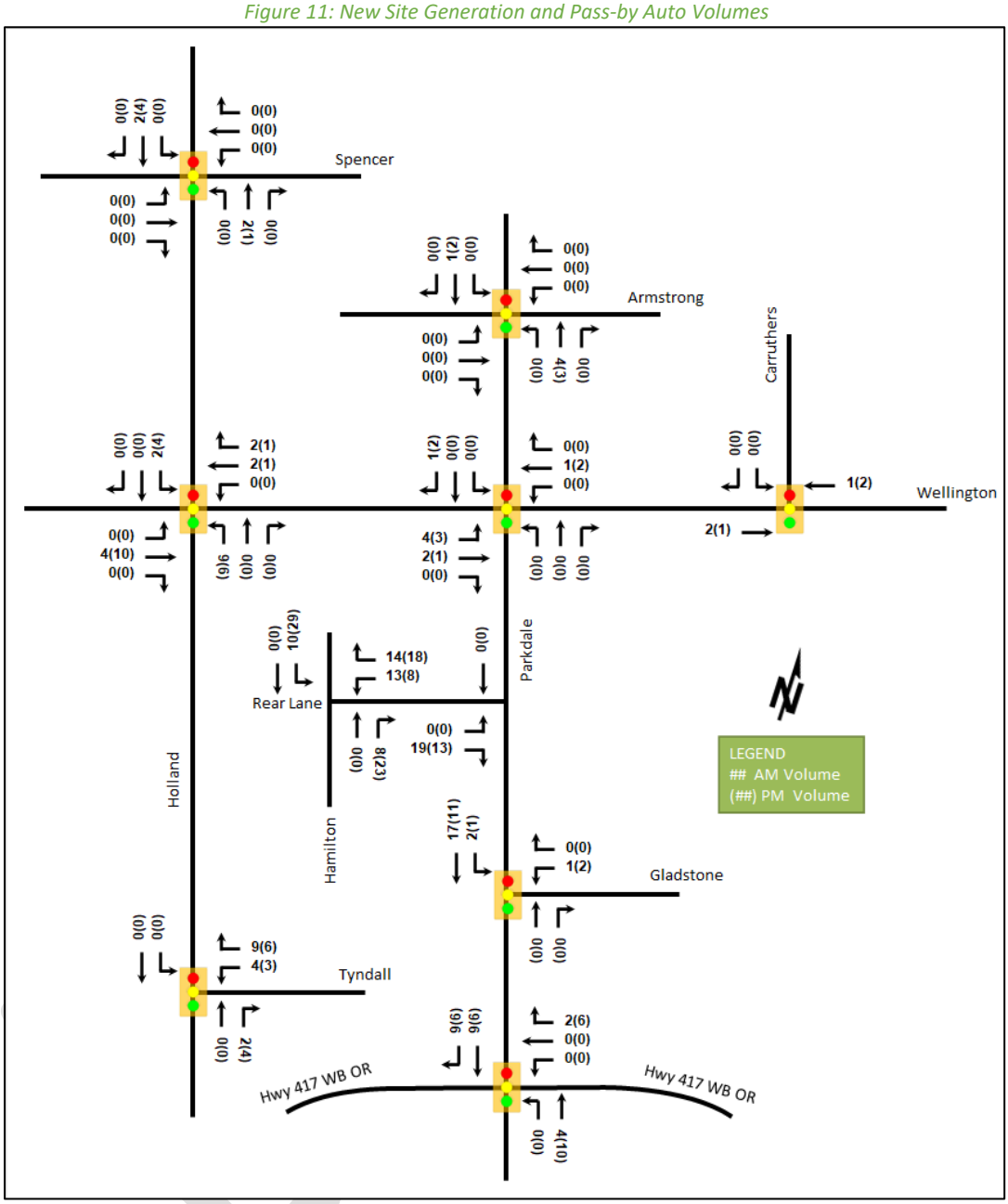
Figure 11: New Site Generation and Pass-by Auto Volumes



6 Background Network Travel Demands

6.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3. No presently scheduled improvements within the study area are anticipated to impact 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 % from 2011 to 2031	
	Eastbound	Westbound
Wellington St W	3.30%	2.52%
Gladstone Ave	-0.49%	-1.48%
Tyndall St	-0.82%	-0.67%
Hwy 417 Off-Ramp	1.51%	-1.30%
Hwy 417 On-Ramp	2.04%	1.14%
	Northbound	**Southbound**
Holland Ave	-0.26%	1.06%
Parkdale Ave	0.29%	1.12%

A review of the 2011 and 2031 TRANS model horizons reveals the highest area growth forecasted in both directions along Wellington Street West, modest growth in the southbound direction within the study area, and minor growth forecasted on Parkdale Avenue in the northbound direction in the AM peak hour.

Growth rates rounded to the nearest 0.25% will be applied to the mainline volumes of the appropriate links and the turning movements at the intersection of Parkdale Avenue at the Highway 417 WB ramps in the AM peak hour and reversed during the PM peak hour. Negative growth rates will be taken as zero.

In the case of the highway ramps, the PM rates have been estimated from the AM rates for the opposite ramp at the eastbound interchange. For example, the PM westbound off-ramp growth rates were estimated from the forecasted AM eastbound on-ramp growth.

Table 16 summarizes the growth rates applied with for the background road network.

Table 16: Study Area Growth Rates

Street	Direction Growth % from 2011 to 2031	
	Eastbound	Westbound
Wellington St W	3.25%	2.50%
Gladstone Ave	-	-
Tyndall St	-	-
Hwy 417 Off-Ramp	1.50%	-
Hwy 417 On-Ramp	2.00%	1.25%
	Northbound	**Southbound**
Holland Ave	-	1.00%
Parkdale Ave	0.25%	1.00%

6.3 Other Developments

As no background developments are appreciable traffic generators, all study area growth is assumed to be captured by the background growth rates applied.

7 Demand Rationalization

7.1 2025 Future Background Operations

Figure 12 illustrates the 2025 background volumes and Table 17 summarizes the 2025 background intersection operations. The level of service for signalized intersections is based on HCM 2010 v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. The synchro worksheets for the 2025 future background horizon are provided in Appendix F.

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Figure 12: 2025 Future Background Volumes

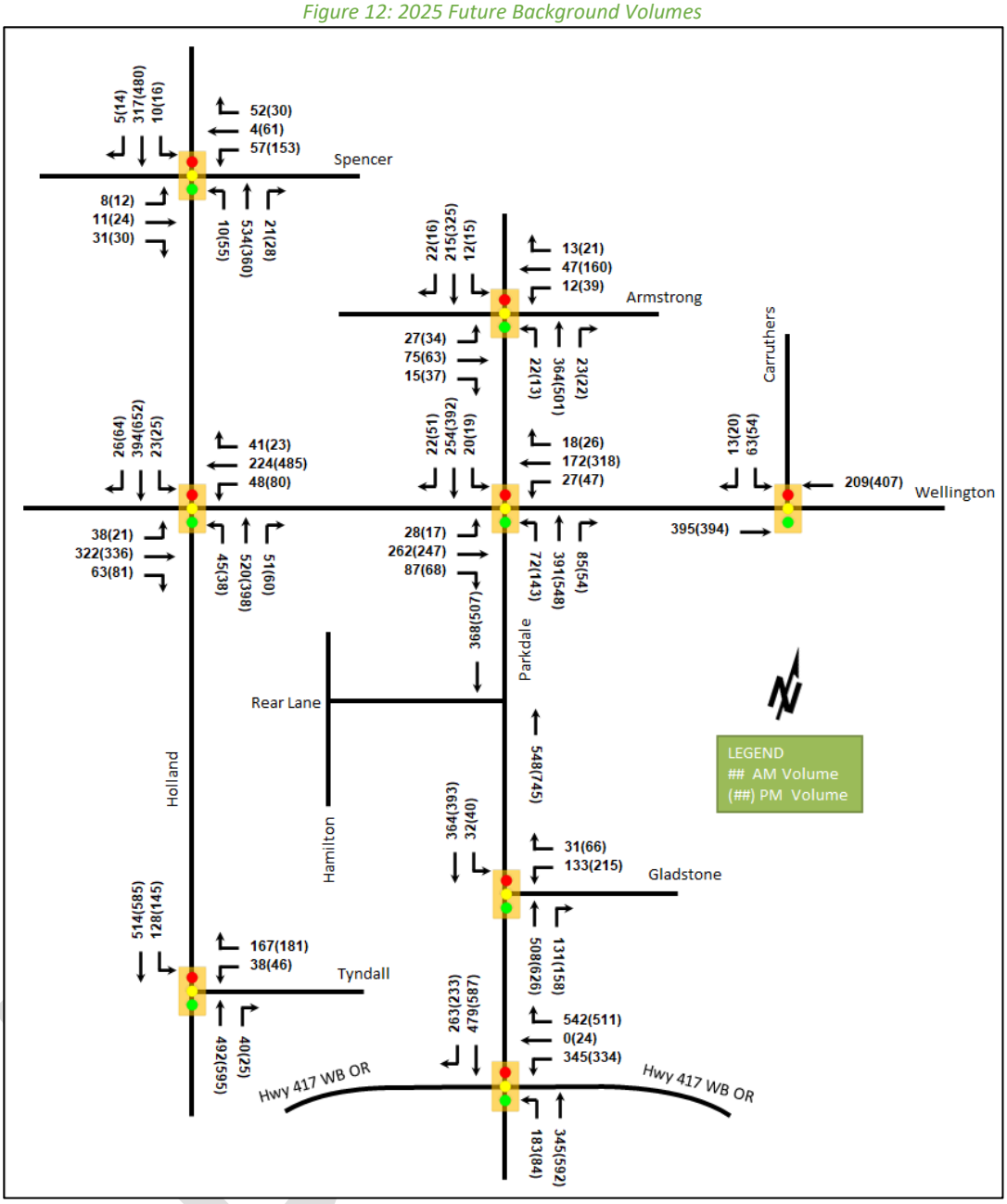

Table 17: 2025 Future Background Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Holland Avenue & Spencer Street *Signalized*	EB	A	0.22	21.0	13.0	A	0.19	19.7	15.7
	WB	A	0.55	36.4	29.3	D	0.82	57.8	**#74.0**
	NB	A	0.24	0.6	2.7	A	0.24	1.1	2.2
	SB	A	0.14	3.8	13.5	A	0.25	7.2	28.0
	Overall	**A**	**0.27**	**6.4**	-	**A**	**0.39**	**15.5**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Holland Avenue & Wellington Street W ***Signalized***	EBL	A	0.12	20.6	11.5	A	0.12	21.6	7.8
	EBT/R	A	0.60	28.7	88.0	B	0.67	31.2	98.8
	WBL	A	0.20	20.3	12.6	A	0.37	18.2	m13.5
	WBT/R	A	0.41	22.0	51.7	C	0.75	22.9	62.1
	NB	A	0.55	25.5	64.5	A	0.48	17.1	34.1
	SB	A	0.38	19.8	37.1	B	0.64	22.8	66.9
	Overall	**A**	**0.53**	**24.0**	-	**B**	**0.65**	**22.9**	-
Holland Avenue & Tyndall Street ***Signalized***	WB	B	0.67	37.2	43.9	C	0.75	51.7	61.1
	NBT/R	A	0.29	9.2	30.5	A	0.30	9.4	42.7
	SBL	A	0.30	12.0	21.6	A	0.33	6.6	m12.0
	SBT	A	0.52	13.1	74.9	A	0.53	7.0	40.5
	Overall	**A**	**0.53**	**15.1**	-	**A**	**0.56**	**14.4**	-
Parkdale Avenue & Armstrong Street ***Signalized***	EB	A	0.35	34.7	34.3	A	0.30	25.5	32.5
	WB	A	0.21	29.8	21.7	A	0.47	32.2	55.7
	NB	A	0.36	3.3	4.0	A	0.52	7.7	67.0
	SB	A	0.22	6.4	25.0	A	0.35	11.4	49.3
	Overall	**A**	**0.35**	**10.8**	-	**A**	**0.50**	**15.0**	-
Parkdale Avenue & Wellington Street W ***Signalized***	EB	A	0.40	13.4	17.4	A	0.45	48.8	46.3
	WB	A	0.23	24.0	24.4	A	0.52	32.9	47.8
	NBL	A	0.14	3.5	m3.2	A	0.32	10.4	m17.1
	NBT/R	A	0.54	8.0	51.2	A	0.60	14.1	79.1
	SBL	A	0.06	16.2	m5.9	A	0.06	12.8	m4.6
	SBT/R	A	0.38	18.9	43.8	A	0.58	18.6	59.3
	Overall	**A**	**0.54**	**13.8**	-	**B**	**0.64**	**24.6**	-
Parkdale Avenue & Gladstone Avenue ***Signalized***	WBL/R	A	0.41	34.9	45.3	C	0.73	46.8	**#84.4**
	NBT/R	B	0.61	12.0	75.1	C	0.75	15.5	m105.8
	SBL	A	0.09	9.1	5.7	A	0.16	6.8	m3.5
	SBT	A	0.33	10.8	48.0	A	0.36	6.8	25.4
	Overall	**A**	**0.55**	**14.7**	-	**C**	**0.74**	**18.9**	-
Parkdale Avenue & Highway 417 WB OR ***Signalized***	WBL	E	0.92	68.4	**#113.6**	D	0.90	65.0	**#108.8**
	WBT/R	C	0.76	12.3	43.5	E	0.95	44.5	**#113.5**
	NBL	A	0.54	21.0	20.5	A	0.29	11.9	10.3
	NBT	A	0.30	8.5	40.5	A	0.52	11.1	81.2
	SBT/R	D	0.85	36.7	**#195.0**	D	0.86	31.0	**#222.4**
	Overall	**D**	**0.84**	**29.8**	-	**D**	**0.87**	**33.2**	-
Carruthers Avenue & Wellington Street W ***Signalized***	EBT	A	0.39	9.9	44.0	A	0.30	4.6	29.2
	WBT	A	0.21	8.1	22.3	A	0.31	4.7	30.3
	SBL	A	0.14	21.7	15.4	A	0.22	30.1	16.1
	SBR	A	0.03	11.0	3.8	A	0.10	13.6	5.5
	Overall	**A**	**0.31**	**10.4**	-	**A**	**0.31**	**6.5**	-

Notes: Saturation flow rate of 1800 veh/h/lane
PHF = 1.00

m = metered queue
# = queue exceeds storage or mid-block length

During both the AM and PM peak hours, the study area intersections at the 2025 future background horizon operate similarly to the existing conditions. No new capacity issues are noted.

7.2 2030 Future Background Operations

Figure 13 illustrates the 2030 background volumes and Table 18 summarizes the 2030 background intersection operations. The level of service for signalized intersections is based on HCM 2010 v/c calculations for individual

lane movements and HCM 2000 v/c calculations for the overall intersection. The synchro worksheets for the 2030 future background horizon are provided in Appendix G.

Figure 13: 2030 Future Background Volumes

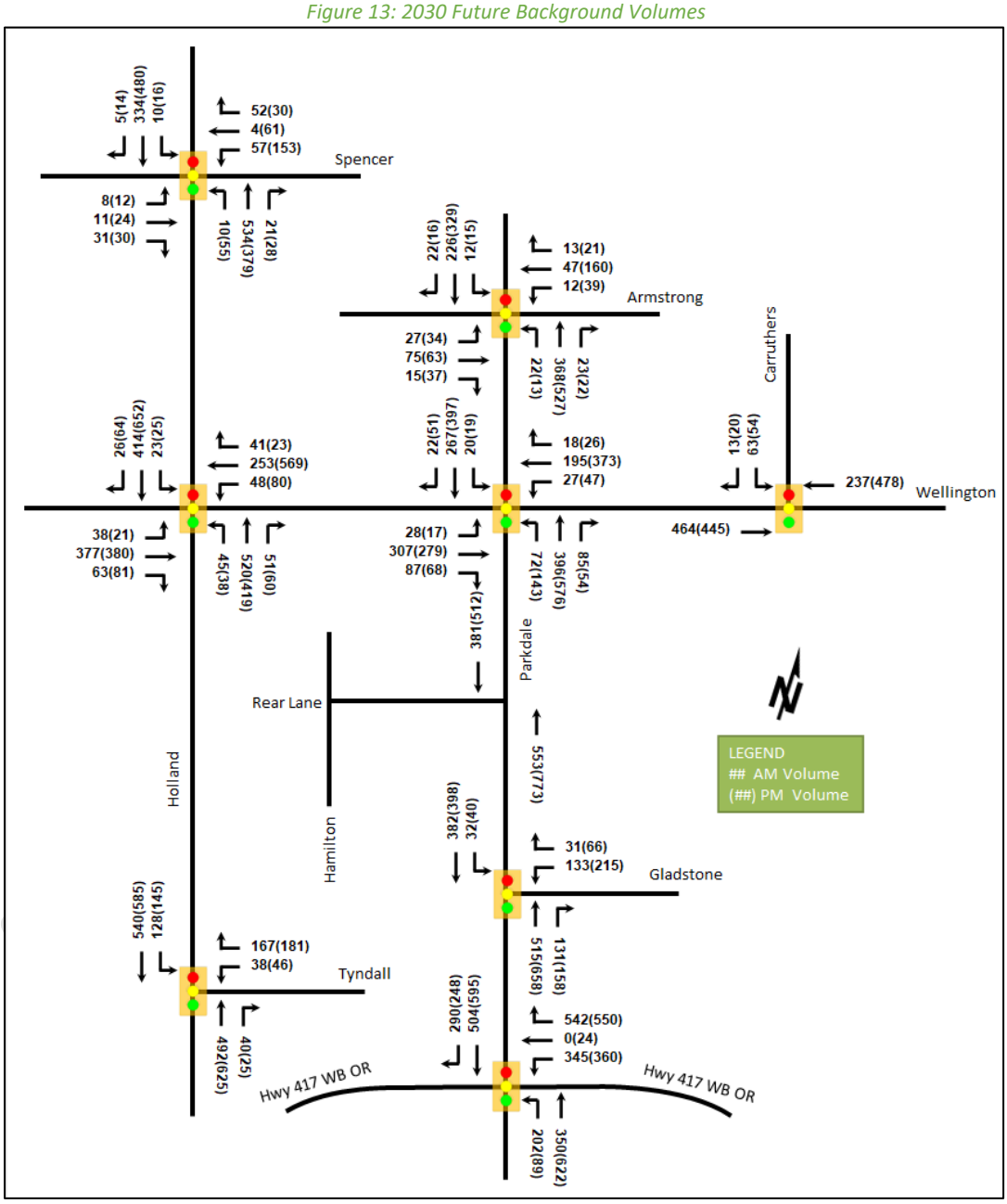

Table 18: 2030 Future Background Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Holland Avenue & Spencer Street ***Signalized***	EB	A	0.22	21.0	13.0	A	0.19	19.7	15.7
	WB	A	0.55	36.4	29.3	D	0.82	57.8	**#74.0**
	NB	A	0.24	0.7	3.1	A	0.25	1.1	m2.3
	SB	A	0.15	3.8	14.3	A	0.25	7.2	28.0
	Overall	**A**	**0.27**	**6.4**	-	**A**	**0.39**	**15.3**	-
Holland Avenue & Wellington Street W ***Signalized***	EBL	A	0.12	20.8	11.6	A	0.18	24.7	8.5
	EBT/R	B	0.67	31.3	103.5	C	0.73	33.9	112.3
	WBL	A	0.23	22.6	13.2	A	0.42	19.5	m12.1
	WBT/R	A	0.45	24.9	60.0	D	0.88	30.8	**#166.8**
	NB	A	0.55	25.6	64.5	A	0.50	17.3	35.2
	SB	A	0.40	20.0	38.8	B	0.64	22.8	66.9
	Overall	**A**	**0.57**	**25.3**	-	**B**	**0.70**	**25.6**	-
Holland Avenue & Tyndall Street ***Signalized***	WB	B	0.67	37.2	43.9	C	0.75	51.7	61.1
	NBT/R	A	0.29	9.2	30.5	A	0.31	9.5	45.3
	SBL	A	0.30	12.0	21.6	A	0.35	6.6	m11.3
	SBT	A	0.54	13.6	80.4	A	0.53	6.8	40.0
	Overall	**A**	**0.55**	**15.2**	-	**A**	**0.56**	**14.2**	-
Parkdale Avenue & Armstrong Street ***Signalized***	EB	A	0.35	34.7	34.3	A	0.30	25.5	32.5
	WB	A	0.21	29.8	21.7	A	0.47	32.2	55.7
	NB	A	0.36	3.3	3.7	A	0.55	7.8	67.5
	SB	A	0.23	6.5	26.1	A	0.36	11.4	49.8
	Overall	**A**	**0.36**	**10.7**	-	**A**	**0.52**	**14.9**	-
Parkdale Avenue & Wellington Street W ***Signalized***	EB	A	0.44	14.2	22.4	A	0.48	50.0	50.3
	WB	A	0.25	24.3	26.7	A	0.58	34.2	54.7
	NBL	A	0.15	3.5	m3.1	A	0.32	10.9	m17.1
	NBT/R	A	0.55	7.9	50.9	B	0.63	15.0	85.7
	SBL	A	0.06	16.2	m5.9	A	0.07	12.9	m4.5
	SBT/R	A	0.40	19.2	45.2	A	0.59	18.7	59.7
	Overall	**A**	**0.57**	**14.3**	-	**B**	**0.68**	**25.9**	-
Parkdale Avenue & Gladstone Avenue ***Signalized***	WBL/R	A	0.41	34.9	45.3	C	0.73	46.8	**#84.4**
	NBT/R	B	0.61	12.1	76.1	C	0.78	16.0	m106.0
	SBL	A	0.09	9.4	m5.7	A	0.17	6.8	m3.3
	SBT	A	0.35	11.2	53.2	A	0.36	6.7	25.4
	Overall	**A**	**0.55**	**14.8**	-	**C**	**0.76**	**19.0**	-
Parkdale Avenue & Highway 417 WB OR ***Signalized***	WBL	E	0.92	68.4	**#113.6**	E	0.93	69.1	**#120.5**
	WBT/R	C	0.76	12.7	45.0	**F**	**1.02**	**65.0**	**#136.8**
	NBL	B	0.66	30.9	**#25.0**	A	0.34	14.4	10.9
	NBT	A	0.31	8.5	41.2	A	0.55	12.0	87.5
	SBT/R	E	0.91	42.6	**#218.2**	D	0.90	35.3	**#231.8**
	Overall	**D**	**0.89**	**32.9**	-	**E**	**0.94**	**40.5**	-
Carruthers Avenue & Wellington Street W ***Signalized***	EBT	A	0.46	10.7	53.8	A	0.33	4.9	33.9
	WBT	A	0.23	8.3	25.2	A	0.36	5.1	37.2
	SBL	A	0.14	21.7	15.4	A	0.22	30.1	16.1
	SBR	A	0.03	11.0	3.8	A	0.10	13.6	5.5
	Overall	**A**	**0.36**	**10.9**	-	**A**	**0.36**	**6.5**	-

Notes: Saturation flow rate of 1800 veh/h/lane
PHF = 1.00

m = metered queue
# = queue exceeds storage or mid-block length

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During both the AM and PM peak hours, the study area intersections operate similarly to the existing and the 2025 future background conditions.

At the intersection of Holland Avenue at Wellington Street West, the westbound through/right movement may exhibit extended queues during the PM peak hour at this horizon.

At the intersection of Parkdale Avenue and the Highway 417 westbound ramps, the northbound left movement may exhibit extended queues during the AM peak hour and the westbound through/right movement is forecasted to be over theoretical capacity during the PM peak hour. To mitigate the capacity issues noted during the PM peak hour, an additional two seconds of split could be shifted from the north-south phases to the east-west phase at the intersection of Parkdale Avenue and the Highway 417 westbound ramps.

7.3 Modal Share Sensitivity

Minor capacity constraints have been noted at the intersection of Parkdale Avenue at the Highway 417 westbound ramps and can be mitigated through signal optimization. As this development is targeted for an increased focus on transit, TDM measures will need to be implemented to support the increased transit mode share and rationalization for adjusted demand is not required for this TIA.

8 Transportation Demand Management

8.1 Context for TDM

The mode shares used within the TIA represent a shift from auto modes to transit modes. Given the proximity of rapid transit, with Tunney's Pasture Station being less than 600 metres from the site, the modal shares are likely to be achieved and supporting TDM measures should be provided.

The subject site is within the Wellington Traditional Mainstreet design priority area. Total bedrooms within the development is subject to the final unit breakdown and no age restrictions are noted.

8.2 Need and Opportunity

The subject site has been assumed to rely predominantly on auto travel with an increase in transit ridership with the proximity to the Confederation LRT Line/Transitway BRT line, and those assumptions have been carried through the analysis. The study area intersections are generally anticipated to have residual capacity and the increase in transit ridership is achievable.

The traffic risks of not meeting the proposed modal share targets of 35% transit ridership in the AM peak hour and 25% in the PM peak hour, regressing to the existing district transit shares 25% in the AM peak hour and 15% in the PM peak hour, would result in an increase of 16 AM and 19 PM two-way vehicle trips. As noted in Section 7.3, the most sensitive intersection is Parkdale Avenue and the Highway 417 westbound ramps. This increase in auto modes during the PM peak hour would be approximately two vehicles on the westbound approach, two vehicles on the southbound approach, and three vehicles on the northbound approach and is therefore not considered a significant impact to network users.

8.3 TDM Program

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

- Display local area maps with bicycle, walking, transit information, and transit route schedules at building entrances
- Contract with provider to install on-site carshare vehicles and promote their use by residents

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- Provide a multimodal travel option information package to new tenants
- Inclusion of a 1-year Presto card for first time 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

9 Neighbourhood Traffic Management

The proposed development will connect to the arterial road network via the rear lane, via Hamilton Avenue North (a local road), via Tyndall Street (a collector road), and via Holland Avenue (a major collector road). The TIA guidelines prescribe a classification threshold of 600-vehicle per peak hour for major collector roads, a 300-vehicle per peak hour for collector roads, and a 120-vehicle per peak hour for local roads, which are considered two-way volumes per City guidance. The existing volumes on the roadways of Tyndall Street and Holland Avenue are summarized below and compared to the forecasted site volumes for those links. Due to disruption related to the pandemic, no meaningful traffic data could be collected for Hamilton Avenue North at this time, and through consultation with City staff, it was agreed to assess the new trip volumes for the OPA/ZBA and review during the site plan application, if data collection is permitted. The results of this analysis are summarized in Table 19.

Table 19: NTM Review

Segment	AM Peak				PM Peak			
	Existing EB	Existing WB	Existing Two-Way	Site Traffic	Existing EB	Existing WB	Existing Two-Way	Site Traffic
Tyndall St	168	167	**335**	15	170	227	**397**	13
Segment	**AM Peak**				**PM Peak**			
	Existing NB	**Existing SB**	**Existing Two-Way**	**Site Traffic**	**Existing NB**	**Existing SB**	**Existing Two-Way**	**Site Traffic**
Holland Ave (south of Tyndall St)	532	527	**1,059**	6	591	631	**1,222**	7
Holland Ave (north of Tyndall St)	659	617	**1,276**	9	747	730	**1,477**	6
Hamilton Ave N (north of Site)	-	-	-	24	-	-	-	47
Hamilton Ave N (south of Site)	-	-	-	21	-	-	-	31

Existing two-way volumes on Tyndall Street are over the thresholds for collector roads and existing two-way and both one-way volumes on Holland Avenue are over the thresholds for major collector roads from the TIA guidelines.

The forecasted site traffic would amount to an increase in volumes of 3.3%-4.5% on Tyndall Street and 0.4%-0.7% on Holland Avenue. The percentage of the total local road classification threshold for Hamilton Avenue forecasted to be used by site traffic is 18%-39% based upon the two-way volume capacities.

While the volume thresholds described above from the TIA guidelines may be considered too low for two-way volumes, and would be better representative of one-way volumes, the overall impact of the site trips on Hamilton Avenue North is not considered to be a significant impact from a road capacity perspective. As Hamilton Avenue North has an approximate block length of 250 metres between Wellington Street West and Tyndall Street, very low local volumes would be anticipated, and the roadway could accommodate the addition of the proposed site to their community. Should the volumes ultimately be close or above the TIA thresholds, it would be a result of cut through traffic to/from Wellington Street West and Tyndall Street. The cut through traffic may be displaced

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by the proposed site, or additional review by the City's Area Traffic Management may be required to determine a preferred approach with the development proposal to reduce the cut through impacts.

10 Transit

10.1 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 (PM)	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Transit	35% (25%)	15	43	58	29	20	49

The proposed development is anticipated to generate an additional 58 AM peak hour transit trips and 49 PM peak hour transit trips. Of these trips, 43 outbound AM trips and 29 inbound PM trips are anticipated. From the trip distribution found in Section 5.2, these values can be further broken down.

Site-generated outbound AM trips break down to four trips to the north and 13 trips to each the south, east, and west. Site-generated inbound PM trips break down to three trips from the north, and nine trips from each the south, east, and west. Given the site is within an 800-metre-walk of Tunney's Pasture Station, trips east and west are assumed to be accommodated by the LRT and BRT lines. Given the number and frequency of routes in the area travelling north and south, no impacts are anticipated on these routes.

From a transportation network impact, the transit trips will result in an increase of pedestrian trips at the network intersections as they travel to and from their preferred stops. These trips have been added to the synchro analyses summarized within Sections 11.2.1 and 11.2.2.

10.2 Transit Priority

No site driveways are proposed onto any transit priority corridor. The transit priority turning movements within the study area that may be impacted by site traffic are the eastbound left, westbound right, southbound right, and southbound left at the intersection of Holland Avenue and Wellington Street West.

As summarized in the background conditions in Section 7.1 and total conditions in Section 11.2.1, the site traffic has a negligible impact on the listed movements, with increases in delays of less than a second on each movement.

11 Network Intersection Design

11.1 Network Intersection Control

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

11.2 Network Intersection Design

11.2.1 2025 Future Total Network Intersection Operations

Figure 14 illustrates the 2030 total volumes and Table 22 summarizes the 2030 total intersection operations. The level of service for signalized intersections is based on HCM 2010 v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection, and HCM average delay for unsignalized intersections. The synchro worksheets have been provided in Appendix I.

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Figure 14: 2025 Future Total Volumes

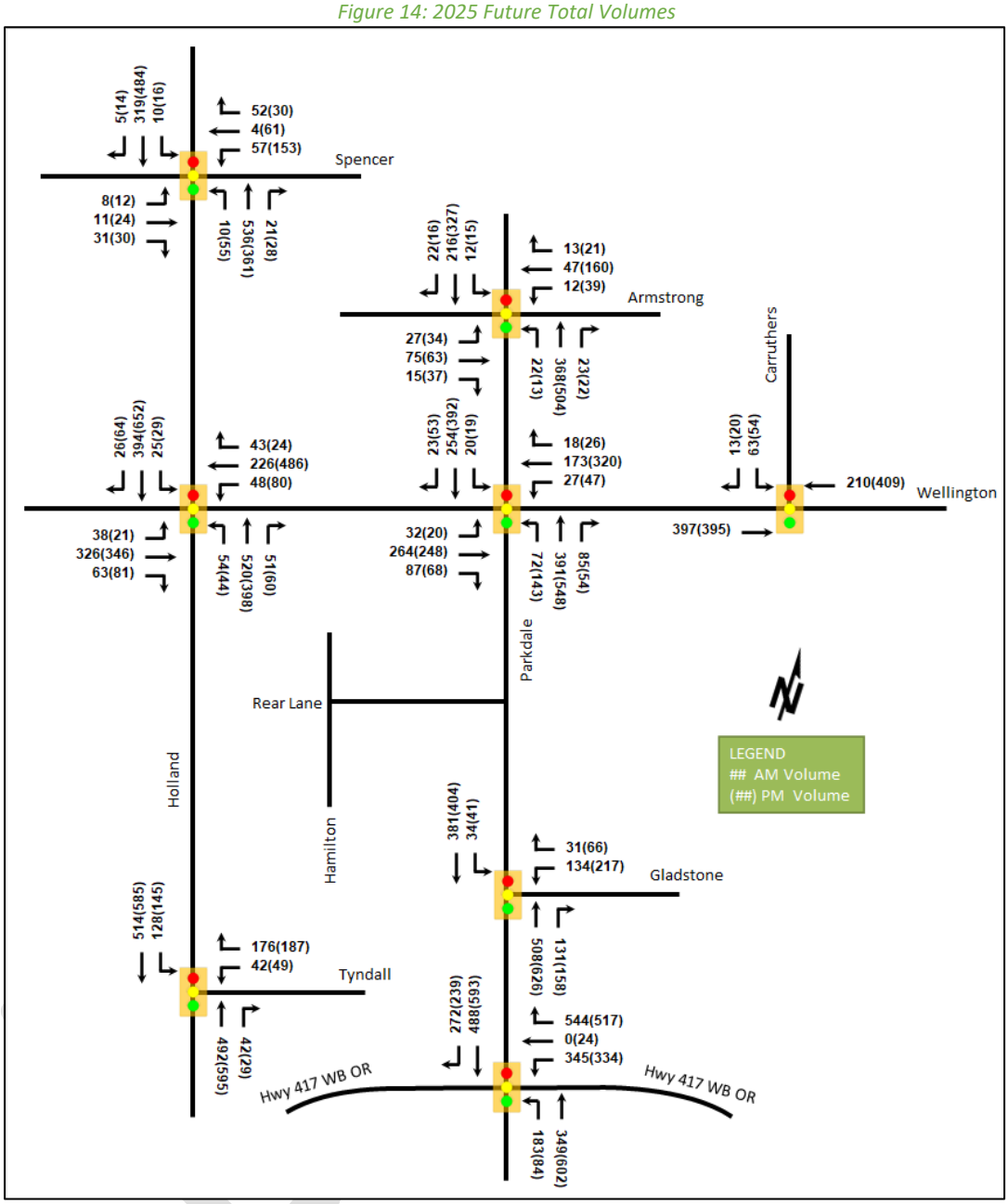

Table 21: 2025 Future Total Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Holland Avenue & Spencer Street *Signalized*	EB	A	0.22	21.0	13.0	A	0.19	19.7	15.7
	WB	A	0.55	36.6	29.4	D	0.82	58.3	**#74.6**
	NB	A	0.24	0.7	2.9	A	0.25	1.2	2.3
	SB	A	0.14	3.8	13.6	A	0.25	7.2	28.3
	Overall	**A**	**0.27**	**6.4**	-	**A**	**0.39**	**15.6**	-
Holland Avenue & Wellington Street W *Signalized*	EBL	A	0.12	20.7	11.5	A	0.12	21.7	7.9
	EBT/R	B	0.61	29.0	89.6	B	0.68	31.8	101.9
	WBL	A	0.20	20.8	12.8	A	0.38	18.6	m13.5
	WBT/R	A	0.41	22.4	52.9	C	0.76	23.0	62.3
	NB	A	0.58	26.2	66.5	A	0.51	17.5	34.9
	SB	A	0.39	19.9	37.4	B	0.65	23.4	68.2
	Overall	**A**	**0.55**	**24.4**	-	**B**	**0.65**	**23.4**	-
Holland Avenue & Tyndall Street *Signalized*	WB	B	0.70	38.6	46.7	C	0.75	51.7	63.0
	NBT/R	A	0.29	9.3	30.5	A	0.30	9.7	43.8
	SBL	A	0.30	12.2	21.6	A	0.34	6.8	m11.7
	SBT	A	0.52	13.3	74.9	A	0.53	7.0	40.3
	Overall	**A**	**0.54**	**15.6**	-	**A**	**0.57**	**14.7**	-
Parkdale Avenue & Armstrong Street *Signalized*	EB	A	0.35	34.7	34.3	A	0.30	25.5	32.5
	WB	A	0.21	29.8	21.7	A	0.47	32.2	55.7
	NB	A	0.36	3.4	4.4	A	0.53	7.9	68.0
	SB	A	0.22	6.4	25.0	A	0.36	11.4	49.7
	Overall	**A**	**0.35**	**10.8**	-	**A**	**0.51**	**15.0**	-
Parkdale Avenue & Wellington Street W *Signalized*	EB	A	0.42	13.8	18.4	A	0.46	48.8	46.7
	WB	A	0.23	24.1	24.6	A	0.52	33.0	48.2
	NBL	A	0.14	3.5	m3.2	A	0.32	10.5	m17.0
	NBT/R	A	0.55	8.1	52.9	A	0.60	14.2	79.3
	SBL	A	0.07	16.3	m5.9	A	0.07	12.9	m4.6
	SBT/R	A	0.39	19.0	43.9	A	0.59	18.9	59.7
	Overall	**A**	**0.55**	**14.0**	-	**B**	**0.64**	**24.8**	-
Parkdale Avenue & Gladstone Avenue *Signalized*	WBL/R	A	0.41	35.0	45.8	C	0.74	47.5	**#86.0**
	NBT/R	B	0.61	12.0	74.9	C	0.75	15.5	m103.8
	SBL	A	0.10	9.1	m5.9	A	0.16	6.9	m3.6
	SBT	A	0.35	10.9	50.9	A	0.37	6.9	26.5
	Overall	**A**	**0.55**	**14.7**	-	**C**	**0.74**	**18.9**	-
Parkdale Avenue & Highway 417 WB OR *Signalized*	WBL	E	0.92	68.4	**#113.6**	D	0.90	65.0	**#108.8**
	WBT/R	C	0.76	12.9	45.6	E	0.97	50.2	**#119.3**
	NBL	A	0.56	22.7	20.5	A	0.30	12.3	10.3
	NBT	A	0.31	8.5	40.9	A	0.53	11.3	83.4
	SBT/R	D	0.87	38.3	**#204.0**	D	0.88	32.3	**#227.8**
	Overall	**D**	**0.85**	**30.6**	-	**D**	**0.89**	**34.9**	-
Carruthers Avenue & Wellington Street W *Signalized*	EBT	A	0.39	9.9	44.3	A	0.30	4.7	29.3
	WBT	A	0.21	8.1	22.4	A	0.31	4.7	30.5
	SBL	A	0.14	21.7	15.4	A	0.22	30.1	16.1
	SBR	A	0.03	11.0	3.8	A	0.10	13.6	5.5
	Overall	**A**	**0.31**	**10.4**	-	**A**	**0.31**	**6.5**	-

Notes: Saturation flow rate of 1800 veh/h/lane
PHF = 1.00

m = metered queue
# = queue exceeds storage or mid-block length

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The network intersections for the 2025 future total horizon operate similarly to the 2025 future background conditions. No new capacity issues are noted.

11.2.2 2030 Future Total Network Intersection Operations

Figure 15 illustrates the 2030 total volumes and Table 22 summarizes the 2030 total intersection operations. The level of service for signalized intersections is based on HCM 2010 v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection, and HCM average delay for unsignalized intersections. The synchro worksheets have been provided in Appendix J.

Figure 15: 2030 Future Total Volumes

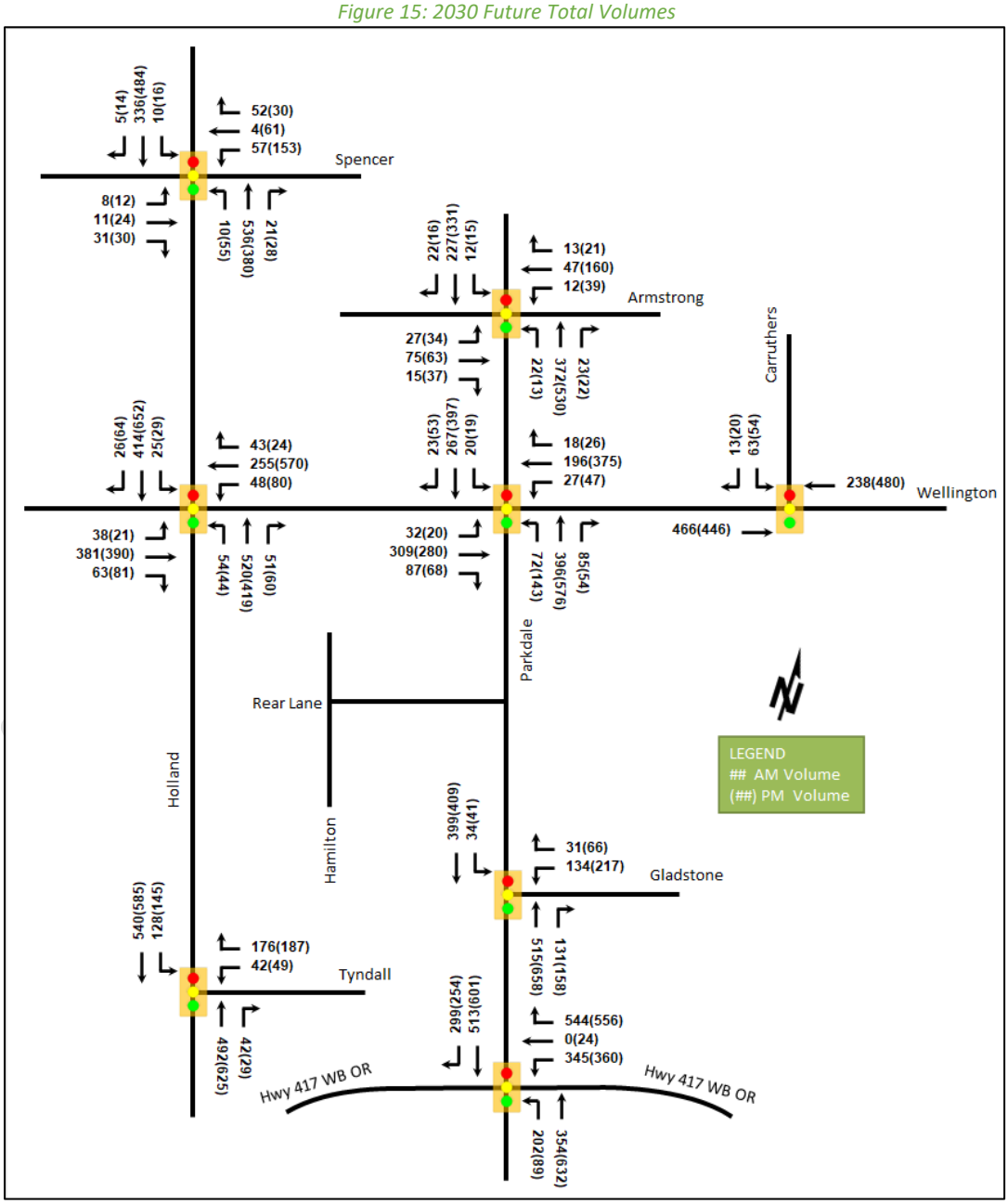

Table 22: 2030 Future Total Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Holland Avenue & Spencer Street ***Signalized***	EB	A	0.22	21.0	13.0	A	0.19	19.7	15.7
	WB	A	0.55	36.6	29.4	D	0.82	58.3	**#74.6**
	NB	A	0.24	0.7	3.2	A	0.26	1.1	m2.4
	SB	A	0.15	3.8	14.3	A	0.25	7.2	28.3
	Overall	**A**	**0.27**	**6.4**	-	**A**	**0.39**	**15.4**	-
Holland Avenue & Wellington Street W ***Signalized***	EBL	A	0.13	20.9	11.6	A	0.18	24.8	8.5
	EBT/R	B	0.69	31.8	105.3	C	0.75	34.8	115.6
	WBL	A	0.24	23.2	13.7	A	0.44	20.1	m12.1
	WBT/R	A	0.46	25.2	61.0	D	0.88	31.2	**#168.2**
	NB	A	0.58	26.2	66.6	A	0.53	17.7	36.0
	SB	A	0.41	20.1	39.2	B	0.66	23.4	68.2
	Overall	**A**	**0.58**	**25.7**	-	**C**	**0.71**	**26.2**	-
Holland Avenue & Tyndall Street ***Signalized***	WB	B	0.70	38.6	46.7	C	0.75	51.7	63.0
	NBT/R	A	0.29	9.3	30.5	A	0.32	9.9	46.3
	SBL	A	0.30	12.2	21.6	A	0.35	6.8	m11.1
	SBT	A	0.55	13.8	80.4	A	0.53	6.8	39.6
	Overall	**A**	**0.56**	**15.8**	-	**A**	**0.57**	**14.6**	-
Parkdale Avenue & Armstrong Street ***Signalized***	EB	A	0.35	34.7	34.3	A	0.30	25.5	32.5
	WB	A	0.21	29.8	21.7	A	0.47	32.2	55.7
	NB	A	0.37	3.4	4.2	A	0.55	8.0	68.7
	SB	A	0.23	6.5	26.2	A	0.36	11.4	50.2
	Overall	**A**	**0.36**	**10.8**	-	**A**	**0.52**	**15.0**	-
Parkdale Avenue & Wellington Street W ***Signalized***	EB	A	0.46	14.6	23.4	A	0.49	50.0	m50.2
	WB	A	0.25	24.3	26.8	A	0.59	34.3	55.1
	NBL	A	0.15	3.5	m3.1	A	0.32	10.9	m17.2
	NBT/R	A	0.55	8.1	52.6	B	0.63	15.1	86.0
	SBL	A	0.07	16.3	m5.7	A	0.07	12.9	m4.5
	SBT/R	A	0.41	19.2	45.4	A	0.60	19.0	60.1
	Overall	**A**	**0.57**	**14.5**	-	**B**	**0.68**	**26.1**	-
Parkdale Avenue & Gladstone Avenue ***Signalized***	WBL/R	A	0.41	35.0	45.8	C	0.74	47.5	**#86.0**
	NBT/R	B	0.61	12.0	76.4	C	0.78	16.1	m104.4
	SBL	A	0.10	9.6	m6.2	A	0.18	7.0	m3.4
	SBT	A	0.36	11.4	56.1	A	0.37	6.8	26.5
	Overall	**A**	**0.56**	**14.8**	-	**C**	**0.77**	**19.1**	-
Parkdale Avenue & Highway 417 WB OR ***Signalized***	WBL	E	0.92	68.4	**#113.6**	E	0.93	69.1	**#120.5**
	WBT/R	C	0.77	13.3	47.2	**F**	**1.05**	**72.7**	**#142.6**
	NBL	B	0.69	34.6	**#32.4**	A	0.35	15.1	10.9
	NBT	A	0.31	8.5	41.7	A	0.56	12.2	89.9
	SBT/R	E	0.93	45.5	**#226.6**	E	0.92	37.2	**#237.9**
	Overall	**E**	**0.91**	**34.5**	-	**E**	**0.96**	**42.9**	-
Carruthers Avenue & Wellington Street W ***Signalized***	EBT	A	0.46	10.8	54.2	A	0.34	4.9	34.0
	WBT	A	0.23	8.3	25.4	A	0.36	5.1	37.4
	SBL	A	0.14	21.7	15.4	A	0.22	30.1	16.1
	SBR	A	0.03	11.0	3.8	A	0.10	13.6	5.5
	Overall	**A**	**0.36**	**10.9**	-	**A**	**0.36**	**6.5**	-

Notes: Saturation flow rate of 1800 veh/h/lane
PHF = 1.00

m = metered queue
# = queue exceeds storage or mid-block length

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The network intersections for the 2030 future total horizon operate similarly to the 2030 future background conditions. No new capacity issues are noted.

Similarly to the background conditions, mitigation of the capacity issues at the intersection of Parkdale Avenue and the Highway 417 westbound ramps could be achieved by shifting four seconds of split from the north-south phases to the east-west phase, bringing all movements to a v/c of 1.00 or below.

11.2.3 Network Intersection MMLOS

Table 23 summarizes the MMLOS analysis for the network intersections. The existing and future conditions for both intersections will be the same and are considered in one row. The analysis is based on the policy area of "Within 600m of a rapid transit station" for the intersections of Holland Avenue at Spencer Street, Holland Avenue at Wellington Street West, Parkdale Avenue at Wellington Street W, and Parkdale Avenue at Armstrong Street. The intersection analysis is based on the policy area of "Within 300m of a school" for the intersections of Parkdale Avenue at Gladstone Avenue, Carruthers Avenue at Wellington Street West, and Holland Avenue at Tyndall Street, as these intersections are within this distance of either Fisher Park Public School, Connaught Public School, or Saint Francis of Assisi Catholic Elementary School. The analysis for the intersection of Parkdale Avenue at the Highway 417 westbound ramps is based on the land use designation of "General Urban Area". Parkdale Avenue at Wellington Street West is additionally within 300 metres of Connaught Public School, however the targets for this policy area are the same for being within 600 metres of a rapid transit station. The MMLOS worksheets has been provided in Appendix K.

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
Holland Avenue & Spencer Street	D	A	C	B	B	D	-	-	A	E
Holland Avenue & Wellington Street W	C	A	C	B	E	D	F	D	C	E
Holland Avenue & Tyndall Street	C	A	B	B	B	D	-	-	A	E
Parkdale Avenue & Armstrong Street	C	A	C	D	C	D	-	-	A	E
Parkdale Avenue & Wellington Street W	C	A	C	D	F	D	-	-	B	E
Parkdale Avenue & Gladstone Avenue	C	A	C	C	C	D	-	-	C	E
Parkdale Avenue & Highway 417 WB OR	C	C	A	D	F	D	-	-	E	D
Carruthers Avenue & Wellington Street W	B	A	B	C	C	D	-	-	A	E

The MMLOS targets will not be met for the pedestrian LOS at all study area intersections but Parkdale Avenue at the Highway 417 westbound ramps, bicycle LOS at the intersections of Holland Avenue at Spencer Street and Holland Avenue at Wellington Street West, transit LOS at the intersection of Holland Avenue at Wellington Street West, Parkdale Avenue at Wellington Street West, and Parkdale at Highway 417 westbound ramps, and truck LOS at the intersection of Holland Avenue and Wellington Street West, and auto LOS at the intersection of Parkdale Avenue at Highway 417 westbound ramps.

To meet pedestrian LOS target score of "A", all crossing distances at an intersection cannot generally exceed two lane widths.

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Bicycle LOS is limited by the mixed-traffic left-turn conditions at the intersections of Holland Avenue at Spencer Street and Holland Avenue at Wellington Street West and would require two-stage left turns or bike boxes to meet targets.

Transit LOS is limited by delays for the transit movements on the Wellington Street West approaches at Holland Avenue and at Parkdale Avenue, and the southbound approach on Parkdale Avenue at the westbound highway ramps.

Modifications required to meet truck LOS at the intersection of Holland Avenue and Wellington Street West, including increasing the effective radii to more than 15 metres, would negatively impact pedestrian LOS at this location.

No mitigation measures are proposed to address the levels of service for the study area intersections.

11.2.4 Recommended Design Elements

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

12 Summary of Improvements Indicated and Modifications Options

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

Proposed Site and Screening

- The proposed site includes 240 residential dwelling units and 1,172 m^2 of ground floor retail
- Accesses will be provided along the existing rear lane to Hamilton Avenue, and outbound to Parkdale Avenue through modifications to the lane
- The development is proposed to be completed as a single phase by 2025
- The Trip Generation, Location, and Safety triggers were met for the TIA Screening

Existing Conditions

- Highway 417 is a provincial freeway, Parkdale Avenue and Wellington Street West are arterial roads, Holland Avenue and Gladstone Avenue are major collector roads, and Tyndall Street is a collector road in the study area
- Sidewalks are generally provided on both sides of the study area roadways, a MUP is provided along the north sides of Byron Avenue and of Scott Street, a buffered bike lane is provided on the south side of Scott Street, and sharrows and a buffered dooring zone are present along Wellington Street West between Holland Avenue and Parkdale Avenue
- Holland Avenue, Parkdale Avenue between Gladstone Avenue and Tyndall Street, Scott Street, Wellington Street West, Tyndall Street, and Gladstone Avenue are spine cycling routes
- Local cycling routes include Tunney's Pasture Driveway, Hamilton Avenue North between Spencer Street and Armstrong Street, Fairmont Avenue, Spencer Street west of Hamilton Avenue North, Armstrong Street east of Hamilton Avenue North, and Byron Avenue
- Scott Street is a cross-town bikeway, and the corridor from the pathway west of Holland Avenue, north to Holland Avenue, east to Tyndall Street, north to Parkdale Avenue, east to Gladstone Avenue and south to Fairmont Street is a neighbourhood bikeway
- Higher incidence of collisions is primarily noted at the Parkdale Avenue at Wellington Street West intersection, which while likely impacted by congestion, may additionally be influenced by vehicles

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weaving around turning vehicles and movements introduced from the gas station on the northwest quadrant of the intersection

- Some high delays and queuing are noted at the intersection of Parkdale Avenue and the Highway 417 westbound ramps during both peak hours, with several movements and the overall intersection approaching capacity during the PM peak hour

Development Generated Travel Demand

- The proposed development is forecasted produce 171 two-way people trips during the AM peak hour and 225 two-way people trips during the PM peak hour
- Of the forecasted people trips, 58 two-way trips will be vehicle trips during the AM peak hour and 69 two-way trips will be vehicle trips during the PM peak hour based on a 35% auto mode share target, reduced from the 45% typical to the district for the site's proximity to rapid transit
- Of the forecasted trips, 10% are anticipated to travel north and 30% are anticipated to travel each south, east, and west

Background Conditions

- Given the availability of other study area developments, no background development traffic was explicitly included in the background conditions
- An annual background growth of 3.25% eastbound and 2.50% westbound along Wellington Street West, 1.00% southbound on Holland Avenue and Parkdale Avenue, and 0.25% northbound on Parkdale Avenue was applied in the AM peak hour and reversed in the PM peak hour, along with an annual growth of 1.50% during the PM peak hour at the highway off-ramp and 1.25% in the AM peak hour and 2.00% in the PM peak hour at the highway on-ramp
- The study area intersections at both horizons will operate similarly to the existing conditions, where capacity issues are more developed on the westbound movement at the Parkdale Avenue intersection with the highway ramps at the future horizons, however signal timing optimization can reduce all v/c ratios to 1.00 or lower at the intersection

TDM

- No risks are noted with not meeting proposed mode transit mode shares given the negligible impacts of minor increases to site auto traffic
- Supportive TDM measures to be included within the proposed development should include:
  - Display local area maps with bicycle, walking, transit information, and transit route schedules at building entrances
  - Contract with provider to install on-site carshare vehicles and promote their use by residents
  - Provide a multimodal travel option information package to new tenants
  - 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

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NTM

- The proposed development will connect to the arterial network via Hamilton Avenue North, Tyndall Street, and Holland Avenue
- Tyndall Street and Holland Avenue are over the TIA thresholds for their classifications, and site traffic would contribute negligible volumes to their total volumes
- Hamilton Avenue North did not have any available existing data, nor could data be collected due to the pandemic, but given the characteristics and land access of the roadway, no functional impacts are noted given the proposed site traffic

Transit

- No impact to existing area transit service is forecasted from site-generated transit trips given the distribution of site traffic, number and frequency of area routes, and site proximity to the LRT/BRT lines
- Transit priority is not impacted by site driveways or from site-generated traffic on transit turning movements

Network Intersection Design

- The network intersections at the future total horizons will operate similarly to the future background horizons
- As in the background horizons, signal timing optimization can reduce the v/c ratios to 1.00 or lower for the overcapacity movement and the remaining movements at the intersection of Parkdale Avenue and the highway ramps
- The MMLOS targets will not be met for the Pedestrian LOS at all study area intersections but Parkdale Avenue at the Highway 417 westbound ramps, bicycle LOS at the intersections of Holland Avenue at Spencer Street and Holland Avenue at Wellington Street West, transit LOS at the intersection of Holland Avenue at Wellington Street West, Parkdale Avenue at Wellington Street West, and Parkdale at Highway 417 westbound ramps, and truck LOS at the intersection of Holland Avenue and Wellington Street West, and auto LOS at the intersection of Parkdale Avenue at Highway 417 westbound ramps
- Improved cycling left-turn configurations out of mixed flow could meet the LOS targets but due to the crossing distances, the pedestrian and transit LOS cannot be met, and improvements to the truck LOS would negatively impact pedestrian LOS

13 Next Steps

Following the circulation and review of the TIA, any outstanding comments will be documents within the context of the zoning by-law amendment/Official Plan amendment in the Step 4 Strategy Report. Once remaining TIA Steps are completed and sign-off has been received from City Transportation Project Manager, a signed and stamped final report will be provided to City staff.

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Appendix A

TIA Screening Form and PM Certification Form

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13 Markham Avenue
Ottawa ON K2G 3Z1

City of Ottawa 2017 TIA Guidelines
Step 1 - Screening Form

Date: 17-Jul-20
Project Number: 2020-62
Project Reference: 1186-1194 Wellington

1.1 Description of Proposed Development	
Municipal Address	1186-1194 Wellington Street
Description of Location	Existing pharmacy, chruch and parking lot
Land Use Classification	Traditional Mainstreet Zoning (TM11)
Development Size	12-storey residential (228 units), 1,190 sq.m. retails, 174 parking spaces, 128 bicycle parking spaces
Accesses	Existing laneway at rear property line
Phase of Development	Single phase
Buildout Year	2025
TIA Requirement	Full TIA Required

1.2 Trip Generation Trigger		
Land Use Type	Townhomes or apartments	
Development Size	228	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	Wellington Traditional Mainstreet, Wellington Street CDP
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	Parkdale/Wellington
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
Tel. : 613-580-2424
Fax: 613-560-6006

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

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Transportation Services - Traffic Services

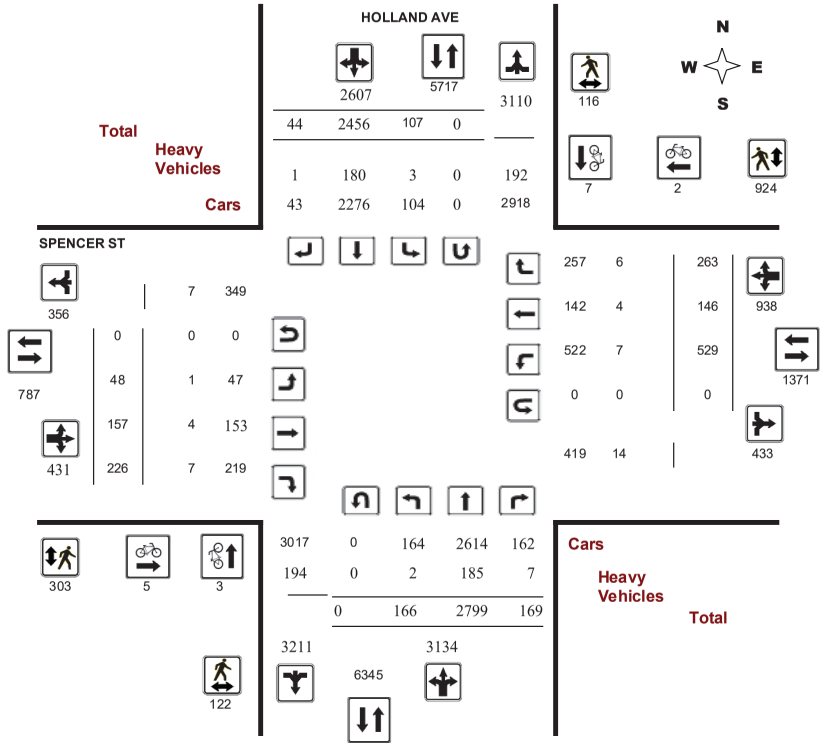
Turning Movement Count - Study Results

HOLLAND AVE @ SPENCER ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36635

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

Full Study Diagram



Transportation Services - Traffic Services

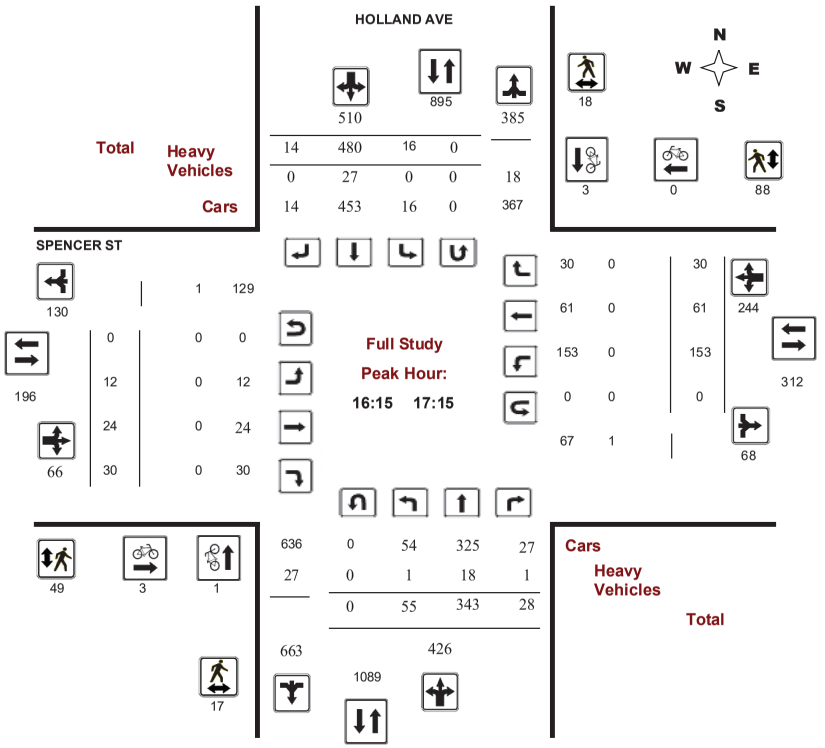
Turning Movement Count - Study Results

HOLLAND AVE @ SPENCER ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36635

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

Full Study Peak Hour Diagram



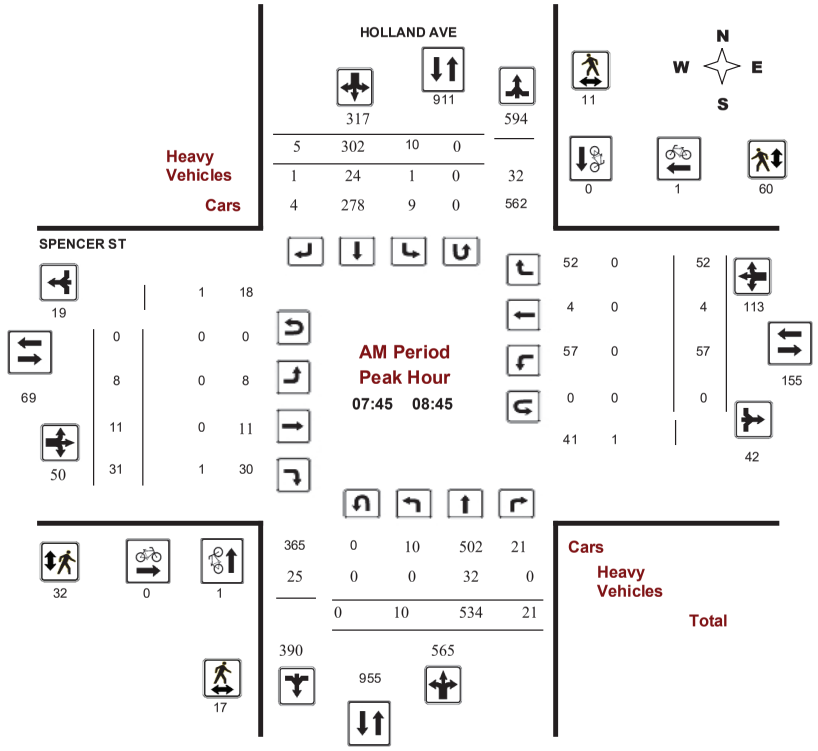
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ SPENCER ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36635

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



Comments

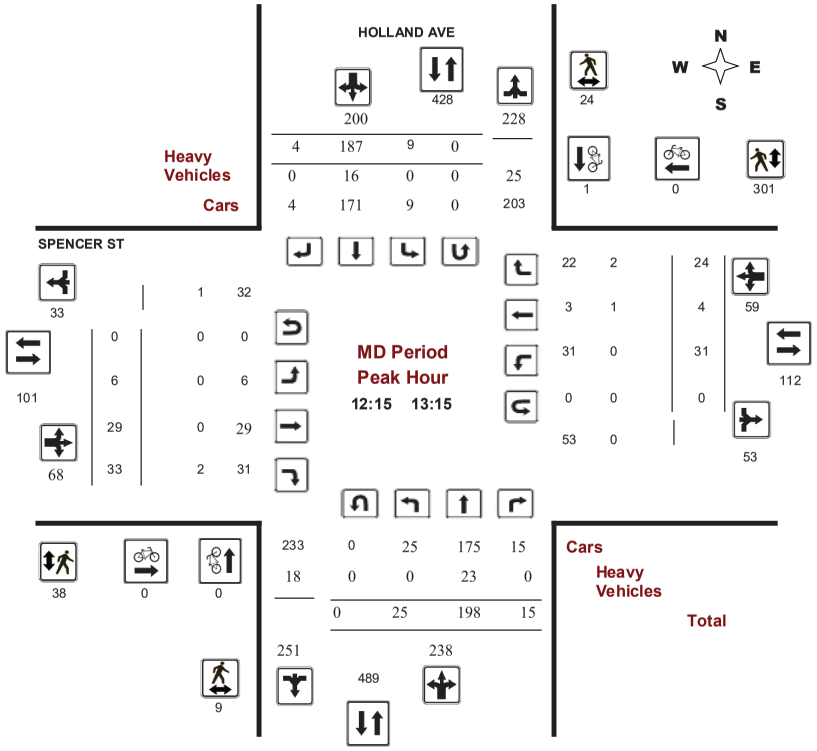
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ SPENCER ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36635

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



Comments

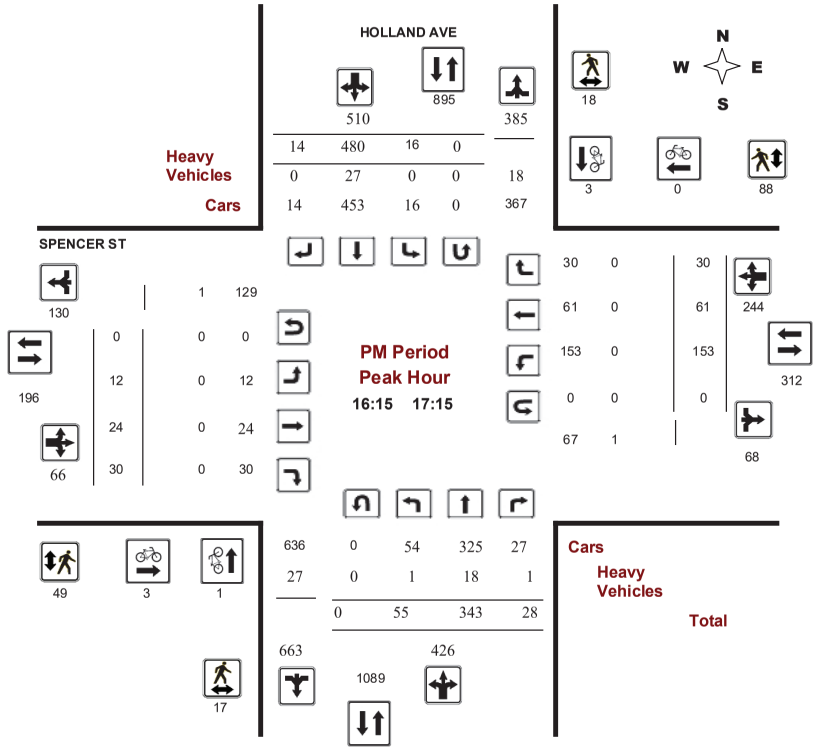
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ SPENCER ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36635

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ SPENCER ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36635

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, January 11, 201

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor 1.00

	HOLLAND AVE									SPENCER 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	5	508	25	**538**	11	264	1	**276**	**814**	0	8	27	**35**	24	4	55	**83**	**118**	**932**
08:00 09:00	11	525	25	**561**	9	286	9	**304**	**865**	12	10	27	**49**	59	2	48	**109**	**158**	**1023**
09:00 10:00	10	327	18	**355**	11	209	2	**222**	**577**	4	12	25	**41**	22	4	36	**62**	**103**	**680**
11:30 12:30	9	175	12	**196**	5	199	6	**210**	**406**	6	24	34	**64**	31	10	16	**57**	**121**	**527**
12:30 13:30	27	194	17	**238**	11	191	3	**205**	**443**	7	24	31	**62**	27	6	22	**55**	**117**	**560**
15:00 16:00	17	407	23	**447**	23	428	3	**454**	**901**	3	25	27	**55**	101	25	36	**162**	**217**	**1118**
16:00 17:00	42	342	30	**414**	23	491	10	**524**	**938**	7	31	30	**68**	142	49	27	**218**	**286**	**1224**
17:00 18:00	45	321	19	**385**	14	388	10	**412**	**797**	9	23	25	**57**	123	46	23	**192**	**249**	**1046**
Sub Total	166	2799	169	**3134**	107	2456	44	**2607**	**5741**	48	157	226	**431**	529	146	263	**938**	**1369**	**7110**
U Turns	0			**0**	0			**0**	**0**	0			**0**	0			**0**	**0**	**0**
Total	166	2799	169	**3134**	107	2456	44	**2607**	**5741**	48	157	226	**431**	529	146	263	**938**	**1369**	**7110**
EQ 12Hr	231	3891	235	**4357**	149	3414	61	**3624**	**7981**	67	218	314	**599**	735	203	366	**1304**	**1903**	**9884**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	231	3891	235	**4357**	149	3414	61	**3624**	**7981**	67	218	314	**599**	735	203	366	**1304**	**1903**	**9884**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	303	5097	308	**5708**	195	4472	80	**4747**	**10455**	88	286	411	**785**	963	266	479	**1708**	**2493**	**12948**
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

HOLLAND AVE @ SPENCER ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36635

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

Full Study 15 Minute Increments

		HOLLAND AVE									SPENCER 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	3	110	2	115	4	61	0	65	**180**	0	2	5	7	4	1	16	21	**28**	**208**
07:15	07:30	1	123	12	136	1	69	1	71	**207**	0	2	4	6	6	0	16	22	**28**	**235**
07:30	07:45	0	119	6	125	1	73	0	74	**199**	0	1	8	9	5	0	9	14	**23**	**222**
07:45	08:00	1	156	5	162	5	61	0	66	**228**	0	3	10	13	9	3	14	26	**39**	**267**
08:00	08:15	3	125	7	135	1	88	0	89	**224**	1	2	6	9	11	0	15	26	**35**	**259**
08:15	08:30	1	130	3	134	0	80	2	82	**216**	4	1	11	16	21	1	14	36	**52**	**268**
08:30	08:45	5	123	6	134	4	73	3	80	**214**	3	5	4	12	16	0	9	25	**37**	**251**
08:45	09:00	2	147	9	158	4	45	4	53	**211**	4	2	6	12	11	1	10	22	**34**	**245**
09:00	09:15	1	105	7	113	6	61	2	69	**182**	0	1	4	5	7	2	13	22	**27**	**209**
09:15	09:30	1	100	4	105	3	53	0	56	**161**	2	2	3	7	10	0	8	18	**25**	**186**
09:30	09:45	4	78	3	85	2	53	0	55	**140**	1	4	13	18	3	1	9	13	**31**	**171**
09:45	10:00	4	44	4	52	0	42	0	42	**94**	1	5	5	11	2	1	6	9	**20**	**114**
11:30	11:45	0	44	5	49	1	43	0	44	**93**	2	9	9	20	5	4	3	12	**32**	**125**
11:45	12:00	5	40	5	50	2	55	3	60	**110**	2	4	8	14	6	3	3	12	**26**	**136**
12:00	12:15	1	44	1	46	1	57	2	60	**106**	1	1	7	9	11	2	6	19	**28**	**134**
12:15	12:30	3	47	1	51	1	44	1	46	**97**	1	10	10	21	9	1	4	14	**35**	**132**
12:30	12:45	9	60	2	71	4	41	1	46	**117**	0	8	5	13	7	2	6	15	**28**	**145**
12:45	13:00	6	43	5	54	2	58	1	61	**115**	2	6	7	15	10	0	7	17	**32**	**147**
13:00	13:15	7	48	7	62	2	44	1	47	**109**	3	5	11	19	5	1	7	13	**32**	**141**
13:15	13:30	5	43	3	51	3	48	0	51	**102**	2	5	8	15	5	3	2	10	**25**	**127**
15:00	15:15	3	90	5	98	8	121	1	130	**228**	0	4	7	11	22	4	9	35	**46**	**274**
15:15	15:30	3	107	5	115	3	93	0	96	**211**	0	5	8	13	14	4	5	23	**36**	**247**
15:30	15:45	7	108	5	120	5	101	2	108	**228**	1	6	7	14	28	9	10	47	**61**	**289**
15:45	16:00	4	102	8	114	7	113	0	120	**234**	2	10	5	17	37	8	12	57	**74**	**308**
16:00	16:15	5	87	7	99	8	131	0	139	**238**	1	12	6	19	34	5	6	45	**64**	**302**
16:15	16:30	10	99	11	120	5	114	2	121	**241**	1	8	5	14	33	16	4	53	**67**	**308**
16:30	16:45	9	90	2	101	4	130	2	136	**237**	2	7	9	18	27	17	10	54	**72**	**309**
16:45	17:00	18	66	10	94	6	116	6	128	**222**	3	4	10	17	48	11	7	66	**83**	**305**
17:00	17:15	18	88	5	111	1	120	4	125	**236**	6	5	6	17	45	17	9	71	**88**	**324**
17:15	17:30	10	72	2	84	4	108	2	114	**198**	1	9	6	16	42	8	8	58	**74**	**272**
17:30	17:45	6	73	6	85	4	90	2	96	**181**	1	4	6	11	21	14	3	38	**49**	**230**
17:45	18:00	11	88	6	105	5	70	2	77	**182**	1	5	7	13	15	7	3	25	**38**	**220**
Total:		166	2799	169	3134	107	2456	44	2607	**5741**	48	157	226	431	529	146	263	938	**5741**	**7,110**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ SPENCER ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36635

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

Full Study Cyclist Volume

		HOLLAND AVE			SPENCER ST			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	**0**	0	0	**0**	**0**
07:15	07:30	0	0	**0**	0	0	**0**	**0**
07:30	07:45	0	1	**1**	0	0	**0**	**1**
07:45	08:00	1	0	**1**	0	0	**0**	**1**
08:00	08:15	0	0	**0**	0	1	**1**	**1**
08:15	08:30	0	0	**0**	0	0	**0**	**0**
08:30	08:45	0	0	**0**	0	0	**0**	**0**
08:45	09:00	0	0	**0**	0	0	**0**	**0**
09:00	09:15	0	0	**0**	0	0	**0**	**0**
09:15	09:30	1	0	**1**	0	0	**0**	**1**
09:30	09:45	0	0	**0**	0	0	**0**	**0**
09:45	10:00	0	0	**0**	0	0	**0**	**0**
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**	0	0	**0**	**0**
12:15	12:30	0	1	**1**	0	0	**0**	**1**
12:30	12:45	0	0	**0**	0	0	**0**	**0**
12:45	13:00	0	0	**0**	0	0	**0**	**0**
13:00	13:15	0	0	**0**	0	0	**0**	**0**
13:15	13:30	0	0	**0**	1	0	**1**	**1**
15:00	15:15	0	1	**1**	0	0	**0**	**1**
15:15	15:30	0	1	**1**	1	0	**1**	**2**
15:30	15:45	0	0	**0**	0	0	**0**	**0**
15:45	16:00	0	0	**0**	0	0	**0**	**0**
16:00	16:15	0	0	**0**	0	0	**0**	**0**
16:15	16:30	0	1	**1**	0	0	**0**	**1**
16:30	16:45	0	1	**1**	1	0	**1**	**2**
16:45	17:00	0	1	**1**	1	0	**1**	**2**
17:00	17:15	1	0	**1**	1	0	**1**	**2**
17:15	17:30	0	0	**0**	0	0	**0**	**0**
17:30	17:45	0	0	**0**	0	0	**0**	**0**
17:45	18:00	0	0	**0**	0	0	**0**	**0**
Total		3	7	**10**	5	2	**7**	**17**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ SPENCER ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36635

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

Full Study Pedestrian Volume

	HOLLAND AVE			SPENCER 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	0	1	**1**	5	6	**11**	**12**
07:15 07:30	1	1	**2**	4	4	**8**	**10**
07:30 07:45	5	3	**8**	4	8	**12**	**20**
07:45 08:00	2	2	**4**	6	14	**20**	**24**
08:00 08:15	6	1	**7**	8	17	**25**	**32**
08:15 08:30	3	2	**5**	5	18	**23**	**28**
08:30 08:45	6	6	**12**	13	11	**24**	**36**
08:45 09:00	3	5	**8**	7	15	**22**	**30**
09:00 09:15	8	1	**9**	7	16	**23**	**32**
09:15 09:30	5	2	**7**	6	9	**15**	**22**
09:30 09:45	2	3	**5**	2	8	**10**	**15**
09:45 10:00	1	2	**3**	7	9	**16**	**19**
11:30 11:45	3	2	**5**	9	47	**56**	**61**
11:45 12:00	3	3	**6**	15	114	**129**	**135**
12:00 12:15	3	2	**5**	21	80	**101**	**106**
12:15 12:30	5	3	**8**	13	81	**94**	**102**
12:30 12:45	3	10	**13**	7	80	**87**	**100**
12:45 13:00	0	5	**5**	7	85	**92**	**97**
13:00 13:15	1	6	**7**	11	55	**66**	**73**
13:15 13:30	2	9	**11**	15	31	**46**	**57**
15:00 15:15	5	1	**6**	8	15	**23**	**29**
15:15 15:30	5	0	**5**	5	10	**15**	**20**
15:30 15:45	8	2	**10**	8	20	**28**	**38**
15:45 16:00	2	5	**7**	9	6	**15**	**22**
16:00 16:15	6	5	**11**	8	18	**26**	**37**
16:15 16:30	4	4	**8**	7	19	**26**	**34**
16:30 16:45	7	7	**14**	12	27	**39**	**53**
16:45 17:00	2	3	**5**	17	12	**29**	**34**
17:00 17:15	4	4	**8**	13	30	**43**	**51**
17:15 17:30	9	5	**14**	13	30	**43**	**57**
17:30 17:45	4	9	**13**	17	14	**31**	**44**
17:45 18:00	4	2	**6**	14	15	**29**	**35**
Total	122	116	**238**	303	924	**1227**	**1465**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ SPENCER ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36635

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

Full Study Heavy Vehicles

		HOLLAND AVE									SPENCER 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	5	0	**5**	0	5	0	**5**	**10**	0	0	0	**0**	0	0	0	**0**	**0**	**10**
07:15	07:30	0	5	3	**8**	0	5	0	**5**	**13**	0	1	0	**1**	0	0	0	**0**	**1**	**14**
07:30	07:45	0	5	0	**5**	0	6	0	**6**	**11**	0	0	0	**0**	0	0	0	**0**	**0**	**11**
07:45	08:00	0	10	0	**10**	0	5	0	**5**	**15**	0	0	1	**1**	0	0	0	**0**	**1**	**16**
08:00	08:15	0	6	0	**6**	0	7	0	**7**	**13**	0	0	0	**0**	0	0	0	**0**	**0**	**13**
08:15	08:30	0	6	0	**6**	0	7	1	**8**	**14**	0	0	0	**0**	0	0	0	**0**	**0**	**14**
08:30	08:45	0	10	0	**10**	1	5	0	**6**	**16**	0	0	0	**0**	0	0	0	**0**	**0**	**16**
08:45	09:00	0	11	0	**11**	0	4	0	**4**	**15**	0	0	1	**1**	1	1	0	**2**	**3**	**18**
09:00	09:15	0	6	0	**6**	1	5	0	**6**	**12**	0	0	0	**0**	0	0	0	**0**	**0**	**12**
09:15	09:30	1	9	0	**10**	0	7	0	**7**	**17**	1	0	0	**1**	0	0	0	**0**	**1**	**18**
09:30	09:45	0	6	0	**6**	0	5	0	**5**	**11**	0	0	1	**1**	0	0	0	**0**	**1**	**12**
09:45	10:00	0	6	0	**6**	0	2	0	**2**	**8**	0	0	0	**0**	0	0	0	**0**	**0**	**8**
11:30	11:45	0	7	1	**8**	0	4	0	**4**	**12**	0	0	0	**0**	0	1	0	**1**	**1**	**13**
11:45	12:00	0	5	0	**5**	1	4	0	**5**	**10**	0	0	0	**0**	0	0	1	**1**	**1**	**11**
12:00	12:15	0	5	0	**5**	0	6	0	**6**	**11**	0	0	0	**0**	0	2	1	0	**3**	**3**	**14**
12:15	12:30	0	3	0	**3**	0	3	0	**3**	**6**	0	0	1	**1**	0	1	1	**2**	**3**	**9**
12:30	12:45	0	7	0	**7**	0	5	0	**5**	**12**	0	0	0	**0**	0	0	0	**0**	**0**	**12**
12:45	13:00	0	6	0	**6**	0	4	0	**4**	**10**	0	0	0	**0**	0	0	1	**1**	**1**	**11**
13:00	13:15	0	7	0	**7**	0	4	0	**4**	**11**	0	0	1	**1**	0	0	0	**0**	**1**	**12**
13:15	13:30	0	1	0	**1**	0	3	0	**3**	**4**	0	0	1	**1**	0	0	0	**0**	**1**	**5**
15:00	15:15	0	6	0	**6**	0	7	0	**7**	**13**	0	0	0	**0**	1	0	0	**1**	**1**	**14**
15:15	15:30	0	5	0	**5**	0	8	0	**8**	**13**	0	2	0	**2**	0	0	0	**0**	**2**	**15**
15:30	15:45	0	8	0	**8**	0	6	0	**6**	**14**	0	0	0	**0**	1	0	0	**1**	**1**	**15**
15:45	16:00	0	6	1	**7**	0	8	0	**8**	**15**	0	1	1	**2**	0	0	1	**1**	**3**	**18**
16:00	16:15	0	3	1	**4**	0	9	0	**9**	**13**	0	0	0	**0**	2	0	0	**2**	**2**	**15**
16:15	16:30	1	4	0	**5**	0	6	0	**6**	**11**	0	0	0	**0**	0	0	0	**0**	**0**	**11**
16:30	16:45	0	7	0	**7**	0	7	0	**7**	**14**	0	0	0	**0**	0	0	0	**0**	**0**	**14**
16:45	17:00	0	3	1	**4**	0	5	0	**5**	**9**	0	0	0	**0**	0	0	0	**0**	**0**	**9**
17:00	17:15	0	4	0	**4**	0	9	0	**9**	**13**	0	0	0	**0**	0	0	0	**0**	**0**	**13**
17:15	17:30	0	3	0	**3**	0	8	0	**8**	**11**	0	0	0	**0**	0	0	2	**2**	**2**	**13**
17:30	17:45	0	5	0	**5**	0	7	0	**7**	**12**	0	0	0	**0**	0	0	0	**0**	**0**	**12**
17:45	18:00	0	5	0	**5**	0	4	0	**4**	**9**	0	0	0	**0**	0	0	0	**0**	**0**	**9**
Total:	None	2	185	7	**194**	3	180	1	**184**	**378**	1	4	7	**12**	7	4	6	**17**	**29**	**407**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ SPENCER ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36635

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

Full Study 15 Minute U-Turn Total

Time Period		HOLLAND AVE Northbound U-Turn Total	HOLLAND AVE Southbound U-Turn Total	SPENCER ST Eastbound U-Turn Total	SPENCER 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

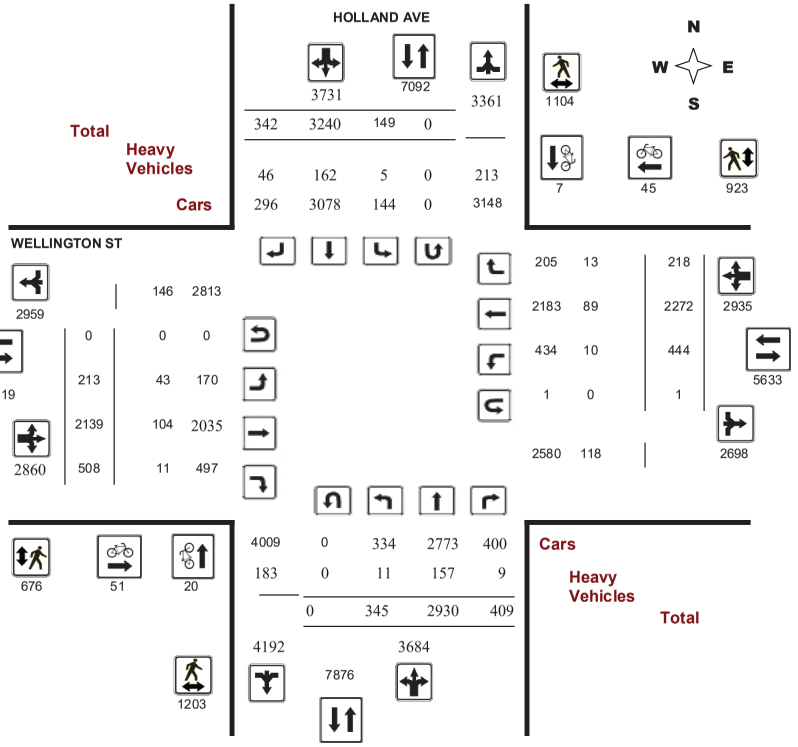
Turning Movement Count - Study Results

HOLLAND AVE @ WELLINGTON ST

Survey Date: Wednesday, November 22, 2017 **WO No:** 37317

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

Full Study Diagram



Transportation Services - Traffic Services

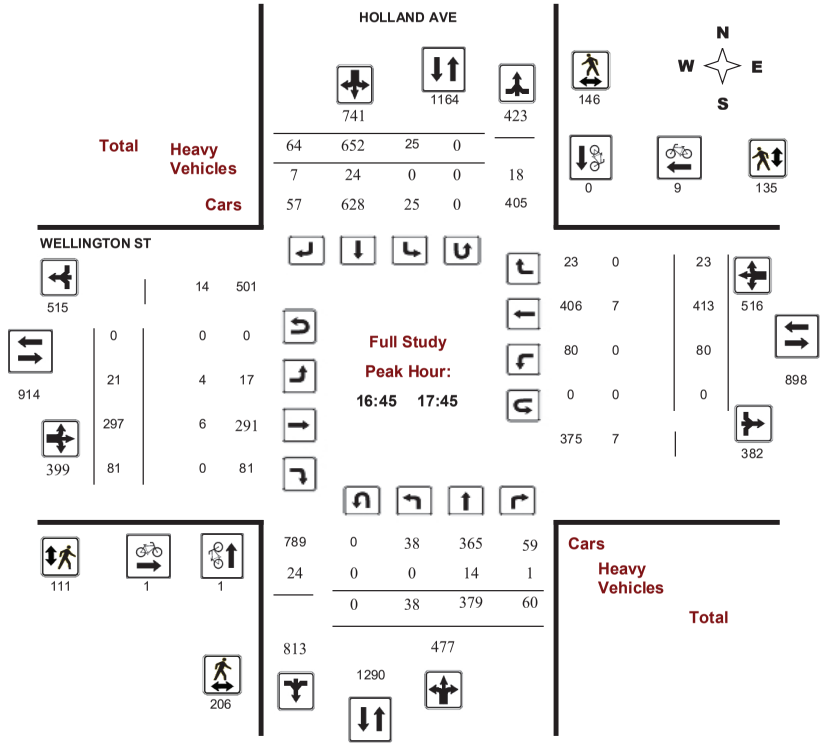
Turning Movement Count - Study Results

HOLLAND AVE @ WELLINGTON ST

Survey Date: Wednesday, November 22, 2017 **WO No:** 37317

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

Full Study Peak Hour Diagram



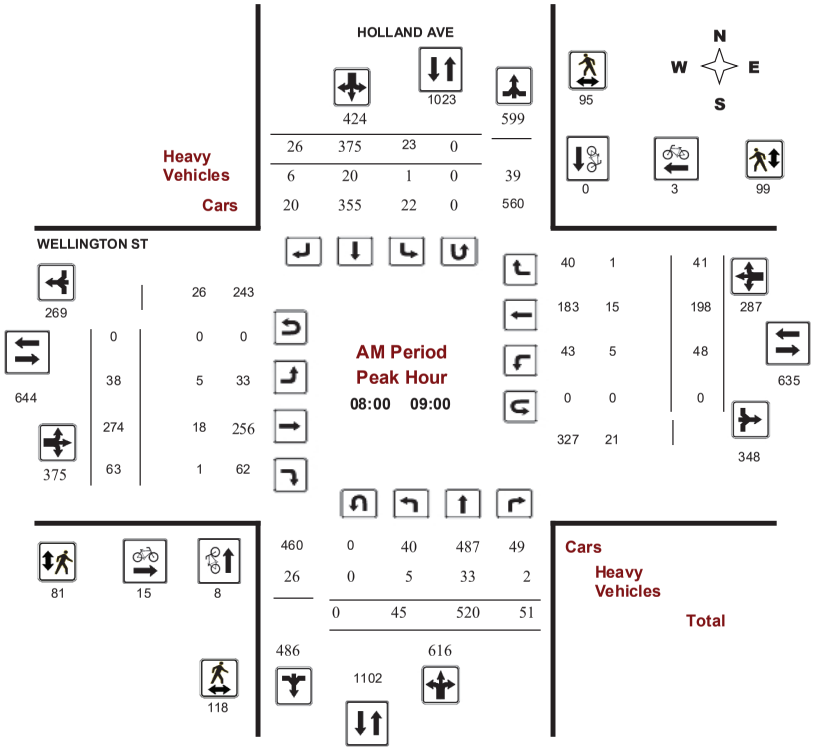
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ WELLINGTON ST

Survey Date: Wednesday, November 22, 2017 **WO No:** 37317

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



Comments

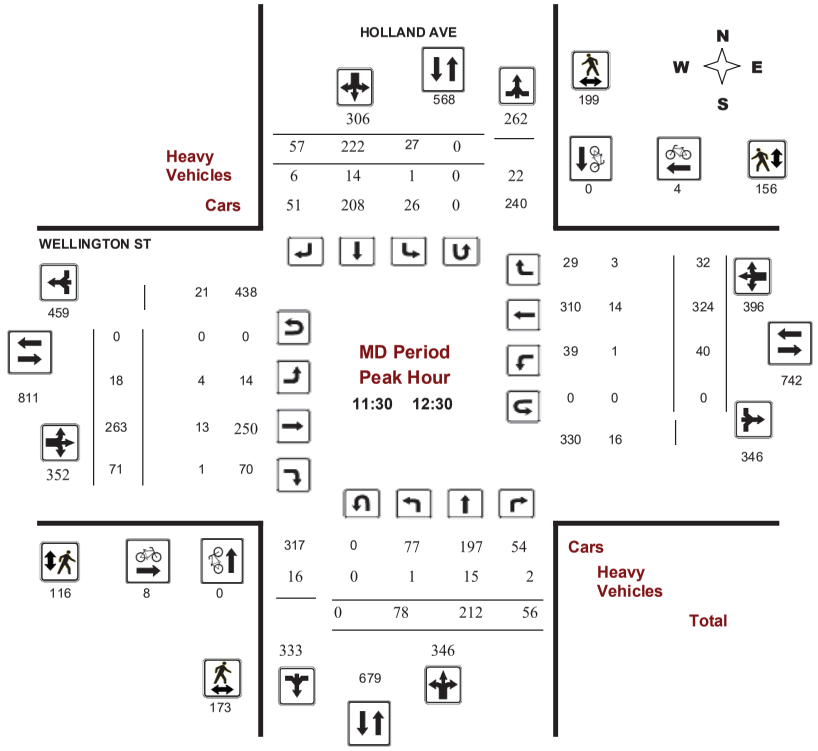
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ WELLINGTON ST

Survey Date: Wednesday, November 22, 2017 **WO No:** 37317

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



Comments

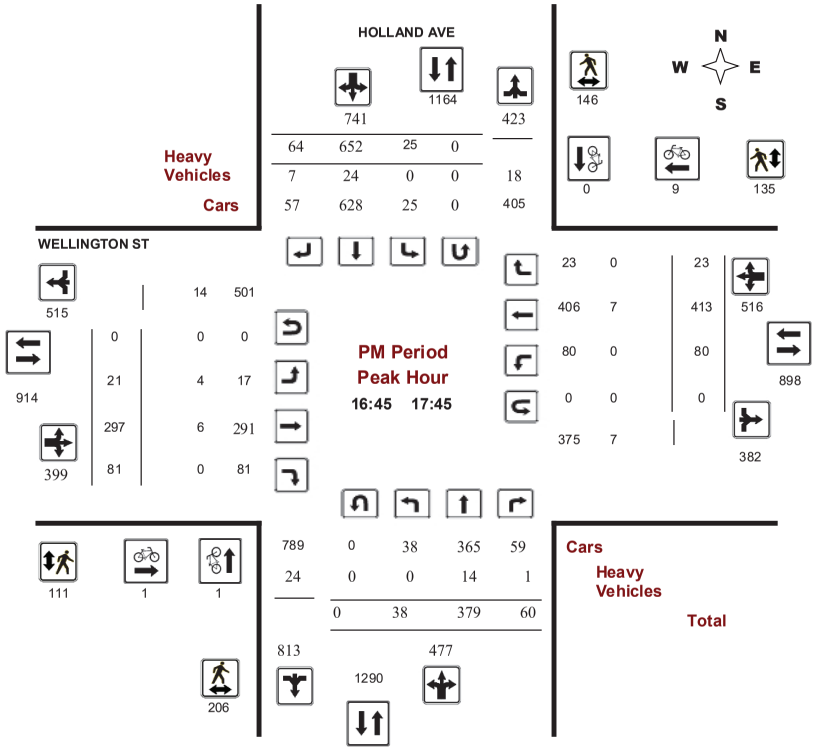
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ WELLINGTON ST

Survey Date: Wednesday, November 22, 2017 **WO No:** 37317

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ WELLINGTON ST

Survey Date: Wednesday, November 22, 2017 **WO No:** 37317

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, November 22, 2017

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 1

AADT Factor .90

	HOLLAND 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	25	474	29	**528**	10	325	21	**356**	**884**	39	225	55	**319**	30	132	33	**195**	**514**	**1398**
08:00 09:00	45	520	51	**616**	23	375	26	**424**	**1040**	38	274	63	**375**	48	198	41	**287**	**662**	**1702**
09:00 10:00	42	351	48	**441**	16	255	34	**305**	**746**	21	257	48	**326**	37	203	23	**263**	**589**	**1335**
11:30 12:30	78	212	56	**346**	27	222	57	**306**	**652**	18	263	71	**352**	40	324	32	**396**	**748**	**1400**
12:30 13:30	47	206	53	**306**	19	213	39	**271**	**577**	20	278	64	**362**	60	258	32	**350**	**712**	**1289**
15:00 16:00	28	423	60	**511**	12	607	37	**656**	**1167**	19	263	59	**341**	79	321	20	**420**	**761**	**1928**
16:00 17:00	37	383	48	**468**	20	646	60	**726**	**1194**	28	278	67	**373**	90	428	15	**533**	**906**	**2100**
17:00 18:00	43	361	64	**468**	22	597	68	**687**	**1155**	30	301	81	**412**	60	408	22	**490**	**902**	**2057**
Sub Total	345	2930	409	**3684**	149	3240	342	**3731**	**7415**	213	2139	508	**2860**	444	2272	218	**2934**	**5794**	**13209**
U Turns				**0**				**0**	**0**				**0**				**1**	**1**	**1**
Total	345	2930	409	**3684**	149	3240	342	**3731**	**7415**	213	2139	508	**2860**	444	2272	218	**2935**	**5795**	**13210**
EQ 12Hr	480	4073	569	**5121**	207	4504	475	**5186**	**10307**	296	2973	706	**3975**	617	3158	303	**4080**	**8055**	**18362**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	407	3454	482	**4343**	176	3820	403	**4399**	**9276**	251	2522	599	**3372**	523	2679	257	**3460**	**7250**	**16526**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**0.9**					
AVG 24Hr	533	4525	632	**5690**	230	5004	528	**5762**	**11452**	329	3304	785	**4417**	686	3509	337	**4533**	**8950**	**20402**
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

HOLLAND AVE @ WELLINGTON ST

Survey Date: Wednesday, November 22, 2017 **WO No:** 37317

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

Full Study 15 Minute Increments

		HOLLAND 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	3	108	5	116	5	71	2	78	11	11	56	11	78	5	26	7	38	11	310
07:15	07:30	6	124	7	137	1	80	7	88	13	10	46	11	67	3	36	9	48	13	340
07:30	07:45	7	111	7	125	4	69	3	76	11	8	49	7	64	12	31	12	55	11	320
07:45	08:00	9	131	10	150	0	105	9	114	16	10	74	26	110	10	39	5	54	16	428
08:00	08:15	7	148	8	163	4	100	5	109	14	11	70	21	102	8	39	11	58	14	432
08:15	08:30	9	120	11	140	6	91	4	101	17	6	64	13	83	13	42	16	71	17	395
08:30	08:45	16	123	16	155	10	94	10	114	18	10	69	20	99	15	53	9	77	18	445
08:45	09:00	13	129	16	158	3	90	7	100	18	11	71	9	91	12	64	5	81	18	430
09:00	09:15	14	124	19	157	5	78	8	91	16	3	70	15	88	13	46	7	66	16	402
09:15	09:30	12	100	6	118	4	79	8	91	13	9	66	8	83	5	55	4	64	13	356
09:30	09:45	10	72	13	95	2	61	4	67	11	7	63	9	79	10	52	7	69	11	310
09:45	10:00	6	55	10	71	5	37	14	56	10	2	58	16	76	9	50	5	64	10	267
11:30	11:45	18	53	12	83	6	47	13	66	10	3	62	14	79	12	84	8	104	10	332
11:45	12:00	18	56	15	89	8	50	20	78	11	4	59	18	81	8	82	7	97	11	345
12:00	12:15	19	54	17	90	4	62	11	77	6	6	67	14	87	12	76	7	95	6	349
12:15	12:30	23	49	12	84	9	63	13	85	12	5	75	25	105	8	82	10	100	12	374
12:30	12:45	16	42	14	72	6	56	11	73	7	7	60	18	85	15	61	8	84	7	314
15:00	15:15	5	95	11	111	5	149	4	158	12	4	69	16	89	23	56	4	83	12	441
12:45	13:00	10	55	8	73	5	58	11	74	8	6	68	16	90	15	60	10	85	8	322
13:00	13:15	13	51	16	80	4	55	8	67	8	3	75	17	95	19	61	10	90	8	332
13:15	13:30	8	58	15	81	4	44	9	57	14	4	75	13	92	11	76	4	91	14	321
15:15	15:30	9	118	17	144	3	148	8	159	14	5	61	17	83	14	81	3	98	14	484
15:30	15:45	10	97	16	123	3	158	11	172	12	4	66	15	85	18	87	10	115	12	495
15:45	16:00	4	113	16	133	1	152	14	167	19	6	67	11	84	24	97	3	124	19	508
16:00	16:15	5	83	16	104	6	157	10	173	8	7	76	17	100	19	106	3	128	8	505
16:15	16:30	11	120	8	139	3	165	16	184	16	10	69	13	92	19	107	5	131	16	546
16:30	16:45	14	86	9	109	4	161	15	180	9	8	60	16	84	26	104	1	131	9	504
16:45	17:00	7	94	15	116	7	163	19	189	13	3	73	21	97	26	111	6	143	13	545
17:00	17:15	7	84	12	103	8	181	17	206	15	9	74	14	97	23	90	5	118	15	524
17:15	17:30	7	98	15	120	5	174	10	189	7	3	72	18	93	15	106	8	129	7	531
17:30	17:45	17	103	18	138	5	134	18	157	11	6	78	28	112	16	106	4	126	11	533
17:45	18:00	12	76	19	107	4	108	23	135	10	12	77	21	110	6	106	5	118	10	470
Total:		345	2930	409	3684	149	3240	342	3731	390	213	2139	508	2860	444	2272	218	2935	390	13,210

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ WELLINGTON ST

Survey Date: Wednesday, November 22, 2017 **WO No:** 37317

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

Full Study Cyclist Volume

Time Period		HOLLAND 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	1	0	1	0	1	1	2
07:30	07:45	2	0	2	1	2	3	5
07:45	08:00	1	1	2	5	4	9	11
08:00	08:15	2	0	2	3	0	3	5
08:15	08:30	2	0	2	3	0	3	5
08:30	08:45	1	0	1	6	1	7	8
08:45	09:00	3	0	3	3	2	5	8
09:00	09:15	0	0	0	1	3	4	4
09:15	09:30	2	0	2	1	1	2	4
09:30	09:45	0	0	0	0	1	1	1
09:45	10:00	1	0	1	0	3	3	4
11:30	11:45	0	0	0	1	2	3	3
11:45	12:00	0	0	0	4	1	5	5
12:00	12:15	0	0	0	2	1	3	3
12:15	12:30	0	0	0	1	0	1	1
12:30	12:45	0	0	0	2	0	2	2
15:00	15:15	0	0	0	1	1	2	2
12:45	13:00	0	0	0	3	1	4	4
13:00	13:15	0	0	0	2	2	4	4
13:15	13:30	1	1	2	2	1	3	5
15:15	15:30	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	1	1	1	1	2	3
16:00	16:15	1	2	3	1	0	1	4
16:15	16:30	1	1	2	2	4	6	8
16:30	16:45	1	0	1	2	2	4	5
16:45	17:00	1	0	1	1	2	3	4
17:00	17:15	0	0	0	0	2	2	2
17:15	17:30	0	0	0	0	1	1	1
17:30	17:45	0	0	0	0	4	4	4
17:45	18:00	0	1	1	0	2	2	3
Total		20	7	**27**	51	45	96	123

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ WELLINGTON ST

Survey Date: Wednesday, November 22, 2017 **WO No:** 37317

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

Full Study Pedestrian Volume

Time Period	HOLLAND 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	17	5	**22**	3	10	**13**	**35**
07:15 07:30	17	16	**33**	10	14	**24**	**57**
07:30 07:45	23	10	**33**	5	12	**17**	**50**
07:45 08:00	26	16	**42**	12	20	**32**	**74**
08:00 08:15	27	18	**45**	9	14	**23**	**68**
08:15 08:30	35	21	**56**	28	25	**53**	**109**
08:30 08:45	29	30	**59**	27	28	**55**	**114**
08:45 09:00	27	26	**53**	17	32	**49**	**102**
09:00 09:15	19	21	**40**	10	14	**24**	**64**
09:15 09:30	26	21	**47**	11	24	**35**	**82**
09:30 09:45	30	18	**48**	14	13	**27**	**75**
09:45 10:00	24	31	**55**	14	13	**27**	**82**
11:30 11:45	40	24	**64**	20	39	**59**	**123**
11:45 12:00	54	42	**96**	19	46	**65**	**161**
12:00 12:15	38	68	**106**	31	30	**61**	**167**
12:15 12:30	41	65	**106**	46	41	**87**	**193**
12:30 12:45	61	63	**124**	33	58	**91**	**215**
15:00 15:15	43	36	**79**	17	24	**41**	**120**
12:45 13:00	54	67	**121**	22	55	**77**	**198**
13:00 13:15	29	53	**82**	23	31	**54**	**136**
13:15 13:30	59	61	**120**	31	53	**84**	**204**
15:15 15:30	38	30	**68**	26	17	**43**	**111**
15:30 15:45	35	32	**67**	22	31	**53**	**120**
15:45 16:00	41	35	**76**	21	29	**50**	**126**
16:00 16:15	46	28	**74**	22	26	**48**	**122**
16:15 16:30	41	38	**79**	33	21	**54**	**133**
16:30 16:45	37	43	**80**	27	34	**61**	**141**
16:45 17:00	71	26	**97**	41	31	**72**	**169**
17:00 17:15	40	54	**94**	25	36	**61**	**155**
17:15 17:30	50	35	**85**	21	35	**56**	**141**
17:30 17:45	45	31	**76**	24	33	**57**	**133**
17:45 18:00	40	40	**80**	12	34	**46**	**126**
Total	1203	1104	**2307**	676	923	**1599**	**3906**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ WELLINGTON ST

Survey Date: Wednesday, November 22, 2017 **WO No:** 37317

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

Full Study Heavy Vehicles

		HOLLAND 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	4	0	**5**	1	4	1	**6**	**11**	4	4	0	**8**	0	2	0	**2**	**10**	**21**
07:15	07:30	1	7	0	**8**	0	5	0	**5**	**13**	2	5	1	**8**	0	2	0	**2**	**10**	**23**
07:30	07:45	0	6	0	**6**	0	5	0	**5**	**11**	1	2	0	**3**	0	1	1	**2**	**5**	**16**
07:45	08:00	2	6	0	**8**	0	6	2	**8**	**16**	2	3	1	**6**	0	3	0	**3**	**9**	**25**
08:00	08:15	0	6	1	**7**	0	5	2	**7**	**14**	1	6	0	**7**	0	2	0	**2**	**9**	**23**
08:15	08:30	2	8	0	**10**	0	6	1	**7**	**17**	1	0	0	**1**	0	3	1	**4**	**5**	**22**
08:30	08:45	3	9	0	**12**	1	3	2	**6**	**18**	2	2	1	**5**	3	4	0	**7**	**12**	**30**
08:45	09:00	0	10	1	**11**	0	6	1	**7**	**18**	1	10	0	**11**	2	6	0	**8**	**19**	**37**
09:00	09:15	0	7	0	**7**	0	8	1	**9**	**16**	1	3	0	**4**	1	1	3	**5**	**9**	**25**
09:15	09:30	0	6	0	**6**	0	4	3	**7**	**13**	3	6	0	**9**	0	4	1	**5**	**14**	**27**
09:30	09:45	0	2	1	**3**	0	7	1	**8**	**11**	2	4	1	**7**	0	1	0	**1**	**8**	**19**
09:45	10:00	0	5	0	**5**	0	2	3	**5**	**10**	1	4	1	**6**	0	2	0	**2**	**8**	**18**
11:30	11:45	0	3	0	**3**	1	5	1	**7**	**10**	1	4	0	**5**	0	5	0	**5**	**10**	**20**
11:45	12:00	0	4	1	**5**	0	3	3	**6**	**11**	1	3	0	**4**	0	3	1	**4**	**8**	**19**
12:00	12:15	0	4	0	**4**	0	1	1	**2**	**6**	2	3	0	**5**	1	2	0	**3**	**8**	**14**
12:15	12:30	1	4	1	**6**	0	5	1	**6**	**12**	0	3	1	**4**	0	4	2	**6**	**10**	**22**
12:30	12:45	0	2	0	**2**	0	3	2	**5**	**7**	1	2	0	**3**	0	3	1	**4**	**7**	**14**
15:00	15:15	0	7	1	**8**	0	3	1	**4**	**12**	0	3	0	**3**	1	1	0	**2**	**5**	**17**
12:45	13:00	1	3	0	**4**	0	3	1	**4**	**8**	1	7	1	**9**	1	6	1	**8**	**17**	**25**
13:00	13:15	0	3	0	**3**	0	4	1	**5**	**8**	0	5	1	**6**	0	5	0	**5**	**11**	**19**
13:15	13:30	0	8	1	**9**	0	4	1	**5**	**14**	2	3	0	**5**	0	4	0	**4**	**9**	**23**
15:15	15:30	0	6	0	**6**	0	7	1	**8**	**14**	2	5	0	**7**	0	6	1	**7**	**14**	**28**
15:30	15:45	0	5	0	**5**	0	5	2	**7**	**12**	2	3	1	**6**	0	1	0	**1**	**7**	**19**
15:45	16:00	0	5	0	**5**	1	11	2	**14**	**19**	2	1	0	**3**	1	0	0	**1**	**4**	**23**
16:00	16:15	0	2	0	**2**	0	4	2	**6**	**8**	1	4	0	**5**	0	4	0	**4**	**9**	**17**
16:15	16:30	0	6	1	**7**	1	8	0	**9**	**16**	1	0	2	**3**	0	4	0	**4**	**7**	**23**
16:30	16:45	0	3	0	**3**	0	4	2	**6**	**9**	1	1	0	**2**	0	3	1	**4**	**6**	**15**
16:45	17:00	0	4	0	**4**	0	7	2	**9**	**13**	1	4	0	**5**	0	2	0	**2**	**7**	**20**
17:00	17:15	0	4	0	**4**	0	9	2	**11**	**15**	2	0	0	**2**	0	1	0	**1**	**3**	**18**
17:15	17:30	0	2	1	**3**	0	4	0	**4**	**7**	0	0	0	**0**	0	2	0	**2**	**2**	**9**
17:30	17:45	0	4	0	**4**	0	4	3	**7**	**11**	1	2	0	**3**	0	2	0	**2**	**5**	**16**
17:45	18:00	0	2	0	**2**	0	7	1	**8**	**10**	1	2	0	**3**	0	0	0	**0**	**3**	**13**
Total:	None	11	157	9	**177**	5	162	46	**213**	**390**	43	104	11	**158**	10	89	13	**112**	**270**	**660**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ WELLINGTON ST

Survey Date: Wednesday, November 22, 2017 **WO No:** 37317

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

Full Study 15 Minute U-Turn Total

		HOLLAND AVE		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	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
15:00	15:15	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
15:15	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	1	1
Total		0	0	0	1	1

Transportation Services - Traffic Services

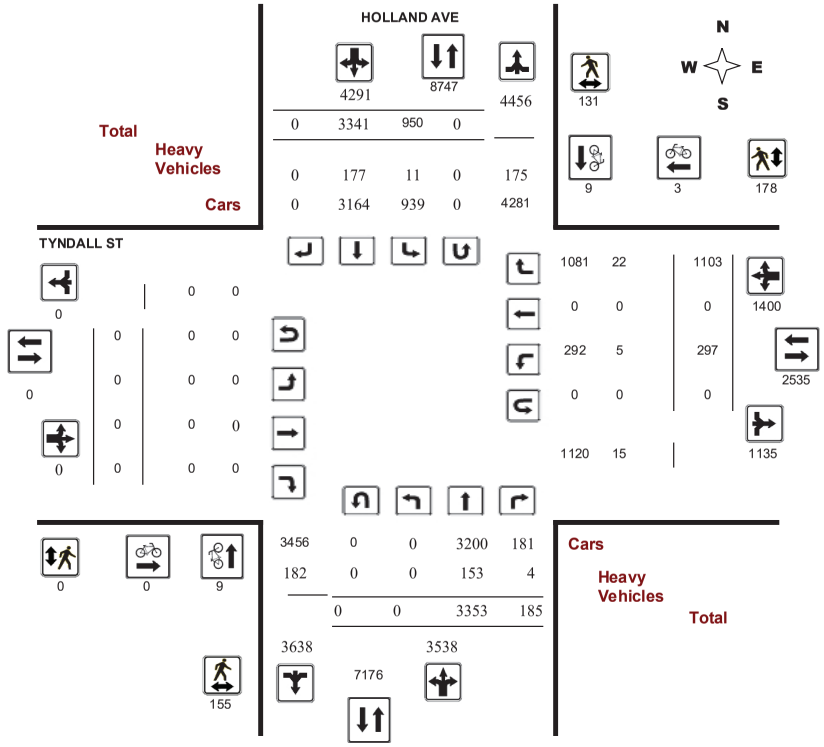
Turning Movement Count - Study Results

HOLLAND AVE @ TYNDALL ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36638

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

Full Study Diagram



Transportation Services - Traffic Services

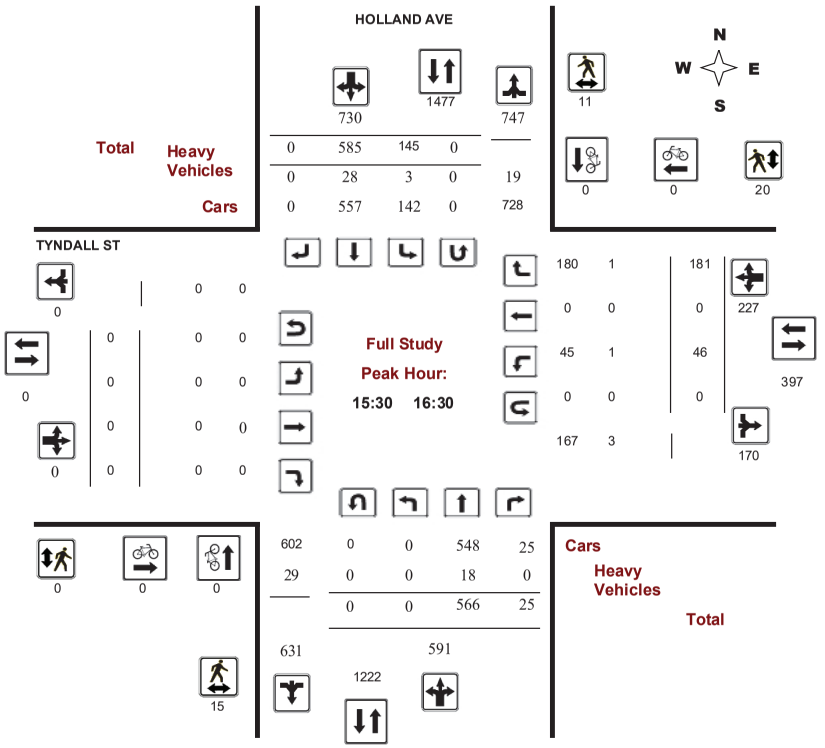
Turning Movement Count - Study Results

HOLLAND AVE @ TYNDALL ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36638

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

Full Study Peak Hour Diagram



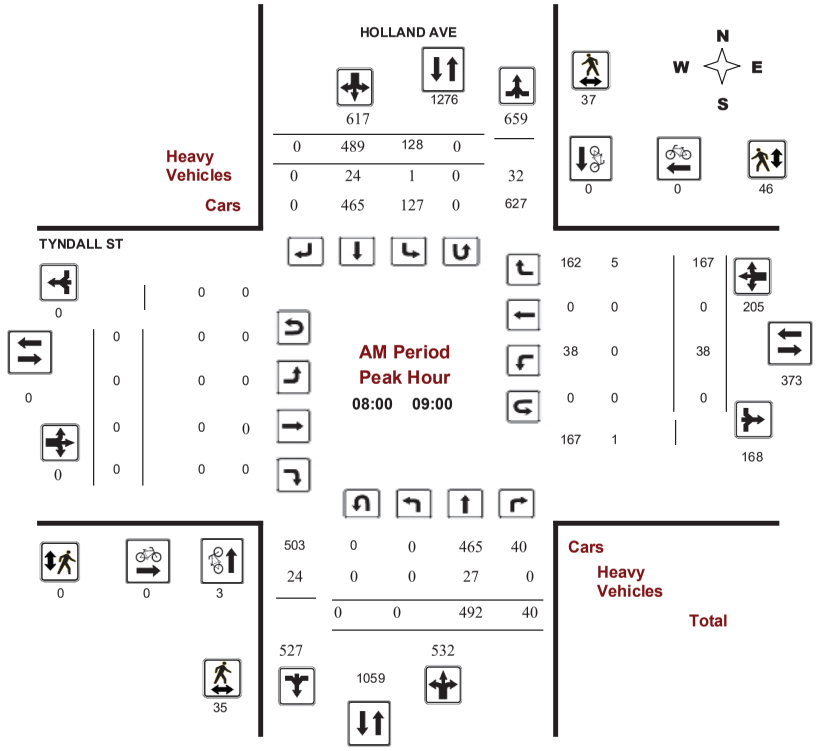
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ TYNDALL ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36638

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



Comments

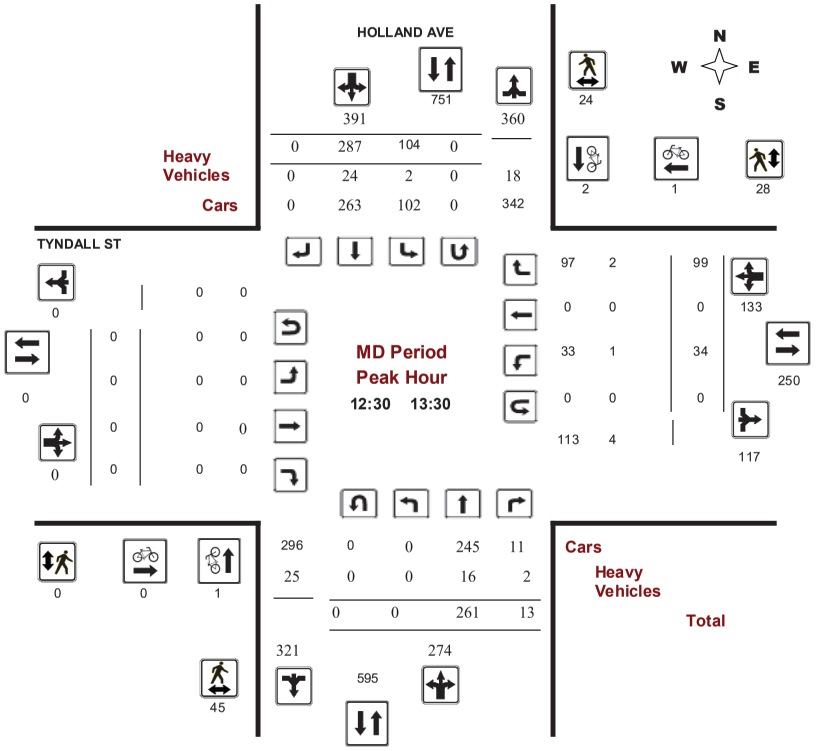
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ TYNDALL ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36638

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



Comments

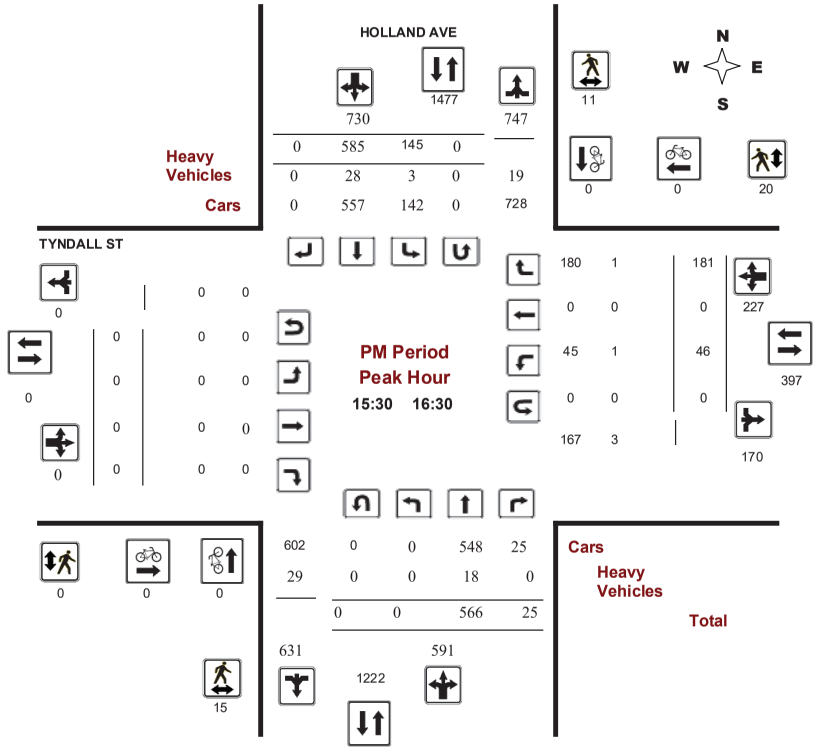
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ TYNDALL ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36638

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ TYNDALL ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36638

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, January 11, 201

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor 1.00

	HOLLAND AVE								TYNDALL 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	419	10	**429**	101	375	0	**476**	**905**	0	0	0	**0**	25	0	133	**158**	**158**	**1063**
08:00 09:00	0	492	40	**532**	128	489	0	**617**	**1149**	0	0	0	**0**	38	0	167	**205**	**205**	**1354**
09:00 10:00	0	363	26	**389**	107	285	0	**392**	**781**	0	0	0	**0**	20	0	121	**141**	**141**	**922**
11:30 12:30	0	235	19	**254**	99	237	0	**336**	**590**	0	0	0	**0**	16	0	109	**125**	**125**	**715**
12:30 13:30	0	261	13	**274**	104	287	0	**391**	**665**	0	0	0	**0**	34	0	99	**133**	**133**	**798**
15:00 16:00	0	540	31	**571**	161	563	0	**724**	**1295**	0	0	0	**0**	61	0	127	**188**	**188**	**1483**
16:00 17:00	0	546	22	**568**	127	584	0	**711**	**1279**	0	0	0	**0**	47	0	179	**226**	**226**	**1505**
17:00 18:00	0	497	24	**521**	123	521	0	**644**	**1165**	0	0	0	**0**	56	0	168	**224**	**224**	**1389**
Sub Total	0	3353	185	**3538**	950	3341	0	**4291**	**7829**	0	0	0	**0**	297	0	1103	**1400**	**1400**	**9229**
U Turns	0			**0**	0			**0**	**0**	**0**			**0**	0			**0**	**0**	**0**
Total	0	3353	185	**3538**	950	3341	0	**4291**	**7829**	0	0	0	**0**	297	0	1103	**1400**	**1400**	**9229**
EQ 12Hr	0	4661	257	**4918**	1320	4644	0	**5964**	**10882**	0	0	0	**0**	413	0	1533	**1946**	**1946**	**12828**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	0	4661	257	**4918**	1320	4644	0	**5964**	**10882**	0	0	0	**0**	413	0	1533	**1946**	**1946**	**12828**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	0	6106	337	**6443**	1729	6084	0	**7813**	**14256**	0	0	0	**0**	541	0	2008	**2549**	**2549**	**16805**
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

HOLLAND AVE @ TYNDALL ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36638

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

Full Study 15 Minute Increments

		HOLLAND AVE									TYNDALL 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	77	4	81	18	72	0	90	**171**	0	0	0	0	1	0	35	36	**36**	**207**
07:15	07:30	0	115	0	115	23	95	0	118	**233**	0	0	0	0	4	0	36	40	**40**	**273**
07:30	07:45	0	85	3	88	31	94	0	125	**213**	0	0	0	0	10	0	30	40	**40**	**253**
07:45	08:00	0	142	3	145	29	114	0	143	**288**	0	0	0	0	10	0	32	42	**42**	**330**
08:00	08:15	0	103	5	108	36	137	0	173	**281**	0	0	0	0	7	0	38	45	**45**	**326**
08:15	08:30	0	114	7	121	32	138	0	170	**291**	0	0	0	0	12	0	44	56	**56**	**347**
08:30	08:45	0	134	14	148	29	125	0	154	**302**	0	0	0	0	11	0	34	45	**45**	**347**
08:45	09:00	0	141	14	155	31	89	0	120	**275**	0	0	0	0	8	0	51	59	**59**	**334**
09:00	09:15	0	114	11	125	30	88	0	118	**243**	0	0	0	0	8	0	38	46	**46**	**289**
09:15	09:30	0	100	5	105	32	65	0	97	**202**	0	0	0	0	2	0	33	35	**35**	**237**
09:30	09:45	0	84	7	91	25	78	0	103	**194**	0	0	0	0	5	0	33	38	**38**	**232**
09:45	10:00	0	65	3	68	20	54	0	74	**142**	0	0	0	0	5	0	17	22	**22**	**164**
11:30	11:45	0	61	3	64	28	49	0	77	**141**	0	0	0	0	4	0	32	36	**36**	**177**
11:45	12:00	0	70	1	71	27	64	0	91	**162**	0	0	0	0	4	0	31	35	**35**	**197**
12:00	12:15	0	57	9	66	18	63	0	81	**147**	0	0	0	0	4	0	20	24	**24**	**171**
12:15	12:30	0	47	6	53	26	61	0	87	**140**	0	0	0	0	4	0	26	30	**30**	**170**
12:30	12:45	0	68	4	72	26	73	0	99	**171**	0	0	0	0	12	0	24	36	**36**	**207**
12:45	13:00	0	57	3	60	23	74	0	97	**157**	0	0	0	0	7	0	22	29	**29**	**186**
13:00	13:15	0	77	2	79	34	62	0	96	**175**	0	0	0	0	6	0	26	32	**32**	**207**
13:15	13:30	0	59	4	63	21	78	0	99	**162**	0	0	0	0	9	0	27	36	**36**	**198**
15:00	15:15	0	121	8	129	50	149	0	199	**328**	0	0	0	0	13	0	11	24	**24**	**352**
15:15	15:30	0	143	10	153	31	143	0	174	**327**	0	0	0	0	22	0	28	50	**50**	**377**
15:30	15:45	0	124	8	132	43	114	0	157	**289**	0	0	0	0	13	0	46	59	**59**	**348**
15:45	16:00	0	152	5	157	37	157	0	194	**351**	0	0	0	0	13	0	42	55	**55**	**406**
16:00	16:15	0	134	9	143	33	145	0	178	**321**	0	0	0	0	10	0	48	58	**58**	**379**
16:15	16:30	0	156	3	159	32	169	0	201	**360**	0	0	0	0	10	0	45	55	**55**	**415**
16:30	16:45	0	129	3	132	33	128	0	161	**293**	0	0	0	0	15	0	38	53	**53**	**346**
16:45	17:00	0	127	7	134	29	142	0	171	**305**	0	0	0	0	12	0	48	60	**60**	**365**
17:00	17:15	0	130	5	135	34	150	0	184	**319**	0	0	0	0	10	0	43	53	**53**	**372**
17:15	17:30	0	135	4	139	31	139	0	170	**309**	0	0	0	0	14	0	44	58	**58**	**367**
17:30	17:45	0	131	7	138	22	145	0	167	**305**	0	0	0	0	19	0	53	72	**72**	**377**
17:45	18:00	0	101	8	109	36	87	0	123	**232**	0	0	0	0	13	0	28	41	**41**	**273**
Total:		0	3353	185	3538	950	3341	0	4291	**7829**	0	0	0	0	297	0	1103	1400	**7829**	**9,229**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ TYNDALL ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36638

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

Full Study Cyclist Volume

		HOLLAND AVE			TYNDALL ST			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	**0**	0	0	**0**	**0**
07:15	07:30	0	0	**0**	0	0	**0**	**0**
07:30	07:45	1	1	**2**	0	1	**1**	**3**
07:45	08:00	1	1	**2**	0	0	**0**	**2**
08:00	08:15	0	0	**0**	0	0	**0**	**0**
08:15	08:30	1	0	**1**	0	0	**0**	**1**
08:30	08:45	1	0	**1**	0	0	**0**	**1**
08:45	09:00	1	0	**1**	0	0	**0**	**1**
09:00	09:15	0	1	**1**	0	1	**1**	**2**
09:15	09:30	0	0	**0**	0	0	**0**	**0**
09:30	09:45	0	1	**1**	0	0	**0**	**1**
09:45	10:00	0	0	**0**	0	0	**0**	**0**
11:30	11:45	0	0	**0**	0	0	**0**	**0**
11:45	12:00	0	1	**1**	0	0	**0**	**1**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	1	**1**	0	0	**0**	**1**
12:30	12:45	0	1	**1**	0	0	**0**	**1**
12:45	13:00	1	0	**1**	0	0	**0**	**1**
13:00	13:15	0	1	**1**	0	0	**0**	**1**
13:15	13:30	0	0	**0**	0	1	**1**	**1**
15:00	15:15	0	0	**0**	0	0	**0**	**0**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	0	**0**	0	0	**0**	**0**
15:45	16:00	0	0	**0**	0	0	**0**	**0**
16:00	16:15	0	0	**0**	0	0	**0**	**0**
16:15	16:30	0	0	**0**	0	0	**0**	**0**
16:30	16:45	1	0	**1**	0	0	**0**	**1**
16:45	17:00	0	1	**1**	0	0	**0**	**1**
17:00	17:15	0	0	**0**	0	0	**0**	**0**
17:15	17:30	0	0	**0**	0	0	**0**	**0**
17:30	17:45	0	0	**0**	0	0	**0**	**0**
17:45	18:00	2	0	**2**	0	0	**0**	**2**
Total		9	9	**18**	0	3	**3**	**21**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ TYNDALL ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36638

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

Full Study Pedestrian Volume

		HOLLAND AVE			TYNDALL 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	2	1	**3**	0	1	**1**	**4**
07:15	07:30	5	1	**6**	0	4	**4**	**10**
07:30	07:45	1	2	**3**	0	1	**1**	**4**
07:45	08:00	0	5	**5**	0	4	**4**	**9**
08:00	08:15	4	3	**7**	0	10	**10**	**17**
08:15	08:30	6	17	**23**	0	11	**11**	**34**
08:30	08:45	21	16	**37**	0	22	**22**	**59**
08:45	09:00	4	1	**5**	0	3	**3**	**8**
09:00	09:15	4	1	**5**	0	2	**2**	**7**
09:15	09:30	3	3	**6**	0	0	**0**	**6**
09:30	09:45	0	0	**0**	0	3	**3**	**3**
09:45	10:00	0	0	**0**	0	0	**0**	**0**
11:30	11:45	3	0	**3**	0	3	**3**	**6**
11:45	12:00	0	3	**3**	0	7	**7**	**10**
12:00	12:15	1	3	**4**	0	4	**4**	**8**
12:15	12:30	1	2	**3**	0	3	**3**	**6**
12:30	12:45	24	5	**29**	0	1	**1**	**30**
12:45	13:00	5	7	**12**	0	6	**6**	**18**
13:00	13:15	2	7	**9**	0	6	**6**	**15**
13:15	13:30	14	5	**19**	0	15	**15**	**34**
15:00	15:15	1	3	**4**	0	8	**8**	**12**
15:15	15:30	15	19	**34**	0	14	**14**	**48**
15:30	15:45	4	4	**8**	0	3	**3**	**11**
15:45	16:00	3	3	**6**	0	6	**6**	**12**
16:00	16:15	5	2	**7**	0	6	**6**	**13**
16:15	16:30	3	2	**5**	0	5	**5**	**10**
16:30	16:45	7	8	**15**	0	7	**7**	**22**
16:45	17:00	2	1	**3**	0	3	**3**	**6**
17:00	17:15	2	2	**4**	0	5	**5**	**9**
17:15	17:30	3	3	**6**	0	7	**7**	**13**
17:30	17:45	5	1	**6**	0	6	**6**	**12**
17:45	18:00	5	1	**6**	0	2	**2**	**8**
Total	.....	155	131	**286**	0	178	**178**	**464**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ TYNDALL ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36638

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

Full Study Heavy Vehicles

		HOLLAND AVE									TYNDALL 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	6	1	**7**	0	6	0	**6**	**13**	0	0	0	**0**	0	0	1	**1**	**1**	**14**
07:15	07:30	0	5	0	**5**	0	5	0	**5**	**10**	0	0	0	**0**	0	0	1	**1**	**1**	**11**
07:30	07:45	0	5	1	**6**	0	3	0	**3**	**9**	0	0	0	**0**	0	0	3	**3**	**3**	**12**
07:45	08:00	0	10	0	**10**	0	8	0	**8**	**18**	0	0	0	**0**	0	0	2	**2**	**2**	**20**
08:00	08:15	0	4	0	**4**	0	7	0	**7**	**11**	0	0	0	**0**	0	0	2	**2**	**2**	**13**
08:15	08:30	0	5	0	**5**	0	7	0	**7**	**12**	0	0	0	**0**	0	0	1	**1**	**1**	**13**
08:30	08:45	0	8	0	**8**	1	5	0	**6**	**14**	0	0	0	**0**	0	0	1	**1**	**1**	**15**
08:45	09:00	0	10	0	**10**	0	5	0	**5**	**15**	0	0	0	**0**	0	0	1	**1**	**1**	**16**
09:00	09:15	0	9	0	**9**	1	7	0	**8**	**17**	0	0	0	**0**	0	0	2	**2**	**2**	**19**
09:15	09:30	0	8	0	**8**	0	5	0	**5**	**13**	0	0	0	**0**	0	0	0	**0**	**0**	**13**
09:30	09:45	0	4	0	**4**	1	4	0	**5**	**9**	0	0	0	**0**	2	0	1	**3**	**3**	**12**
09:45	10:00	0	3	0	**3**	0	1	0	**1**	**4**	0	0	0	**0**	0	0	0	**0**	**0**	**4**
11:30	11:45	0	4	0	**4**	1	2	0	**3**	**7**	0	0	0	**0**	0	0	0	**0**	**0**	**7**
11:45	12:00	0	4	0	**4**	2	3	0	**5**	**9**	0	0	0	**0**	1	0	0	**1**	**1**	**10**
12:00	12:15	0	4	0	**4**	0	7	0	**7**	**11**	0	0	0	**0**	0	0	1	**1**	**1**	**12**
12:15	12:30	0	2	0	**2**	0	2	0	**2**	**4**	0	0	0	**0**	0	0	0	**0**	**0**	**4**
12:30	12:45	0	5	1	**6**	0	8	0	**8**	**14**	0	0	0	**0**	0	0	1	**1**	**1**	**15**
12:45	13:00	0	4	0	**4**	0	4	0	**4**	**8**	0	0	0	**0**	0	0	1	**1**	**1**	**9**
13:00	13:15	0	6	0	**6**	2	6	0	**8**	**14**	0	0	0	**0**	0	0	0	**0**	**0**	**14**
13:15	13:30	0	1	1	**2**	0	6	0	**6**	**8**	0	0	0	**0**	1	0	0	**1**	**1**	**9**
15:00	15:15	0	5	0	**5**	0	8	0	**8**	**13**	0	0	0	**0**	0	0	0	**0**	**0**	**13**
15:15	15:30	0	4	0	**4**	0	8	0	**8**	**12**	0	0	0	**0**	0	0	0	**0**	**0**	**12**
15:30	15:45	0	8	0	**8**	1	6	0	**7**	**15**	0	0	0	**0**	0	0	1	**1**	**1**	**16**
15:45	16:00	0	3	0	**3**	0	8	0	**8**	**11**	0	0	0	**0**	0	0	0	**0**	**0**	**11**
16:00	16:15	0	5	0	**5**	1	8	0	**9**	**14**	0	0	0	**0**	0	0	0	**0**	**0**	**14**
16:15	16:30	0	2	0	**2**	1	6	0	**7**	**9**	0	0	0	**0**	1	0	0	**1**	**1**	**10**
16:30	16:45	0	4	0	**4**	0	6	0	**6**	**10**	0	0	0	**0**	0	0	1	**1**	**1**	**11**
16:45	17:00	0	3	0	**3**	0	3	0	**3**	**6**	0	0	0	**0**	0	0	2	**2**	**2**	**8**
17:00	17:15	0	2	0	**2**	0	6	0	**6**	**8**	0	0	0	**0**	0	0	0	**0**	**0**	**8**
17:15	17:30	0	3	0	**3**	0	6	0	**6**	**9**	0	0	0	**0**	0	0	0	**0**	**0**	**9**
17:30	17:45	0	4	0	**4**	0	7	0	**7**	**11**	0	0	0	**0**	0	0	0	**0**	**0**	**11**
17:45	18:00	0	3	0	**3**	0	4	0	**4**	**7**	0	0	0	**0**	0	0	0	**0**	**0**	**7**
Total:	None	0	153	4	**157**	11	177	0	**188**	**345**	0	0	0	**0**	5	0	22	**27**	**27**	**372**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ TYNDALL ST

Survey Date: Wednesday, January 11, 2017 **WO No:** 36638

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

Full Study 15 Minute U-Turn Total

Time Period		HOLLAND AVE Northbound U-Turn Total	HOLLAND AVE Southbound U-Turn Total	TYNDALL ST Eastbound U-Turn Total	TYNDALL 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

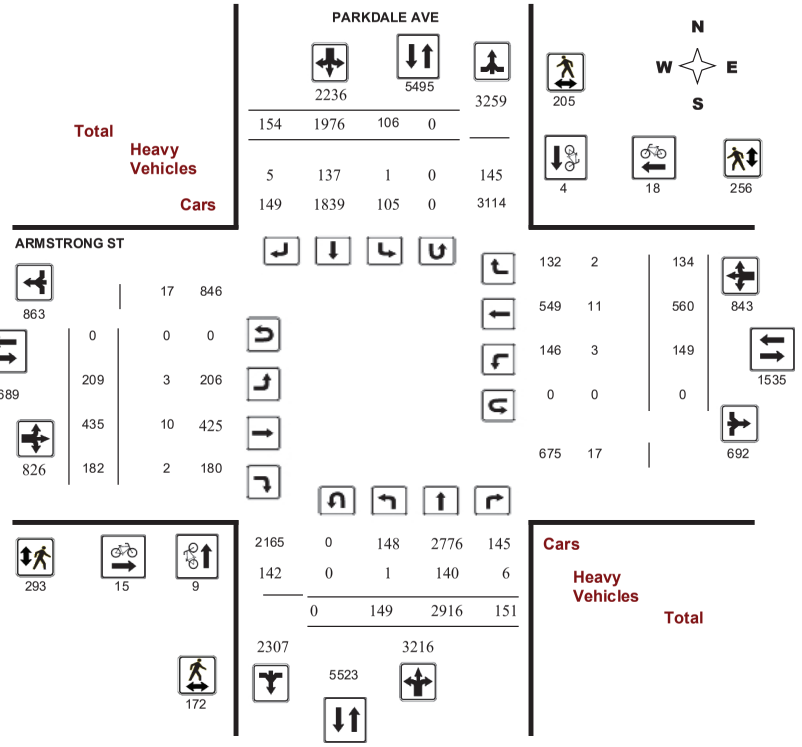
Turning Movement Count - Study Results

ARMSTRONG ST @ PARKDALE AVE

Survey Date: Wednesday, November 20, 2019 **WO No:** 39060

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

Full Study Diagram



Transportation Services - Traffic Services

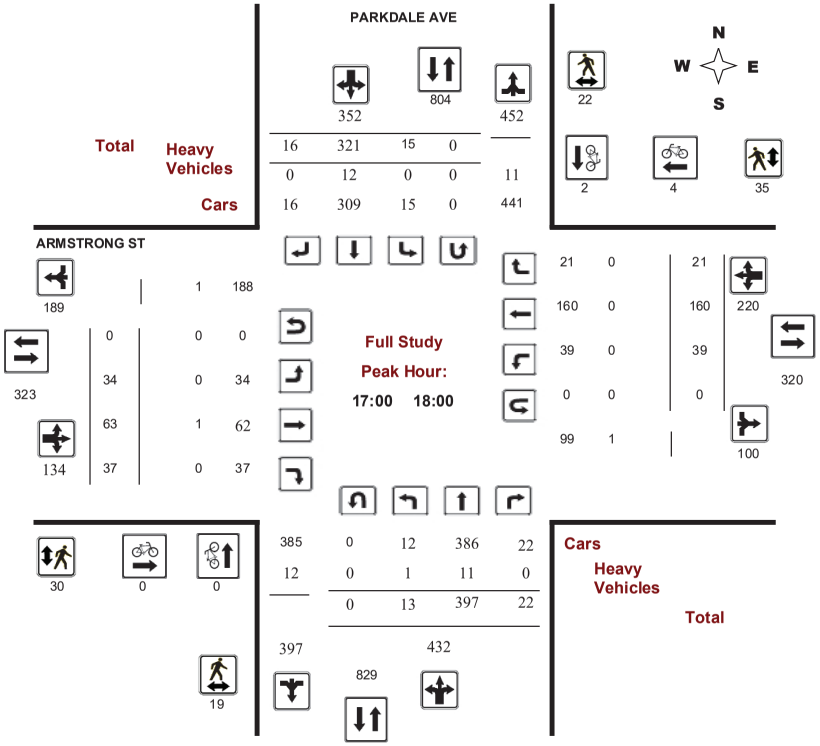
Turning Movement Count - Study Results

ARMSTRONG ST @ PARKDALE AVE

Survey Date: Wednesday, November 20, 2019 **WO No:** 39060

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

Full Study Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

ARMSTRONG ST @ PARKDALE AVE

Survey Date: Wednesday, November 20, 2019 **WO No:** 39060

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, November 20, 2019

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor .90

	PARKDALE AVE								ARMSTRONG 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	12	361	15	**388**	15	232	16	**263**	**651**	13	25	6	**44**	13	20	6	**39**	**83**	**734**
08:00 09:00	22	359	23	**404**	12	205	22	**239**	**643**	27	75	15	**117**	12	47	13	**72**	**189**	**832**
09:00 10:00	30	344	26	**400**	15	205	21	**241**	**641**	15	53	11	**79**	9	29	14	**52**	**131**	**772**
11:30 12:30	19	275	24	**318**	16	304	19	**339**	**657**	17	46	30	**93**	26	43	13	**82**	**175**	**832**
12:30 13:30	17	335	22	**374**	14	307	18	**339**	**713**	17	51	33	**101**	19	37	20	**76**	**177**	**890**
15:00 16:00	14	396	11	**421**	9	191	24	**224**	**645**	42	64	23	**129**	11	68	23	**102**	**231**	**876**
16:00 17:00	22	449	8	**479**	10	211	18	**239**	**718**	44	58	27	**129**	20	156	24	**200**	**329**	**1047**
17:00 18:00	13	397	22	**432**	15	321	16	**352**	**784**	34	63	37	**134**	39	160	21	**220**	**354**	**1138**
Sub Total	149	2916	151	**3216**	106	1976	154	**2236**	**5452**	209	435	182	**826**	149	560	134	**843**	**1669**	**7121**
U Turns				**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total	149	2916	151	**3216**	106	1976	154	**2236**	**5452**	209	435	182	**826**	149	560	134	**843**	**1669**	**7121**
EQ 12Hr	207	4053	210	**4470**	147	2747	214	**3108**	**7578**	291	605	253	**1148**	207	778	186	**1172**	**2320**	**9898**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	176	3438	178	**3792**	125	2330	182	**2636**	**6820**	246	513	215	**974**	176	660	158	**994**	**2088**	**8908**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**0.9**					
AVG 24Hr	230	4504	233	**4967**	164	3052	238	**3453**	**8420**	323	672	281	**1276**	230	865	207	**1302**	**2578**	**10998**
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.

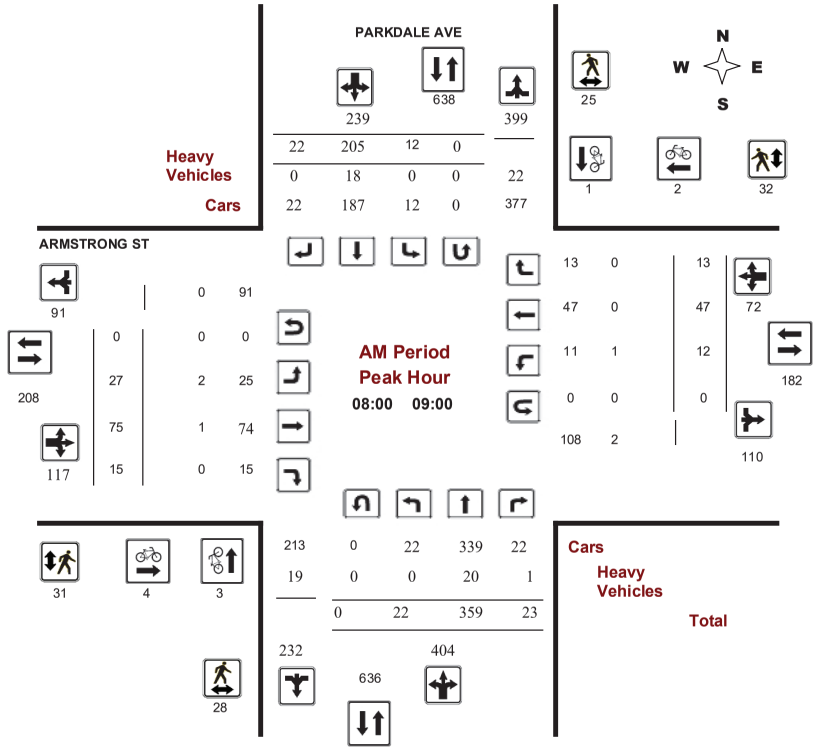
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ARMSTRONG ST @ PARKDALE AVE

Survey Date: Wednesday, November 20, 2019 **WO No:** 39060

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



Comments

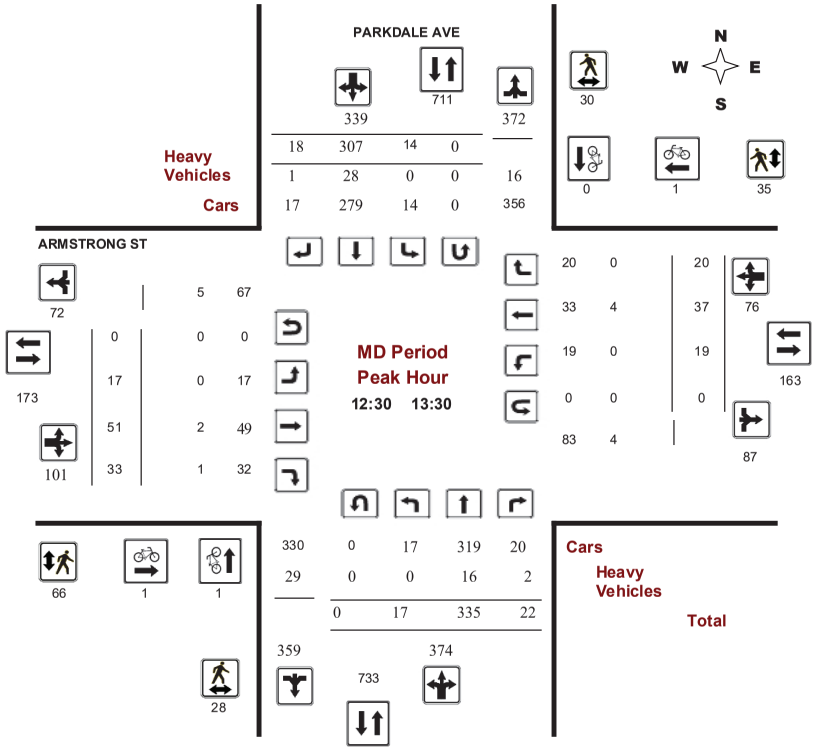
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ARMSTRONG ST @ PARKDALE AVE

Survey Date: Wednesday, November 20, 2019 **WO No:** 39060

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



Comments

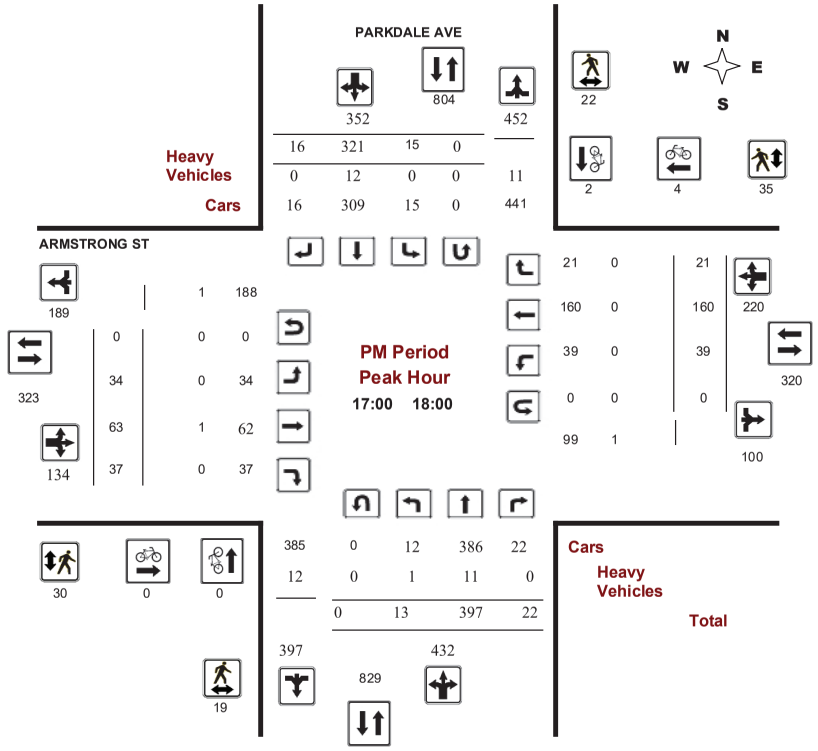
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ARMSTRONG ST @ PARKDALE AVE

Survey Date: Wednesday, November 20, 2019 **WO No:** 39060

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ARMSTRONG ST @ PARKDALE AVE

Survey Date: Wednesday, November 20, 2019 **WO No:** 39060

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

Full Study 15 Minute Increments

		PARKDALE AVE									ARMSTRONG 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	99	1	101	0	76	0	76	8	1	4	3	8	4	2	1	7	8	192
07:15	07:30	3	78	4	85	5	59	4	68	8	2	4	0	6	1	5	3	9	8	168
07:30	07:45	3	82	5	90	3	46	7	56	9	2	7	1	10	5	7	1	13	9	169
07:45	08:00	5	102	5	112	7	51	5	63	3	8	10	2	20	3	6	1	10	3	205
08:00	08:15	7	80	8	95	6	49	6	61	12	8	20	3	31	4	15	4	23	12	210
08:15	08:30	5	99	1	105	3	47	5	55	6	8	16	5	29	1	15	3	19	6	208
08:30	08:45	4	95	4	103	3	52	4	59	8	7	15	3	25	1	9	3	13	8	200
08:45	09:00	6	85	10	101	0	57	7	64	13	4	24	4	32	6	8	3	17	13	214
09:00	09:15	6	99	3	108	9	37	2	48	15	7	17	2	26	1	9	3	13	15	195
09:15	09:30	7	94	7	108	4	54	4	62	16	3	15	5	23	0	9	4	13	16	206
09:30	09:45	10	81	3	94	2	57	6	65	10	3	12	2	17	3	7	2	12	10	188
09:45	10:00	7	70	13	90	0	57	9	66	5	2	9	2	13	5	4	5	14	5	183
11:30	11:45	6	80	8	94	1	92	6	99	10	3	11	5	19	4	11	0	15	10	227
11:45	12:00	5	68	3	76	3	58	2	63	8	7	11	9	27	7	14	5	26	8	192
12:00	12:15	5	67	7	79	5	73	7	85	7	3	14	9	26	5	11	3	19	7	209
12:15	12:30	3	60	6	69	7	81	4	92	14	4	10	7	21	10	7	5	22	14	204
12:30	12:45	3	83	3	89	6	87	5	98	10	5	16	7	28	5	5	4	14	10	229
12:45	13:00	4	63	8	75	0	73	5	78	9	6	15	9	30	4	10	9	23	9	206
13:00	13:15	7	86	3	96	5	83	4	92	13	4	13	8	25	5	10	2	17	13	230
13:15	13:30	3	103	8	114	3	64	4	71	15	2	7	9	18	5	12	5	22	15	225
15:00	15:15	4	103	2	109	0	46	1	47	9	10	12	11	33	0	13	7	20	9	209
15:15	15:30	1	108	2	111	2	48	12	62	13	14	20	4	38	4	12	3	19	13	230
15:30	15:45	4	89	2	95	4	49	6	59	6	9	15	4	28	3	13	6	22	6	204
15:45	16:00	5	96	5	106	3	48	5	56	9	9	17	4	30	4	30	7	41	9	233
16:00	16:15	4	117	2	123	0	55	3	58	8	15	10	11	36	4	23	6	33	8	250
16:15	16:30	7	121	2	130	2	58	3	63	9	9	17	7	33	4	48	4	56	9	282
16:30	16:45	7	108	2	117	6	40	8	54	6	5	11	2	18	5	47	7	59	6	248
16:45	17:00	4	103	2	109	2	58	4	64	7	15	20	7	42	7	38	7	52	7	267
17:00	17:15	3	84	4	91	2	78	3	83	5	5	17	15	37	14	61	7	82	5	293
17:15	17:30	2	89	7	98	2	80	4	86	6	13	25	9	47	9	54	4	67	6	298
17:30	17:45	5	122	5	132	8	70	0	78	7	12	9	10	31	8	25	5	38	7	279
17:45	18:00	3	102	6	111	3	93	9	105	6	4	12	3	19	8	20	5	33	6	268
Total:		149	2916	151	3216	106	1976	154	2236	290	209	435	182	826	149	560	134	843	290	7,121

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ARMSTRONG ST @ PARKDALE AVE

Survey Date: Wednesday, November 20, 2019 **WO No:** 39060

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

Full Study Cyclist Volume

Time Period		PARKDALE AVE Northbound	PARKDALE AVE Southbound	PARKDALE AVE Street Total	ARMSTRONG ST Eastbound	ARMSTRONG ST Westbound	ARMSTRONG ST Street Total	Grand Total
07:00	07:15	0	0	0	0	1	1	1
07:15	07:30	0	0	0	0	1	1	1
07:30	07:45	0	0	0	0	1	1	1
07:45	08:00	0	0	0	0	1	1	1
08:00	08:15	2	0	2	2	0	2	4
08:15	08:30	0	0	0	0	0	0	0
08:30	08:45	1	0	1	0	1	1	2
08:45	09:00	0	1	1	2	1	3	4
09:00	09:15	2	0	2	1	2	3	5
09:15	09:30	0	0	0	0	0	0	0
09:30	09:45	0	0	0	1	1	2	2
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	1	0	1	1	0	1	2
12:30	12:45	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	1	1	1
13:00	13:15	1	0	1	0	0	0	1
13:15	13:30	0	0	0	1	0	1	1
15:00	15:15	0	0	0	1	2	3	3
15:15	15:30	1	0	1	1	0	1	2
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	1	0	1	1
16:00	16:15	1	0	1	3	0	3	4
16:15	16:30	0	0	0	0	0	0	0
16:30	16:45	0	1	1	0	2	2	3
16:45	17:00	0	0	0	1	0	1	1
17:00	17:15	0	1	1	0	2	2	3
17:15	17:30	0	0	0	0	0	0	0
17:30	17:45	0	1	1	0	1	1	2
17:45	18:00	0	0	0	0	1	1	1
Total		9	4	**13**	15	18	33	46

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ARMSTRONG ST @ PARKDALE AVE

Survey Date: Wednesday, November 20, 2019 **WO No:** 39060

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

Full Study Pedestrian Volume

Time Period	PARKDALE AVE NB Approach (E or W Crossing)	PARKDALE AVE SB Approach (E or W Crossing)	PARKDALE AVE Total	ARMSTRONG ST EB Approach (N or S Crossing)	ARMSTRONG ST WB Approach (N or S Crossing)	ARMSTRONG ST Total	Grand Total
07:00 07:15	1	5	**6**	4	5	**9**	**15**
07:15 07:30	1	1	**2**	6	6	**12**	**14**
07:30 07:45	3	5	**8**	7	10	**17**	**25**
07:45 08:00	4	10	**14**	4	5	**9**	**23**
08:00 08:15	8	7	**15**	4	8	**12**	**27**
08:15 08:30	9	7	**16**	10	10	**20**	**36**
08:30 08:45	4	6	**10**	8	5	**13**	**23**
08:45 09:00	7	5	**12**	9	9	**18**	**30**
09:00 09:15	7	7	**14**	5	10	**15**	**29**
09:15 09:30	3	5	**8**	6	3	**9**	**17**
09:30 09:45	1	7	**8**	4	4	**8**	**16**
09:45 10:00	1	5	**6**	2	3	**5**	**11**
11:30 11:45	6	7	**13**	9	7	**16**	**29**
11:45 12:00	9	3	**12**	9	3	**12**	**24**
12:00 12:15	4	8	**12**	16	9	**25**	**37**
12:15 12:30	10	11	**21**	18	12	**30**	**51**
12:30 12:45	11	4	**15**	25	10	**35**	**50**
12:45 13:00	7	16	**23**	20	12	**32**	**55**
13:00 13:15	6	6	**12**	11	12	**23**	**35**
13:15 13:30	4	4	**8**	10	1	**11**	**19**
15:00 15:15	5	11	**16**	11	8	**19**	**35**
15:15 15:30	1	7	**8**	4	8	**12**	**20**
15:30 15:45	11	6	**17**	11	12	**23**	**40**
15:45 16:00	8	7	**15**	9	9	**18**	**33**
16:00 16:15	5	6	**11**	12	7	**19**	**30**
16:15 16:30	5	3	**8**	10	6	**16**	**24**
16:30 16:45	5	7	**12**	8	17	**25**	**37**
16:45 17:00	7	7	**14**	11	10	**21**	**35**
17:00 17:15	4	7	**11**	6	15	**21**	**32**
17:15 17:30	8	7	**15**	7	6	**13**	**28**
17:30 17:45	5	3	**8**	6	10	**16**	**24**
17:45 18:00	2	5	**7**	11	4	**15**	**22**
Total	172	205	**377**	293	256	**549**	**926**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ARMSTRONG ST @ PARKDALE AVE

Survey Date: Wednesday, November 20, 2019 **WO No:** 39060

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

Full Study Heavy Vehicles

		PARKDALE AVE									ARMSTRONG 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	3	0	**3**	0	5	0	**5**	**8**	0	0	0	**0**	0	0	0	**0**	**0**	**8**
07:15	07:30	0	4	0	**4**	0	4	0	**4**	**8**	0	0	0	**0**	0	1	0	**1**	**1**	**9**
07:30	07:45	0	5	0	**5**	0	4	0	**4**	**9**	0	0	0	**0**	0	0	0	**0**	**0**	**9**
07:45	08:00	0	1	0	**1**	0	2	0	**2**	**3**	0	0	1	**1**	0	1	1	**2**	**3**	**6**
08:00	08:15	0	7	0	**7**	0	5	0	**5**	**12**	1	0	0	**1**	0	0	0	**0**	**1**	**13**
08:15	08:30	0	2	0	**2**	0	4	0	**4**	**6**	1	0	0	**1**	0	0	0	**0**	**1**	**7**
08:30	08:45	0	4	0	**4**	0	4	0	**4**	**8**	0	0	0	**0**	0	0	0	**0**	**0**	**8**
08:45	09:00	0	7	1	**8**	0	5	0	**5**	**13**	0	1	0	**1**	1	0	0	**1**	**2**	**15**
09:00	09:15	0	10	0	**10**	0	5	0	**5**	**15**	0	2	0	**2**	0	0	0	**0**	**2**	**17**
09:15	09:30	0	6	1	**7**	1	8	0	**9**	**16**	0	2	0	**2**	0	0	1	**1**	**3**	**19**
09:30	09:45	0	5	0	**5**	0	5	0	**5**	**10**	0	0	0	**0**	0	0	0	**0**	**0**	**10**
09:45	10:00	0	2	0	**2**	0	2	1	**3**	**5**	0	0	0	**0**	0	0	0	**0**	**0**	**5**
11:30	11:45	0	5	0	**5**	0	5	0	**5**	**10**	0	0	0	**0**	0	0	0	**0**	**0**	**10**
11:45	12:00	0	2	0	**2**	0	6	0	**6**	**8**	0	0	0	**0**	0	0	0	**0**	**0**	**8**
12:00	12:15	0	2	1	**3**	0	3	1	**4**	**7**	0	0	0	**0**	0	1	0	**1**	**1**	**8**
12:15	12:30	0	8	0	**8**	0	6	0	**6**	**14**	1	0	0	**1**	0	1	0	**1**	**2**	**16**
12:30	12:45	0	2	1	**3**	0	7	0	**7**	**10**	0	1	0	**1**	0	1	0	**1**	**2**	**12**
12:45	13:00	0	3	0	**3**	0	5	1	**6**	**9**	0	1	0	**1**	0	1	0	**1**	**2**	**11**
13:00	13:15	0	5	1	**6**	0	7	0	**7**	**13**	0	0	1	**1**	0	0	0	**0**	**1**	**14**
13:15	13:30	0	6	0	**6**	0	9	0	**9**	**15**	0	0	0	**0**	0	2	0	**2**	**2**	**17**
15:00	15:15	0	6	0	**6**	0	3	0	**3**	**9**	0	0	0	**0**	0	0	0	**0**	**0**	**9**
15:15	15:30	0	8	0	**8**	0	4	1	**5**	**13**	0	0	0	**0**	0	0	0	**0**	**0**	**13**
15:30	15:45	0	3	0	**3**	0	3	0	**3**	**6**	0	0	0	**0**	1	0	0	**1**	**1**	**7**
15:45	16:00	0	4	0	**4**	0	4	1	**5**	**9**	0	0	0	**0**	0	0	0	**0**	**0**	**9**
16:00	16:15	0	5	1	**6**	0	2	0	**2**	**8**	0	1	0	**1**	0	2	0	**2**	**3**	**11**
16:15	16:30	0	6	0	**6**	0	3	0	**3**	**9**	0	0	0	**0**	0	1	0	**1**	**1**	**10**
16:30	16:45	0	4	0	**4**	0	2	0	**2**	**6**	0	0	0	**0**	1	0	0	**1**	**1**	**7**
16:45	17:00	0	4	0	**4**	0	3	0	**3**	**7**	0	1	0	**1**	0	0	0	**0**	**1**	**8**
17:00	17:15	0	3	0	**3**	0	2	0	**2**	**5**	0	1	0	**1**	0	0	0	**0**	**1**	**6**
17:15	17:30	1	2	0	**3**	0	3	0	**3**	**6**	0	0	0	**0**	0	0	0	**0**	**0**	**6**
17:30	17:45	0	4	0	**4**	0	3	0	**3**	**7**	0	0	0	**0**	0	0	0	**0**	**0**	**7**
17:45	18:00	0	2	0	**2**	0	4	0	**4**	**6**	0	0	0	**0**	0	0	0	**0**	**0**	**6**
Total:	None	1	140	6	**147**	1	137	5	**143**	**290**	3	10	2	**15**	3	11	2	**16**	**31**	**321**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ARMSTRONG ST @ PARKDALE AVE

Survey Date: Wednesday, November 20, 2019 **WO No:** 39060

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

Full Study 15 Minute U-Turn Total

		PARKDALE AVE		ARMSTRONG 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	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

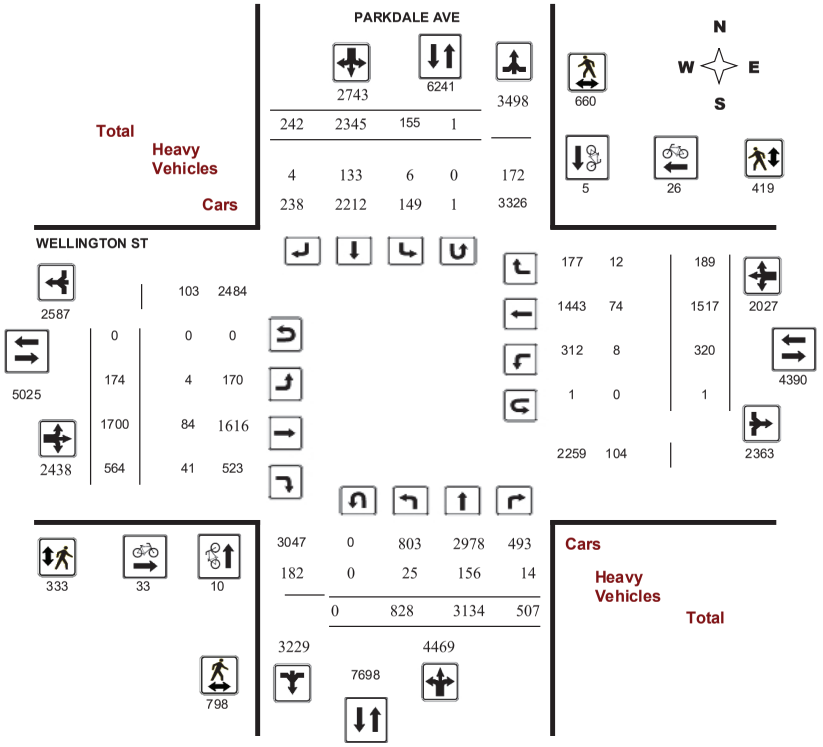
Turning Movement Count - Study Results

PARKDALE AVE @ WELLINGTON ST

Survey Date: Tuesday, March 10, 2020 **WO No:** 39588

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

Full Study Diagram



5479331 - MAR 10 2020 - 8HRS - LAUREN O'GRADY

Transportation Services - Traffic Services

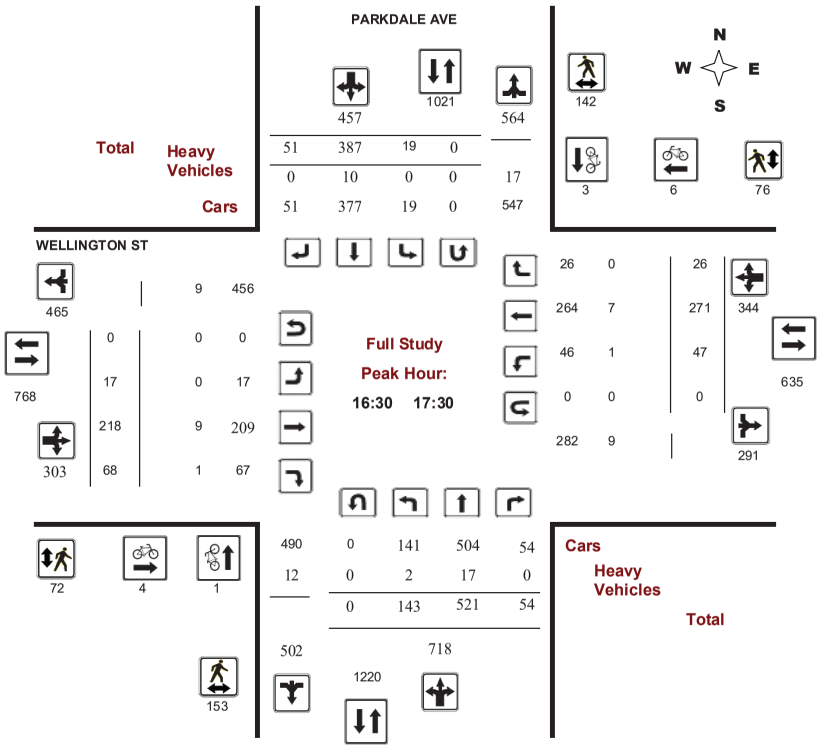
Turning Movement Count - Study Results

PARKDALE AVE @ WELLINGTON ST

Survey Date: Tuesday, March 10, 2020 **WO No:** 39588

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

Full Study Peak Hour Diagram



5479331 - MAR 10 2020 - 8HRS - LAUREN O'GRADY

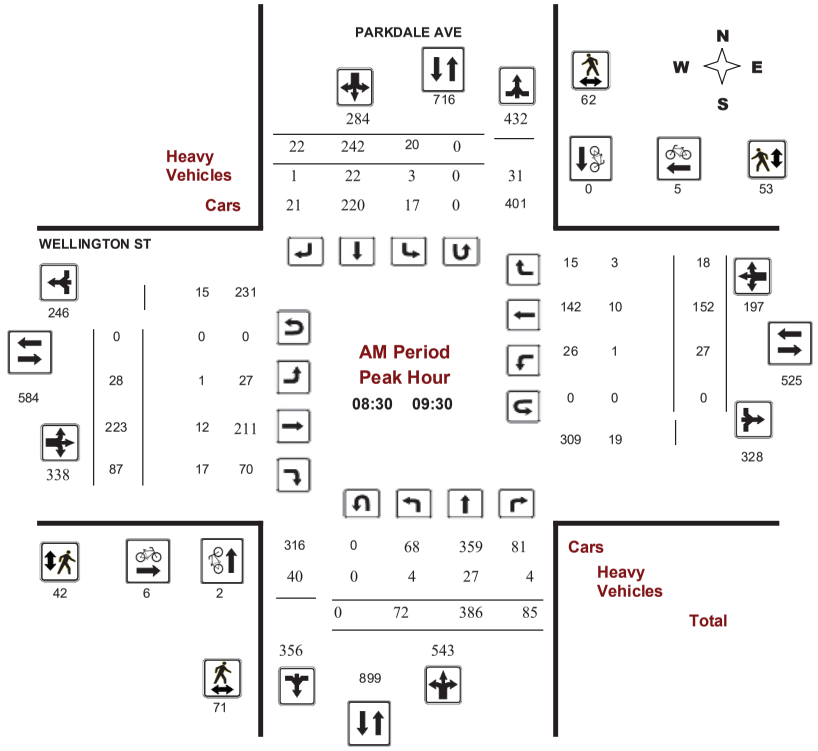
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PARKDALE AVE @ WELLINGTON ST

Survey Date: Tuesday, March 10, 2020 **WO No:** 39588

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



Comments 5479331 - MAR 10 2020 - 8HRS - LAUREN O'GRADY

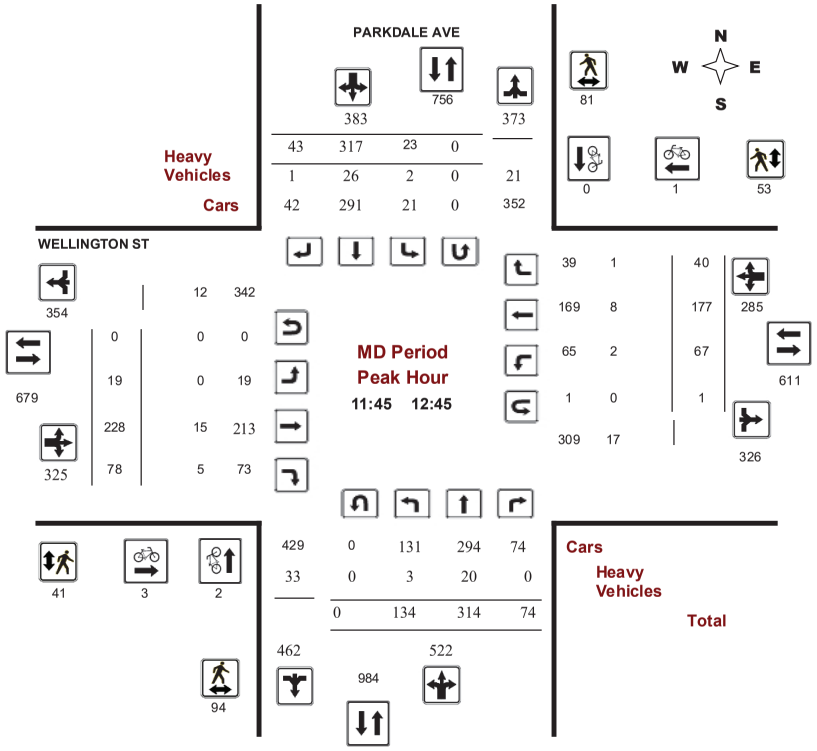
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PARKDALE AVE @ WELLINGTON ST

Survey Date: Tuesday, March 10, 2020 **WO No:** 39588

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



Comments 5479331 - MAR 10 2020 - 8HRS - LAUREN O'GRADY

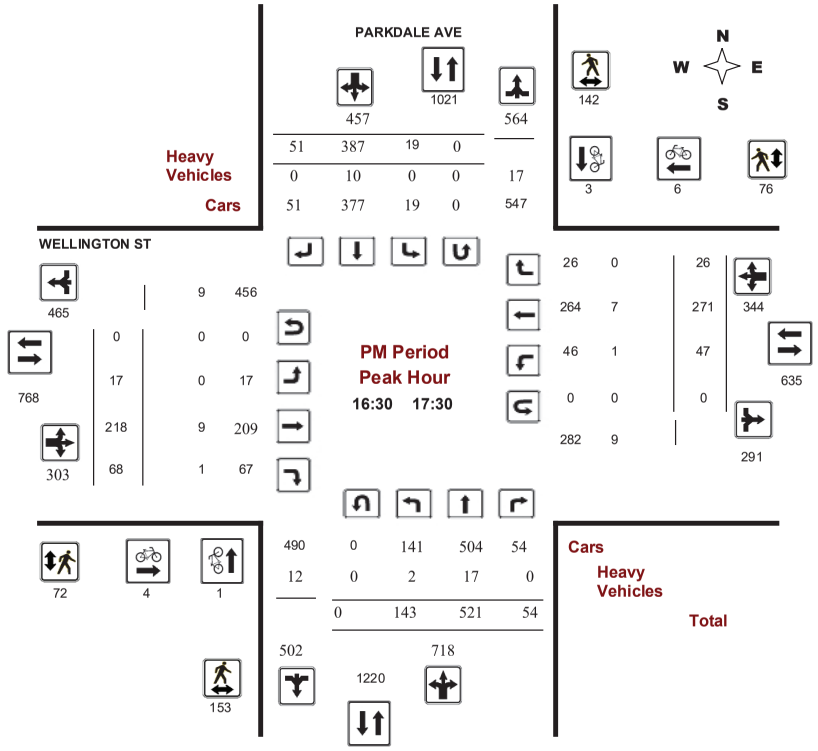
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PARKDALE AVE @ WELLINGTON ST

Survey Date: Tuesday, March 10, 2020 **WO No:** 39588

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



Comments 5479331 - MAR 10 2020 - 8HRS - LAUREN O'GRADY

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ WELLINGTON ST

Survey Date: Tuesday, March 10, 2020 **WO No:** 39588

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, March 10, 2020

Total Observed U-Turns

Northbound: 0 Southbound: 1

Eastbound: 0 Westbound: 1

AADT Factor 1.00

	PARKDALE 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	63	397	28	**488**	11	293	11	**315**	**803**	24	178	58	**260**	28	82	2	**112**	**372**	**1175**
08:00 09:00	81	383	65	**529**	15	241	25	**281**	**810**	16	263	76	**355**	22	145	12	**179**	**534**	**1344**
09:00 10:00	73	346	89	**508**	21	264	12	**297**	**805**	26	207	77	**310**	25	156	26	**207**	**517**	**1322**
11:30 12:30	137	307	79	**523**	23	311	46	**380**	**903**	22	215	71	**308**	66	179	42	**287**	**595**	**1498**
12:30 13:30	118	317	80	**515**	27	291	33	**351**	**866**	18	218	100	**336**	64	181	35	**280**	**616**	**1482**
15:00 16:00	101	391	28	**520**	15	213	24	**252**	**772**	22	182	52	**256**	31	250	25	**306**	**562**	**1334**
16:00 17:00	124	464	60	**648**	19	368	51	**438**	**1086**	16	221	70	**307**	43	283	17	**343**	**650**	**1736**
17:00 18:00	131	529	78	**738**	24	364	40	**428**	**1166**	30	216	60	**306**	41	241	30	**312**	**618**	**1784**
Sub Total	828	3134	507	**4469**	155	2345	242	**2742**	**7211**	174	1700	564	**2438**	320	1517	189	**2026**	**4464**	**11675**
U Turns	0			**0**	1			**1**	**1**	**0**			**0**	1			**1**	**1**	**2**
Total	828	3134	507	**4469**	156	2345	242	**2743**	**7212**	174	1700	564	**2438**	321	1517	189	**2027**	**4465**	**11677**
EQ 12Hr	1151	4356	705	**6212**	217	3260	336	**3813**	**10025**	242	2363	784	**3389**	446	2109	263	**2818**	**6207**	**16232**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	1151	4356	705	**6212**	217	3260	336	**3813**	**10025**	242	2363	784	**3389**	446	2109	263	**2818**	**6207**	**16232**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	1508	5706	924	**8138**	284	4271	440	**4995**	**13133**	317	3096	1027	**4440**	584	2763	345	**3692**	**8132**	**21265**
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

PARKDALE AVE @ WELLINGTON ST

Survey Date: Tuesday, March 10, 2020 **WO No:** 39588

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

Full Study 15 Minute Increments

		PARKDALE 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	12	98	10	120	1	93	2	96	**216**	5	31	12	48	12	18	0	30	**78**	**294**
07:15	07:30	13	99	7	119	4	80	2	86	**205**	7	30	11	48	7	22	0	29	**77**	**282**
07:30	07:45	19	87	4	110	3	69	4	76	**186**	6	49	22	77	5	17	1	23	**100**	**286**
07:45	08:00	19	113	7	139	3	51	3	57	**196**	6	68	13	87	4	25	1	30	**117**	**313**
08:00	08:15	17	98	17	132	5	67	8	80	**212**	3	75	20	98	5	34	5	44	**142**	**354**
08:15	08:30	21	104	14	139	3	59	3	65	**204**	2	77	19	98	3	38	2	43	**141**	**345**
08:30	08:45	21	83	19	123	3	48	8	59	**182**	2	56	21	79	4	40	3	47	**126**	**308**
08:45	09:00	22	98	15	135	4	67	6	77	**212**	9	55	16	80	10	33	2	45	**125**	**337**
09:00	09:15	12	108	31	151	8	57	4	69	**220**	11	53	17	81	9	37	4	50	**131**	**351**
09:15	09:30	17	97	20	134	5	70	4	79	**213**	6	59	33	98	4	42	9	55	**153**	**366**
09:30	09:45	23	77	14	114	4	71	1	76	**190**	4	47	15	66	7	34	7	48	**114**	**304**
09:45	10:00	21	64	24	109	4	66	3	73	**182**	5	48	12	65	5	43	6	54	**119**	**301**
11:30	11:45	37	69	24	130	5	79	9	93	**223**	7	48	16	71	12	55	10	77	**148**	**371**
11:45	12:00	39	99	25	163	5	79	10	94	**257**	6	54	14	74	12	45	10	67	**141**	**398**
12:00	12:15	29	70	19	118	7	68	15	90	**208**	6	57	23	86	26	40	14	80	**166**	**374**
12:15	12:30	32	69	11	112	6	85	12	103	**215**	3	56	18	77	17	39	8	64	**141**	**356**
12:30	12:45	34	76	19	129	5	85	6	96	**225**	4	61	23	88	13	53	8	74	**162**	**387**
12:45	13:00	31	80	15	126	9	73	5	87	**213**	4	50	22	76	17	36	7	60	**136**	**349**
13:00	13:15	23	78	19	120	5	66	12	83	**203**	6	48	27	81	21	48	10	79	**160**	**363**
13:15	13:30	30	83	27	140	8	67	10	85	**225**	4	59	28	91	13	44	10	67	**158**	**383**
15:00	15:15	25	104	10	139	5	43	4	52	**191**	5	39	13	57	4	66	10	80	**137**	**328**
15:15	15:30	19	107	5	131	1	49	2	52	**183**	8	54	14	76	11	52	4	67	**143**	**326**
15:30	15:45	27	93	6	126	5	62	4	71	**197**	5	46	12	63	7	65	5	77	**140**	**337**
15:45	16:00	30	87	7	124	5	59	14	78	**202**	4	43	13	60	9	67	6	82	**142**	**344**
16:00	16:15	28	97	18	143	5	101	11	117	**260**	4	58	16	78	9	71	3	83	**161**	**421**
16:15	16:30	30	121	10	161	7	86	9	102	**263**	7	56	19	82	10	74	5	89	**171**	**434**
16:30	16:45	28	126	14	168	4	76	16	96	**264**	1	55	18	74	9	73	5	87	**161**	**425**
16:45	17:00	38	120	18	176	3	105	15	123	**299**	4	52	17	73	15	65	4	84	**157**	**456**
17:00	17:15	42	124	8	174	6	105	10	121	**295**	6	59	20	85	13	61	11	85	**170**	**465**
17:15	17:30	35	151	14	200	6	101	10	117	**317**	6	52	13	71	10	72	6	88	**159**	**476**
17:30	17:45	32	134	25	191	3	68	13	84	**275**	9	54	12	75	7	41	5	53	**128**	**403**
17:45	18:00	22	120	31	173	9	90	7	106	**279**	9	51	15	75	11	67	8	86	**161**	**440**
Total:		828	3134	507	4469	156	2345	242	2743	**7212**	174	1700	564	2438	321	1517	189	2027	**7212**	**11,677**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ WELLINGTON ST

Survey Date: Tuesday, March 10, 2020 **WO No:** 39588

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

Full Study Cyclist Volume

		PARKDALE AVE			WELLINGTON ST			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	1	**1**	2	0	**2**	**3**
07:15	07:30	0	0	**0**	3	1	**4**	**4**
07:30	07:45	0	0	**0**	1	0	**1**	**1**
07:45	08:00	0	0	**0**	1	0	**1**	**1**
08:00	08:15	0	0	**0**	1	0	**1**	**1**
08:15	08:30	1	0	**1**	3	1	**4**	**5**
08:30	08:45	0	0	**0**	4	2	**6**	**6**
08:45	09:00	2	0	**2**	1	0	**1**	**3**
09:00	09:15	0	0	**0**	1	1	**2**	**2**
09:15	09:30	0	0	**0**	0	2	**2**	**2**
09:30	09:45	1	0	**1**	1	0	**1**	**2**
09:45	10:00	0	0	**0**	0	0	**0**	**0**
11:30	11:45	0	0	**0**	0	0	**0**	**0**
11:45	12:00	1	0	**1**	0	0	**0**	**1**
12:00	12:15	0	0	**0**	1	0	**1**	**1**
12:15	12:30	0	0	**0**	1	0	**1**	**1**
12:30	12:45	1	0	**1**	1	1	**2**	**3**
12:45	13:00	1	0	**1**	1	0	**1**	**2**
13:00	13:15	0	0	**0**	1	1	**2**	**2**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	0	0	**0**	0	2	**2**	**2**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	0	**0**	0	0	**0**	**0**
15:45	16:00	0	0	**0**	1	0	**1**	**1**
16:00	16:15	1	0	**1**	0	0	**0**	**1**
16:15	16:30	0	0	**0**	0	2	**2**	**2**
16:30	16:45	0	0	**0**	1	0	**1**	**1**
16:45	17:00	0	3	**3**	1	2	**3**	**6**
17:00	17:15	1	0	**1**	1	1	**2**	**3**
17:15	17:30	0	0	**0**	1	3	**4**	**4**
17:30	17:45	0	1	**1**	3	6	**9**	**10**
17:45	18:00	1	0	**1**	2	1	**3**	**4**
Total		10	5	**15**	33	26	**59**	**74**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ WELLINGTON ST

Survey Date: Tuesday, March 10, 2020 **WO No:** 39588

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

Full Study Pedestrian Volume

		PARKDALE AVE			WELLINGTON 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	16	13	**29**	2	6	**8**	**37**
07:15	07:30	8	12	**20**	3	8	**11**	**31**
07:30	07:45	14	10	**24**	6	9	**15**	**39**
07:45	08:00	16	14	**30**	9	10	**19**	**49**
08:00	08:15	18	14	**32**	7	5	**12**	**44**
08:15	08:30	14	22	**36**	13	12	**25**	**61**
08:30	08:45	15	11	**26**	11	15	**26**	**52**
08:45	09:00	17	18	**35**	14	11	**25**	**60**
09:00	09:15	14	16	**30**	9	7	**16**	**46**
09:15	09:30	25	17	**42**	8	20	**28**	**70**
09:30	09:45	21	17	**38**	7	15	**22**	**60**
09:45	10:00	22	14	**36**	6	11	**17**	**53**
11:30	11:45	24	15	**39**	8	12	**20**	**59**
11:45	12:00	18	16	**34**	5	12	**17**	**51**
12:00	12:15	23	20	**43**	12	19	**31**	**74**
12:15	12:30	25	24	**49**	13	14	**27**	**76**
12:30	12:45	28	21	**49**	11	8	**19**	**68**
12:45	13:00	29	16	**45**	10	11	**21**	**66**
13:00	13:15	29	17	**46**	5	17	**22**	**68**
13:15	13:30	19	20	**39**	10	11	**21**	**60**
15:00	15:15	25	33	**58**	15	21	**36**	**94**
15:15	15:30	39	20	**59**	11	16	**27**	**86**
15:30	15:45	28	34	**62**	9	19	**28**	**90**
15:45	16:00	21	17	**38**	8	6	**14**	**52**
16:00	16:15	21	16	**37**	5	13	**18**	**55**
16:15	16:30	37	27	**64**	15	10	**25**	**89**
16:30	16:45	37	41	**78**	16	18	**34**	**112**
16:45	17:00	35	23	**58**	19	19	**38**	**96**
17:00	17:15	38	33	**71**	25	26	**51**	**122**
17:15	17:30	43	45	**88**	12	13	**25**	**113**
17:30	17:45	41	27	**68**	16	12	**28**	**96**
17:45	18:00	38	17	**55**	13	13	**26**	**81**
Total	.....	798	660	**1458**	333	419	**752**	**2210**

5479331 - MAR 10 2020 - 8HRS - LAUREN O'GRADY

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ WELLINGTON ST

Survey Date: Tuesday, March 10, 2020 **WO No:** 39588

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

Full Study Heavy Vehicles

		PARKDALE 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	3	0	**3**	0	2	0	**2**	**5**	1	1	0	**2**	0	3	0	**3**	**5**	**10**
07:15	07:30	0	5	1	**6**	0	7	0	**7**	**13**	0	2	0	**2**	0	1	0	**1**	**3**	**16**
07:30	07:45	0	1	0	**1**	0	3	0	**3**	**4**	0	2	2	**4**	0	2	0	**2**	**6**	**10**
07:45	08:00	1	4	0	**5**	0	3	0	**3**	**8**	0	6	0	**6**	0	1	0	**1**	**7**	**15**
08:00	08:15	1	4	1	**6**	0	4	0	**4**	**10**	0	1	3	**4**	1	6	1	**8**	**12**	**22**
08:15	08:30	2	4	0	**6**	0	3	0	**3**	**9**	0	3	3	**6**	0	4	0	**4**	**10**	**19**
08:30	08:45	0	6	0	**6**	0	4	1	**5**	**11**	0	1	2	**3**	0	2	0	**2**	**5**	**16**
08:45	09:00	0	6	1	**7**	1	8	0	**9**	**16**	1	7	3	**11**	1	0	0	**1**	**12**	**28**
09:00	09:15	2	5	2	**9**	2	4	0	**6**	**15**	0	1	6	**7**	0	5	2	**7**	**14**	**29**
09:15	09:30	2	10	1	**13**	0	6	0	**6**	**19**	0	3	6	**9**	0	3	1	**4**	**13**	**32**
09:30	09:45	3	7	1	**11**	1	7	0	**8**	**19**	1	2	3	**6**	0	5	0	**5**	**11**	**30**
09:45	10:00	1	5	1	**7**	0	6	0	**6**	**13**	0	2	0	**2**	0	5	0	**5**	**7**	**20**
11:30	11:45	4	4	2	**10**	0	5	1	**6**	**16**	0	4	1	**5**	0	4	0	**4**	**9**	**25**
11:45	12:00	1	5	0	**6**	2	5	1	**8**	**14**	0	5	0	**5**	0	3	0	**3**	**8**	**22**
12:00	12:15	1	4	0	**5**	0	5	0	**5**	**10**	0	3	2	**5**	1	1	1	**3**	**8**	**18**
12:15	12:30	0	4	0	**4**	0	8	0	**8**	**12**	0	3	3	**6**	0	2	0	**2**	**8**	**20**
12:30	12:45	1	7	0	**8**	0	8	0	**8**	**16**	0	4	0	**4**	1	2	0	**3**	**7**	**23**
12:45	13:00	0	5	0	**5**	0	5	0	**5**	**10**	0	5	0	**5**	0	1	3	**4**	**9**	**19**
13:00	13:15	1	8	1	**10**	0	1	0	**1**	**11**	0	3	2	**5**	1	2	1	**4**	**9**	**20**
13:15	13:30	1	4	1	**6**	0	6	1	**7**	**13**	0	1	1	**2**	0	2	0	**2**	**4**	**17**
15:00	15:15	0	5	1	**6**	0	0	0	**0**	**6**	0	3	1	**4**	0	1	0	**1**	**5**	**11**
15:15	15:30	0	7	1	**8**	0	3	0	**3**	**11**	0	3	0	**3**	1	3	1	**5**	**8**	**19**
15:30	15:45	1	5	0	**6**	0	4	0	**4**	**10**	0	2	0	**2**	0	3	0	**3**	**5**	**15**
15:45	16:00	0	5	0	**5**	0	4	0	**4**	**9**	0	2	0	**2**	1	1	1	**3**	**5**	**14**
16:00	16:15	1	4	0	**5**	0	4	0	**4**	**9**	1	1	2	**4**	0	1	0	**1**	**5**	**14**
16:15	16:30	0	7	0	**7**	0	3	0	**3**	**10**	0	2	0	**2**	0	3	1	**4**	**6**	**16**
16:30	16:45	1	8	0	**9**	0	2	0	**2**	**11**	0	2	0	**2**	0	4	0	**4**	**6**	**17**
16:45	17:00	0	2	0	**2**	0	3	0	**3**	**5**	0	3	0	**3**	1	1	0	**2**	**5**	**10**
17:00	17:15	0	5	0	**5**	0	1	0	**1**	**6**	0	2	1	**3**	0	2	0	**2**	**5**	**11**
17:15	17:30	1	2	0	**3**	0	4	0	**4**	**7**	0	2	0	**2**	0	0	0	**0**	**2**	**9**
17:30	17:45	0	4	0	**4**	0	2	0	**2**	**6**	0	1	0	**1**	0	1	0	**1**	**2**	**8**
17:45	18:00	0	1	0	**1**	0	3	0	**3**	**4**	0	2	0	**2**	0	0	0	**0**	**2**	**6**
Total:	None	25	156	14	**195**	6	133	4	**143**	**338**	4	84	41	**129**	8	74	12	**94**	**223**	**561**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ WELLINGTON ST

Survey Date: Tuesday, March 10, 2020 **WO No:** 39588

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

Full Study 15 Minute U-Turn Total

Time Period		PARKDALE AVE Northbound U-Turn Total	PARKDALE 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	1	**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	1	0	0	**1**
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	1	0	1	**2**

Transportation Services - Traffic Services

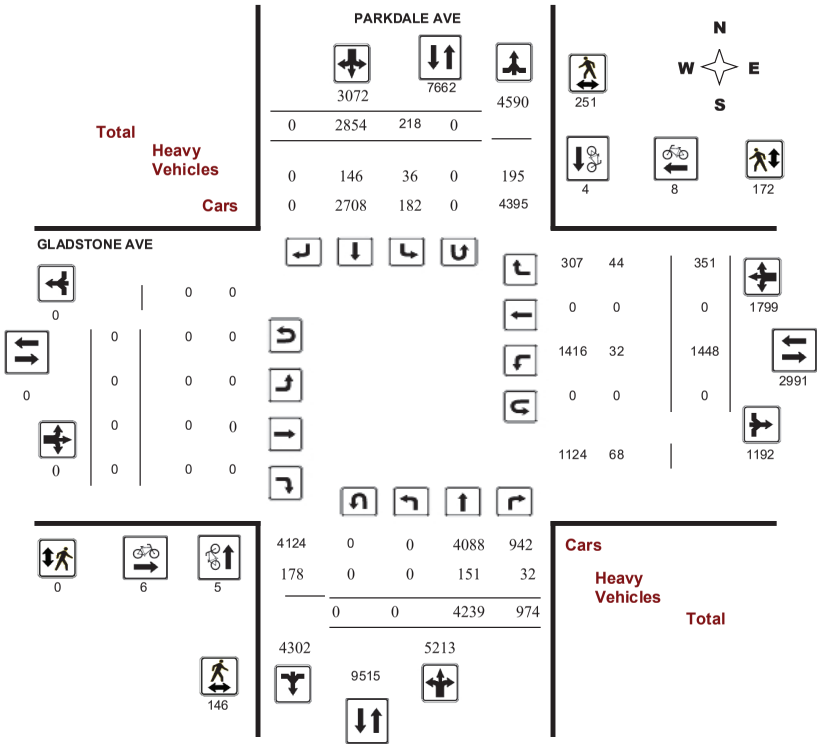
Turning Movement Count - Study Results

PARKDALE AVE @ GLADSTONE AVE

Survey Date: Thursday, December 05, 2019 **WO No:** 39201

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

Full Study Diagram



Transportation Services - Traffic Services

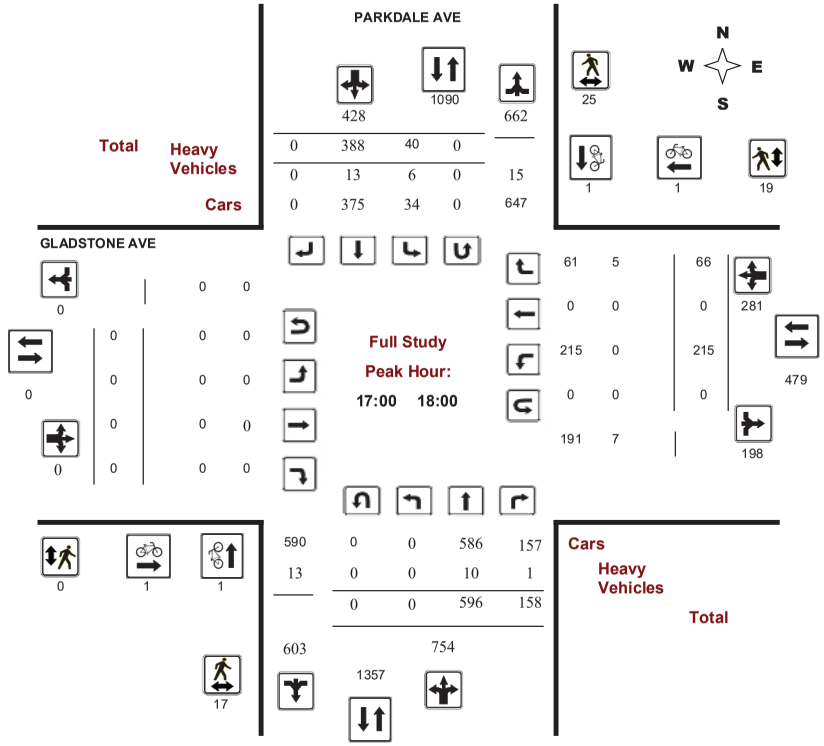
Turning Movement Count - Study Results

PARKDALE AVE @ GLADSTONE AVE

Survey Date: Thursday, December 05, 2019 **WO No:** 39201

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

Full Study Peak Hour Diagram



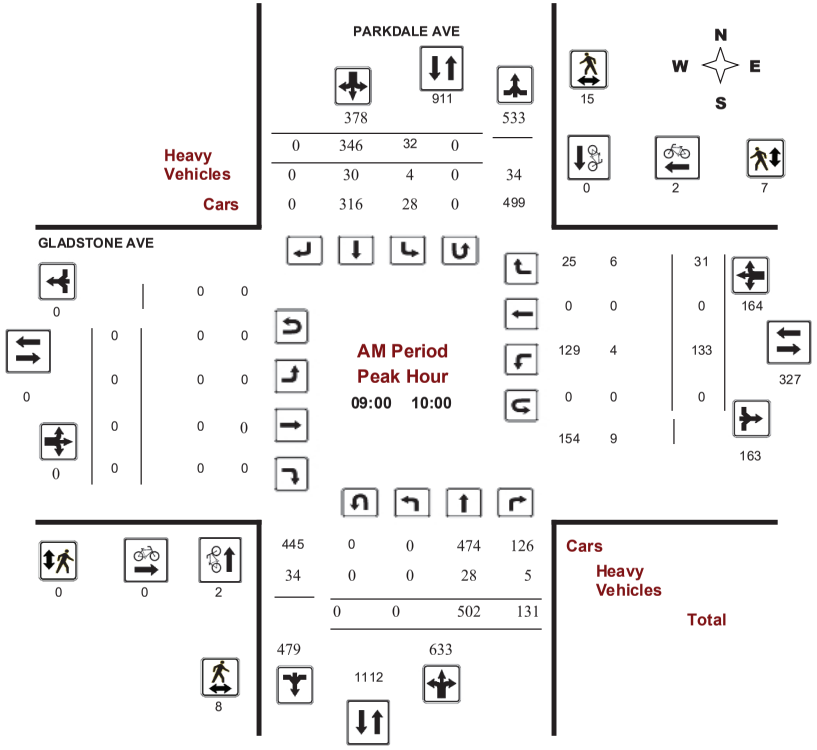
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PARKDALE AVE @ GLADSTONE AVE

Survey Date: Thursday, December 05, 2019 **WO No:** 39201

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



Comments

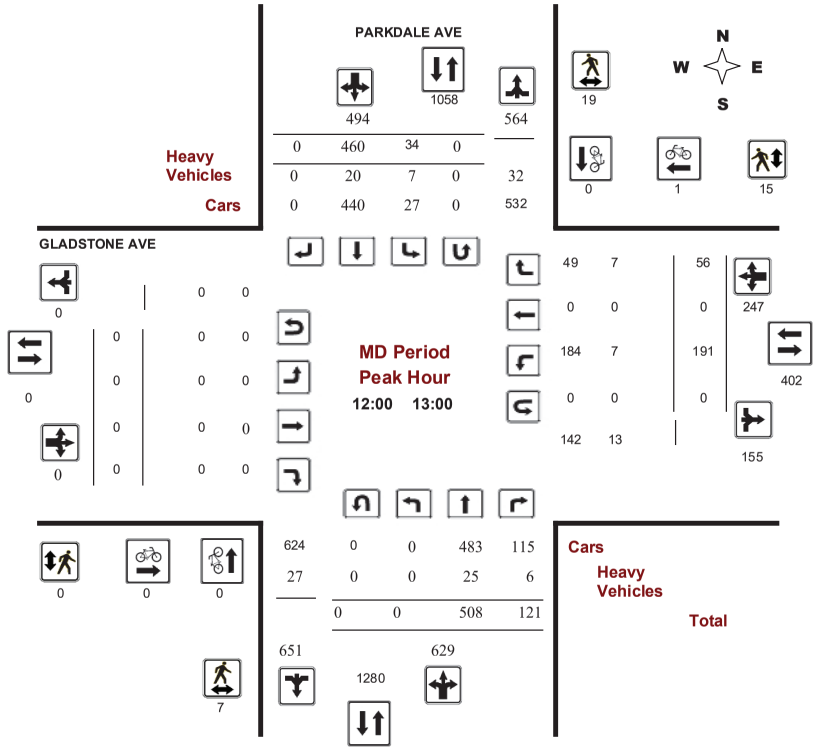
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PARKDALE AVE @ GLADSTONE AVE

Survey Date: Thursday, December 05, 2019 **WO No:** 39201

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



Comments

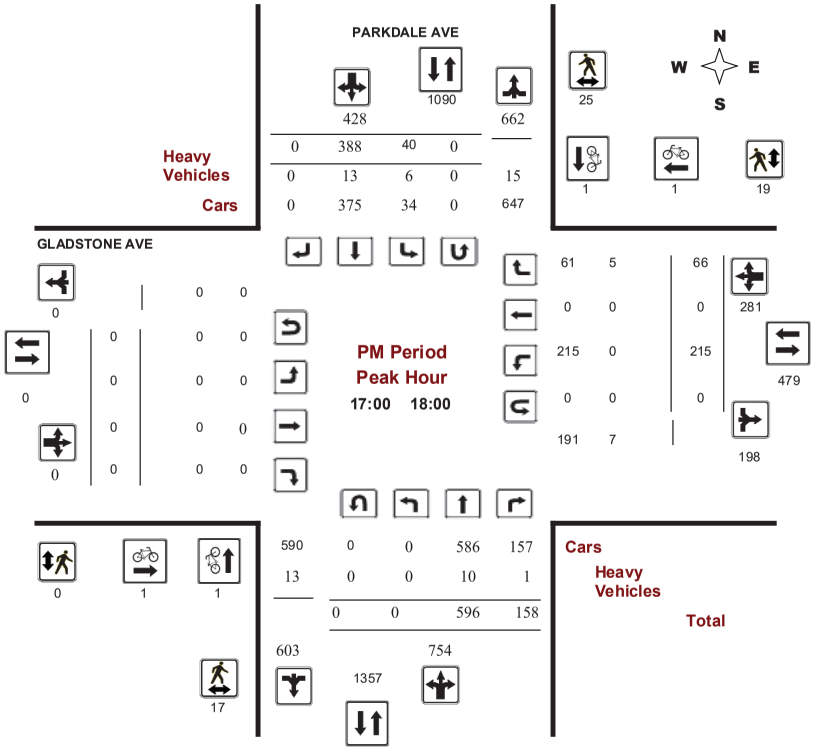
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PARKDALE AVE @ GLADSTONE AVE

Survey Date: Thursday, December 05, 2019 **WO No:** 39201

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ GLADSTONE AVE

Survey Date: Thursday, December 05, 2019 **WO No:** 39201

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

Full Study Summary (8 HR Standard)

Survey Date: Thursday, December 05, 2019

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor 1.00

	PARKDALE AVE									GLADSTONE AVE									
	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	465	103	**568**	18	299	0	**317**	**885**	0	0	0	**0**	167	0	15	**182**	**182**	**1067**
08:00 09:00	0	484	118	**602**	19	275	0	**294**	**896**	0	0	0	**0**	171	0	34	**205**	**205**	**1101**
09:00 10:00	0	502	131	**633**	32	346	0	**378**	**1011**	0	0	0	**0**	133	0	31	**164**	**164**	**1175**
11:30 12:30	0	517	138	**655**	31	467	0	**498**	**1153**	0	0	0	**0**	162	0	53	**215**	**215**	**1368**
12:30 13:30	0	497	118	**615**	22	453	0	**475**	**1090**	0	0	0	**0**	186	0	49	**235**	**235**	**1325**
15:00 16:00	0	576	89	**665**	23	280	0	**303**	**968**	0	0	0	**0**	193	0	42	**235**	**235**	**1203**
16:00 17:00	0	602	119	**721**	33	346	0	**379**	**1100**	0	0	0	**0**	221	0	61	**282**	**282**	**1382**
17:00 18:00	0	596	158	**754**	40	388	0	**428**	**1182**	0	0	0	**0**	215	0	66	**281**	**281**	**1463**
Sub Total	0	4239	974	**5213**	218	2854	0	**3072**	**8285**	0	0	0	**0**	1448	0	351	**1799**	**1799**	**10084**
U Turns	0			**0**	0			**0**	**0**	**0**			**0**	0			**0**	**0**	**0**
Total	0	4239	974	**5213**	218	2854	0	**3072**	**8285**	0	0	0	**0**	1448	0	351	**1799**	**1799**	**10084**
EQ 12Hr	0	5892	1354	**7246**	303	3967	0	**4270**	**11516**	0	0	0	**0**	2013	0	488	**2501**	**2501**	**14017**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	0	5892	1354	**7246**	303	3967	0	**4270**	**11516**	0	0	0	**0**	2013	0	488	**2501**	**2501**	**14017**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	0	7719	1774	**9493**	397	5197	0	**5594**	**15087**	0	0	0	**0**	2637	0	639	**3276**	**3276**	**18363**
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

PARKDALE AVE @ GLADSTONE AVE

Survey Date: Thursday, December 05, 2019 **WO No:** 39201

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

Full Study 15 Minute Increments

		PARKDALE AVE									GLADSTONE AVE									
		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	101	23	124	10	80	0	90	**214**	0	0	0	0	31	0	5	36	**36**	**250**
07:15	07:30	0	121	22	143	3	77	0	80	**223**	0	0	0	0	43	0	4	47	**47**	**270**
07:30	07:45	0	109	29	138	1	74	0	75	**213**	0	0	0	0	44	0	3	47	**47**	**260**
07:45	08:00	0	134	29	163	4	68	0	72	**235**	0	0	0	0	49	0	3	52	**52**	**287**
08:00	08:15	0	113	35	148	8	77	0	85	**233**	0	0	0	0	41	0	11	52	**52**	**285**
08:15	08:30	0	111	29	140	1	48	0	49	**189**	0	0	0	0	42	0	5	47	**47**	**236**
08:30	08:45	0	120	22	142	6	81	0	87	**229**	0	0	0	0	45	0	11	56	**56**	**285**
08:45	09:00	0	140	32	172	4	69	0	73	**245**	0	0	0	0	43	0	7	50	**50**	**295**
09:00	09:15	0	127	38	165	9	74	0	83	**248**	0	0	0	0	42	0	8	50	**50**	**298**
09:15	09:30	0	121	33	154	7	78	0	85	**239**	0	0	0	0	34	0	7	41	**41**	**280**
09:30	09:45	0	131	28	159	8	92	0	100	**259**	0	0	0	0	30	0	10	40	**40**	**299**
09:45	10:00	0	123	32	155	8	102	0	110	**265**	0	0	0	0	27	0	6	33	**33**	**298**
11:30	11:45	0	134	40	174	4	107	0	111	**285**	0	0	0	0	38	0	9	47	**47**	**332**
11:45	12:00	0	124	29	153	6	120	0	126	**279**	0	0	0	0	34	0	11	45	**45**	**324**
12:00	12:15	0	120	31	151	14	119	0	133	**284**	0	0	0	0	45	0	14	59	**59**	**343**
12:15	12:30	0	139	38	177	7	121	0	128	**305**	0	0	0	0	45	0	19	64	**64**	**369**
12:30	12:45	0	126	22	148	8	111	0	119	**267**	0	0	0	0	52	0	11	63	**63**	**330**
12:45	13:00	0	123	30	153	5	109	0	114	**267**	0	0	0	0	49	0	12	61	**61**	**328**
13:00	13:15	0	117	31	148	4	114	0	118	**266**	0	0	0	0	44	0	14	58	**58**	**324**
13:15	13:30	0	131	35	166	5	119	0	124	**290**	0	0	0	0	41	0	12	53	**53**	**343**
15:00	15:15	0	147	17	164	3	67	0	70	**234**	0	0	0	0	55	0	5	60	**60**	**294**
15:15	15:30	0	127	25	152	4	57	0	61	**213**	0	0	0	0	37	0	6	43	**43**	**256**
15:30	15:45	0	148	29	177	8	77	0	85	**262**	0	0	0	0	43	0	15	58	**58**	**320**
15:45	16:00	0	154	18	172	8	79	0	87	**259**	0	0	0	0	58	0	16	74	**74**	**333**
16:00	16:15	0	153	19	172	9	91	0	100	**272**	0	0	0	0	62	0	9	71	**71**	**343**
16:15	16:30	0	156	34	190	10	89	0	99	**289**	0	0	0	0	53	0	19	72	**72**	**361**
16:30	16:45	0	143	34	177	7	90	0	97	**274**	0	0	0	0	54	0	14	68	**68**	**342**
16:45	17:00	0	150	32	182	7	76	0	83	**265**	0	0	0	0	52	0	19	71	**71**	**336**
17:00	17:15	0	151	38	189	7	89	0	96	**285**	0	0	0	0	65	0	17	82	**82**	**367**
17:15	17:30	0	142	28	170	10	111	0	121	**291**	0	0	0	0	46	0	19	65	**65**	**356**
17:30	17:45	0	148	44	192	11	104	0	115	**307**	0	0	0	0	53	0	14	67	**67**	**374**
17:45	18:00	0	155	48	203	12	84	0	96	**299**	0	0	0	0	51	0	16	67	**67**	**366**
Total:		0	4239	974	5213	218	2854	0	3072	**8285**	0	0	0	0	1448	0	351	1799	**8285**	**10,084**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ GLADSTONE AVE

Survey Date: Thursday, December 05, 2019 **WO No:** 39201

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

Full Study Cyclist Volume

Time Period		PARKDALE AVE			GLADSTONE AVE			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	**0**	0	0	**0**	**0**
07:15	07:30	0	0	**0**	0	0	**0**	**0**
07:30	07:45	0	0	**0**	0	0	**0**	**0**
07:45	08:00	0	0	**0**	0	0	**0**	**0**
08:00	08:15	0	0	**0**	0	0	**0**	**0**
08:15	08:30	0	0	**0**	1	0	**1**	**1**
08:30	08:45	0	1	**1**	0	0	**0**	**1**
08:45	09:00	0	1	**1**	0	0	**0**	**1**
09:00	09:15	1	0	**1**	0	0	**0**	**1**
09:15	09:30	1	0	**1**	0	1	**1**	**2**
09:30	09:45	0	0	**0**	0	0	**0**	**0**
09:45	10:00	0	0	**0**	0	1	**1**	**1**
11:30	11:45	1	0	**1**	0	0	**0**	**1**
11:45	12:00	0	0	**0**	0	0	**0**	**0**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
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**	0	0	**0**	**0**
13:00	13:15	0	0	**0**	0	0	**0**	**0**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	0	0	**0**	2	1	**3**	**3**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	0	**0**	1	0	**1**	**1**
15:45	16:00	0	0	**0**	1	1	**2**	**2**
16:00	16:15	1	0	**1**	0	1	**1**	**2**
16:15	16:30	0	1	**1**	0	1	**1**	**2**
16:30	16:45	0	0	**0**	0	0	**0**	**0**
16:45	17:00	0	0	**0**	0	0	**0**	**0**
17:00	17:15	0	0	**0**	0	0	**0**	**0**
17:15	17:30	0	0	**0**	0	0	**0**	**0**
17:30	17:45	1	1	**2**	0	0	**0**	**2**
17:45	18:00	0	0	**0**	1	1	**2**	**2**
Total		5	4	**9**	6	8	**14**	**23**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ GLADSTONE AVE

Survey Date: Thursday, December 05, 2019 **WO No:** 39201

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

Full Study Pedestrian Volume

Time Period		PARKDALE AVE			GLADSTONE AVE			
		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	1	0	**1**	0	2	**2**	**3**
07:15	07:30	3	3	**6**	0	2	**2**	**8**
07:30	07:45	4	5	**9**	0	3	**3**	**12**
07:45	08:00	3	8	**11**	0	4	**4**	**15**
08:00	08:15	7	13	**20**	0	11	**11**	**31**
08:15	08:30	15	33	**48**	0	10	**10**	**58**
08:30	08:45	23	13	**36**	0	26	**26**	**62**
08:45	09:00	2	8	**10**	0	1	**1**	**11**
09:00	09:15	3	5	**8**	0	2	**2**	**10**
09:15	09:30	0	1	**1**	0	0	**0**	**1**
09:30	09:45	2	4	**6**	0	4	**4**	**10**
09:45	10:00	3	5	**8**	0	1	**1**	**9**
11:30	11:45	0	5	**5**	0	5	**5**	**10**
11:45	12:00	2	4	**6**	0	2	**2**	**8**
12:00	12:15	3	2	**5**	0	2	**2**	**7**
12:15	12:30	1	5	**6**	0	3	**3**	**9**
12:30	12:45	1	5	**6**	0	3	**3**	**9**
12:45	13:00	2	7	**9**	0	7	**7**	**16**
13:00	13:15	1	6	**7**	0	1	**1**	**8**
13:15	13:30	3	1	**4**	0	4	**4**	**8**
15:00	15:15	4	15	**19**	0	5	**5**	**24**
15:15	15:30	14	21	**35**	0	9	**9**	**44**
15:30	15:45	2	30	**32**	0	3	**3**	**35**
15:45	16:00	6	2	**8**	0	5	**5**	**13**
16:00	16:15	8	7	**15**	0	8	**8**	**23**
16:15	16:30	4	1	**5**	0	9	**9**	**14**
16:30	16:45	9	9	**18**	0	8	**8**	**26**
16:45	17:00	3	8	**11**	0	13	**13**	**24**
17:00	17:15	3	5	**8**	0	6	**6**	**14**
17:15	17:30	7	9	**16**	0	3	**3**	**19**
17:30	17:45	3	6	**9**	0	4	**4**	**13**
17:45	18:00	4	5	**9**	0	6	**6**	**15**
Total	.....	146	251	**397**	0	172	**172**	**569**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ GLADSTONE AVE

Survey Date: Thursday, December 05, 2019 **WO No:** 39201

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

Full Study Heavy Vehicles

		PARKDALE AVE									GLADSTONE AVE									
		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	3	3	**6**	2	3	0	**5**	**11**	0	0	0	**0**	0	0	2	**2**	**2**	**13**
07:15	07:30	0	2	1	**3**	2	2	0	**4**	**7**	0	0	0	**0**	0	0	1	**1**	**1**	**8**
07:30	07:45	0	6	2	**8**	0	5	0	**5**	**13**	0	0	0	**0**	2	0	1	**3**	**3**	**16**
07:45	08:00	0	5	2	**7**	2	5	0	**7**	**14**	0	0	0	**0**	0	0	0	**0**	**0**	**14**
08:00	08:15	0	5	0	**5**	1	5	0	**6**	**11**	0	0	0	**0**	0	0	3	**3**	**3**	**14**
08:15	08:30	0	4	0	**4**	0	3	0	**3**	**7**	0	0	0	**0**	3	0	0	**3**	**3**	**10**
08:30	08:45	0	4	2	**6**	2	4	0	**6**	**12**	0	0	0	**0**	1	0	2	**3**	**3**	**15**
08:45	09:00	0	8	0	**8**	1	10	0	**11**	**19**	0	0	0	**0**	3	0	1	**4**	**4**	**23**
09:00	09:15	0	6	0	**6**	1	6	0	**7**	**13**	0	0	0	**0**	0	0	1	**1**	**1**	**14**
09:15	09:30	0	8	2	**10**	1	11	0	**12**	**22**	0	0	0	**0**	1	0	1	**2**	**2**	**24**
09:30	09:45	0	10	2	**12**	1	10	0	**11**	**23**	0	0	0	**0**	0	0	2	**2**	**2**	**25**
09:45	10:00	0	4	1	**5**	1	3	0	**4**	**9**	0	0	0	**0**	3	0	2	**5**	**5**	**14**
11:30	11:45	0	4	2	**6**	1	7	0	**8**	**14**	0	0	0	**0**	1	0	1	**2**	**2**	**16**
11:45	12:00	0	5	1	**6**	0	5	0	**5**	**11**	0	0	0	**0**	1	0	2	**3**	**3**	**14**
12:00	12:15	0	5	1	**6**	2	7	0	**9**	**15**	0	0	0	**0**	1	0	2	**3**	**3**	**18**
12:15	12:30	0	11	1	**12**	2	5	0	**7**	**19**	0	0	0	**0**	2	0	2	**4**	**4**	**23**
12:30	12:45	0	4	1	**5**	2	3	0	**5**	**10**	0	0	0	**0**	2	0	2	**4**	**4**	**14**
12:45	13:00	0	5	3	**8**	1	5	0	**6**	**14**	0	0	0	**0**	2	0	1	**3**	**3**	**17**
13:00	13:15	0	4	1	**5**	1	4	0	**5**	**10**	0	0	0	**0**	0	0	1	**1**	**1**	**11**
13:15	13:30	0	3	4	**7**	1	6	0	**7**	**14**	0	0	0	**0**	0	0	1	**1**	**1**	**15**
15:00	15:15	0	3	0	**3**	0	3	0	**3**	**6**	0	0	0	**0**	3	0	0	**3**	**3**	**9**
15:15	15:30	0	4	0	**4**	0	1	0	**1**	**5**	0	0	0	**0**	1	0	1	**2**	**2**	**7**
15:30	15:45	0	2	0	**2**	3	5	0	**8**	**10**	0	0	0	**0**	2	0	2	**4**	**4**	**14**
15:45	16:00	0	6	0	**6**	1	4	0	**5**	**11**	0	0	0	**0**	2	0	1	**3**	**3**	**14**
16:00	16:15	0	9	1	**10**	0	4	0	**4**	**14**	0	0	0	**0**	2	0	1	**3**	**3**	**17**
16:15	16:30	0	3	1	**4**	1	4	0	**5**	**9**	0	0	0	**0**	0	0	1	**1**	**1**	**10**
16:30	16:45	0	4	0	**4**	1	1	0	**2**	**6**	0	0	0	**0**	0	0	3	**3**	**3**	**9**
16:45	17:00	0	4	0	**4**	0	2	0	**2**	**6**	0	0	0	**0**	0	0	2	**2**	**2**	**8**
17:00	17:15	0	1	0	**1**	1	3	0	**4**	**5**	0	0	0	**0**	0	0	1	**1**	**1**	**6**
17:15	17:30	0	3	0	**3**	2	4	0	**6**	**9**	0	0	0	**0**	0	0	3	**3**	**3**	**12**
17:30	17:45	0	2	1	**3**	0	3	0	**3**	**6**	0	0	0	**0**	0	0	0	**0**	**0**	**6**
17:45	18:00	0	4	0	**4**	3	3	0	**6**	**10**	0	0	0	**0**	0	0	1	**1**	**1**	**11**
Total:	None	0	151	32	**183**	36	146	0	**182**	**365**	0	0	0	**0**	32	0	44	**76**	**76**	**441**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ GLADSTONE AVE

Survey Date: Thursday, December 05, 2019 **WO No:** 39201

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

Full Study 15 Minute U-Turn Total

		PARKDALE AVE	PARKDALE AVE	GLADSTONE AVE	GLADSTONE AVE	
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	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

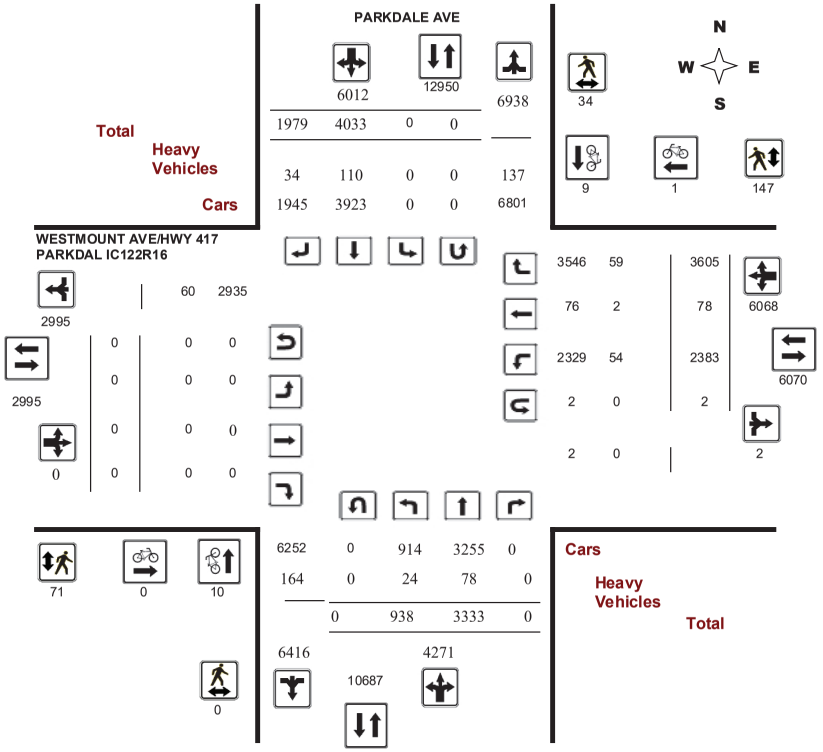
Turning Movement Count - Study Results

PARKDALE AVE @ WESTMOUNT AVE/HWY 417 PARKDAL I

Survey Date: Thursday, April 05, 2018 **WO No:** 37687

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

Full Study Diagram



Transportation Services - Traffic Services

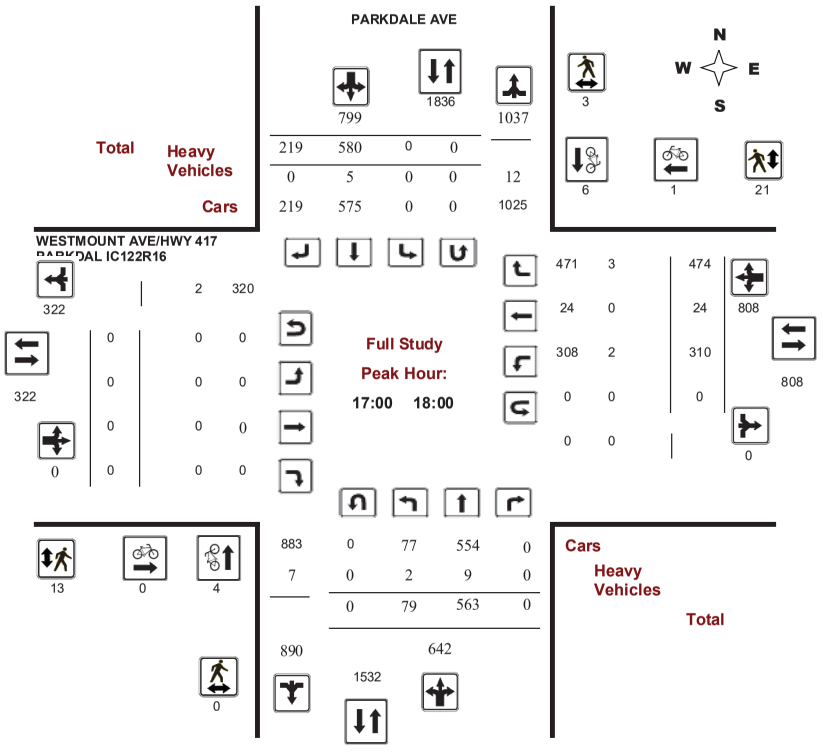
Turning Movement Count - Study Results

PARKDALE AVE @ WESTMOUNT AVE/HWY 417 PARKDAL I

Survey Date: Thursday, April 05, 2018 **WO No:** 37687

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

Full Study Peak Hour Diagram



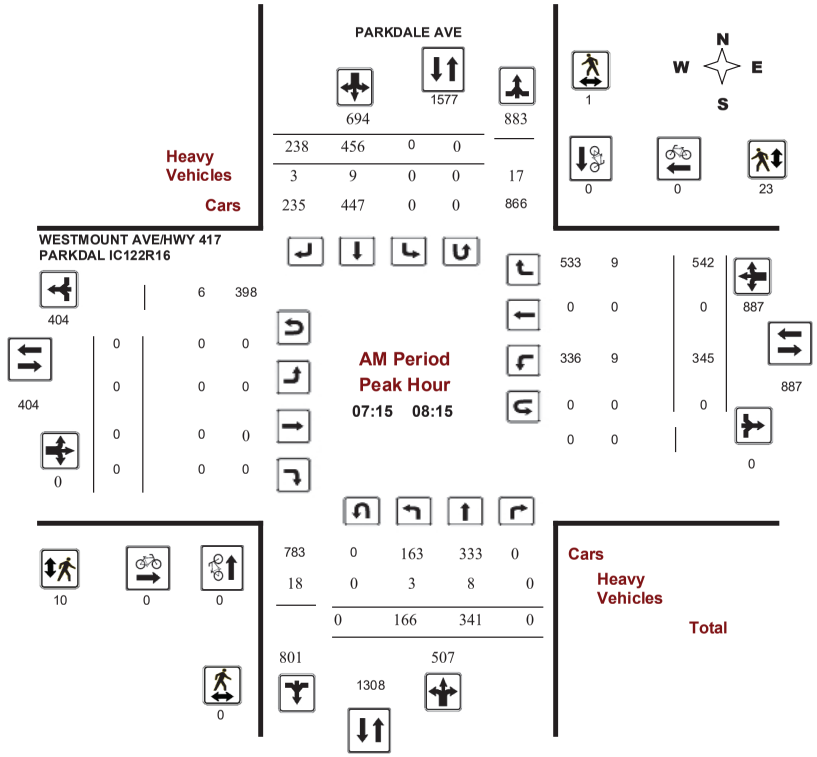
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PARKDALE AVE @ WESTMOUNT AVE/HWY 417 PARKDAL I

Survey Date: Thursday, April 05, 2018 **WO No:** 37687

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



Comments

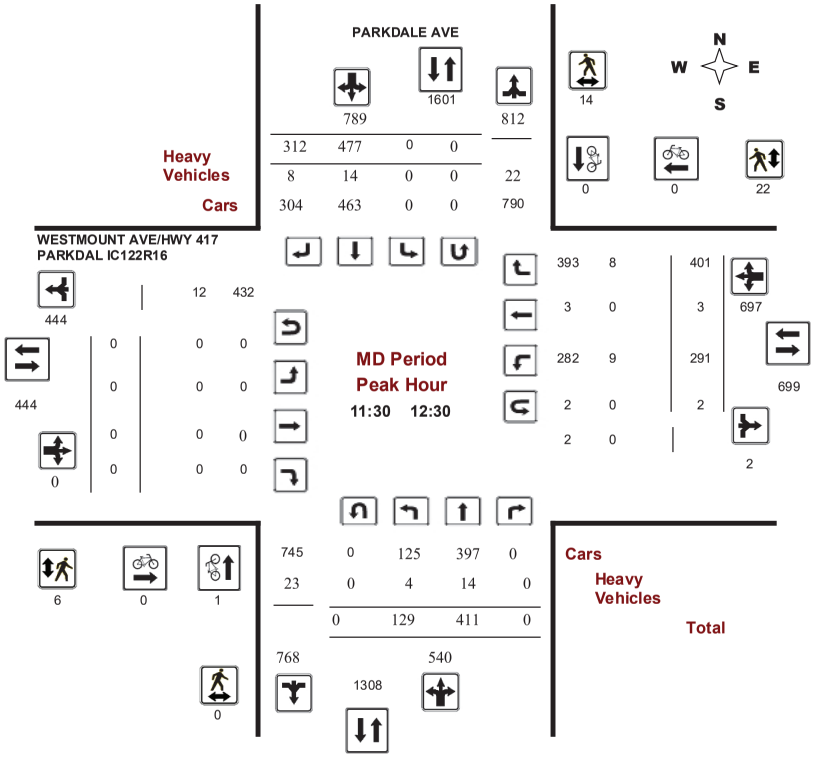
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PARKDALE AVE @ WESTMOUNT AVE/HWY 417 PARKDAL I

Survey Date: Thursday, April 05, 2018 **WO No:** 37687

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



Comments

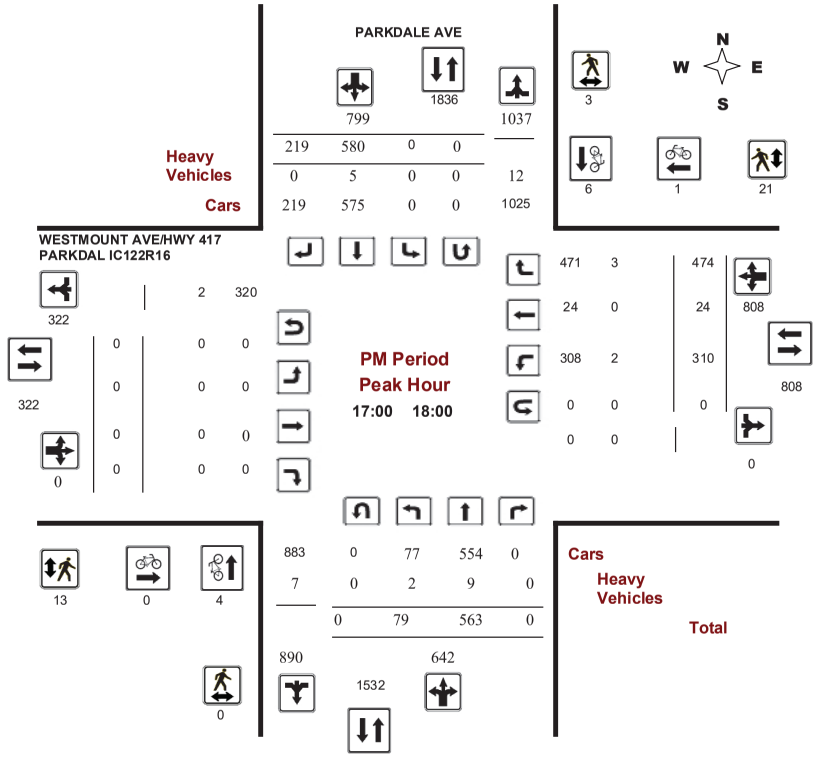
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PARKDALE AVE @ WESTMOUNT AVE/HWY 417 PARKDAL I

Survey Date: Thursday, April 05, 2018 **WO No:** 37687

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ WESTMOUNT AVE/HWY 417 PARKDAL I

Survey Date: Thursday, April 05, 2018 **WO No:** 37687

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

Full Study Summary (8 HR Standard)

Survey Date: Thursday, April 05, 2018

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 2

AADT Factor .90

	PARKDALE AVE								WESTMOUNT AVE/HWY 417 PARKDAL IC122R16								
	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	165	320	0	**485**	0	469	246	**715**	**1200**	0	0	0	**0**	319	0	553	**872**	**872**	**2072**
08:00 09:00	120	363	0	**483**	0	449	254	**703**	**1186**	0	0	0	**0**	302	0	493	**795**	**795**	**1981**
09:00 10:00	113	364	0	**477**	0	486	236	**722**	**1199**	0	0	0	**0**	339	0	519	**858**	**858**	**2057**
11:30 12:30	129	411	0	**540**	0	477	312	**789**	**1329**	0	0	0	**0**	291	3	401	**695**	**695**	**2024**
12:30 13:30	119	403	0	**522**	0	491	285	**776**	**1298**	0	0	0	**0**	298	3	323	**624**	**624**	**1922**
15:00 16:00	123	453	0	**576**	0	517	191	**708**	**1284**	0	0	0	**0**	244	8	416	**668**	**668**	**1952**
16:00 17:00	90	456	0	**546**	0	564	236	**800**	**1346**	0	0	0	**0**	280	40	426	**746**	**746**	**2092**
17:00 18:00	79	563	0	**642**	0	580	219	**799**	**1441**	0	0	0	**0**	310	24	474	**808**	**808**	**2249**
Sub Total	938	3333	0	**4271**	0	4033	1979	**6012**	**10283**	0	0	0	**0**	2383	78	3605	**6066**	**6066**	**16349**
U Turns				**0**				**0**	**0**				**0**				**2**	**2**	**2**
Total	938	3333	0	**4271**	0	4033	1979	**6012**	**10283**	0	0	0	**0**	2383	78	3605	**6068**	**6068**	**16351**
EQ 12Hr	1304	4633	0	**5937**	0	5606	2751	**8357**	**14293**	0	0	0	**0**	3312	108	5011	**8435**	**8435**	**22728**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	1106	3930	0	**5036**	0	4755	2333	**7088**	**12864**	0	0	0	**0**	2810	92	4250	**7154**	**7592**	**20455**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**0.9**					
AVG 24Hr	1449	5148	0	**6597**	0	6229	3057	**9285**	**15882**	0	0	0	**0**	3681	120	5568	**9372**	**9372**	**25254**
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

PARKDALE AVE @ WESTMOUNT AVE/HWY 417 PARKDAL I

Survey Date: Thursday, April 05, 2018 **WO No:** 37687

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

Full Study 15 Minute Increments

		PARKDALE AVE									WESTMOUNT AVE/HWY 417 PARKDAL IC122R16									
		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	36	79	0	115	0	120	69	189	712	0	0	0	0	69	0	140	209	712	513
07:15	07:30	46	83	0	129	0	124	61	185	718	0	0	0	0	82	0	115	197	718	511
07:30	07:45	51	82	0	133	0	109	58	167	723	0	0	0	0	79	0	153	232	723	532
07:45	08:00	32	76	0	108	0	116	58	174	708	0	0	0	0	89	0	145	234	708	516
08:00	08:15	37	100	0	137	0	107	61	168	736	0	0	0	0	95	0	129	224	736	529
08:15	08:30	24	92	0	116	0	113	52	165	682	0	0	0	0	73	0	123	196	682	477
08:30	08:45	37	80	0	117	0	111	76	187	658	0	0	0	0	59	0	104	163	658	467
08:45	09:00	22	91	0	113	0	118	65	183	717	0	0	0	0	75	0	137	212	717	508
09:00	09:15	30	99	0	129	0	120	49	169	753	0	0	0	0	88	0	148	236	753	534
09:15	09:30	19	93	0	112	0	116	52	168	706	0	0	0	0	86	0	131	217	706	497
09:30	09:45	33	73	0	106	0	132	66	198	724	0	0	0	0	85	0	130	215	724	519
09:45	10:00	31	99	0	130	0	118	69	187	724	0	0	0	0	80	0	110	190	724	507
11:30	11:45	29	106	0	135	0	107	91	198	707	0	0	0	0	67	1	94	163	707	496
11:45	12:00	41	119	0	160	0	110	64	174	731	0	0	0	0	79	0	89	169	731	503
12:00	12:15	28	83	0	111	0	130	80	210	743	0	0	0	0	79	0	130	209	743	530
12:15	12:30	31	103	0	134	0	130	77	207	728	0	0	0	0	66	2	88	156	728	497
12:30	12:45	27	99	0	126	0	113	78	191	680	0	0	0	0	79	1	72	152	680	469
12:45	13:00	26	92	0	118	0	134	70	204	705	0	0	0	0	73	2	84	159	705	481
13:00	13:15	35	106	0	141	0	124	73	197	730	0	0	0	0	70	0	92	162	730	500
13:15	13:30	31	106	0	137	0	120	64	184	698	0	0	0	0	76	0	75	151	698	472
15:00	15:15	34	100	0	134	0	127	57	184	719	0	0	0	0	66	0	108	174	719	492
15:15	15:30	39	107	0	146	0	120	45	165	707	0	0	0	0	62	4	107	173	707	484
15:30	15:45	25	125	0	150	0	132	38	170	714	0	0	0	0	49	1	88	138	714	458
15:45	16:00	25	121	0	146	0	138	51	189	774	0	0	0	0	67	3	113	183	774	518
16:00	16:15	20	106	0	126	0	148	63	211	748	0	0	0	0	57	5	100	162	748	499
16:15	16:30	31	103	0	134	0	135	63	198	752	0	0	0	0	70	9	112	191	752	523
16:30	16:45	21	103	0	124	0	137	44	181	740	0	0	0	0	84	11	111	206	740	511
16:45	17:00	18	144	0	162	0	144	66	210	832	0	0	0	0	69	15	103	187	832	559
17:00	17:15	15	145	0	160	0	153	57	210	834	0	0	0	0	59	8	107	174	834	544
17:15	17:30	25	137	0	162	0	139	57	196	833	0	0	0	0	82	6	117	205	833	563
17:30	17:45	21	142	0	163	0	140	56	196	855	0	0	0	0	89	5	125	219	855	578
17:45	18:00	18	139	0	157	0	148	49	197	846	0	0	0	0	80	5	125	210	846	564
Total:		938	3333	0	4271	0	4033	1979	6012	23637	0	0	0	0	2383	78	3605	6068	23637	16,351

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ WESTMOUNT AVE/HWY 417 PARKDAL I

Survey Date: Thursday, April 05, 2018 **WO No:** 37687

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

Full Study Cyclist Volume

		PARKDALE AVE			WESTMOUNT AVE/HWY 417 PARKDAL IC122R16			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	0	0	0	0
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0
08:15	08:30	1	0	1	0	0	0	1
08:30	08:45	1	0	1	0	0	0	1
08:45	09:00	2	0	2	0	0	0	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	0	0	0	0
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0
11:45	12:00	1	0	1	0	0	0	1
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	0	0	0
13:00	13:15	0	0	0	0	0	0	0
13:15	13:30	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0
15:15	15:30	0	1	1	0	0	0	1
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	1	0	1	0	0	0	1
16:30	16:45	0	1	1	0	0	0	1
16:45	17:00	0	1	1	0	0	0	1
17:00	17:15	2	1	3	0	0	0	3
17:15	17:30	1	1	2	0	0	0	2
17:30	17:45	0	2	2	0	1	1	3
17:45	18:00	1	2	3	0	0	0	3
Total		10	9	**19**	0	1	1	20

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ WESTMOUNT AVE/HWY 417 PARKDAL I

Survey Date: Thursday, April 05, 2018 **WO No:** 37687

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

Full Study Pedestrian Volume

Time Period	PARKDALE AVE NB Approach (E or W Crossing)	PARKDALE AVE SB Approach (E or W Crossing)	PARKDALE AVE Total	WESTMOUNT AVE/HWY 417 PARKDAL IC122R16 EB Approach (N or S Crossing)	WESTMOUNT AVE/HWY 417 PARKDAL IC122R16 WB Approach (N or S Crossing)	WESTMOUNT AVE/HWY 417 PARKDAL IC122R16 Total	Grand Total
07:00 07:15	0	0	**0**	2	3	**5**	**5**
07:15 07:30	0	0	**0**	3	5	**8**	**8**
07:30 07:45	0	0	**0**	2	5	**7**	**7**
07:45 08:00	0	1	**1**	4	7	**11**	**12**
08:00 08:15	0	0	**0**	1	6	**7**	**7**
08:15 08:30	0	3	**3**	5	9	**14**	**17**
08:30 08:45	0	2	**2**	1	8	**9**	**11**
08:45 09:00	0	0	**0**	2	2	**4**	**4**
09:00 09:15	0	0	**0**	2	3	**5**	**5**
09:15 09:30	0	0	**0**	0	0	**0**	**0**
09:30 09:45	0	0	**0**	3	1	**4**	**4**
09:45 10:00	0	0	**0**	2	6	**8**	**8**
11:30 11:45	0	13	**13**	3	14	**17**	**30**
11:45 12:00	0	0	**0**	1	1	**2**	**2**
12:00 12:15	0	1	**1**	2	3	**5**	**6**
12:15 12:30	0	0	**0**	0	4	**4**	**4**
12:30 12:45	0	0	**0**	3	3	**6**	**6**
12:45 13:00	0	2	**2**	0	1	**1**	**3**
13:00 13:15	0	0	**0**	1	3	**4**	**4**
13:15 13:30	0	0	**0**	3	0	**3**	**3**
15:00 15:15	0	2	**2**	4	5	**9**	**11**
15:15 15:30	0	1	**1**	0	5	**5**	**6**
15:30 15:45	0	1	**1**	1	5	**6**	**7**
15:45 16:00	0	3	**3**	0	2	**2**	**5**
16:00 16:15	0	0	**0**	3	5	**8**	**8**
16:15 16:30	0	1	**1**	4	5	**9**	**10**
16:30 16:45	0	1	**1**	2	7	**9**	**10**
16:45 17:00	0	0	**0**	4	8	**12**	**12**
17:00 17:15	0	2	**2**	5	6	**11**	**13**
17:15 17:30	0	0	**0**	2	3	**5**	**5**
17:30 17:45	0	1	**1**	3	8	**11**	**12**
17:45 18:00	0	0	**0**	3	4	**7**	**7**
Total	0	34	**34**	71	147	**218**	**252**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ WESTMOUNT AVE/HWY 417 PARKDAL I

Survey Date: Thursday, April 05, 2018 **WO No:** 37687

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

Full Study Heavy Vehicles

Time Period		PARKDALE AVE Northbound LT	ST	RT	N TOT	Southbound LT	ST	RT	S TOT	STR TOT	WESTMOUNT AVE/HWY 417 PARKDAL IC122R16 Eastbound LT	ST	RT	E TOT	Westbound LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	2	0	**5**	0	2	2	**6**	**11**	0	0	0	**2**	1	0	0	**1**	**3**	**7**
07:15	07:30	2	1	0	**7**	0	1	1	**3**	**10**	0	0	0	**3**	3	0	0	**3**	**6**	**8**
07:30	07:45	0	1	0	**4**	0	2	1	**7**	**11**	0	0	0	**1**	1	0	3	**4**	**5**	**8**
07:45	08:00	0	1	0	**7**	0	4	1	**8**	**15**	0	0	0	**1**	2	0	2	**4**	**5**	**10**
08:00	08:15	1	5	0	**11**	0	2	0	**11**	**22**	0	0	0	**1**	3	0	4	**7**	**8**	**15**
08:15	08:30	0	3	0	**12**	0	6	0	**10**	**22**	0	0	0	**0**	3	0	1	**4**	**4**	**13**
08:30	08:45	2	1	0	**8**	0	5	1	**10**	**18**	0	0	0	**3**	0	0	3	**3**	**6**	**12**
08:45	09:00	0	1	0	**14**	0	9	0	**12**	**26**	0	0	0	**0**	4	0	2	**6**	**6**	**16**
09:00	09:15	0	1	0	**12**	0	8	2	**12**	**24**	0	0	0	**2**	3	0	1	**4**	**6**	**15**
09:15	09:30	1	1	0	**11**	0	7	3	**14**	**25**	0	0	0	**4**	2	0	3	**5**	**9**	**17**
09:30	09:45	1	1	0	**11**	0	7	1	**9**	**20**	0	0	0	**2**	2	0	0	**2**	**4**	**12**
09:45	10:00	2	1	0	**7**	0	2	1	**10**	**17**	0	0	0	**3**	2	0	6	**8**	**11**	**14**
11:30	11:45	1	5	0	**8**	0	2	3	**12**	**20**	0	0	0	**4**	0	0	2	**2**	**6**	**13**
11:45	12:00	1	2	0	**14**	0	7	1	**12**	**26**	0	0	0	**2**	4	0	2	**6**	**8**	**17**
12:00	12:15	1	2	0	**8**	0	2	2	**8**	**16**	0	0	0	**3**	3	0	2	**5**	**8**	**12**
12:15	12:30	1	5	0	**11**	0	3	2	**12**	**23**	0	0	0	**3**	2	0	2	**4**	**7**	**15**
12:30	12:45	2	3	0	**11**	0	3	2	**9**	**20**	0	0	0	**4**	3	0	1	**4**	**8**	**14**
12:45	13:00	2	1	0	**8**	0	4	3	**10**	**18**	0	0	0	**6**	1	1	2	**4**	**10**	**14**
13:00	13:15	1	3	0	**13**	0	5	2	**11**	**24**	0	0	0	**3**	4	0	1	**5**	**8**	**16**
13:15	13:30	0	5	0	**8**	0	2	0	**8**	**16**	0	0	0	**0**	1	0	1	**2**	**2**	**9**
15:00	15:15	0	4	0	**8**	0	2	1	**8**	**16**	0	0	0	**1**	2	0	1	**3**	**4**	**10**
15:15	15:30	1	7	0	**13**	0	5	0	**17**	**30**	0	0	0	**1**	0	0	5	**5**	**6**	**18**
15:30	15:45	0	3	0	**5**	0	0	2	**8**	**13**	0	0	0	**2**	2	0	3	**5**	**7**	**10**
15:45	16:00	1	3	0	**9**	0	2	1	**9**	**18**	0	0	0	**2**	3	0	3	**6**	**8**	**13**
16:00	16:15	0	2	0	**6**	0	3	1	**8**	**14**	0	0	0	**1**	1	0	2	**3**	**4**	**9**
16:15	16:30	1	0	0	**7**	0	6	1	**9**	**16**	0	0	0	**2**	0	0	2	**2**	**4**	**10**
16:30	16:45	1	4	0	**7**	0	2	0	**7**	**14**	0	0	0	**2**	0	1	1	**2**	**4**	**9**
16:45	17:00	0	1	0	**3**	0	2	0	**4**	**7**	0	0	0	**0**	0	0	1	**1**	**1**	**4**
17:00	17:15	0	2	0	**4**	0	1	0	**4**	**8**	0	0	0	**0**	1	0	1	**2**	**2**	**5**
17:15	17:30	1	3	0	**7**	0	2	0	**5**	**12**	0	0	0	**1**	1	0	0	**1**	**2**	**7**
17:30	17:45	0	1	0	**1**	0	0	0	**1**	**2**	0	0	0	**0**	0	0	0	**0**	**0**	**1**
17:45	18:00	1	3	0	**6**	0	2	0	**7**	**13**	0	0	0	**1**	0	0	2	**2**	**3**	**8**
Total:	None	24	78	0	**266**	0	110	34	**281**	**547**	0	0	0	**60**	54	2	59	**115**	**175**	**361**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ WESTMOUNT AVE/HWY 417 PARKDAL I

Survey Date: Thursday, April 05, 2018 **WO No:** 37687

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

Full Study 15 Minute U-Turn Total

Time Period		PARKDALE AVE Northbound U-Turn Total	PARKDALE AVE Southbound U-Turn Total	WESTMOUNT AVE/HWY 417 PARKDAL IC122R16 Eastbound U-Turn Total	WESTMOUNT AVE/HWY 417 PARKDAL IC122R16 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	1	1
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	2	2

Transportation Services - Traffic Services

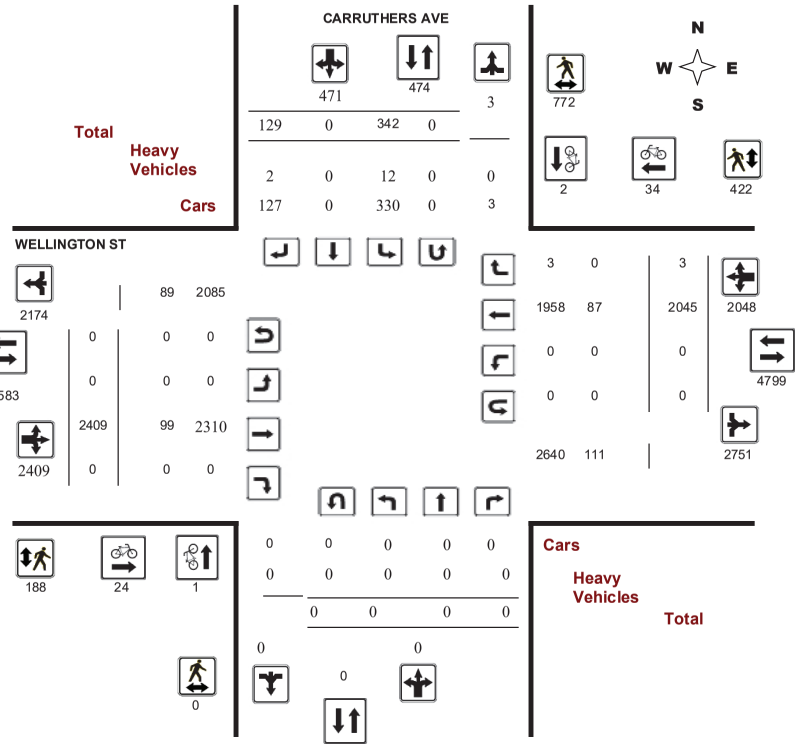
Turning Movement Count - Study Results

CARRUTHERS AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37569

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

Full Study Diagram



Transportation Services - Traffic Services

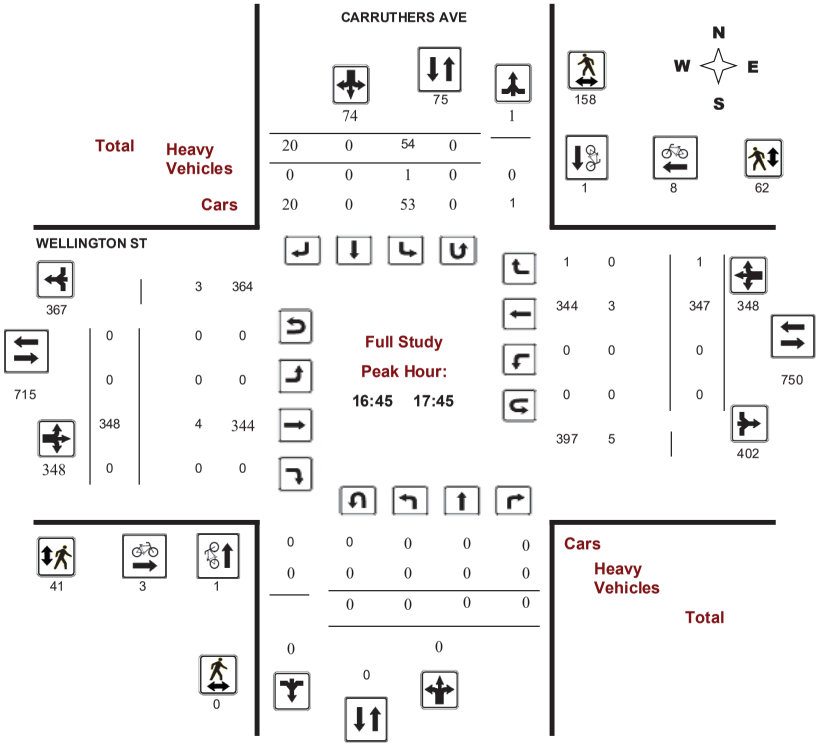
Turning Movement Count - Study Results

CARRUTHERS AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37569

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

Full Study Peak Hour Diagram



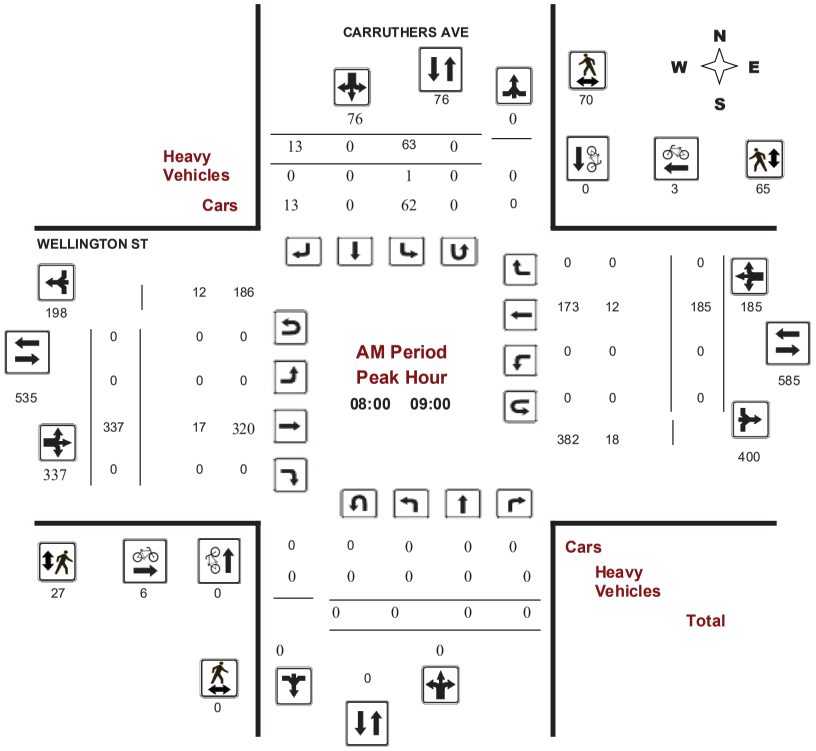
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARRUTHERS AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37569

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



Comments

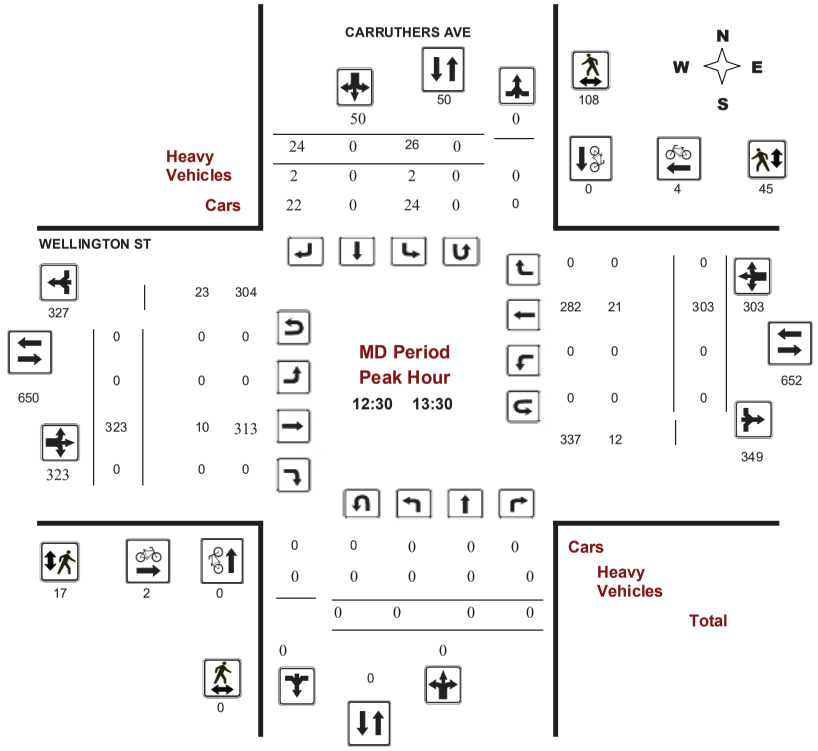
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARRUTHERS AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37569

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



Comments

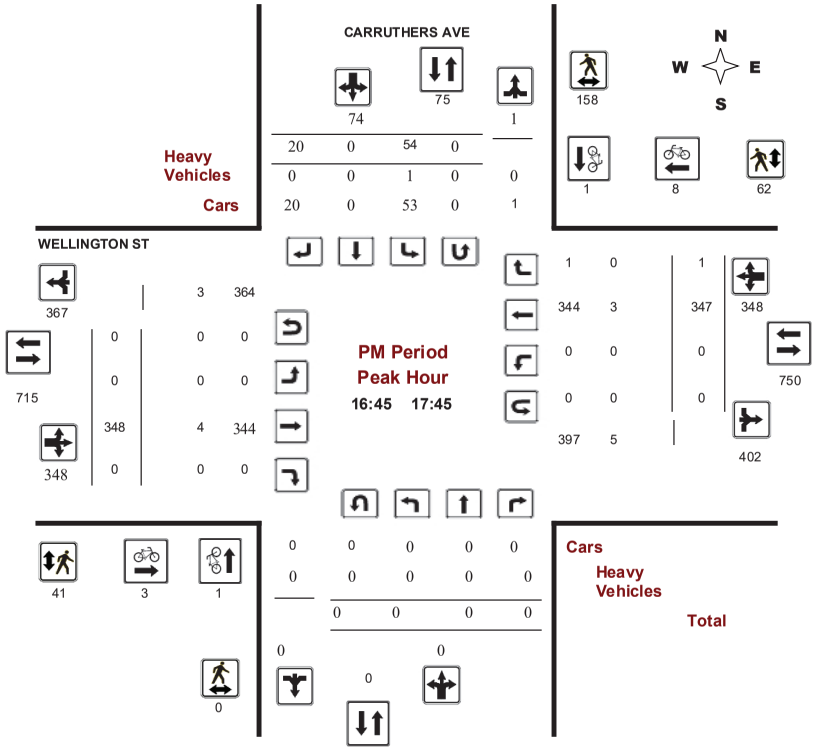
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARRUTHERS AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37569

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARRUTHERS AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37569

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

	CARRUTHERS 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	0	0	0	**0**	31	0	6	**37**	**37**	0	227	0	**227**	0	136	0	**136**	**363**	**400**
08:00 09:00	0	0	0	**0**	63	0	13	**76**	**76**	0	337	0	**337**	0	185	0	**185**	**522**	**598**
09:00 10:00	0	0	0	**0**	17	0	13	**30**	**30**	0	234	0	**234**	0	196	0	**196**	**430**	**460**
11:30 12:30	0	0	0	**0**	31	0	16	**47**	**47**	0	332	0	**332**	0	247	1	**248**	**580**	**627**
12:30 13:30	0	0	0	**0**	26	0	24	**50**	**50**	0	323	0	**323**	0	303	0	**303**	**626**	**676**
15:00 16:00	0	0	0	**0**	56	0	18	**74**	**74**	0	287	0	**287**	0	299	0	**299**	**586**	**660**
16:00 17:00	0	0	0	**0**	65	0	23	**88**	**88**	0	315	0	**315**	0	335	1	**336**	**651**	**739**
17:00 18:00	0	0	0	**0**	53	0	16	**69**	**69**	0	354	0	**354**	0	344	1	**345**	**699**	**768**
Sub Total	0	0	0	**0**	342	0	129	**471**	**471**	0	2409	0	**2409**	0	2045	3	**2048**	**4457**	**4928**
U Turns	0			**0**	0			**0**	**0**	**0**			**0**	0			**0**	**0**	**0**
Total	0	0	0	**0**	342	0	129	**471**	**471**	0	2409	0	**2409**	0	2045	3	**2048**	**4457**	**4928**
EQ 12Hr	0	0	0	**0**	475	0	179	**654**	**654**	0	3349	0	**3349**	0	2843	4	**2847**	**6196**	**6850**

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

AVG 12Hr	0	0	0	**0**	428	0	161	**589**	**589**	0	3014	0	**3014**	0	2559	4	**2563**	**5577**	**6166**

Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **.90**

AVG 24Hr	0	0	0	**0**	561	0	211	**772**	**772**	0	3948	0	**3948**	0	3352	5	**3357**	**7305**	**8077**

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

CARRUTHERS AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37569

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

Full Study 15 Minute Increments

		CARRUTHERS 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	2	0	0	2	**2**	0	45	0	45	0	29	0	29	**74**	**76**
07:15	07:30	0	0	0	0	3	0	3	6	**6**	0	45	0	45	0	30	0	30	**75**	**81**
07:30	07:45	0	0	0	0	11	0	1	12	**12**	0	61	0	61	0	43	0	43	**104**	**116**
07:45	08:00	0	0	0	0	15	0	2	17	**17**	0	76	0	76	0	34	0	34	**110**	**127**
08:00	08:15	0	0	0	0	21	0	4	25	**25**	0	97	0	97	0	43	0	43	**140**	**165**
08:15	08:30	0	0	0	0	21	0	2	23	**23**	0	79	0	79	0	50	0	50	**129**	**152**
08:30	08:45	0	0	0	0	12	0	4	16	**16**	0	79	0	79	0	55	0	55	**134**	**150**
08:45	09:00	0	0	0	0	9	0	3	12	**12**	0	82	0	82	0	37	0	37	**119**	**131**
09:00	09:15	0	0	0	0	5	0	3	8	**8**	0	50	0	50	0	46	0	46	**96**	**104**
09:15	09:30	0	0	0	0	3	0	6	9	**9**	0	63	0	63	0	59	0	59	**122**	**131**
09:30	09:45	0	0	0	0	5	0	2	7	**7**	0	57	0	57	0	53	0	53	**110**	**117**
09:45	10:00	0	0	0	0	4	0	2	6	**6**	0	64	0	64	0	38	0	38	**102**	**108**
11:30	11:45	0	0	0	0	3	0	5	8	**8**	0	83	0	83	0	52	0	52	**135**	**143**
11:45	12:00	0	0	0	0	5	0	2	7	**7**	0	89	0	89	0	56	0	56	**145**	**152**
12:00	12:15	0	0	0	0	14	0	4	18	**18**	0	80	0	80	0	75	1	76	**156**	**174**
12:15	12:30	0	0	0	0	9	0	5	14	**14**	0	80	0	80	0	64	0	64	**144**	**158**
12:30	12:45	0	0	0	0	6	0	8	14	**14**	0	69	0	69	0	72	0	72	**141**	**155**
12:45	13:00	0	0	0	0	10	0	4	14	**14**	0	96	0	96	0	78	0	78	**174**	**188**
13:00	13:15	0	0	0	0	4	0	8	12	**12**	0	78	0	78	0	66	0	66	**144**	**156**
13:15	13:30	0	0	0	0	6	0	4	10	**10**	0	80	0	80	0	87	0	87	**167**	**177**
15:00	15:15	0	0	0	0	12	0	4	16	**16**	0	72	0	72	0	63	0	63	**135**	**151**
15:15	15:30	0	0	0	0	19	0	4	23	**23**	0	75	0	75	0	77	0	77	**152**	**175**
15:30	15:45	0	0	0	0	14	0	5	19	**19**	0	64	0	64	0	91	0	91	**155**	**174**
15:45	16:00	0	0	0	0	11	0	5	16	**16**	0	76	0	76	0	68	0	68	**144**	**160**
16:00	16:15	0	0	0	0	18	0	9	27	**27**	0	74	0	74	0	87	1	88	**162**	**189**
16:15	16:30	0	0	0	0	19	0	3	22	**22**	0	80	0	80	0	86	0	86	**166**	**188**
16:30	16:45	0	0	0	0	17	0	3	20	**20**	0	80	0	80	0	79	0	79	**159**	**179**
16:45	17:00	0	0	0	0	11	0	8	19	**19**	0	81	0	81	0	83	0	83	**164**	**183**
17:00	17:15	0	0	0	0	18	0	3	21	**21**	0	82	0	82	0	81	1	82	**164**	**185**
17:15	17:30	0	0	0	0	15	0	3	18	**18**	0	97	0	97	0	86	0	86	**183**	**201**
17:30	17:45	0	0	0	0	10	0	6	16	**16**	0	88	0	88	0	97	0	97	**185**	**201**
17:45	18:00	0	0	0	0	10	0	4	14	**14**	0	87	0	87	0	80	0	80	**167**	**181**
Total:		0	0	0	0	342	0	129	471	**471**	0	2409	0	2409	0	2045	3	2048	**471**	**4,928**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARRUTHERS AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37569

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

Full Study Cyclist Volume

Time Period		CARRUTHERS AVE Northbound	CARRUTHERS AVE Southbound	CARRUTHERS AVE Street Total	WELLINGTON ST Eastbound	WELLINGTON ST Westbound	WELLINGTON ST Street Total	Grand Total
07:00	07:15	0	0	**0**	3	0	**3**	**3**
07:15	07:30	0	0	**0**	0	1	**1**	**1**
07:30	07:45	0	0	**0**	2	0	**2**	**2**
07:45	08:00	0	0	**0**	1	1	**2**	**2**
08:00	08:15	0	0	**0**	4	2	**6**	**6**
08:15	08:30	0	0	**0**	2	1	**3**	**3**
08:30	08:45	0	0	**0**	0	0	**0**	**0**
08:45	09:00	0	0	**0**	0	0	**0**	**0**
09:00	09:15	0	0	**0**	0	0	**0**	**0**
09:15	09:30	0	0	**0**	0	1	**1**	**1**
09:30	09:45	0	0	**0**	2	0	**2**	**2**
09:45	10:00	0	0	**0**	1	0	**1**	**1**
11:30	11:45	0	0	**0**	0	2	**2**	**2**
11:45	12:00	0	0	**0**	0	0	**0**	**0**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	0	**0**	0	0	**0**	**0**
12:30	12:45	0	0	**0**	0	0	**0**	**0**
12:45	13:00	0	0	**0**	1	1	**2**	**2**
13:00	13:15	0	0	**0**	0	1	**1**	**1**
13:15	13:30	0	0	**0**	1	2	**3**	**3**
15:00	15:15	0	0	**0**	1	1	**2**	**2**
15:15	15:30	0	0	**0**	1	3	**4**	**4**
15:30	15:45	0	1	**1**	0	2	**2**	**3**
15:45	16:00	0	0	**0**	0	0	**0**	**0**
16:00	16:15	0	0	**0**	0	5	**5**	**5**
16:15	16:30	0	0	**0**	1	0	**1**	**1**
16:30	16:45	0	0	**0**	1	0	**1**	**1**
16:45	17:00	0	0	**0**	0	2	**2**	**2**
17:00	17:15	1	0	**1**	2	2	**4**	**5**
17:15	17:30	0	1	**1**	0	4	**4**	**5**
17:30	17:45	0	0	**0**	1	0	**1**	**1**
17:45	18:00	0	0	**0**	0	3	**3**	**3**
Total		1	2	**3**	24	34	**58**	**61**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARRUTHERS AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37569

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

Full Study Pedestrian Volume

Time Period		CARRUTHERS AVE NB Approach (E or W Crossing)	CARRUTHERS AVE SB Approach (E or W Crossing)	CARRUTHERS 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	0	7	**7**	1	5	**6**	**13**
07:15	07:30	0	10	**10**	1	7	**8**	**18**
07:30	07:45	0	16	**16**	6	2	**8**	**24**
07:45	08:00	0	20	**20**	9	12	**21**	**41**
08:00	08:15	0	24	**24**	4	17	**21**	**45**
08:15	08:30	0	20	**20**	15	36	**51**	**71**
08:30	08:45	0	10	**10**	6	10	**16**	**26**
08:45	09:00	0	16	**16**	2	2	**4**	**20**
09:00	09:15	0	12	**12**	2	7	**9**	**21**
09:15	09:30	0	17	**17**	1	4	**5**	**22**
09:30	09:45	0	9	**9**	1	5	**6**	**15**
09:45	10:00	0	15	**15**	4	7	**11**	**26**
11:30	11:45	0	19	**19**	1	13	**14**	**33**
11:45	12:00	0	21	**21**	3	9	**12**	**33**
12:00	12:15	0	21	**21**	8	7	**15**	**36**
12:15	12:30	0	46	**46**	3	17	**20**	**66**
12:30	12:45	0	34	**34**	6	8	**14**	**48**
12:45	13:00	0	24	**24**	3	14	**17**	**41**
13:00	13:15	0	22	**22**	4	8	**12**	**34**
13:15	13:30	0	28	**28**	4	15	**19**	**47**
15:00	15:15	0	46	**46**	15	41	**56**	**102**
15:15	15:30	0	23	**23**	4	16	**20**	**43**
15:30	15:45	0	33	**33**	6	18	**24**	**57**
15:45	16:00	0	22	**22**	8	16	**24**	**46**
16:00	16:15	0	22	**22**	8	24	**32**	**54**
16:15	16:30	0	28	**28**	8	17	**25**	**53**
16:30	16:45	0	21	**21**	6	13	**19**	**40**
16:45	17:00	0	35	**35**	18	16	**34**	**69**
17:00	17:15	0	40	**40**	13	21	**34**	**74**
17:15	17:30	0	38	**38**	7	12	**19**	**57**
17:30	17:45	0	45	**45**	3	13	**16**	**61**
17:45	18:00	0	28	**28**	8	10	**18**	**46**
Total	.....	0	772	**772**	188	422	**610**	**1382**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARRUTHERS AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37569

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

Full Study Heavy Vehicles

		CARRUTHERS 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	4	0	**4**	0	3	0	**3**	**7**	**7**
07:15	07:30	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	3	0	**3**	**4**	**4**
07:30	07:45	0	0	0	**0**	2	0	0	**2**	**2**	0	2	0	**2**	0	2	0	**2**	**4**	**6**
07:45	08:00	0	0	0	**0**	1	0	0	**1**	**1**	0	4	0	**4**	0	3	0	**3**	**7**	**8**
08:00	08:15	0	0	0	**0**	1	0	0	**1**	**1**	0	4	0	**4**	0	5	0	**5**	**9**	**10**
08:15	08:30	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**5**	0	2	0	**2**	**7**	**7**
08:30	08:45	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	3	0	**3**	**5**	**5**
08:45	09:00	0	0	0	**0**	0	0	0	**0**	**0**	0	6	0	**6**	0	2	0	**2**	**8**	**8**
09:00	09:15	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	3	0	**3**	**6**	**6**
09:15	09:30	0	0	0	**0**	1	0	0	**1**	**1**	0	2	0	**2**	0	6	0	**6**	**8**	**9**
09:30	09:45	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	2	0	**2**	**6**	**6**
09:45	10:00	0	0	0	**0**	0	0	0	**0**	**0**	0	6	0	**6**	0	2	0	**2**	**8**	**8**
11:30	11:45	0	0	0	**0**	0	0	0	**0**	**0**	0	8	0	**8**	0	2	0	**2**	**10**	**10**
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	4	0	**4**	0	4	0	**4**	**8**	**8**
12:15	12:30	0	0	0	**0**	0	0	0	**0**	**0**	0	8	0	**8**	0	4	0	**4**	**12**	**12**
12:30	12:45	0	0	0	**0**	0	0	1	**1**	**1**	0	2	0	**2**	0	4	0	**4**	**6**	**7**
12:45	13:00	0	0	0	**0**	1	0	0	**1**	**1**	0	4	0	**4**	0	5	0	**5**	**9**	**10**
13:00	13:15	0	0	0	**0**	1	0	1	**2**	**2**	0	3	0	**3**	0	8	0	**8**	**11**	**13**
13:15	13:30	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	4	0	**4**	**5**	**5**
15:00	15:15	0	0	0	**0**	2	0	0	**2**	**2**	0	5	0	**5**	0	2	0	**2**	**7**	**9**
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	2	0	**2**	0	1	0	**1**	**3**	**3**
15:45	16:00	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	3	0	**3**	**6**	**6**
16:00	16:15	0	0	0	**0**	1	0	0	**1**	**1**	0	3	0	**3**	0	0	0	**0**	**3**	**4**
16:15	16:30	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	1	0	**1**	**3**	**3**
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	2	0	**2**	0	0	0	**0**	**2**	**2**
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**	1	0	0	**1**	**1**	0	0	0	**0**	0	2	0	**2**	**2**	**3**
17:45	18:00	0	0	0	**0**	1	0	0	**1**	**1**	0	1	0	**1**	0	4	0	**4**	**5**	**6**
Total:	None	0	0	0	**0**	12	0	2	**14**	**14**	0	99	0	**99**	0	87	0	**87**	**186**	**200**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARRUTHERS AVE @ WELLINGTON ST

Survey Date: Thursday, February 22, 2018 **WO No:** 37569

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

Full Study 15 Minute U-Turn Total

		CARRUTHERS AVE	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	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

DRAFT

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	8	11	57	4	10	534	10	302
Future Volume (vph)	8	11	57	4	10	534	10	302
Lane Group Flow (vph)	0	55	0	125	0	627	0	353
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	29.3	29.3	29.3	29.3
Total Split (s)	24.0	24.0	24.0	24.0	76.0	76.0	76.0	76.0
Total Split (%)	24.0%	24.0%	24.0%	24.0%	76.0%	76.0%	76.0%	76.0%
Maximum Green (s)	18.5	18.5	18.5	18.5	70.7	70.7	70.7	70.7
Yellow Time (s)	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	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.3		5.3
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	17	17	11	11	60	60	32	32
Act Effct Green (s)		13.7		13.7		75.5		75.5
Actuated g/C Ratio		0.14		0.14		0.76		0.76
v/c Ratio		0.24		0.58		0.27		0.15
Control Delay		20.7		38.3		0.7		3.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		20.7		38.3		0.7		3.9
LOS		C		D		A		A
Approach Delay		20.7		38.3		0.7		3.9
Approach LOS		C		D		A		A
Queue Length 50th (m)		3.7		16.1		0.9		7.4
Queue Length 95th (m)		13.7		32.5		3.3		14.7
Internal Link Dist (m)		151.9		132.2		211.0		210.0
Turn Bay Length (m)								
Base Capacity (vph)		302		276		2345		2325
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.18		0.45		0.27		0.15

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 6.7 — Intersection LOS: A
Intersection Capacity Utilization 47.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Holland & Spencer

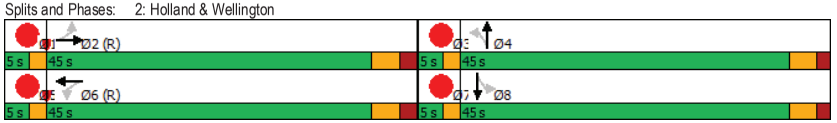
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	38	274	48	198	45	520	23	375				
Future Volume (vph)	38	274	48	198	45	520	23	375				
Lane Group Flow (vph)	42	374	53	266	0	685	0	472				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2		6		4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	4	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.6	23.6	24.5	24.5	20.1	20.1	20.1	20.1	3.0	3.0	3.0	3.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	5.0	5.0	5.0	5.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	5%	5%	5%	5%
Maximum Green (s)	39.4	39.4	39.4	39.4	39.9	39.9	39.9	39.9	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
All-Red Time (s)	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6		5.1		5.1				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	Max	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0				
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	13.0	13.0	13.0	13.0				
Pedestrian Calls (#/hr)	118	118	95	95	99	99	81	81				
Act Effct Green (s)	39.4	39.4	39.4	39.4		39.9		39.9				
Actuated g/C Ratio	0.39	0.39	0.39	0.39		0.40		0.40				
v/c Ratio	0.13	0.58	0.21	0.41		0.62		0.41				
Control Delay	20.8	28.4	20.6	21.5		27.0		20.0				
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0				
Total Delay	20.8	28.4	20.6	21.5		27.0		20.0				
LOS	C	C	C	C		C		B				
Approach Delay		27.6		21.3		27.0		20.0				
Approach LOS		C		C		C		B				
Queue Length 50th (m)	5.1	56.0	4.9	26.2		54.7		30.5				
Queue Length 95th (m)	12.4	85.4	14.0	51.3		73.6		39.4				
Internal Link Dist (m)		128.0		223.4		238.5		211.0				
Turn Bay Length (m)	30.0		30.0									
Base Capacity (vph)	324	641	250	650		1104		1143				
Starvation Cap Reductn	0	0	0	0		0		0				
Spillback Cap Reductn	0	0	0	0		0		0				
Storage Cap Reductn	0	0	0	0		0		0				
Reduced v/c Ratio	0.13	0.58	0.21	0.41		0.62		0.41				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 84 (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: 24.4 — Intersection LOS: C
Intersection Capacity Utilization 78.2% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: Holland & Wellington

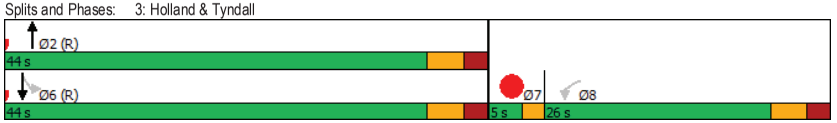


Lane Group	WBL	NBT	SBL	SBT	Ø7
Lane Configurations					
Traffic Volume (vph)	38	492	128	489	
Future Volume (vph)	38	492	128	489	
Lane Group Flow (vph)	228	591	142	543	
Turn Type	Perm	NA	Perm	NA	
Protected Phases		2		6	7
Permitted Phases	8		6		
Detector Phase	8	2	6	6	
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	10.0	1.0
Minimum Split (s)	23.5	25.7	15.7	15.7	3.0
Total Split (s)	26.0	44.0	44.0	44.0	5.0
Total Split (%)	34.7%	58.7%	58.7%	58.7%	7%
Maximum Green (s)	20.5	38.3	38.3	38.3	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.2	2.4	2.4	2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.7	5.7	5.7	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	Max
Walk Time (s)	5.0	10.0			
Flash Dont Walk (s)	13.0	10.0			
Pedestrian Calls (#/hr)	37	36			
Act Effct Green (s)	16.3	42.5	42.5	42.5	
Actuated g/C Ratio	0.22	0.57	0.57	0.57	
v/c Ratio	0.73	0.32	0.36	0.55	
Control Delay	40.6	9.6	13.4	13.9	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	40.6	9.6	13.4	13.9	
LOS	D	A	B	B	
Approach Delay	40.6	9.6		13.8	
Approach LOS	D	A		B	
Queue Length 50th (m)	29.8	21.0	10.2	45.1	
Queue Length 95th (m)	49.1	34.2	25.2	81.1	
Internal Link Dist (m)	197.1	156.5		238.5	
Turn Bay Length (m)					
Base Capacity (vph)	395	1851	398	989	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.58	0.32	0.36	0.55	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 16.2 — Intersection LOS: B
Intersection Capacity Utilization 54.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Holland & Tyndall



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	27	75	12	47	22	359	12	205
Future Volume (vph)	27	75	12	47	22	359	12	205
Lane Group Flow (vph)	0	130	0	79	0	449	0	265
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	25.2	25.2	25.2	25.2
Total Split (s)	27.0	27.0	27.0	27.0	73.0	73.0	73.0	73.0
Total Split (%)	27.0%	27.0%	27.0%	27.0%	73.0%	73.0%	73.0%	73.0%
Maximum Green (s)	21.5	21.5	21.5	21.5	67.8	67.8	67.8	67.8
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.2	2.2	2.2	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.2		5.2
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	28	28	25	25	32	32	31	31
Act Effct Green (s)		21.5		21.5		67.8		67.8
Actuated g/C Ratio		0.22		0.22		0.68		0.68
v/c Ratio		0.39		0.23		0.39		0.23
Control Delay		35.8		30.3		2.9		6.5
Queue Delay		0.0		0.0		0.5		0.0
Total Delay		35.8		30.3		3.4		6.5
LOS		D		C		A		A
Approach Delay		35.8		30.3		3.4		6.5
Approach LOS		D		C		A		A
Queue Length 50th (m)		20.5		11.1		3.5		16.6
Queue Length 95th (m)		37.7		23.6		4.4		26.6
Internal Link Dist (m)		46.6		196.9		125.2		312.1
Turn Bay Length (m)								
Base Capacity (vph)		334		345		1137		1132
Starvation Cap Reductn		0		0		323		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.39		0.23		0.55		0.23

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 52 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.39
Intersection Signal Delay: 11.2 — Intersection LOS: B
Intersection Capacity Utilization 53.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Parkdale & Armstrong

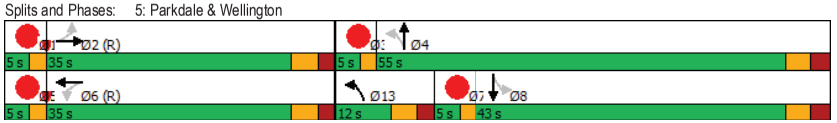
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	28	223	27	152	72	386	20	242				
Future Volume (vph)	28	223	27	152	72	386	20	242				
Lane Group Flow (vph)	0	376	0	219	80	523	22	293				
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA				
Protected Phases		2		6	13	4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	13	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.4	23.4	23.4	23.4	10.2	15.5	20.5	20.5	3.0	3.0	3.0	3.0
Total Split (s)	35.0	35.0	35.0	35.0	12.0	55.0	43.0	43.0	5.0	5.0	5.0	5.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	12.0%	55.0%	43.0%	43.0%	5%	5%	5%	5%
Maximum Green (s)	29.6	29.6	29.6	29.6	6.8	49.5	37.5	37.5	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	2.1	2.1	2.1	2.1	2.2	2.5	2.5	2.5	0.0	0.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)		5.4		5.4	5.2	5.5	5.5	5.5				
Lead/Lag	Lag	Lag	Lag	Lag	Lead				Lead		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		2.0	2.0	2.0				
Flash Dont Walk (s)	8.0	8.0	8.0	8.0		8.0	8.0	8.0				
Pedestrian Calls (#/hr)	71	71	62	62		53	42	42				
Act Effct Green (s)		34.6		34.6	54.8	54.5	42.5	42.5				
Actuated g/C Ratio		0.35		0.35	0.55	0.54	0.42	0.42				
v/c Ratio		0.41		0.23	0.16	0.60	0.07	0.41				
Control Delay		13.8		24.1	3.5	8.2	16.2	19.2				
Queue Delay		0.0		0.0	0.0	0.3	0.0	0.0				
Total Delay		13.8		24.1	3.5	8.5	16.2	19.2				
LOS		B		C	A	A	B	B				
Approach Delay		13.8		24.1		7.8		19.0				
Approach LOS		B		C		A		B				
Queue Length 50th (m)		12.7		15.7	2.2	46.6	2.2	32.0				
Queue Length 95th (m)		18.0		24.7	m3.1	53.7	m6.1	46.1				
Internal Link Dist (m)		223.4		216.2		139.5		125.2				
Turn Bay Length (m)					40.0		40.0					
Base Capacity (vph)		915		939	488	878	303	719				
Starvation Cap Reductn		0		0	0	63	0	0				
Spillback Cap Reductn		0		0	0	0	0	0				
Storage Cap Reductn		0		0	0	0	0	0				
Reduced v/c Ratio		0.41		0.23	0.16	0.64	0.07	0.41				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 14.0 — Intersection LOS: B
Intersection Capacity Utilization 76.6% — ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Parkdale & Wellington

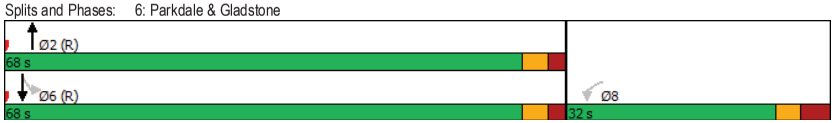


Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	133	502	32	346
Future Volume (vph)	133	502	32	346
Lane Group Flow (vph)	182	704	36	384
Turn Type	Perm	NA	Perm	NA
Protected Phases		2		6
Permitted Phases	8		6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	22.7	20.3	15.3	15.3
Total Split (s)	32.0	68.0	68.0	68.0
Total Split (%)	32.0%	68.0%	68.0%	68.0%
Maximum Green (s)	25.3	62.7	62.7	62.7
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.7	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.3	5.3	5.3
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		
Flash Dont Walk (s)	9.0	8.0		
Pedestrian Calls (#/hr)	15	7		
Act Effct Green (s)	25.3	62.7	62.7	62.7
Actuated g/C Ratio	0.25	0.63	0.63	0.63
v/c Ratio	0.46	0.67	0.12	0.35
Control Delay	35.9	12.5	9.8	11.1
Queue Delay	0.0	0.2	0.0	0.1
Total Delay	35.9	12.7	9.8	11.2
LOS	D	B	A	B
Approach Delay	35.9	12.7		11.1
Approach LOS	D	B		B
Queue Length 50th (m)	29.9	70.3	2.4	35.5
Queue Length 95th (m)	50.2	m84.5	7.0	53.3
Internal Link Dist (m)	224.2	197.3		139.5
Turn Bay Length (m)			85.0	
Base Capacity (vph)	399	1053	305	1094
Starvation Cap Reductn	0	48	0	0
Spillback Cap Reductn	0	0	0	109
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.46	0.70	0.12	0.39

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 12 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 15.4 — Intersection LOS: B
Intersection Capacity Utilization 59.8% — ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Parkdale & Gladstone



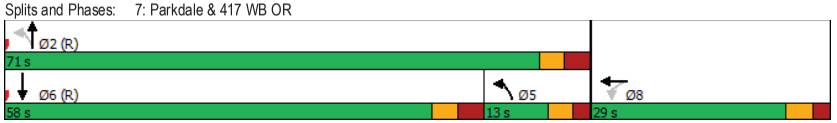
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	345	0	166	341	456
Future Volume (vph)	345	0	166	341	456
Lane Group Flow (vph)	383	602	184	379	771
Turn Type	Perm	NA	pm+pt	NA	NA
Protected Phases		8	5	2	6
Permitted Phases	8		2		
Detector Phase	8	8	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	20.5	20.5	10.2	27.3	21.3
Total Split (s)	29.0	29.0	13.0	71.0	58.0
Total Split (%)	29.0%	29.0%	13.0%	71.0%	58.0%
Maximum Green (s)	23.5	23.5	7.8	64.7	51.7
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0
All-Red Time (s)	2.2	2.2	2.2	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.2	6.3	6.3
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	8.0	8.0		14.0	8.0
Pedestrian Calls (#/hr)	1	1		23	10
Act Effct Green (s)	23.5	23.5	65.8	64.7	51.7
Actuated g/C Ratio	0.24	0.24	0.66	0.65	0.52
v/c Ratio	0.98	0.86	0.59	0.34	0.89
Control Delay	81.6	22.8	25.6	9.0	41.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	81.6	22.8	25.6	9.0	41.4
LOS	F	C	C	A	D
Approach Delay		45.6		14.4	41.4
Approach LOS		D		B	D
Queue Length 50th (m)	74.1	24.1	12.3	30.0	151.5
Queue Length 95th (m)	#131.1	#91.5	20.6	45.1	#209.2
Internal Link Dist (m)		462.5		38.8	197.3
Turn Bay Length (m)					
Base Capacity (vph)	389	698	312	1129	864
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	0.86	0.59	0.34	0.89

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 26 (26%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 36.7 — Intersection LOS: D
Intersection Capacity Utilization 100.4% — 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: 7: Parkdale & 417 WB OR



Lane Group	EBT	WBT	SBL	SBR
Lane Configurations				
Traffic Volume (vph)	337	185	63	13
Future Volume (vph)	337	185	63	13
Lane Group Flow (vph)	374	206	70	14
Turn Type	NA	NA	Prot	Perm
Protected Phases	2	6	8	
Permitted Phases				8
Detector Phase	2	6	8	8
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	15.3	26.3	25.5	25.5
Total Split (s)	49.0	49.0	26.0	26.0
Total Split (%)	65.3%	65.3%	34.7%	34.7%
Maximum Green (s)	43.7	43.7	20.5	20.5
Yellow Time (s)	3.3	3.3	3.0	3.0
All-Red Time (s)	2.0	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.5	5.5
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max
Walk Time (s)		14.0	15.0	15.0
Flash Dont Walk (s)		7.0	5.0	5.0
Pedestrian Calls (#/hr)		70	65	65
Act Effct Green (s)	43.7	43.7	20.5	20.5
Actuated g/C Ratio	0.58	0.58	0.27	0.27
v/c Ratio	0.37	0.20	0.15	0.04
Control Delay	9.6	8.0	21.9	10.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.6	8.0	21.9	10.8
LOS	A	A	C	B
Approach Delay	9.6	8.0	20.0	
Approach LOS	A	A	C	
Queue Length 50th (m)	25.5	12.5	7.5	0.0
Queue Length 95th (m)	41.3	22.0	16.8	3.9
Internal Link Dist (m)	216.2	153.4	73.2	
Turn Bay Length (m)				30.0
Base Capacity (vph)	1016	1016	453	387
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.37	0.20	0.15	0.04

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Natural Cycle: 55
Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 44.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Wellington & Carruthers

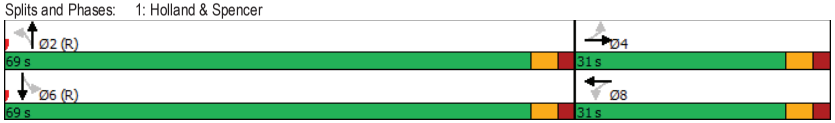
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	24	153	61	55	343	16	480
Future Volume (vph)	12	24	153	61	55	343	16	480
Lane Group Flow (vph)	0	73	0	271	0	473	0	567
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	29.3	29.3	29.3	29.3
Total Split (s)	31.0	31.0	31.0	31.0	69.0	69.0	69.0	69.0
Total Split (%)	31.0%	31.0%	31.0%	31.0%	69.0%	69.0%	69.0%	69.0%
Maximum Green (s)	25.5	25.5	25.5	25.5	63.7	63.7	63.7	63.7
Yellow Time (s)	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	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.3		5.3
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	17	17	18	18	88	88	49	49
Act Effct Green (s)		23.1		23.1		66.1		66.1
Actuated g/C Ratio		0.23		0.23		0.66		0.66
v/c Ratio		0.20		0.87		0.27		0.28
Control Delay		19.4		62.4		1.3		7.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		19.4		62.4		1.3		7.8
LOS		B		E		A		A
Approach Delay		19.4		62.4		1.3		7.8
Approach LOS		B		E		A		A
Queue Length 50th (m)		5.9		47.8		1.7		23.1
Queue Length 95th (m)		16.8		#87.3		2.6		31.4
Internal Link Dist (m)		151.9		132.2		211.0		210.0
Turn Bay Length (m)								
Base Capacity (vph)		406		345		1738		2028
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.18		0.79		0.27		0.28

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 38 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 16.9 Intersection LOS: B
Intersection Capacity Utilization 74.6% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Holland & Spencer



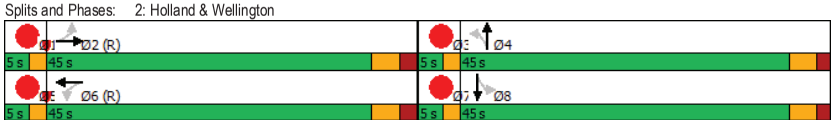
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	21	297	80	413	38	379	25	652				
Future Volume (vph)	21	297	80	413	38	379	25	652				
Lane Group Flow (vph)	23	420	89	485	0	530	0	823				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2		6		4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	4	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.6	23.6	24.5	24.5	20.1	20.1	20.1	20.1	3.0	3.0	3.0	3.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	5.0	5.0	5.0	5.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	5%	5%	5%	5%
Maximum Green (s)	39.4	39.4	39.4	39.4	39.9	39.9	39.9	39.9	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
All-Red Time (s)	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6		5.1		5.1				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	Max	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0				
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	13.0	13.0	13.0	13.0				
Pedestrian Calls (#/hr)	206	206	146	146	135	135	111	111				
Act Effct Green (s)	39.4	39.4	39.4	39.4		39.9		39.9				
Actuated g/C Ratio	0.39	0.39	0.39	0.39		0.40		0.40				
v/c Ratio	0.13	0.68	0.42	0.72		0.55		0.71				
Control Delay	21.8	31.7	20.2	22.2		17.8		25.8				
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0				
Total Delay	21.8	31.7	20.2	22.2		17.8		25.8				
LOS	C	C	C	C		B		C				
Approach Delay		31.2		21.9		17.8		25.8				
Approach LOS		C		C		B		C				
Queue Length 50th (m)	2.8	66.0	8.0	46.7		29.8		56.6				
Queue Length 95th (m)	8.4	100.2	m15.6	63.0		36.2		79.1				
Internal Link Dist (m)		128.0		223.4		238.5		211.0				
Turn Bay Length (m)	30.0		30.0									
Base Capacity (vph)	179	620	212	672		964		1155				
Starvation Cap Reductn	0	0	0	0		0		0				
Spillback Cap Reductn	0	0	0	0		0		0				
Storage Cap Reductn	0	0	0	0		0		0				
Reduced v/c Ratio	0.13	0.68	0.42	0.72		0.55		0.71				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 72 (72%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 24.1 — Intersection LOS: C
Intersection Capacity Utilization 88.5% — ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Holland & Wellington



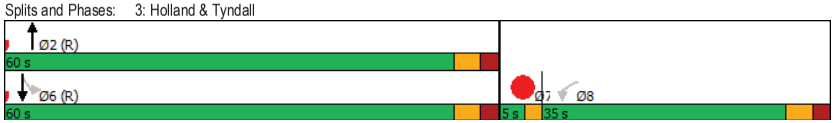
Lane Group	WBL	NBT	SBL	SBT	Ø7
Lane Configurations					
Traffic Volume (vph)	46	566	145	585	
Future Volume (vph)	46	566	145	585	
Lane Group Flow (vph)	252	657	161	650	
Turn Type	Perm	NA	Perm	NA	
Protected Phases		2		6	7
Permitted Phases	8		6		
Detector Phase	8	2	6	6	
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	10.0	1.0
Minimum Split (s)	23.5	25.7	15.7	15.7	3.0
Total Split (s)	35.0	60.0	60.0	60.0	5.0
Total Split (%)	35.0%	60.0%	60.0%	60.0%	5%
Maximum Green (s)	29.5	54.3	54.3	54.3	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.2	2.4	2.4	2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.7	5.7	5.7	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	Max
Walk Time (s)	5.0	10.0			
Flash Dont Walk (s)	13.0	10.0			
Pedestrian Calls (#/hr)	15	20			
Act Effct Green (s)	22.0	61.8	61.8	61.8	
Actuated g/C Ratio	0.22	0.62	0.62	0.62	
v/c Ratio	0.77	0.32	0.40	0.60	
Control Delay	51.6	10.4	7.8	8.1	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	51.6	10.4	7.8	8.1	
LOS	D	B	A	A	
Approach Delay	51.6	10.4		8.0	
Approach LOS	D	B		A	
Queue Length 50th (m)	46.0	29.1	8.3	35.8	
Queue Length 95th (m)	66.6	47.6	m12.2	44.2	
Internal Link Dist (m)	197.1	156.5		238.5	
Turn Bay Length (m)					
Base Capacity (vph)	440	2033	403	1078	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.57	0.32	0.40	0.60	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 24 (24%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 15.3 — Intersection LOS: B
Intersection Capacity Utilization 57.2% — ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Holland & Tyndall



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	34	63	39	160	13	477	15	321
Future Volume (vph)	34	63	39	160	13	477	15	321
Lane Group Flow (vph)	0	149	0	244	0	568	0	392
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	25.2	25.2	25.2	25.2
Total Split (s)	35.0	35.0	35.0	35.0	65.0	65.0	65.0	65.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%
Maximum Green (s)	29.5	29.5	29.5	29.5	59.8	59.8	59.8	59.8
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.2	2.2	2.2	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.2		5.2
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	19	19	30	30	35	35	22	22
Act Effct Green (s)		29.5		29.5		59.8		59.8
Actuated g/C Ratio		0.30		0.30		0.60		0.60
v/c Ratio		0.34		0.52		0.56		0.39
Control Delay		26.6		33.6		7.6		11.9
Queue Delay		0.0		0.0		0.6		0.0
Total Delay		26.6		33.6		8.2		11.9
LOS		C		C		A		B
Approach Delay		26.6		33.6		8.2		11.9
Approach LOS		C		C		A		B
Queue Length 50th (m)		19.5		38.5		58.3		36.5
Queue Length 95th (m)		36.2		62.3		69.1		55.2
Internal Link Dist (m)		46.6		196.9		125.2		312.1
Turn Bay Length (m)								
Base Capacity (vph)		437		465		1021		1002
Starvation Cap Reductn		0		0		178		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.34		0.52		0.67		0.39

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 20 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 15.9 Intersection LOS: B
Intersection Capacity Utilization 57.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Parkdale & Armstrong

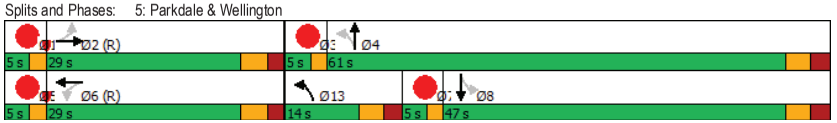
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	17	218	47	271	143	521	19	387				
Future Volume (vph)	17	218	47	271	143	521	19	387				
Lane Group Flow (vph)	0	337	0	382	159	639	21	487				
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA				
Protected Phases		2		6	13	4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	13	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.4	23.4	23.4	23.4	10.2	15.5	20.5	20.5	3.0	3.0	3.0	3.0
Total Split (s)	29.0	29.0	29.0	29.0	14.0	61.0	47.0	47.0	5.0	5.0	5.0	5.0
Total Split (%)	29.0%	29.0%	29.0%	29.0%	14.0%	61.0%	47.0%	47.0%	5%	5%	5%	5%
Maximum Green (s)	23.6	23.6	23.6	23.6	8.8	55.5	41.5	41.5	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	2.1	2.1	2.1	2.1	2.2	2.5	2.5	2.5	0.0	0.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)		5.4		5.4	5.2	5.5	5.5	5.5				
Lead/Lag	Lag	Lag	Lag	Lag	Lead				Lead		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		2.0	2.0	2.0				
Flash Dont Walk (s)	8.0	8.0	8.0	8.0		8.0	8.0	8.0				
Pedestrian Calls (#/hr)	153	153	142	142		76	72	72				
Act Effct Green (s)		28.6		28.6	60.8	60.5	46.5	46.5				
Actuated g/C Ratio		0.29		0.29	0.61	0.60	0.46	0.46				
v/c Ratio		0.46		0.52	0.38	0.64	0.07	0.64				
Control Delay		48.0		33.0	11.3	14.6	12.8	19.3				
Queue Delay		0.0		0.0	0.0	0.6	0.0	0.4				
Total Delay		48.0		33.0	11.3	15.2	12.8	19.6				
LOS		D		C	B	B	B	B				
Approach Delay		48.0		33.0		14.4		19.3				
Approach LOS		D		C		B		B				
Queue Length 50th (m)		32.3		32.6	12.0	57.7	1.9	48.4				
Queue Length 95th (m)		46.7		47.1	m18.6	m88.7	m4.7	65.3				
Internal Link Dist (m)		223.4		216.2		139.5		125.2				
Turn Bay Length (m)					40.0		40.0					
Base Capacity (vph)		729		734	419	1002	287	762				
Starvation Cap Reductn		0		0	0	114	0	48				
Spillback Cap Reductn		0		0	0	0	0	0				
Storage Cap Reductn		0		0	0	0	0	0				
Reduced v/c Ratio		0.46		0.52	0.38	0.72	0.07	0.68				

Intersection Summary

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

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 24.8 — Intersection LOS: C
Intersection Capacity Utilization 81.1% — ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Parkdale & Wellington



Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	215	596	40	388
Future Volume (vph)	215	596	40	388
Lane Group Flow (vph)	312	838	44	431
Turn Type	Perm	NA	Perm	NA
Protected Phases		2		6
Permitted Phases	8		6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	22.7	20.3	15.3	15.3
Total Split (s)	32.0	68.0	68.0	68.0
Total Split (%)	32.0%	68.0%	68.0%	68.0%
Maximum Green (s)	25.3	62.7	62.7	62.7
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.7	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.3	5.3	5.3
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		
Flash Dont Walk (s)	9.0	8.0		
Pedestrian Calls (#/hr)	25	19		
Act Effct Green (s)	25.3	62.7	62.7	62.7
Actuated g/C Ratio	0.25	0.63	0.63	0.63
v/c Ratio	0.81	0.80	0.20	0.39
Control Delay	53.1	17.1	7.5	6.9
Queue Delay	0.0	0.2	0.0	0.1
Total Delay	53.1	17.4	7.5	7.1
LOS	D	B	A	A
Approach Delay	53.1	17.4		7.1
Approach LOS	D	B		A
Queue Length 50th (m)	56.9	75.8	2.1	20.9
Queue Length 95th (m)	#99.0	m121.9	m3.6	27.7
Internal Link Dist (m)	224.2	197.3		139.5
Turn Bay Length (m)			85.0	
Base Capacity (vph)	385	1045	217	1094
Starvation Cap Reductn	0	19	0	0
Spillback Cap Reductn	0	0	0	122
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.81	0.82	0.20	0.44

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 12 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 70

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 21.2 — Intersection LOS: C
Intersection Capacity Utilization 71.0% — ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Parkdale & Gladstone

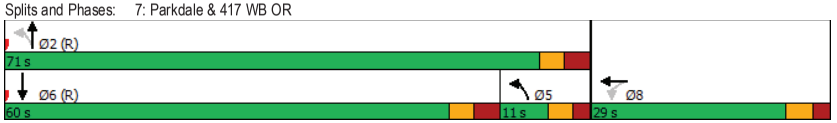
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	310	24	79	563	580
Future Volume (vph)	310	24	79	563	580
Lane Group Flow (vph)	344	554	88	626	887
Turn Type	Perm	NA	pm+pt	NA	NA
Protected Phases		8	5	2	6
Permitted Phases	8		2		
Detector Phase	8	8	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	20.5	20.5	10.2	27.3	21.3
Total Split (s)	29.0	29.0	11.0	71.0	60.0
Total Split (%)	29.0%	29.0%	11.0%	71.0%	60.0%
Maximum Green (s)	23.5	23.5	5.8	64.7	53.7
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0
All-Red Time (s)	2.2	2.2	2.2	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.2	6.3	6.3
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	8.0	8.0		14.0	8.0
Pedestrian Calls (#/hr)	3	3		21	13
Act Effct Green (s)	23.5	23.5	65.8	64.7	55.9
Actuated g/C Ratio	0.24	0.24	0.66	0.65	0.56
v/c Ratio	0.88	0.99	0.38	0.55	0.95
Control Delay	62.5	56.0	18.0	12.1	41.8
Queue Delay	0.0	0.8	0.0	0.0	0.0
Total Delay	62.5	56.8	18.0	12.1	41.8
LOS	E	E	B	B	D
Approach Delay		59.0		12.8	41.8
Approach LOS		E		B	D
Queue Length 50th (m)	64.7	59.1	5.6	60.5	174.4
Queue Length 95th (m)	#113.2	#128.6	10.8	88.7	#251.7
Internal Link Dist (m)		462.5		38.8	197.3
Turn Bay Length (m)					
Base Capacity (vph)	389	559	232	1129	935
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	2	0	12	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.88	0.99	0.38	0.56	0.95

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 39 (39%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 110

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 39.7 — Intersection LOS: D
Intersection Capacity Utilization 98.0% — 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: 7: Parkdale & 417 WB OR



Lane Group	EBT	WBT	SBL	SBR
Lane Configurations				
Traffic Volume (vph)	348	347	54	20
Future Volume (vph)	348	347	54	20
Lane Group Flow (vph)	387	386	60	22
Turn Type	NA	NA	Prot	Perm
Protected Phases	2	6	8	
Permitted Phases				8
Detector Phase	2	6	8	8
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	15.3	26.3	17.5	17.5
Total Split (s)	57.0	57.0	18.0	18.0
Total Split (%)	76.0%	76.0%	24.0%	24.0%
Maximum Green (s)	51.7	51.7	12.5	12.5
Yellow Time (s)	3.3	3.3	3.0	3.0
All-Red Time (s)	2.0	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.5	5.5
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	None
Walk Time (s)		14.0	7.0	7.0
Flash Dont Walk (s)		7.0	5.0	5.0
Pedestrian Calls (#/hr)		157	62	62
Act Effct Green (s)	57.2	57.2	11.2	11.2
Actuated g/C Ratio	0.76	0.76	0.15	0.15
v/c Ratio	0.29	0.29	0.24	0.11
Control Delay	4.6	4.6	30.5	13.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.6	4.6	30.5	13.4
LOS	A	A	C	B
Approach Delay	4.6	4.6	25.9	
Approach LOS	A	A	C	
Queue Length 50th (m)	17.6	17.6	7.5	0.0
Queue Length 95th (m)	28.5	28.5	17.4	5.7
Internal Link Dist (m)	216.2	153.4	73.2	
Turn Bay Length (m)				30.0
Base Capacity (vph)	1330	1330	276	229
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.29	0.29	0.22	0.10

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 72 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.29	
Intersection Signal Delay: 6.7	Intersection LOS: A
Intersection Capacity Utilization 37.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Wellington & Carruthers

Appendix D

Collision Data

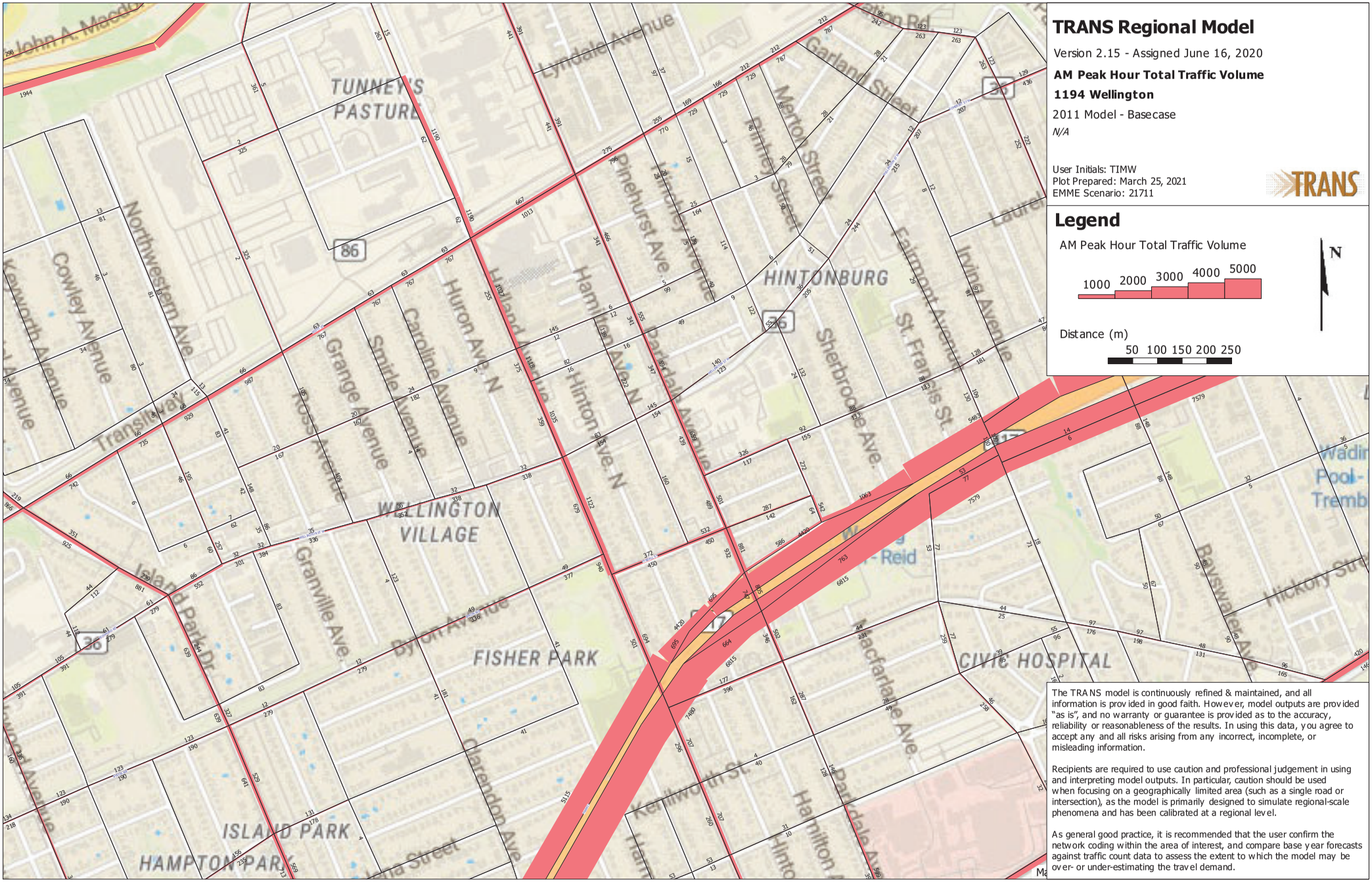
DRAFT

Accident Year	Accident Time	Location	Environment Condition	Light	Traffic Control	Traffic Control Condition	Classification Of Accident	Initial Impact Type	Road Surface Condition
2015	14:50	PARKDALE AVE @ GLADSTONE AVE	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	01 - Dry
2015	15:33	PARKDALE AVE @ GLADSTONE AVE	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	02 - Angle	01 - Dry
2015	11:40	PARKDALE AVE @ GLADSTONE AVE	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	01 - Dry
2015	19:49	PARKDALE AVE @ GLADSTONE AVE	03 - Snow	07 - Dark	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	03 - Loose snow
2015	8:10	PARKDALE AVE @ GLADSTONE AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2016	14:41	PARKDALE AVE @ GLADSTONE AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2017	16:53	PARKDALE AVE @ GLADSTONE AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	02 - Angle	02 - Wet
2017	11:41	PARKDALE AVE @ GLADSTONE AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2017	18:18	PARKDALE AVE @ GLADSTONE AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2017	10:17	PARKDALE AVE @ GLADSTONE AVE	03 - Snow	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	04 - Slush
2018	18:24	PARKDALE AVE @ GLADSTONE AVE (0002362)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2018	13:28	PARKDALE AVE @ GLADSTONE AVE (0002362)	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	04 - Sideswipe	01 - Dry
2018	17:20	PARKDALE AVE @ GLADSTONE AVE (0002362)	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	01 - Dry
2018	16:32	PARKDALE AVE @ GLADSTONE AVE (0002362)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	02 - Angle	01 - Dry
2019	10:07	PARKDALE AVE @ GLADSTONE AVE (0002362)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	02 - Wet
2019	12:37	PARKDALE AVE @ GLADSTONE AVE (0002362)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	04 - Slush
2019	17:00	PARKDALE AVE @ GLADSTONE AVE (0002362)	03 - Snow	01 - Daylight	01 - Traffic signal		03 - P.D. only	02 - Angle	06 - Ice
2019	17:45	PARKDALE AVE @ GLADSTONE AVE (0002362)	03 - Snow	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	02 - Wet
2019	18:43	PARKDALE AVE @ GLADSTONE AVE (0002362)	01 - Clear	05 - Dusk	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2019	9:45	PARKDALE AVE @ GLADSTONE AVE (0002362)	03 - Snow	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	04 - Slush
2015	19:34	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	01 - Dry
2015	15:42	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	01 - Dry
2015	14:33	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	05 - Turning movement	01 - Dry
2015	17:58	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2015	16:11	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2015	7:55	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	02 - Angle	01 - Dry
2015	15:00	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2015	0:14	PARKDALE AVE @ WELLINGTON ST	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	02 - Angle	01 - Dry
2015	12:44	PARKDALE AVE @ WELLINGTON ST	02 - Rain	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	02 - Wet
2016	19:26	PARKDALE AVE @ WELLINGTON ST	01 - Clear	07 - Dark	01 - Traffic signal		02 - Non-fatal injury	05 - Turning movement	01 - Dry
2016	20:20	PARKDALE AVE @ WELLINGTON ST	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	05 - Turning movement	01 - Dry
2016	15:30	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	05 - Turning movement	01 - Dry
2016	12:26	PARKDALE AVE @ WELLINGTON ST	02 - Rain	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	02 - Wet
2016	16:33	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	02 - Angle	02 - Wet
2016	15:00	PARKDALE AVE @ WELLINGTON ST	04 - Freezing Rain	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	03 - Loose snow
2016	13:08	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2016	15:35	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2016	8:26	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	07 - SMV other	02 - Wet
2016	19:13	PARKDALE AVE @ WELLINGTON ST	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	99 - Other	01 - Dry
2017	16:59	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	99 - Other	01 - Dry
2017	15:03	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2017	17:07	PARKDALE AVE @ WELLINGTON ST	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2018	20:16	PARKDALE AVE @ WELLINGTON ST (0002260)	03 - Snow	07 - Dark	01 - Traffic signal		03 - P.D. only	01 - Approaching	03 - Loose snow
2018	7:37	PARKDALE AVE @ WELLINGTON ST (0002260)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	05 - Turning movement	02 - Wet
2018	1:41	PARKDALE AVE @ WELLINGTON ST (0002260)	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	05 - Turning movement	01 - Dry
2018	15:51	PARKDALE AVE @ WELLINGTON ST (0002260)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	02 - Angle	01 - Dry
2018	11:16	PARKDALE AVE @ WELLINGTON ST (0002260)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	05 - Turning movement	01 - Dry
2018	13:38	PARKDALE AVE @ WELLINGTON ST (0002260)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	05 - Turning movement	01 - Dry
2018	21:33	PARKDALE AVE @ WELLINGTON ST (0002260)	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2018	17:19	PARKDALE AVE @ WELLINGTON ST (0002260)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	02 - Angle	01 - Dry
2018	4:22	PARKDALE AVE @ WELLINGTON ST (0002260)	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	02 - Angle	02 - Wet
2019	17:00	PARKDALE AVE @ WELLINGTON ST (0002260)	01 - Clear	05 - Dusk	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2019	7:33	PARKDALE AVE @ WELLINGTON ST (0002260)	03 - Snow	03 - Dawn	01 - Traffic signal		03 - P.D. only	03 - Rear end	06 - Ice
2019	17:00	PARKDALE AVE @ WELLINGTON ST (0002260)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2019	10:35	PARKDALE AVE @ WELLINGTON ST (0002260)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2019	10:40	PARKDALE AVE @ WELLINGTON ST (0002260)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2019	15:30	PARKDALE AVE @ WELLINGTON ST (0002260)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	99 - Other	04 - Slush
2015	14:52	PARKDALE AVE btwn WELLINGTON ST W & GLADSTONE AVE	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	03 - Rear end	01 - Dry
2015	17:45	PARKDALE AVE btwn WELLINGTON ST W & GLADSTONE AVE	01 - Clear	07 - Dark	10 - No control		03 - P.D. only	02 - Angle	04 - Slush
2015	11:22	PARKDALE AVE btwn WELLINGTON ST W & GLADSTONE AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	04 - Slush
2016	14:19	PARKDALE AVE btwn WELLINGTON ST W & GLADSTONE AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
2016	18:20	PARKDALE AVE btwn WELLINGTON ST W & GLADSTONE AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	04 - Sideswipe	01 - Dry
2016	15:20	PARKDALE AVE btwn WELLINGTON ST W & GLADSTONE AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	02 - Angle	01 - Dry
2019	17:30	PARKDALE AVE btwn WELLINGTON ST W & GLADSTONE AVE (__3ZA4QM)	02 - Rain	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	02 - Wet
2016	18:54	WELLINGTON ST W btwn HAMILTON AVE N & PARKDALE AVE	01 - Clear	07 - Dark	10 - No control		03 - P.D. only	02 - Angle	04 - Slush
2017	16:33	WELLINGTON ST W btwn HAMILTON AVE N & PARKDALE AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	04 - Sideswipe	01 - Dry
2017	12:23	WELLINGTON ST W btwn HAMILTON AVE N & PARKDALE AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2018	15:35	WELLINGTON ST W btwn HAMILTON AVE N & PARKDALE AVE (__3ZA4QX)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2019	18:23	WELLINGTON ST W btwn HAMILTON AVE N & PARKDALE AVE (__3ZA4QX)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2019	18:30	WELLINGTON ST W btwn HAMILTON AVE N & PARKDALE AVE (__3ZA4QX)	01 - Clear	07 - Dark	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2016	13:30	WELLINGTON ST W btwn HINTON AVE N & HAMILTON AVE N	02 - Rain	01 - Daylight	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	02 - Wet
2018	9:08	WELLINGTON ST W btwn HINTON AVE N & HAMILTON AVE N (__3ZA4QV)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	03 - Loose snow
2019	0:00	WELLINGTON ST W btwn HINTON AVE N & HAMILTON AVE N (__3ZA4QV)	01 - Clear	00 - Unknown	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2019	12:31	WELLINGTON ST W btwn HINTON AVE N & HAMILTON AVE N (__3ZA4QV)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	04 - Sideswipe	01 - Dry
2019	15:00	WELLINGTON ST W btwn HINTON AVE N & HAMILTON AVE N (__3ZA4QV)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
2019	0:00	WELLINGTON ST W btwn HINTON AVE N & HAMILTON AVE N (__3ZA4QV)	01 - Clear	00 - Unknown	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2016	8:46	WELLINGTON ST @ HAMILTON AVE	02 - Rain	01 - Daylight	02 - Stop sign		03 - P.D. only	02 - Angle	02 - Wet
2017	12:47	WELLINGTON ST @ HAMILTON AVE	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	99 - Other	01 - Dry
2017	13:20	WELLINGTON ST @ HAMILTON AVE	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	05 - Turning movement	01 - Dry
2017	8:10	WELLINGTON ST @ HAMILTON AVE	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	02 - Angle	01 - Dry
2017	13:22	WELLINGTON ST @ HAMILTON AVE	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	02 - Angle	01 - Dry
2017	20:01	WELLINGTON ST @ HAMILTON AVE	01 - Clear	07 - Dark	02 - Stop sign		02 - Non-fatal injury	05 - Turning movement	01 - Dry
2017	13:33	WELLINGTON ST @ HAMILTON AVE	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	02 - Angle	02 - Wet
2017	14:59	WELLINGTON ST @ HAMILTON AVE	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	04 - Sideswipe	01 - Dry
2017	16:15	WELLINGTON ST @ HAMILTON AVE	01 - Clear	05 - Dusk	02 - Stop sign		03 - P.D. only	99 - Other	05 - Packed snow
2018	12:48	WELLINGTON ST @ HAMILTON AVE (0006106)	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	04 - Sideswipe	01 - Dry
2019	8:31	WELLINGTON ST @ HAMILTON AVE (0006106)	01 - Clear	01 - Daylight	02 - Stop sign		02 - Non-fatal injury	02 - Angle	01 - Dry
2019	10:24	WELLINGTON ST @ HAMILTON AVE (0006106)	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	02 - Angle	01 - Dry
2019	15:55	WELLINGTON ST @ HAMILTON AVE (0006106)	02 - Rain	01 - Daylight	02 - Stop sign		03 - P.D. only	03 - Rear end	02 - Wet

Appendix E

TRANS Model Plots

DRAFT



TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

1194 Wellington

2011 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: March 25, 2021
EMME Scenario: 21711

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

Distance (m)

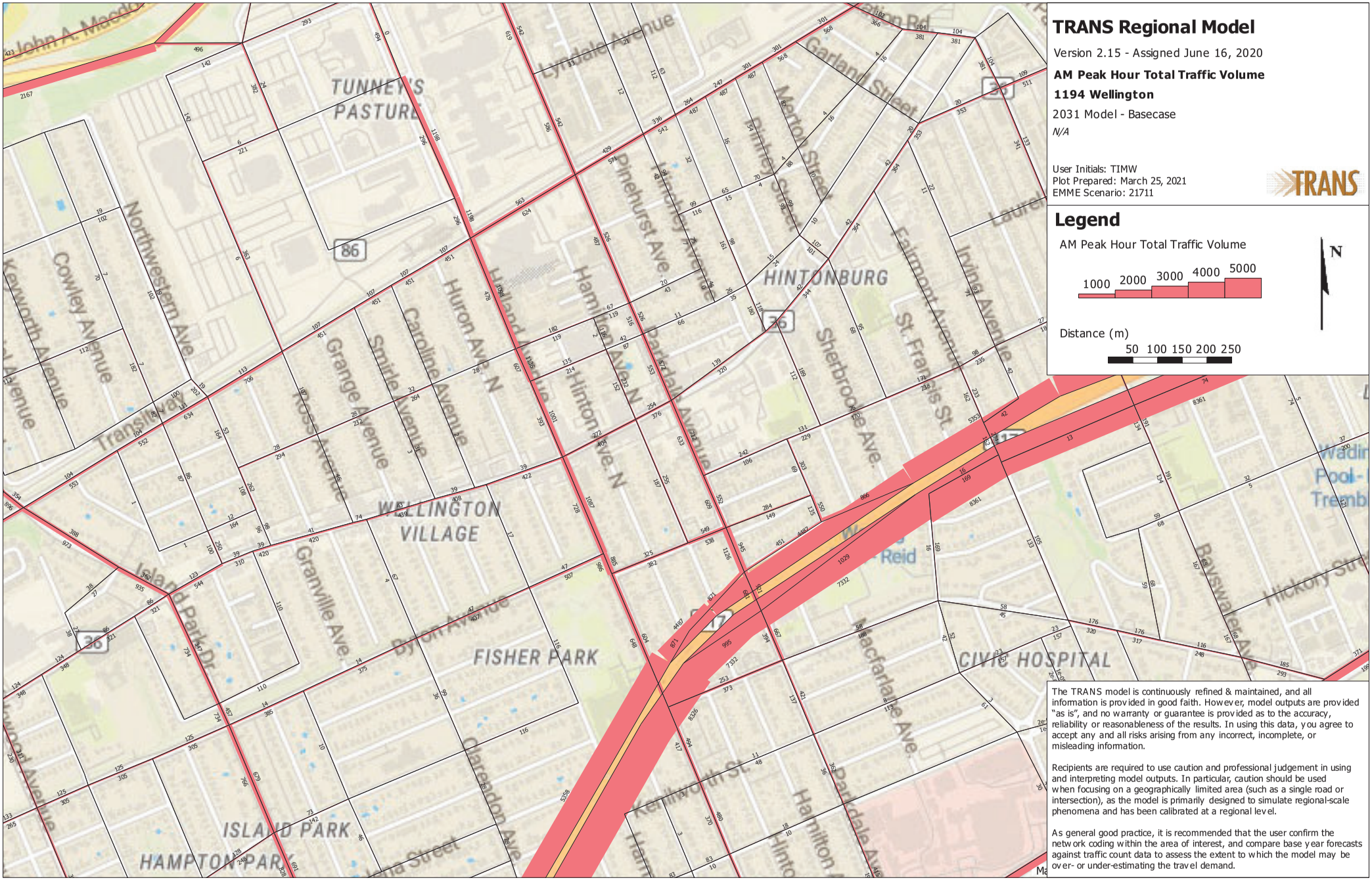
50 100 150 200 250

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

1194 Wellington

2031 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: March 25, 2021
EMME Scenario: 21711

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

50 100 150 200 250

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.

Appendix F

Synchro Intersection Worksheets – 2025 Future Background Conditions

DRAFT

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	8	11	57	4	10	534	10	317
Future Volume (vph)	8	11	57	4	10	534	10	317
Lane Group Flow (vph)	0	50	0	113	0	565	0	332
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	29.3	29.3	29.3	29.3
Total Split (s)	24.0	24.0	24.0	24.0	76.0	76.0	76.0	76.0
Total Split (%)	24.0%	24.0%	24.0%	24.0%	76.0%	76.0%	76.0%	76.0%
Maximum Green (s)	18.5	18.5	18.5	18.5	70.7	70.7	70.7	70.7
Yellow Time (s)	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	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.3		5.3
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	17	17	11	11	60	60	32	32
Act Effct Green (s)		13.4		13.4		75.8		75.8
Actuated g/C Ratio		0.13		0.13		0.76		0.76
v/c Ratio		0.22		0.55		0.24		0.14
Control Delay		21.0		36.4		0.6		3.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		21.0		36.4		0.6		3.8
LOS		C		D		A		A
Approach Delay		21.0		36.4		0.6		3.8
Approach LOS		C		D		A		A
Queue Length 50th (m)		3.4		13.9		0.7		6.5
Queue Length 95th (m)		13.0		29.3		2.7		13.5
Internal Link Dist (m)		151.9		132.2		211.0		210.0
Turn Bay Length (m)								
Base Capacity (vph)		299		270		2354		2345
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.17		0.42		0.24		0.14

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 6.4 — Intersection LOS: A
Intersection Capacity Utilization 47.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Holland & Spencer

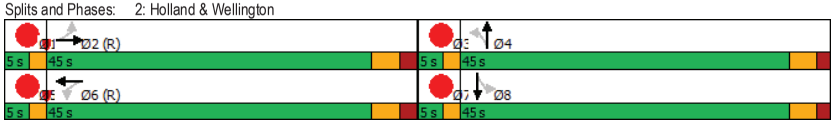
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	38	322	48	224	45	520	23	394				
Future Volume (vph)	38	322	48	224	45	520	23	394				
Lane Group Flow (vph)	38	385	48	265	0	616	0	443				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2		6		4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	4	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.6	23.6	24.5	24.5	20.1	20.1	20.1	20.1	3.0	3.0	3.0	3.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	5.0	5.0	5.0	5.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	5%	5%	5%	5%
Maximum Green (s)	39.4	39.4	39.4	39.4	39.9	39.9	39.9	39.9	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
All-Red Time (s)	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6		5.1		5.1				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	Max	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0				
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	13.0	13.0	13.0	13.0				
Pedestrian Calls (#/hr)	118	118	95	95	99	99	81	81				
Act Effct Green (s)	39.4	39.4	39.4	39.4		39.9		39.9				
Actuated g/C Ratio	0.39	0.39	0.39	0.39		0.40		0.40				
v/c Ratio	0.12	0.60	0.20	0.41		0.55		0.38				
Control Delay	20.6	28.7	20.3	22.0		25.5		19.8				
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0				
Total Delay	20.6	28.7	20.3	22.0		25.5		19.8				
LOS	C	C	C	C		C		B				
Approach Delay		27.9		21.8		25.5		19.8				
Approach LOS		C		C		C		B				
Queue Length 50th (m)	4.6	58.0	4.3	26.0		47.5		28.3				
Queue Length 95th (m)	11.5	88.0	12.6	51.7		64.5		37.1				
Internal Link Dist (m)		128.0		223.4		238.5		211.0				
Turn Bay Length (m)	30.0		30.0									
Base Capacity (vph)	325	647	243	654		1112		1159				
Starvation Cap Reductn	0	0	0	0		0		0				
Spillback Cap Reductn	0	0	0	0		0		0				
Storage Cap Reductn	0	0	0	0		0		0				
Reduced v/c Ratio	0.12	0.60	0.20	0.41		0.55		0.38				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 84 (84%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 24.0 — Intersection LOS: C
Intersection Capacity Utilization 81.3% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: Holland & Wellington

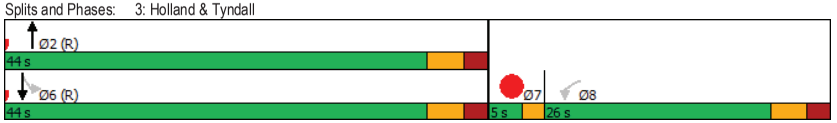


Lane Group	WBL	NBT	SBL	SBT	Ø7
Lane Configurations					
Traffic Volume (vph)	38	492	128	514	
Future Volume (vph)	38	492	128	514	
Lane Group Flow (vph)	205	532	128	514	
Turn Type	Perm	NA	Perm	NA	
Protected Phases		2		6	7
Permitted Phases	8		6		
Detector Phase	8	2	6	6	
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	10.0	1.0
Minimum Split (s)	23.5	25.7	15.7	15.7	3.0
Total Split (s)	26.0	44.0	44.0	44.0	5.0
Total Split (%)	34.7%	58.7%	58.7%	58.7%	7%
Maximum Green (s)	20.5	38.3	38.3	38.3	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.2	2.4	2.4	2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.7	5.7	5.7	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	Max
Walk Time (s)	5.0	10.0			
Flash Dont Walk (s)	13.0	10.0			
Pedestrian Calls (#/hr)	37	36			
Act Effct Green (s)	16.0	42.8	42.8	42.8	
Actuated g/C Ratio	0.21	0.57	0.57	0.57	
v/c Ratio	0.67	0.29	0.30	0.52	
Control Delay	37.2	9.2	12.0	13.1	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	37.2	9.2	12.0	13.1	
LOS	D	A	B	B	
Approach Delay	37.2	9.2		12.9	
Approach LOS	D	A		B	
Queue Length 50th (m)	25.7	19.2	9.2	43.4	
Queue Length 95th (m)	43.9	30.5	21.6	74.9	
Internal Link Dist (m)	197.1	156.5		238.5	
Turn Bay Length (m)					
Base Capacity (vph)	395	1863	431	995	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.52	0.29	0.30	0.52	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 15.1 — Intersection LOS: B
Intersection Capacity Utilization 54.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Holland & Tyndall



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		✣		✣		✣		✣
Traffic Volume (vph)	27	75	12	47	22	364	12	215
Future Volume (vph)	27	75	12	47	22	364	12	215
Lane Group Flow (vph)	0	117	0	72	0	409	0	249
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	25.2	25.2	25.2	25.2
Total Split (s)	27.0	27.0	27.0	27.0	73.0	73.0	73.0	73.0
Total Split (%)	27.0%	27.0%	27.0%	27.0%	73.0%	73.0%	73.0%	73.0%
Maximum Green (s)	21.5	21.5	21.5	21.5	67.8	67.8	67.8	67.8
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.2	2.2	2.2	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.2		5.2
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	28	28	25	25	32	32	31	31
Act Effct Green (s)		21.5		21.5		67.8		67.8
Actuated g/C Ratio		0.22		0.22		0.68		0.68
v/c Ratio		0.35		0.21		0.36		0.22
Control Delay		34.7		29.8		2.9		6.4
Queue Delay		0.0		0.0		0.4		0.0
Total Delay		34.7		29.8		3.3		6.4
LOS		C		C		A		A
Approach Delay		34.7		29.8		3.3		6.4
Approach LOS		C		C		A		A
Queue Length 50th (m)		18.1		9.9		3.3		15.4
Queue Length 95th (m)		34.3		21.7		4.0		25.0
Internal Link Dist (m)		46.6		196.9		125.2		312.1
Turn Bay Length (m)								
Base Capacity (vph)		336		345		1140		1135
Starvation Cap Reductn		0		0		327		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.35		0.21		0.50		0.22

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 52 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 10.8 — Intersection LOS: B
Intersection Capacity Utilization 53.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Parkdale & Armstrong

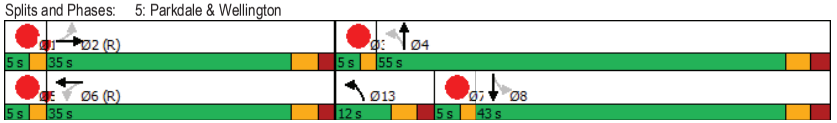
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	28	262	27	172	72	391	20	254				
Future Volume (vph)	28	262	27	172	72	391	20	254				
Lane Group Flow (vph)	0	377	0	217	72	476	20	276				
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA				
Protected Phases		2		6	13	4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	13	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.4	23.4	23.4	23.4	10.2	15.5	20.5	20.5	3.0	3.0	3.0	3.0
Total Split (s)	35.0	35.0	35.0	35.0	12.0	55.0	43.0	43.0	5.0	5.0	5.0	5.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	12.0%	55.0%	43.0%	43.0%	5%	5%	5%	5%
Maximum Green (s)	29.6	29.6	29.6	29.6	6.8	49.5	37.5	37.5	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	2.1	2.1	2.1	2.1	2.2	2.5	2.5	2.5	0.0	0.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)		5.4		5.4	5.2	5.5	5.5	5.5				
Lead/Lag	Lag	Lag	Lag	Lag	Lead				Lead		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		2.0	2.0	2.0				
Flash Dont Walk (s)	8.0	8.0	8.0	8.0		8.0	8.0	8.0				
Pedestrian Calls (#/hr)	71	71	62	62		53	42	42				
Act Effct Green (s)		34.6		34.6	54.8	54.5	42.5	42.5				
Actuated g/C Ratio		0.35		0.35	0.55	0.54	0.42	0.42				
v/c Ratio		0.40		0.23	0.14	0.54	0.06	0.38				
Control Delay		13.4		24.0	3.5	7.8	16.2	18.9				
Queue Delay		0.0		0.0	0.0	0.2	0.0	0.0				
Total Delay		13.4		24.0	3.5	8.0	16.2	18.9				
LOS		B		C	A	A	B	B				
Approach Delay		13.4		24.0		7.4		18.8				
Approach LOS		B		C		A		B				
Queue Length 50th (m)		11.7		15.5	2.0	44.0	2.1	29.9				
Queue Length 95th (m)		17.4		24.4	m3.2	51.2	m5.9	43.8				
Internal Link Dist (m)		223.4		216.2		139.5		125.2				
Turn Bay Length (m)					40.0		40.0					
Base Capacity (vph)		935		955	502	879	315	719				
Starvation Cap Reductn		0		0	0	62	0	0				
Spillback Cap Reductn		0		0	0	0	0	0				
Storage Cap Reductn		0		0	0	0	0	0				
Reduced v/c Ratio		0.40		0.23	0.14	0.58	0.06	0.38				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 13.8 — Intersection LOS: B
Intersection Capacity Utilization 77.8% — ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Parkdale & Wellington



Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	133	508	32	364
Future Volume (vph)	133	508	32	364
Lane Group Flow (vph)	164	639	32	364
Turn Type	Perm	NA	Perm	NA
Protected Phases		2		6
Permitted Phases	8		6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	22.7	20.3	15.3	15.3
Total Split (s)	32.0	68.0	68.0	68.0
Total Split (%)	32.0%	68.0%	68.0%	68.0%
Maximum Green (s)	25.3	62.7	62.7	62.7
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.7	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.3	5.3	5.3
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		
Flash Dont Walk (s)	9.0	8.0		
Pedestrian Calls (#/hr)	15	7		
Act Effct Green (s)	25.3	62.7	62.7	62.7
Actuated g/C Ratio	0.25	0.63	0.63	0.63
v/c Ratio	0.41	0.61	0.09	0.33
Control Delay	34.9	12.0	9.1	10.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	34.9	12.0	9.1	10.8
LOS	C	B	A	B
Approach Delay	34.9	12.0		10.7
Approach LOS	C	B		B
Queue Length 50th (m)	26.5	61.2	2.1	33.1
Queue Length 95th (m)	45.3	75.1	5.7	48.0
Internal Link Dist (m)	224.2	197.3		139.5
Turn Bay Length (m)			85.0	
Base Capacity (vph)	399	1053	349	1094
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	0.61	0.09	0.33

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 12 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 14.7 — Intersection LOS: B
Intersection Capacity Utilization 60.1% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Parkdale & Gladstone

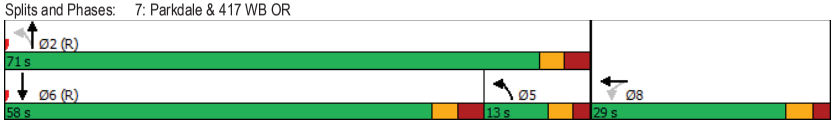
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	345	0	183	345	479
Future Volume (vph)	345	0	183	345	479
Lane Group Flow (vph)	345	542	183	345	742
Turn Type	Perm	NA	pm+pt	NA	NA
Protected Phases		8	5	2	6
Permitted Phases	8		2		
Detector Phase	8	8	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	20.5	20.5	10.2	27.3	21.3
Total Split (s)	29.0	29.0	13.0	71.0	58.0
Total Split (%)	29.0%	29.0%	13.0%	71.0%	58.0%
Maximum Green (s)	23.5	23.5	7.8	64.7	51.7
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0
All-Red Time (s)	2.2	2.2	2.2	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.2	6.3	6.3
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	8.0	8.0		14.0	8.0
Pedestrian Calls (#/hr)	1	1		23	10
Act Effct Green (s)	22.7	22.7	66.6	65.5	52.5
Actuated g/C Ratio	0.23	0.23	0.67	0.66	0.52
v/c Ratio	0.92	0.76	0.54	0.30	0.85
Control Delay	68.4	12.3	21.0	8.5	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	12.3	21.0	8.5	36.7
LOS	E	B	C	A	D
Approach Delay		34.1		12.8	36.7
Approach LOS		C		B	D
Queue Length 50th (m)	64.9	6.3	12.3	26.6	142.7
Queue Length 95th (m)	#113.6	43.5	20.5	40.5	#195.0
Internal Link Dist (m)		462.5		38.8	197.3
Turn Bay Length (m)					
Base Capacity (vph)	389	723	341	1143	874
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.89	0.75	0.54	0.30	0.85

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 26 (26%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 29.8 — Intersection LOS: C
Intersection Capacity Utilization 104.3% — 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: 7: Parkdale & 417 WB OR



Lane Group	EBT	WBT	SBL	SBR
Lane Configurations				
Traffic Volume (vph)	395	209	63	13
Future Volume (vph)	395	209	63	13
Lane Group Flow (vph)	395	209	63	13
Turn Type	NA	NA	Prot	Perm
Protected Phases	2	6	8	
Permitted Phases				8
Detector Phase	2	6	8	8
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	15.3	26.3	25.5	25.5
Total Split (s)	49.0	49.0	26.0	26.0
Total Split (%)	65.3%	65.3%	34.7%	34.7%
Maximum Green (s)	43.7	43.7	20.5	20.5
Yellow Time (s)	3.3	3.3	3.0	3.0
All-Red Time (s)	2.0	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.5	5.5
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max
Walk Time (s)		14.0	15.0	15.0
Flash Dont Walk (s)		7.0	5.0	5.0
Pedestrian Calls (#/hr)		70	65	65
Act Effct Green (s)	43.7	43.7	20.5	20.5
Actuated g/C Ratio	0.58	0.58	0.27	0.27
v/c Ratio	0.39	0.21	0.14	0.03
Control Delay	9.9	8.1	21.7	11.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.9	8.1	21.7	11.0
LOS	A	A	C	B
Approach Delay	9.9	8.1	19.9	
Approach LOS	A	A	B	
Queue Length 50th (m)	27.3	12.7	6.7	0.0
Queue Length 95th (m)	44.0	22.3	15.4	3.8
Internal Link Dist (m)	216.2	153.4	73.2	
Turn Bay Length (m)				30.0
Base Capacity (vph)	1016	1016	453	386
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.21	0.14	0.03

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Natural Cycle: 55
Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.39

Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 47.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Wellington & Carruthers

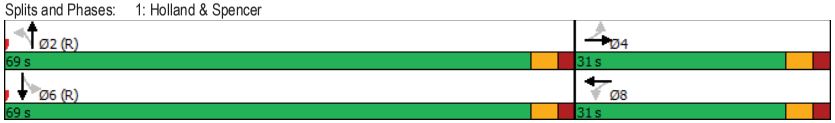
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	24	153	61	55	360	16	480
Future Volume (vph)	12	24	153	61	55	360	16	480
Lane Group Flow (vph)	0	66	0	244	0	443	0	510
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	29.3	29.3	29.3	29.3
Total Split (s)	31.0	31.0	31.0	31.0	69.0	69.0	69.0	69.0
Total Split (%)	31.0%	31.0%	31.0%	31.0%	69.0%	69.0%	69.0%	69.0%
Maximum Green (s)	25.5	25.5	25.5	25.5	63.7	63.7	63.7	63.7
Yellow Time (s)	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	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.3		5.3
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	17	17	18	18	88	88	49	49
Act Effct Green (s)		21.8		21.8		67.4		67.4
Actuated g/C Ratio		0.22		0.22		0.67		0.67
v/c Ratio		0.19		0.82		0.24		0.25
Control Delay		19.7		57.8		1.1		7.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		19.7		57.8		1.1		7.2
LOS		B		E		A		A
Approach Delay		19.7		57.8		1.1		7.2
Approach LOS		B		E		A		A
Queue Length 50th (m)		5.5		43.1		1.5		19.0
Queue Length 95th (m)		15.7		#74.0		2.2		28.0
Internal Link Dist (m)		151.9		132.2		211.0		210.0
Turn Bay Length (m)								
Base Capacity (vph)		405		346		1815		2070
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.16		0.71		0.24		0.25

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 38 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 15.5 Intersection LOS: B
Intersection Capacity Utilization 74.6% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Holland & Spencer



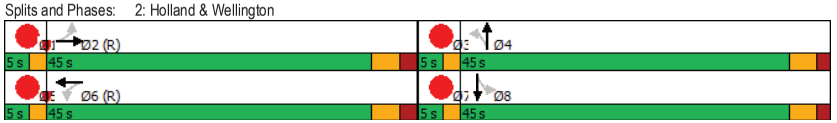
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	21	336	80	485	38	398	25	652				
Future Volume (vph)	21	336	80	485	38	398	25	652				
Lane Group Flow (vph)	21	417	80	508	0	496	0	741				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2		6		4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	4	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.6	23.6	24.5	24.5	20.1	20.1	20.1	20.1	3.0	3.0	3.0	3.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	5.0	5.0	5.0	5.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	5%	5%	5%	5%
Maximum Green (s)	39.4	39.4	39.4	39.4	39.9	39.9	39.9	39.9	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
All-Red Time (s)	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6		5.1		5.1				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	Max	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0				
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	13.0	13.0	13.0	13.0				
Pedestrian Calls (#/hr)	206	206	146	146	135	135	111	111				
Act Effct Green (s)	39.4	39.4	39.4	39.4		39.9		39.9				
Actuated g/C Ratio	0.39	0.39	0.39	0.39		0.40		0.40				
v/c Ratio	0.12	0.67	0.37	0.75		0.48		0.64				
Control Delay	21.6	31.2	18.2	22.9		17.1		22.8				
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0				
Total Delay	21.6	31.2	18.2	22.9		17.1		22.8				
LOS	C	C	B	C		B		C				
Approach Delay		30.7		22.2		17.1		22.8				
Approach LOS		C		C		B		C				
Queue Length 50th (m)	2.5	65.2	6.6	46.2		27.5		44.7				
Queue Length 95th (m)	7.8	98.8	m13.5	62.1		34.1		66.9				
Internal Link Dist (m)		128.0		223.4		238.5		211.0				
Turn Bay Length (m)	30.0		30.0									
Base Capacity (vph)	176	626	214	674		1028		1160				
Starvation Cap Reductn	0	0	0	0		0		0				
Spillback Cap Reductn	0	0	0	0		0		0				
Storage Cap Reductn	0	0	0	0		0		0				
Reduced v/c Ratio	0.12	0.67	0.37	0.75		0.48		0.64				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 72 (72%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 22.9 — Intersection LOS: C
Intersection Capacity Utilization 93.0% — ICU Level of Service F
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Holland & Wellington

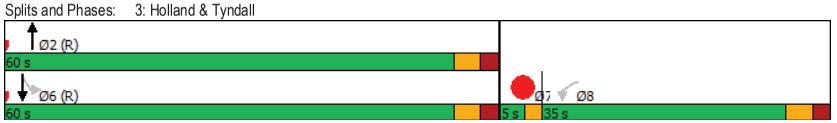


Lane Group	WBL	NBT	SBL	SBT	Ø7
Lane Configurations					
Traffic Volume (vph)	46	595	145	585	
Future Volume (vph)	46	595	145	585	
Lane Group Flow (vph)	227	620	145	585	
Turn Type	Perm	NA	Perm	NA	
Protected Phases		2		6	7
Permitted Phases	8		6		
Detector Phase	8	2	6	6	
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	10.0	1.0
Minimum Split (s)	23.5	25.7	15.7	15.7	3.0
Total Split (s)	35.0	60.0	60.0	60.0	5.0
Total Split (%)	35.0%	60.0%	60.0%	60.0%	5%
Maximum Green (s)	29.5	54.3	54.3	54.3	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.2	2.4	2.4	2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.7	5.7	5.7	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	Max
Walk Time (s)	5.0	10.0			
Flash Dont Walk (s)	13.0	10.0			
Pedestrian Calls (#/hr)	15	20			
Act Effct Green (s)	20.4	63.4	63.4	63.4	
Actuated g/C Ratio	0.20	0.63	0.63	0.63	
v/c Ratio	0.75	0.30	0.33	0.53	
Control Delay	51.7	9.4	6.6	7.0	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	51.7	9.4	6.6	7.0	
LOS	D	A	A	A	
Approach Delay	51.7	9.4		6.9	
Approach LOS	D	A		A	
Queue Length 50th (m)	41.5	25.7	5.5	25.4	
Queue Length 95th (m)	61.1	42.7	m12.0	40.5	
Internal Link Dist (m)	197.1	156.5		238.5	
Turn Bay Length (m)					
Base Capacity (vph)	440	2085	435	1105	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.52	0.30	0.33	0.53	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 24 (24%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 57.2%	ICU Level of Service B
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 3: Holland & Tyndall



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	34	63	39	160	13	501	15	325
Future Volume (vph)	34	63	39	160	13	501	15	325
Lane Group Flow (vph)	0	134	0	220	0	536	0	356
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	25.2	25.2	25.2	25.2
Total Split (s)	35.0	35.0	35.0	35.0	65.0	65.0	65.0	65.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%
Maximum Green (s)	29.5	29.5	29.5	29.5	59.8	59.8	59.8	59.8
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.2	2.2	2.2	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.2		5.2
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	19	19	30	30	35	35	22	22
Act Effct Green (s)		29.5		29.5		59.8		59.8
Actuated g/C Ratio		0.30		0.30		0.60		0.60
v/c Ratio		0.30		0.47		0.52		0.35
Control Delay		25.5		32.2		7.1		11.4
Queue Delay		0.0		0.0		0.5		0.0
Total Delay		25.5		32.2		7.7		11.4
LOS		C		C		A		B
Approach Delay		25.5		32.2		7.7		11.4
Approach LOS		C		C		A		B
Queue Length 50th (m)		17.0		34.0		53.6		32.2
Queue Length 95th (m)		32.5		55.7		67.0		49.3
Internal Link Dist (m)		46.6		196.9		125.2		312.1
Turn Bay Length (m)								
Base Capacity (vph)		442		466		1021		1006
Starvation Cap Reductn		0		0		177		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.30		0.47		0.64		0.35

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 20 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 15.0 — Intersection LOS: B
Intersection Capacity Utilization 58.5% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Parkdale & Armstrong

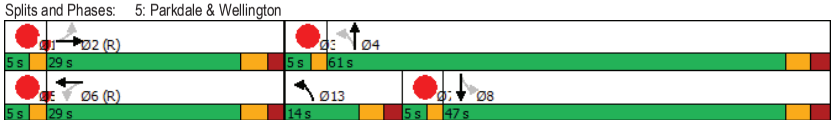
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	17	247	47	318	143	548	19	392				
Future Volume (vph)	17	247	47	318	143	548	19	392				
Lane Group Flow (vph)	0	332	0	391	143	602	19	443				
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA				
Protected Phases		2		6	13	4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	13	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.4	23.4	23.4	23.4	10.2	15.5	20.5	20.5	3.0	3.0	3.0	3.0
Total Split (s)	29.0	29.0	29.0	29.0	14.0	61.0	47.0	47.0	5.0	5.0	5.0	5.0
Total Split (%)	29.0%	29.0%	29.0%	29.0%	14.0%	61.0%	47.0%	47.0%	5%	5%	5%	5%
Maximum Green (s)	23.6	23.6	23.6	23.6	8.8	55.5	41.5	41.5	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	2.1	2.1	2.1	2.1	2.2	2.5	2.5	2.5	0.0	0.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)		5.4		5.4	5.2	5.5	5.5	5.5				
Lead/Lag	Lag	Lag	Lag	Lag	Lead				Lead		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		2.0	2.0	2.0				
Flash Dont Walk (s)	8.0	8.0	8.0	8.0		8.0	8.0	8.0				
Pedestrian Calls (#/hr)	153	153	142	142		76	72	72				
Act Effct Green (s)		28.6		28.6	60.8	60.5	46.5	46.5				
Actuated g/C Ratio		0.29		0.29	0.61	0.60	0.46	0.46				
v/c Ratio		0.45		0.52	0.32	0.60	0.06	0.58				
Control Delay		48.8		32.9	10.4	13.7	12.8	18.2				
Queue Delay		0.0		0.0	0.0	0.4	0.0	0.3				
Total Delay		48.8		32.9	10.4	14.1	12.8	18.6				
LOS		D		C	B	B	B	B				
Approach Delay		48.8		32.9		13.4		18.3				
Approach LOS		D		C		B		B				
Queue Length 50th (m)		31.6		33.3	10.5	53.3	1.7	43.6				
Queue Length 95th (m)		46.3		47.8	m17.1	79.1	m4.6	59.3				
Internal Link Dist (m)		223.4		216.2		139.5		125.2				
Turn Bay Length (m)					40.0		40.0					
Base Capacity (vph)		745		754	452	1005	302	763				
Starvation Cap Reductn		0		0	0	113	0	62				
Spillback Cap Reductn		0		0	0	0	0	0				
Storage Cap Reductn		0		0	0	0	0	0				
Reduced v/c Ratio		0.45		0.52	0.32	0.67	0.06	0.63				

Intersection Summary

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

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 24.6 Intersection LOS: C
Intersection Capacity Utilization 84.4% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Parkdale & Wellington



Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	215	626	40	393
Future Volume (vph)	215	626	40	393
Lane Group Flow (vph)	281	784	40	393
Turn Type	Perm	NA	Perm	NA
Protected Phases		2		6
Permitted Phases	8		6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	22.7	20.3	15.3	15.3
Total Split (s)	32.0	68.0	68.0	68.0
Total Split (%)	32.0%	68.0%	68.0%	68.0%
Maximum Green (s)	25.3	62.7	62.7	62.7
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.7	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.3	5.3	5.3
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		
Flash Dont Walk (s)	9.0	8.0		
Pedestrian Calls (#/hr)	25	19		
Act Effct Green (s)	25.3	62.7	62.7	62.7
Actuated g/C Ratio	0.25	0.63	0.63	0.63
v/c Ratio	0.73	0.75	0.16	0.36
Control Delay	46.8	15.3	6.8	6.7
Queue Delay	0.0	0.2	0.0	0.1
Total Delay	46.8	15.5	6.8	6.8
LOS	D	B	A	A
Approach Delay	46.8	15.5		6.8
Approach LOS	D	B		A
Queue Length 50th (m)	50.0	69.9	1.9	18.9
Queue Length 95th (m)	#84.4	m105.8	m3.5	25.4
Internal Link Dist (m)	224.2	197.3		139.5
Turn Bay Length (m)			85.0	
Base Capacity (vph)	385	1047	252	1094
Starvation Cap Reductn	0	20	0	0
Spillback Cap Reductn	0	0	0	93
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.73	0.76	0.16	0.39

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 12 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 18.9 — Intersection LOS: B
Intersection Capacity Utilization 72.7% — ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Parkdale & Gladstone

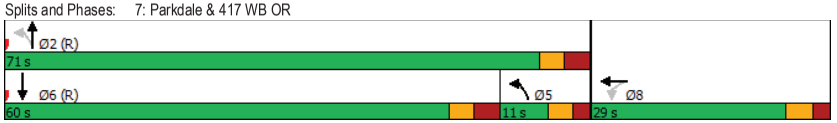
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	334	24	84	592	587
Future Volume (vph)	334	24	84	592	587
Lane Group Flow (vph)	334	535	84	592	820
Turn Type	Perm	NA	pm+pt	NA	NA
Protected Phases		8	5	2	6
Permitted Phases	8		2		
Detector Phase	8	8	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	20.5	20.5	10.2	27.3	21.3
Total Split (s)	29.0	29.0	11.0	71.0	60.0
Total Split (%)	29.0%	29.0%	11.0%	71.0%	60.0%
Maximum Green (s)	23.5	23.5	5.8	64.7	53.7
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0
All-Red Time (s)	2.2	2.2	2.2	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.2	6.3	6.3
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	8.0	8.0		14.0	8.0
Pedestrian Calls (#/hr)	3	3		21	13
Act Effct Green (s)	22.5	22.5	66.8	65.7	56.9
Actuated g/C Ratio	0.22	0.22	0.67	0.66	0.57
v/c Ratio	0.90	0.95	0.29	0.52	0.86
Control Delay	65.0	44.5	11.9	11.1	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	44.5	11.9	11.1	31.0
LOS	E	D	B	B	C
Approach Delay		52.4		11.2	31.0
Approach LOS		D		B	C
Queue Length 50th (m)	62.2	47.9	5.3	55.6	148.7
Queue Length 95th (m)	#108.8	#113.5	10.3	81.2	#222.4
Internal Link Dist (m)		462.5		38.8	197.3
Turn Bay Length (m)					
Base Capacity (vph)	389	575	288	1146	949
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.86	0.93	0.29	0.52	0.86

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 39 (39%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 33.2 — Intersection LOS: C
Intersection Capacity Utilization 102.0% — 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: 7: Parkdale & 417 WB OR



Lane Group	EBT	WBT	SBL	SBR
Lane Configurations				
Traffic Volume (vph)	394	407	54	20
Future Volume (vph)	394	407	54	20
Lane Group Flow (vph)	394	407	54	20
Turn Type	NA	NA	Prot	Perm
Protected Phases	2	6	8	
Permitted Phases				8
Detector Phase	2	6	8	8
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	15.3	26.3	17.5	17.5
Total Split (s)	57.0	57.0	18.0	18.0
Total Split (%)	76.0%	76.0%	24.0%	24.0%
Maximum Green (s)	51.7	51.7	12.5	12.5
Yellow Time (s)	3.3	3.3	3.0	3.0
All-Red Time (s)	2.0	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.5	5.5
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	None
Walk Time (s)		14.0	7.0	7.0
Flash Dont Walk (s)		7.0	5.0	5.0
Pedestrian Calls (#/hr)		157	62	62
Act Effct Green (s)	57.2	57.2	11.2	11.2
Actuated g/C Ratio	0.76	0.76	0.15	0.15
v/c Ratio	0.30	0.31	0.22	0.10
Control Delay	4.6	4.7	30.1	13.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.6	4.7	30.1	13.6
LOS	A	A	C	B
Approach Delay	4.6	4.7	25.6	
Approach LOS	A	A	C	
Queue Length 50th (m)	18.1	18.9	6.7	0.0
Queue Length 95th (m)	29.2	30.3	16.1	5.5
Internal Link Dist (m)	216.2	153.4	73.2	
Turn Bay Length (m)				30.0
Base Capacity (vph)	1330	1330	276	227
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.31	0.20	0.09

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 72 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.31
Intersection Signal Delay: 6.5 — Intersection LOS: A
Intersection Capacity Utilization 41.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 8: Wellington & Carruthers

Appendix G

Synchro Intersection Worksheets – 2030 Future Background Conditions

DRAFT

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	8	11	57	4	10	534	10	334
Future Volume (vph)	8	11	57	4	10	534	10	334
Lane Group Flow (vph)	0	50	0	113	0	565	0	349
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	29.3	29.3	29.3	29.3
Total Split (s)	24.0	24.0	24.0	24.0	76.0	76.0	76.0	76.0
Total Split (%)	24.0%	24.0%	24.0%	24.0%	76.0%	76.0%	76.0%	76.0%
Maximum Green (s)	18.5	18.5	18.5	18.5	70.7	70.7	70.7	70.7
Yellow Time (s)	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	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.3		5.3
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	17	17	11	11	60	60	32	32
Act Effct Green (s)		13.4		13.4		75.8		75.8
Actuated g/C Ratio		0.13		0.13		0.76		0.76
v/c Ratio		0.22		0.55		0.24		0.15
Control Delay		21.0		36.4		0.7		3.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		21.0		36.4		0.7		3.8
LOS		C		D		A		A
Approach Delay		21.0		36.4		0.7		3.8
Approach LOS		C		D		A		A
Queue Length 50th (m)		3.4		13.9		0.8		6.9
Queue Length 95th (m)		13.0		29.3		3.1		14.3
Internal Link Dist (m)		151.9		132.2		211.0		210.0
Turn Bay Length (m)								
Base Capacity (vph)		299		270		2355		2347
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.17		0.42		0.24		0.15

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 6.4 — Intersection LOS: A
Intersection Capacity Utilization 47.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Holland & Spencer

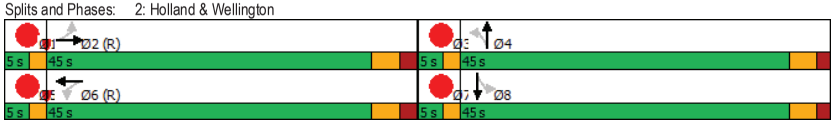
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	38	377	48	253	45	520	23	414				
Future Volume (vph)	38	377	48	253	45	520	23	414				
Lane Group Flow (vph)	38	440	48	294	0	616	0	463				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2		6		4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	4	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.6	23.6	24.5	24.5	20.1	20.1	20.1	20.1	3.0	3.0	3.0	3.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	5.0	5.0	5.0	5.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	5%	5%	5%	5%
Maximum Green (s)	39.4	39.4	39.4	39.4	39.9	39.9	39.9	39.9	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
All-Red Time (s)	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6		5.1		5.1				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	Max	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0				
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	13.0	13.0	13.0	13.0				
Pedestrian Calls (#/hr)	118	118	95	95	99	99	81	81				
Act Effct Green (s)	39.4	39.4	39.4	39.4		39.9		39.9				
Actuated g/C Ratio	0.39	0.39	0.39	0.39		0.40		0.40				
v/c Ratio	0.12	0.67	0.23	0.45		0.55		0.40				
Control Delay	20.8	31.3	22.6	24.9		25.6		20.0				
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0				
Total Delay	20.8	31.3	22.6	24.9		25.6		20.0				
LOS	C	C	C	C		C		B				
Approach Delay		30.5		24.6		25.6		20.0				
Approach LOS		C		C		C		B				
Queue Length 50th (m)	4.6	69.2	4.2	32.5		47.5		30.1				
Queue Length 95th (m)	11.6	103.5	13.2	60.0		64.5		38.8				
Internal Link Dist (m)		128.0		223.4		238.5		211.0				
Turn Bay Length (m)	30.0		30.0									
Base Capacity (vph)	306	652	210	657		1110		1163				
Starvation Cap Reductn	0	0	0	0		0		0				
Spillback Cap Reductn	0	0	0	0		0		0				
Storage Cap Reductn	0	0	0	0		0		0				
Reduced v/c Ratio	0.12	0.67	0.23	0.45		0.55		0.40				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 84 (84%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 25.3 — Intersection LOS: C
Intersection Capacity Utilization 84.8% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Holland & Wellington

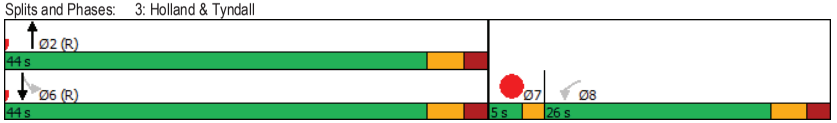


Lane Group	WBL	NBT	SBL	SBT	Ø7
Lane Configurations					
Traffic Volume (vph)	38	492	128	540	
Future Volume (vph)	38	492	128	540	
Lane Group Flow (vph)	205	532	128	540	
Turn Type	Perm	NA	Perm	NA	
Protected Phases		2		6	7
Permitted Phases	8		6		
Detector Phase	8	2	6	6	
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	10.0	1.0
Minimum Split (s)	23.5	25.7	15.7	15.7	3.0
Total Split (s)	26.0	44.0	44.0	44.0	5.0
Total Split (%)	34.7%	58.7%	58.7%	58.7%	7%
Maximum Green (s)	20.5	38.3	38.3	38.3	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.2	2.4	2.4	2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.7	5.7	5.7	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	Max
Walk Time (s)	5.0	10.0			
Flash Dont Walk (s)	13.0	10.0			
Pedestrian Calls (#/hr)	37	36			
Act Effct Green (s)	16.0	42.8	42.8	42.8	
Actuated g/C Ratio	0.21	0.57	0.57	0.57	
v/c Ratio	0.67	0.29	0.30	0.54	
Control Delay	37.2	9.2	12.0	13.6	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	37.2	9.2	12.0	13.6	
LOS	D	A	B	B	
Approach Delay	37.2	9.2		13.3	
Approach LOS	D	A		B	
Queue Length 50th (m)	25.7	19.2	9.2	46.6	
Queue Length 95th (m)	43.9	30.5	21.6	80.4	
Internal Link Dist (m)	197.1	156.5		238.5	
Turn Bay Length (m)					
Base Capacity (vph)	395	1863	431	995	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.52	0.29	0.30	0.54	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 15.2 — Intersection LOS: B
Intersection Capacity Utilization 55.0% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Holland & Tyndall



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	27	75	12	47	22	368	12	226
Future Volume (vph)	27	75	12	47	22	368	12	226
Lane Group Flow (vph)	0	117	0	72	0	413	0	260
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	25.2	25.2	25.2	25.2
Total Split (s)	27.0	27.0	27.0	27.0	73.0	73.0	73.0	73.0
Total Split (%)	27.0%	27.0%	27.0%	27.0%	73.0%	73.0%	73.0%	73.0%
Maximum Green (s)	21.5	21.5	21.5	21.5	67.8	67.8	67.8	67.8
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.2	2.2	2.2	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.2		5.2
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	28	28	25	25	32	32	31	31
Act Effct Green (s)		21.5		21.5		67.8		67.8
Actuated g/C Ratio		0.22		0.22		0.68		0.68
v/c Ratio		0.35		0.21		0.36		0.23
Control Delay		34.7		29.8		2.9		6.5
Queue Delay		0.0		0.0		0.4		0.0
Total Delay		34.7		29.8		3.3		6.5
LOS		C		C		A		A
Approach Delay		34.7		29.8		3.3		6.5
Approach LOS		C		C		A		A
Queue Length 50th (m)		18.1		9.9		3.4		16.2
Queue Length 95th (m)		34.3		21.7		3.7		26.1
Internal Link Dist (m)		46.6		196.9		125.2		312.1
Turn Bay Length (m)								
Base Capacity (vph)		336		345		1140		1137
Starvation Cap Reductn		0		0		327		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.35		0.21		0.51		0.23

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 52 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 10.7 — Intersection LOS: B
Intersection Capacity Utilization 54.3% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Parkdale & Armstrong

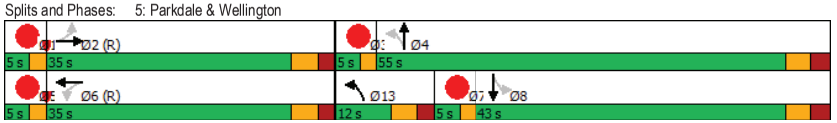
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	28	307	27	195	72	396	20	267				
Future Volume (vph)	28	307	27	195	72	396	20	267				
Lane Group Flow (vph)	0	422	0	240	72	481	20	289				
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA				
Protected Phases		2		6	13	4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	13	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.4	23.4	23.4	23.4	10.2	15.5	20.5	20.5	3.0	3.0	3.0	3.0
Total Split (s)	35.0	35.0	35.0	35.0	12.0	55.0	43.0	43.0	5.0	5.0	5.0	5.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	12.0%	55.0%	43.0%	43.0%	5%	5%	5%	5%
Maximum Green (s)	29.6	29.6	29.6	29.6	6.8	49.5	37.5	37.5	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	2.1	2.1	2.1	2.1	2.2	2.5	2.5	2.5	0.0	0.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)		5.4		5.4	5.2	5.5	5.5	5.5				
Lead/Lag	Lag	Lag	Lag	Lag	Lead				Lead		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		2.0	2.0	2.0				
Flash Dont Walk (s)	8.0	8.0	8.0	8.0		8.0	8.0	8.0				
Pedestrian Calls (#/hr)	71	71	62	62		53	42	42				
Act Effct Green (s)		34.6		34.6	54.8	54.5	42.5	42.5				
Actuated g/C Ratio		0.35		0.35	0.55	0.54	0.42	0.42				
v/c Ratio		0.44		0.25	0.15	0.55	0.06	0.40				
Control Delay		14.2		24.3	3.5	7.7	16.2	19.2				
Queue Delay		0.0		0.0	0.0	0.2	0.0	0.0				
Total Delay		14.2		24.3	3.5	7.9	16.2	19.2				
LOS		B		C	A	A	B	B				
Approach Delay		14.2		24.3		7.4		19.0				
Approach LOS		B		C		A		B				
Queue Length 50th (m)		12.2		17.3	2.0	44.3	2.1	31.2				
Queue Length 95th (m)		22.4		26.7	m3.1	50.9	m5.9	45.2				
Internal Link Dist (m)		223.4		216.2		139.5		125.2				
Turn Bay Length (m)					40.0		40.0					
Base Capacity (vph)		950		961	491	879	315	720				
Starvation Cap Reductn		0		0	0	62	0	0				
Spillback Cap Reductn		0		0	0	0	0	0				
Storage Cap Reductn		0		0	0	0	0	0				
Reduced v/c Ratio		0.44		0.25	0.15	0.59	0.06	0.40				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 14.3 — Intersection LOS: B
Intersection Capacity Utilization 79.3% — ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Parkdale & Wellington

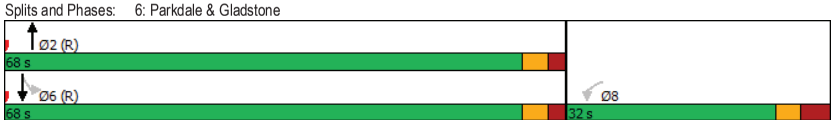


Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	133	515	32	382
Future Volume (vph)	133	515	32	382
Lane Group Flow (vph)	164	646	32	382
Turn Type	Perm	NA	Perm	NA
Protected Phases		2		6
Permitted Phases	8		6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	22.7	20.3	15.3	15.3
Total Split (s)	32.0	68.0	68.0	68.0
Total Split (%)	32.0%	68.0%	68.0%	68.0%
Maximum Green (s)	25.3	62.7	62.7	62.7
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.7	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.3	5.3	5.3
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		
Flash Dont Walk (s)	9.0	8.0		
Pedestrian Calls (#/hr)	15	7		
Act Effct Green (s)	25.3	62.7	62.7	62.7
Actuated g/C Ratio	0.25	0.63	0.63	0.63
v/c Ratio	0.41	0.61	0.09	0.35
Control Delay	34.9	12.1	9.4	11.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	34.9	12.1	9.4	11.2
LOS	C	B	A	B
Approach Delay	34.9	12.1		11.1
Approach LOS	C	B		B
Queue Length 50th (m)	26.5	62.0	2.2	34.5
Queue Length 95th (m)	45.3	76.1	m5.7	53.2
Internal Link Dist (m)	224.2	197.3		139.5
Turn Bay Length (m)			85.0	
Base Capacity (vph)	399	1055	344	1094
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	0.61	0.09	0.35

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 12 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 14.8 — Intersection LOS: B
Intersection Capacity Utilization 60.5% — ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Parkdale & Gladstone



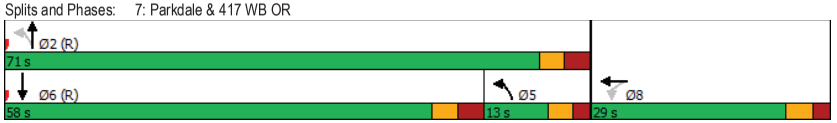
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	345	0	202	350	504
Future Volume (vph)	345	0	202	350	504
Lane Group Flow (vph)	345	542	202	350	794
Turn Type	Perm	NA	pm+pt	NA	NA
Protected Phases		8	5	2	6
Permitted Phases	8		2		
Detector Phase	8	8	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	20.5	20.5	10.2	27.3	21.3
Total Split (s)	29.0	29.0	13.0	71.0	58.0
Total Split (%)	29.0%	29.0%	13.0%	71.0%	58.0%
Maximum Green (s)	23.5	23.5	7.8	64.7	51.7
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0
All-Red Time (s)	2.2	2.2	2.2	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.2	6.3	6.3
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	8.0	8.0		14.0	8.0
Pedestrian Calls (#/hr)	1	1		23	10
Act Effct Green (s)	22.7	22.7	66.6	65.5	52.5
Actuated g/C Ratio	0.23	0.23	0.67	0.66	0.52
v/c Ratio	0.92	0.76	0.66	0.31	0.91
Control Delay	68.4	12.7	30.9	8.5	42.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	12.7	30.9	8.5	42.6
LOS	E	B	C	A	D
Approach Delay		34.4		16.7	42.6
Approach LOS		C		B	D
Queue Length 50th (m)	64.9	7.1	13.7	27.1	155.1
Queue Length 95th (m)	#113.6	45.0	#25.0	41.2	#218.2
Internal Link Dist (m)		462.5		38.8	197.3
Turn Bay Length (m)					
Base Capacity (vph)	389	719	305	1143	874
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.89	0.75	0.66	0.31	0.91

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 26 (26%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 32.9 — Intersection LOS: C
Intersection Capacity Utilization 108.6% — 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: 7: Parkdale & 417 WB OR



Lane Group	EBT	WBT	SBL	SBR
Lane Configurations				
Traffic Volume (vph)	464	237	63	13
Future Volume (vph)	464	237	63	13
Lane Group Flow (vph)	464	237	63	13
Turn Type	NA	NA	Prot	Perm
Protected Phases	2	6	8	
Permitted Phases				8
Detector Phase	2	6	8	8
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	15.3	26.3	25.5	25.5
Total Split (s)	49.0	49.0	26.0	26.0
Total Split (%)	65.3%	65.3%	34.7%	34.7%
Maximum Green (s)	43.7	43.7	20.5	20.5
Yellow Time (s)	3.3	3.3	3.0	3.0
All-Red Time (s)	2.0	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.5	5.5
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max
Walk Time (s)		14.0	15.0	15.0
Flash Dont Walk (s)		7.0	5.0	5.0
Pedestrian Calls (#/hr)		70	65	65
Act Effct Green (s)	43.7	43.7	20.5	20.5
Actuated g/C Ratio	0.58	0.58	0.27	0.27
v/c Ratio	0.46	0.23	0.14	0.03
Control Delay	10.7	8.3	21.7	11.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.7	8.3	21.7	11.0
LOS	B	A	C	B
Approach Delay	10.7	8.3	19.9	
Approach LOS	B	A	B	
Queue Length 50th (m)	33.9	14.7	6.7	0.0
Queue Length 95th (m)	53.8	25.2	15.4	3.8
Internal Link Dist (m)	216.2	153.4	73.2	
Turn Bay Length (m)				30.0
Base Capacity (vph)	1016	1016	453	386
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.46	0.23	0.14	0.03

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Natural Cycle: 55
Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 10.9	Intersection LOS: B
Intersection Capacity Utilization 51.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Wellington & Carruthers

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	24	153	61	55	379	16	480
Future Volume (vph)	12	24	153	61	55	379	16	480
Lane Group Flow (vph)	0	66	0	244	0	462	0	510
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	29.3	29.3	29.3	29.3
Total Split (s)	31.0	31.0	31.0	31.0	69.0	69.0	69.0	69.0
Total Split (%)	31.0%	31.0%	31.0%	31.0%	69.0%	69.0%	69.0%	69.0%
Maximum Green (s)	25.5	25.5	25.5	25.5	63.7	63.7	63.7	63.7
Yellow Time (s)	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	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.3		5.3
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	17	17	18	18	88	88	49	49
Act Effct Green (s)		21.8		21.8		67.4		67.4
Actuated g/C Ratio		0.22		0.22		0.67		0.67
v/c Ratio		0.19		0.82		0.25		0.25
Control Delay		19.7		57.8		1.1		7.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		19.7		57.8		1.1		7.2
LOS		B		E		A		A
Approach Delay		19.7		57.8		1.1		7.2
Approach LOS		B		E		A		A
Queue Length 50th (m)		5.5		43.1		1.7		19.0
Queue Length 95th (m)		15.7		#74.0		m2.3		28.0
Internal Link Dist (m)		151.9		132.2		211.0		210.0
Turn Bay Length (m)								
Base Capacity (vph)		405		346		1825		2070
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.16		0.71		0.25		0.25

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 38 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 15.3 Intersection LOS: B
Intersection Capacity Utilization 74.6% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Holland & Spencer

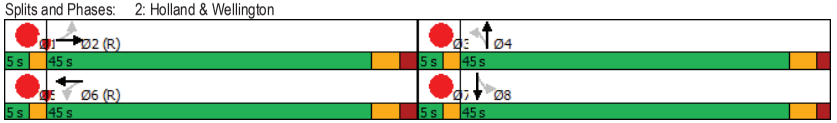
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	21	380	80	569	38	419	25	652				
Future Volume (vph)	21	380	80	569	38	419	25	652				
Lane Group Flow (vph)	21	461	80	592	0	517	0	741				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2		6		4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	4	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.6	23.6	24.5	24.5	20.1	20.1	20.1	20.1	3.0	3.0	3.0	3.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	5.0	5.0	5.0	5.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	5%	5%	5%	5%
Maximum Green (s)	39.4	39.4	39.4	39.4	39.9	39.9	39.9	39.9	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
All-Red Time (s)	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6		5.1		5.1				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	Max	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0				
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	13.0	13.0	13.0	13.0				
Pedestrian Calls (#/hr)	206	206	146	146	135	135	111	111				
Act Effct Green (s)	39.4	39.4	39.4	39.4		39.9		39.9				
Actuated g/C Ratio	0.39	0.39	0.39	0.39		0.40		0.40				
v/c Ratio	0.18	0.73	0.42	0.88		0.50		0.64				
Control Delay	24.7	33.9	19.5	30.8		17.3		22.8				
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0				
Total Delay	24.7	33.9	19.5	30.8		17.3		22.8				
LOS	C	C	B	C		B		C				
Approach Delay		33.5		29.4		17.3		22.8				
Approach LOS		C		C		B		C				
Queue Length 50th (m)	2.6	74.5	6.4	52.3		28.4		44.7				
Queue Length 95th (m)	8.5	112.3	m12.1	#166.8		35.2		66.9				
Internal Link Dist (m)		128.0		223.4		238.5		211.0				
Turn Bay Length (m)	30.0		30.0									
Base Capacity (vph)	117	632	189	676		1036		1159				
Starvation Cap Reductn	0	0	0	0		0		0				
Spillback Cap Reductn	0	0	0	0		0		0				
Storage Cap Reductn	0	0	0	0		0		0				
Reduced v/c Ratio	0.18	0.73	0.42	0.88		0.50		0.64				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 72 (72%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 25.6 — Intersection LOS: C
Intersection Capacity Utilization 98.2% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Holland & Wellington



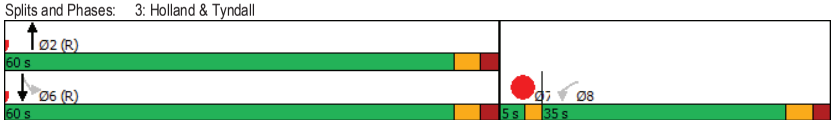
Lane Group	WBL	NBT	SBL	SBT	Ø7
Lane Configurations					
Traffic Volume (vph)	46	625	145	585	
Future Volume (vph)	46	625	145	585	
Lane Group Flow (vph)	227	650	145	585	
Turn Type	Perm	NA	Perm	NA	
Protected Phases		2		6	7
Permitted Phases	8		6		
Detector Phase	8	2	6	6	
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	10.0	1.0
Minimum Split (s)	23.5	25.7	15.7	15.7	3.0
Total Split (s)	35.0	60.0	60.0	60.0	5.0
Total Split (%)	35.0%	60.0%	60.0%	60.0%	5%
Maximum Green (s)	29.5	54.3	54.3	54.3	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.2	2.4	2.4	2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.7	5.7	5.7	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	Max
Walk Time (s)	5.0	10.0			
Flash Dont Walk (s)	13.0	10.0			
Pedestrian Calls (#/hr)	15	20			
Act Effct Green (s)	20.4	63.4	63.4	63.4	
Actuated g/C Ratio	0.20	0.63	0.63	0.63	
v/c Ratio	0.75	0.31	0.35	0.53	
Control Delay	51.7	9.5	6.6	6.8	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	51.7	9.5	6.6	6.8	
LOS	D	A	A	A	
Approach Delay	51.7	9.5		6.8	
Approach LOS	D	A		A	
Queue Length 50th (m)	41.5	27.3	5.2	24.6	
Queue Length 95th (m)	61.1	45.3	m11.3	40.0	
Internal Link Dist (m)	197.1	156.5		238.5	
Turn Bay Length (m)					
Base Capacity (vph)	440	2084	419	1105	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.52	0.31	0.35	0.53	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 24 (24%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 14.2 — Intersection LOS: B
Intersection Capacity Utilization 57.2% — ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Holland & Tyndall



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	34	63	39	160	13	527	15	329
Future Volume (vph)	34	63	39	160	13	527	15	329
Lane Group Flow (vph)	0	134	0	220	0	562	0	360
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	25.2	25.2	25.2	25.2
Total Split (s)	35.0	35.0	35.0	35.0	65.0	65.0	65.0	65.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%
Maximum Green (s)	29.5	29.5	29.5	29.5	59.8	59.8	59.8	59.8
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.2	2.2	2.2	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.2		5.2
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	19	19	30	30	35	35	22	22
Act Effct Green (s)		29.5		29.5		59.8		59.8
Actuated g/C Ratio		0.30		0.30		0.60		0.60
v/c Ratio		0.30		0.47		0.55		0.36
Control Delay		25.5		32.2		7.2		11.4
Queue Delay		0.0		0.0		0.6		0.0
Total Delay		25.5		32.2		7.8		11.4
LOS		C		C		A		B
Approach Delay		25.5		32.2		7.8		11.4
Approach LOS		C		C		A		B
Queue Length 50th (m)		17.0		34.0		57.0		32.7
Queue Length 95th (m)		32.5		55.7		67.5		49.8
Internal Link Dist (m)		46.6		196.9		125.2		312.1
Turn Bay Length (m)								
Base Capacity (vph)		442		466		1024		1005
Starvation Cap Reductn		0		0		176		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.30		0.47		0.66		0.36

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 20 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 14.9 Intersection LOS: B
Intersection Capacity Utilization 60.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Parkdale & Armstrong

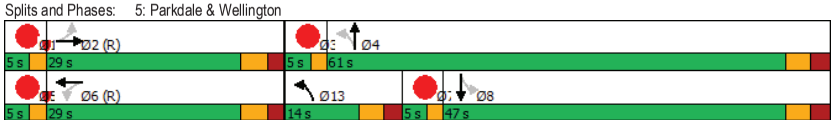
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	17	279	47	373	143	576	19	397				
Future Volume (vph)	17	279	47	373	143	576	19	397				
Lane Group Flow (vph)	0	364	0	446	143	630	19	448				
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA				
Protected Phases		2		6	13	4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	13	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.4	23.4	23.4	23.4	10.2	15.5	20.5	20.5	3.0	3.0	3.0	3.0
Total Split (s)	29.0	29.0	29.0	29.0	14.0	61.0	47.0	47.0	5.0	5.0	5.0	5.0
Total Split (%)	29.0%	29.0%	29.0%	29.0%	14.0%	61.0%	47.0%	47.0%	5%	5%	5%	5%
Maximum Green (s)	23.6	23.6	23.6	23.6	8.8	55.5	41.5	41.5	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	2.1	2.1	2.1	2.1	2.2	2.5	2.5	2.5	0.0	0.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)		5.4		5.4	5.2	5.5	5.5	5.5				
Lead/Lag	Lag	Lag	Lag	Lag	Lead				Lead		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		2.0	2.0	2.0				
Flash Dont Walk (s)	8.0	8.0	8.0	8.0		8.0	8.0	8.0				
Pedestrian Calls (#/hr)	153	153	142	142		76	72	72				
Act Effct Green (s)		28.6		28.6	60.8	60.5	46.5	46.5				
Actuated g/C Ratio		0.29		0.29	0.61	0.60	0.46	0.46				
v/c Ratio		0.48		0.58	0.32	0.63	0.07	0.59				
Control Delay		50.0		34.2	10.9	14.5	12.9	18.3				
Queue Delay		0.0		0.0	0.0	0.5	0.0	0.3				
Total Delay		50.0		34.2	10.9	15.0	12.9	18.7				
LOS		D		C	B	B	B	B				
Approach Delay		50.0		34.2		14.3		18.4				
Approach LOS		D		C		B		B				
Queue Length 50th (m)		35.1		38.8	10.9	57.5	1.7	44.0				
Queue Length 95th (m)		50.3		54.7	m17.1	85.7	m4.5	59.7				
Internal Link Dist (m)		223.4		216.2		139.5		125.2				
Turn Bay Length (m)					40.0		40.0					
Base Capacity (vph)		758		767	449	1006	291	763				
Starvation Cap Reductn		0		0	0	110	0	60				
Spillback Cap Reductn		0		0	0	0	0	0				
Storage Cap Reductn		0		0	0	0	0	0				
Reduced v/c Ratio		0.48		0.58	0.32	0.70	0.07	0.64				

Intersection Summary

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

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 25.9 — Intersection LOS: C
Intersection Capacity Utilization 88.3% — ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Parkdale & Wellington



Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	215	658	40	398
Future Volume (vph)	215	658	40	398
Lane Group Flow (vph)	281	816	40	398
Turn Type	Perm	NA	Perm	NA
Protected Phases		2		6
Permitted Phases	8		6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	22.7	20.3	15.3	15.3
Total Split (s)	32.0	68.0	68.0	68.0
Total Split (%)	32.0%	68.0%	68.0%	68.0%
Maximum Green (s)	25.3	62.7	62.7	62.7
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.7	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.3	5.3	5.3
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		
Flash Dont Walk (s)	9.0	8.0		
Pedestrian Calls (#/hr)	25	19		
Act Effct Green (s)	25.3	62.7	62.7	62.7
Actuated g/C Ratio	0.25	0.63	0.63	0.63
v/c Ratio	0.73	0.78	0.17	0.36
Control Delay	46.8	15.8	6.8	6.6
Queue Delay	0.0	0.2	0.0	0.1
Total Delay	46.8	16.0	6.8	6.7
LOS	D	B	A	A
Approach Delay	46.8	16.0		6.7
Approach LOS	D	B		A
Queue Length 50th (m)	50.0	72.5	1.9	18.9
Queue Length 95th (m)	#84.4	m106.0	m3.3	25.4
Internal Link Dist (m)	224.2	197.3		139.5
Turn Bay Length (m)			85.0	
Base Capacity (vph)	385	1048	231	1094
Starvation Cap Reductn	0	24	0	0
Spillback Cap Reductn	0	0	0	102
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.73	0.80	0.17	0.40

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 12 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 19.0 — Intersection LOS: B
Intersection Capacity Utilization 74.4% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Parkdale & Gladstone

Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	360	24	89	622	595
Future Volume (vph)	360	24	89	622	595
Lane Group Flow (vph)	360	574	89	622	843
Turn Type	Perm	NA	pm+pt	NA	NA
Protected Phases		8	5	2	6
Permitted Phases	8		2		
Detector Phase	8	8	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	20.5	20.5	10.2	27.3	21.3
Total Split (s)	29.0	29.0	11.0	71.0	60.0
Total Split (%)	29.0%	29.0%	11.0%	71.0%	60.0%
Maximum Green (s)	23.5	23.5	5.8	64.7	53.7
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0
All-Red Time (s)	2.2	2.2	2.2	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.2	6.3	6.3
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	8.0	8.0		14.0	8.0
Pedestrian Calls (#/hr)	3	3		21	13
Act Effct Green (s)	23.5	23.5	65.8	64.7	55.9
Actuated g/C Ratio	0.24	0.24	0.66	0.65	0.56
v/c Ratio	0.93	1.02	0.34	0.55	0.90
Control Delay	69.1	65.0	14.4	12.0	35.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	69.1	65.0	14.4	12.0	35.3
LOS	E	E	B	B	D
Approach Delay		66.5		12.3	35.3
Approach LOS		E		B	D
Queue Length 50th (m)	68.4	~72.7	5.6	59.8	161.1
Queue Length 95th (m)	#120.5	#136.8	10.9	87.5	#231.8
Internal Link Dist (m)		462.5		38.8	197.3
Turn Bay Length (m)					
Base Capacity (vph)	389	560	261	1129	932
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	4	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.93	1.02	0.34	0.55	0.90

Intersection Summary

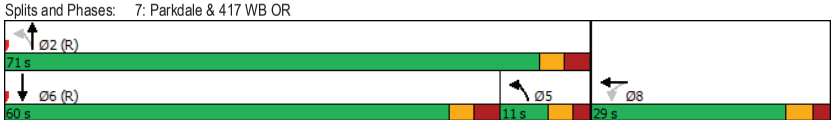
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 39 (39%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 110

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 40.5 — Intersection LOS: D
Intersection Capacity Utilization 106.3% — ICU Level of Service G
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Parkdale & 417 WB OR



Lane Group	EBT	WBT	SBL	SBR
Lane Configurations				
Traffic Volume (vph)	445	478	54	20
Future Volume (vph)	445	478	54	20
Lane Group Flow (vph)	445	478	54	20
Turn Type	NA	NA	Prot	Perm
Protected Phases	2	6	8	
Permitted Phases				8
Detector Phase	2	6	8	8
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	15.3	26.3	17.5	17.5
Total Split (s)	57.0	57.0	18.0	18.0
Total Split (%)	76.0%	76.0%	24.0%	24.0%
Maximum Green (s)	51.7	51.7	12.5	12.5
Yellow Time (s)	3.3	3.3	3.0	3.0
All-Red Time (s)	2.0	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.5	5.5
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	None
Walk Time (s)		14.0	7.0	7.0
Flash Dont Walk (s)		7.0	5.0	5.0
Pedestrian Calls (#/hr)		157	62	62
Act Effct Green (s)	57.2	57.2	11.2	11.2
Actuated g/C Ratio	0.76	0.76	0.15	0.15
v/c Ratio	0.33	0.36	0.22	0.10
Control Delay	4.9	5.1	30.1	13.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.9	5.1	30.1	13.6
LOS	A	A	C	B
Approach Delay	4.9	5.1	25.6	
Approach LOS	A	A	C	
Queue Length 50th (m)	21.3	23.5	6.7	0.0
Queue Length 95th (m)	33.9	37.2	16.1	5.5
Internal Link Dist (m)	216.2	153.4	73.2	
Turn Bay Length (m)				30.0
Base Capacity (vph)	1330	1330	276	227
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.33	0.36	0.20	0.09

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 72 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 6.5 — Intersection LOS: A
Intersection Capacity Utilization 45.1% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 8: Wellington & Carruthers

Appendix H

TDM Checklist

DRAFT

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	☐

Appendix I

Synchro Intersection Worksheets – 2025 Future Total Conditions

DRAFT

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	8	11	57	4	10	536	10	319
Future Volume (vph)	8	11	57	4	10	536	10	319
Lane Group Flow (vph)	0	50	0	113	0	567	0	334
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	29.3	29.3	29.3	29.3
Total Split (s)	24.0	24.0	24.0	24.0	76.0	76.0	76.0	76.0
Total Split (%)	24.0%	24.0%	24.0%	24.0%	76.0%	76.0%	76.0%	76.0%
Maximum Green (s)	18.5	18.5	18.5	18.5	70.7	70.7	70.7	70.7
Yellow Time (s)	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	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.3		5.3
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	24	24	17	17	67	67	74	74
Act Effct Green (s)		13.5		13.5		75.7		75.7
Actuated g/C Ratio		0.14		0.14		0.76		0.76
v/c Ratio		0.22		0.55		0.24		0.14
Control Delay		21.0		36.6		0.7		3.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		21.0		36.6		0.7		3.8
LOS		C		D		A		A
Approach Delay		21.0		36.6		0.7		3.8
Approach LOS		C		D		A		A
Queue Length 50th (m)		3.4		13.9		0.7		6.6
Queue Length 95th (m)		13.0		29.4		2.9		13.6
Internal Link Dist (m)		151.9		132.2		211.0		210.0
Turn Bay Length (m)								
Base Capacity (vph)		296		268		2350		2341
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.17		0.42		0.24		0.14

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 6.4 — Intersection LOS: A
Intersection Capacity Utilization 47.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Holland & Spencer

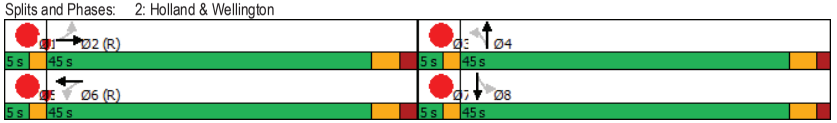
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	38	326	48	226	54	520	25	394				
Future Volume (vph)	38	326	48	226	54	520	25	394				
Lane Group Flow (vph)	38	389	48	269	0	625	0	445				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2		6		4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	4	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.6	23.6	24.5	24.5	20.1	20.1	20.1	20.1	3.0	3.0	3.0	3.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	5.0	5.0	5.0	5.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	5%	5%	5%	5%
Maximum Green (s)	39.4	39.4	39.4	39.4	39.9	39.9	39.9	39.9	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
All-Red Time (s)	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6		5.1		5.1				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	Max	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0				
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	13.0	13.0	13.0	13.0				
Pedestrian Calls (#/hr)	153	153	113	113	123	123	116	116				
Act Effct Green (s)	39.4	39.4	39.4	39.4		39.9		39.9				
Actuated g/C Ratio	0.39	0.39	0.39	0.39		0.40		0.40				
v/c Ratio	0.12	0.61	0.20	0.41		0.58		0.39				
Control Delay	20.7	29.0	20.8	22.4		26.2		19.9				
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0				
Total Delay	20.7	29.0	20.8	22.4		26.2		19.9				
LOS	C	C	C	C		C		B				
Approach Delay		28.3		22.2		26.2		19.9				
Approach LOS		C		C		C		B				
Queue Length 50th (m)	4.6	58.8	4.2	26.9		48.8		28.6				
Queue Length 95th (m)	11.5	89.6	12.8	52.9		66.5		37.4				
Internal Link Dist (m)		128.0		223.4		238.5		211.0				
Turn Bay Length (m)	30.0		30.0									
Base Capacity (vph)	316	642	235	649		1078		1141				
Starvation Cap Reductn	0	0	0	0		0		0				
Spillback Cap Reductn	0	0	0	0		0		0				
Storage Cap Reductn	0	0	0	0		0		0				
Reduced v/c Ratio	0.12	0.61	0.20	0.41		0.58		0.39				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 84 (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: 24.4 — Intersection LOS: C
Intersection Capacity Utilization 82.1% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Holland & Wellington

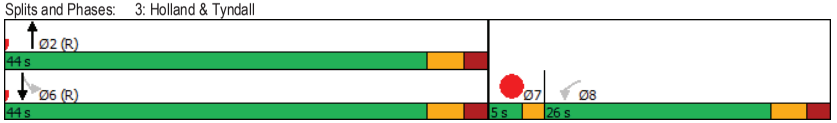


Lane Group	WBL	NBT	SBL	SBT	Ø7
Lane Configurations					
Traffic Volume (vph)	42	492	128	514	
Future Volume (vph)	42	492	128	514	
Lane Group Flow (vph)	218	534	128	514	
Turn Type	Perm	NA	Perm	NA	
Protected Phases		2		6	7
Permitted Phases	8		6		
Detector Phase	8	2	6	6	
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	10.0	1.0
Minimum Split (s)	23.5	25.7	15.7	15.7	3.0
Total Split (s)	26.0	44.0	44.0	44.0	5.0
Total Split (%)	34.7%	58.7%	58.7%	58.7%	7%
Maximum Green (s)	20.5	38.3	38.3	38.3	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.2	2.4	2.4	2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.7	5.7	5.7	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	Max
Walk Time (s)	5.0	10.0			
Flash Dont Walk (s)	13.0	10.0			
Pedestrian Calls (#/hr)	38	47			
Act Effct Green (s)	16.3	42.5	42.5	42.5	
Actuated g/C Ratio	0.22	0.57	0.57	0.57	
v/c Ratio	0.70	0.29	0.30	0.52	
Control Delay	38.6	9.3	12.2	13.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	38.6	9.3	12.2	13.3	
LOS	D	A	B	B	
Approach Delay	38.6	9.3		13.1	
Approach LOS	D	A		B	
Queue Length 50th (m)	27.7	19.2	9.2	43.4	
Queue Length 95th (m)	46.7	30.5	21.6	74.9	
Internal Link Dist (m)	197.1	156.5		238.5	
Turn Bay Length (m)					
Base Capacity (vph)	395	1849	427	989	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.55	0.29	0.30	0.52	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.6 — Intersection LOS: B
Intersection Capacity Utilization 55.6% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Holland & Tyndall



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		✣		✣		✣		✣
Traffic Volume (vph)	27	75	12	47	22	368	12	216
Future Volume (vph)	27	75	12	47	22	368	12	216
Lane Group Flow (vph)	0	117	0	72	0	413	0	250
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	25.2	25.2	25.2	25.2
Total Split (s)	27.0	27.0	27.0	27.0	73.0	73.0	73.0	73.0
Total Split (%)	27.0%	27.0%	27.0%	27.0%	73.0%	73.0%	73.0%	73.0%
Maximum Green (s)	21.5	21.5	21.5	21.5	67.8	67.8	67.8	67.8
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.2	2.2	2.2	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.2		5.2
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	28	28	25	25	33	33	32	32
Act Effct Green (s)		21.5		21.5		67.8		67.8
Actuated g/C Ratio		0.22		0.22		0.68		0.68
v/c Ratio		0.35		0.21		0.36		0.22
Control Delay		34.7		29.8		3.0		6.4
Queue Delay		0.0		0.0		0.4		0.0
Total Delay		34.7		29.8		3.4		6.4
LOS		C		C		A		A
Approach Delay		34.7		29.8		3.4		6.4
Approach LOS		C		C		A		A
Queue Length 50th (m)		18.1		9.9		3.7		15.5
Queue Length 95th (m)		34.3		21.7		4.4		25.0
Internal Link Dist (m)		46.6		196.9		125.2		312.1
Turn Bay Length (m)								
Base Capacity (vph)		336		345		1139		1134
Starvation Cap Reductn		0		0		327		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.35		0.21		0.51		0.22

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 52 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 10.8 — Intersection LOS: B
Intersection Capacity Utilization 54.1% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Parkdale & Armstrong

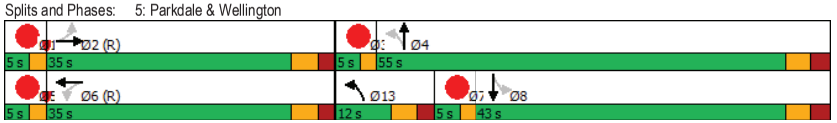
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	32	264	27	173	72	391	20	254				
Future Volume (vph)	32	264	27	173	72	391	20	254				
Lane Group Flow (vph)	0	383	0	218	72	476	20	277				
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA				
Protected Phases		2		6	13	4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	13	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.4	23.4	23.4	23.4	10.2	15.5	20.5	20.5	3.0	3.0	3.0	3.0
Total Split (s)	35.0	35.0	35.0	35.0	12.0	55.0	43.0	43.0	5.0	5.0	5.0	5.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	12.0%	55.0%	43.0%	43.0%	5%	5%	5%	5%
Maximum Green (s)	29.6	29.6	29.6	29.6	6.8	49.5	37.5	37.5	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	2.1	2.1	2.1	2.1	2.2	2.5	2.5	2.5	0.0	0.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)		5.4		5.4	5.2	5.5	5.5	5.5				
Lead/Lag	Lag	Lag	Lag	Lag	Lead				Lead		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		2.0	2.0	2.0				
Flash Dont Walk (s)	8.0	8.0	8.0	8.0		8.0	8.0	8.0				
Pedestrian Calls (#/hr)	89	89	74	74		65	60	60				
Act Effct Green (s)		34.6		34.6	54.8	54.5	42.5	42.5				
Actuated g/C Ratio		0.35		0.35	0.55	0.54	0.42	0.42				
v/c Ratio		0.42		0.23	0.14	0.55	0.07	0.39				
Control Delay		13.8		24.1	3.5	7.9	16.3	19.0				
Queue Delay		0.0		0.0	0.0	0.2	0.0	0.0				
Total Delay		13.8		24.1	3.5	8.1	16.3	19.0				
LOS		B		C	A	A	B	B				
Approach Delay		13.8		24.1		7.5		18.8				
Approach LOS		B		C		A		B				
Queue Length 50th (m)		12.0		15.6	2.0	45.2	2.1	29.9				
Queue Length 95th (m)		18.4		24.6	m3.2	52.9	m5.9	43.9				
Internal Link Dist (m)		223.4		216.2		26.9		125.2				
Turn Bay Length (m)					40.0		40.0					
Base Capacity (vph)		910		947	501	869	305	713				
Starvation Cap Reductn		0		0	0	58	0	0				
Spillback Cap Reductn		0		0	0	0	0	0				
Storage Cap Reductn		0		0	0	0	0	0				
Reduced v/c Ratio		0.42		0.23	0.14	0.59	0.07	0.39				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 14.0 — Intersection LOS: B
Intersection Capacity Utilization 78.2% — ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Parkdale & Wellington

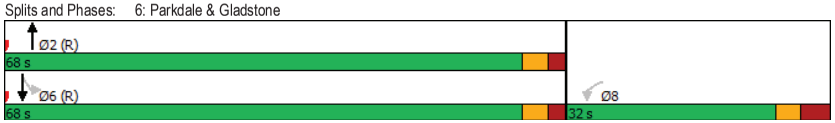


Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	134	508	34	381
Future Volume (vph)	134	508	34	381
Lane Group Flow (vph)	165	639	34	381
Turn Type	Perm	NA	Perm	NA
Protected Phases		2		6
Permitted Phases	8		6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	22.7	20.3	15.3	15.3
Total Split (s)	32.0	68.0	68.0	68.0
Total Split (%)	32.0%	68.0%	68.0%	68.0%
Maximum Green (s)	25.3	62.7	62.7	62.7
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.7	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.3	5.3	5.3
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		
Flash Dont Walk (s)	9.0	8.0		
Pedestrian Calls (#/hr)	16	8		
Act Effct Green (s)	25.3	62.7	62.7	62.7
Actuated g/C Ratio	0.25	0.63	0.63	0.63
v/c Ratio	0.41	0.61	0.10	0.35
Control Delay	35.0	12.0	9.1	10.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	35.0	12.0	9.1	10.9
LOS	C	B	A	B
Approach Delay	35.0	12.0		10.8
Approach LOS	C	B		B
Queue Length 50th (m)	26.7	61.5	2.3	34.8
Queue Length 95th (m)	45.8	74.9	m5.9	50.9
Internal Link Dist (m)	224.2	197.3		88.5
Turn Bay Length (m)			85.0	
Base Capacity (vph)	398	1053	349	1094
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	0.61	0.10	0.35

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 12 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 14.7 — Intersection LOS: B
Intersection Capacity Utilization 60.1% — ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Parkdale & Gladstone



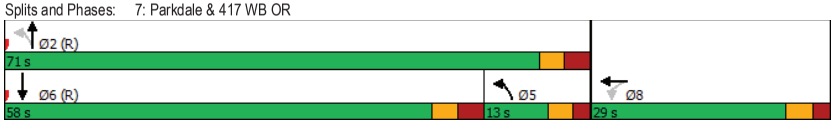
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	345	0	183	349	488
Future Volume (vph)	345	0	183	349	488
Lane Group Flow (vph)	345	544	183	349	760
Turn Type	Perm	NA	pm+pt	NA	NA
Protected Phases		8	5	2	6
Permitted Phases	8		2		
Detector Phase	8	8	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	20.5	20.5	10.2	27.3	21.3
Total Split (s)	29.0	29.0	13.0	71.0	58.0
Total Split (%)	29.0%	29.0%	13.0%	71.0%	58.0%
Maximum Green (s)	23.5	23.5	7.8	64.7	51.7
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0
All-Red Time (s)	2.2	2.2	2.2	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.2	6.3	6.3
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	8.0	8.0		14.0	8.0
Pedestrian Calls (#/hr)	1	1		24	11
Act Effct Green (s)	22.7	22.7	66.6	65.5	52.5
Actuated g/C Ratio	0.23	0.23	0.67	0.66	0.52
v/c Ratio	0.92	0.76	0.56	0.31	0.87
Control Delay	68.4	12.9	22.7	8.5	38.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	12.9	22.7	8.5	38.3
LOS	E	B	C	A	D
Approach Delay		34.4		13.4	38.3
Approach LOS		C		B	D
Queue Length 50th (m)	64.9	7.4	12.3	27.0	147.1
Queue Length 95th (m)	#113.6	45.6	20.5	40.9	#204.0
Internal Link Dist (m)		462.5		38.8	197.3
Turn Bay Length (m)					
Base Capacity (vph)	389	719	329	1143	873
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.89	0.76	0.56	0.31	0.87

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 26 (26%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 30.6 — Intersection LOS: C
Intersection Capacity Utilization 105.6% — 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: 7: Parkdale & 417 WB OR



Lane Group	EBT	WBT	SBL	SBR
Lane Configurations				
Traffic Volume (vph)	397	210	63	13
Future Volume (vph)	397	210	63	13
Lane Group Flow (vph)	397	210	63	13
Turn Type	NA	NA	Prot	Perm
Protected Phases	2	6	8	
Permitted Phases				8
Detector Phase	2	6	8	8
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	15.3	26.3	25.5	25.5
Total Split (s)	49.0	49.0	26.0	26.0
Total Split (%)	65.3%	65.3%	34.7%	34.7%
Maximum Green (s)	43.7	43.7	20.5	20.5
Yellow Time (s)	3.3	3.3	3.0	3.0
All-Red Time (s)	2.0	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.5	5.5
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max
Walk Time (s)		14.0	15.0	15.0
Flash Dont Walk (s)		7.0	5.0	5.0
Pedestrian Calls (#/hr)		75	66	66
Act Effct Green (s)	43.7	43.7	20.5	20.5
Actuated g/C Ratio	0.58	0.58	0.27	0.27
v/c Ratio	0.39	0.21	0.14	0.03
Control Delay	9.9	8.1	21.7	11.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.9	8.1	21.7	11.0
LOS	A	A	C	B
Approach Delay	9.9	8.1	19.9	
Approach LOS	A	A	B	
Queue Length 50th (m)	27.5	12.8	6.7	0.0
Queue Length 95th (m)	44.3	22.4	15.4	3.8
Internal Link Dist (m)	216.2	153.4	73.2	
Turn Bay Length (m)				30.0
Base Capacity (vph)	1016	1016	453	385
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.21	0.14	0.03

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Natural Cycle: 55
Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.39

Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 47.7%	ICU Level of Service A
Analysis Period (min) 15	

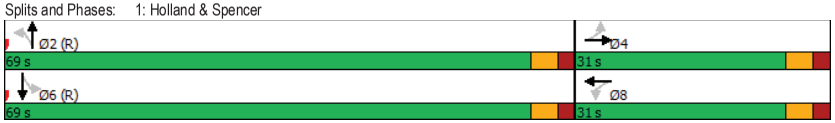
Splits and Phases: 8: Wellington & Carruthers

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	24	153	61	55	361	16	484
Future Volume (vph)	12	24	153	61	55	361	16	484
Lane Group Flow (vph)	0	66	0	244	0	444	0	514
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	29.3	29.3	29.3	29.3
Total Split (s)	31.0	31.0	31.0	31.0	69.0	69.0	69.0	69.0
Total Split (%)	31.0%	31.0%	31.0%	31.0%	69.0%	69.0%	69.0%	69.0%
Maximum Green (s)	25.5	25.5	25.5	25.5	63.7	63.7	63.7	63.7
Yellow Time (s)	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	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.3		5.3
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	24	24	23	23	95	95	85	85
Act Effct Green (s)		21.9		21.9		67.3		67.3
Actuated g/C Ratio		0.22		0.22		0.67		0.67
v/c Ratio		0.19		0.82		0.25		0.25
Control Delay		19.7		58.3		1.2		7.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		19.7		58.3		1.2		7.2
LOS		B		E		A		A
Approach Delay		19.7		58.3		1.2		7.2
Approach LOS		B		E		A		A
Queue Length 50th (m)		5.5		43.0		1.6		19.3
Queue Length 95th (m)		15.7		#74.6		2.3		28.3
Internal Link Dist (m)		151.9		132.2		211.0		210.0
Turn Bay Length (m)								
Base Capacity (vph)		403		343		1803		2065
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.16		0.71		0.25		0.25

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 38 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 15.6 — Intersection LOS: B
Intersection Capacity Utilization 74.6% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Holland & Spencer



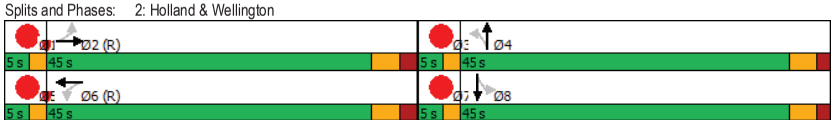
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	21	346	80	486	44	398	29	652				
Future Volume (vph)	21	346	80	486	44	398	29	652				
Lane Group Flow (vph)	21	427	80	510	0	502	0	745				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2		6		4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	4	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.6	23.6	24.5	24.5	20.1	20.1	20.1	20.1	3.0	3.0	3.0	3.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	5.0	5.0	5.0	5.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	5%	5%	5%	5%
Maximum Green (s)	39.4	39.4	39.4	39.4	39.9	39.9	39.9	39.9	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
All-Red Time (s)	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6		5.1		5.1				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	Max	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0				
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	13.0	13.0	13.0	13.0				
Pedestrian Calls (#/hr)	241	241	166	166	165	165	146	146				
Act Effct Green (s)	39.4	39.4	39.4	39.4		39.9		39.9				
Actuated g/C Ratio	0.39	0.39	0.39	0.39		0.40		0.40				
v/c Ratio	0.12	0.68	0.38	0.76		0.51		0.65				
Control Delay	21.7	31.8	18.6	23.0		17.5		23.4				
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0				
Total Delay	21.7	31.8	18.6	23.0		17.5		23.4				
LOS	C	C	B	C		B		C				
Approach Delay		31.4		22.4		17.5		23.4				
Approach LOS		C		C		B		C				
Queue Length 50th (m)	2.5	67.3	6.7	46.4		28.2		45.6				
Queue Length 95th (m)	7.9	101.9	m13.5	62.3		34.9		68.2				
Internal Link Dist (m)		128.0		223.4		238.5		211.0				
Turn Bay Length (m)	30.0		30.0									
Base Capacity (vph)	174	626	208	673		976		1138				
Starvation Cap Reductn	0	0	0	0		0		0				
Spillback Cap Reductn	0	0	0	0		0		0				
Storage Cap Reductn	0	0	0	0		0		0				
Reduced v/c Ratio	0.12	0.68	0.38	0.76		0.51		0.65				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 72 (72%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 23.4 — Intersection LOS: C
Intersection Capacity Utilization 93.6% — ICU Level of Service F
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Holland & Wellington

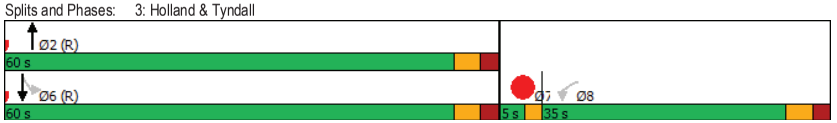


Lane Group	WBL	NBT	SBL	SBT	Ø7
Lane Configurations					
Traffic Volume (vph)	49	595	145	585	
Future Volume (vph)	49	595	145	585	
Lane Group Flow (vph)	236	624	145	585	
Turn Type	Perm	NA	Perm	NA	
Protected Phases		2		6	7
Permitted Phases	8		6		
Detector Phase	8	2	6	6	
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	10.0	1.0
Minimum Split (s)	23.5	25.7	15.7	15.7	3.0
Total Split (s)	35.0	60.0	60.0	60.0	5.0
Total Split (%)	35.0%	60.0%	60.0%	60.0%	5%
Maximum Green (s)	29.5	54.3	54.3	54.3	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.2	2.4	2.4	2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.7	5.7	5.7	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	Max
Walk Time (s)	5.0	10.0			
Flash Dont Walk (s)	13.0	10.0			
Pedestrian Calls (#/hr)	15	22			
Act Effct Green (s)	21.0	62.8	62.8	62.8	
Actuated g/C Ratio	0.21	0.63	0.63	0.63	
v/c Ratio	0.75	0.30	0.34	0.53	
Control Delay	51.7	9.7	6.8	7.0	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	51.7	9.7	6.8	7.0	
LOS	D	A	A	A	
Approach Delay	51.7	9.7		7.0	
Approach LOS	D	A		A	
Queue Length 50th (m)	43.2	26.4	6.1	27.1	
Queue Length 95th (m)	63.0	43.8	m11.7	40.3	
Internal Link Dist (m)	197.1	156.5		238.5	
Turn Bay Length (m)					
Base Capacity (vph)	439	2062	426	1095	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.54	0.30	0.34	0.53	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 24 (24%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 14.7	Intersection LOS: B
Intersection Capacity Utilization 57.9%	ICU Level of Service B
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 3: Holland & Tyndall



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	34	63	39	160	13	504	15	327
Future Volume (vph)	34	63	39	160	13	504	15	327
Lane Group Flow (vph)	0	134	0	220	0	539	0	358
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	25.2	25.2	25.2	25.2
Total Split (s)	35.0	35.0	35.0	35.0	65.0	65.0	65.0	65.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%
Maximum Green (s)	29.5	29.5	29.5	29.5	59.8	59.8	59.8	59.8
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.2	2.2	2.2	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.2		5.2
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	19	19	22	22	37	37	32	32
Act Effct Green (s)		29.5		29.5		59.8		59.8
Actuated g/C Ratio		0.30		0.30		0.60		0.60
v/c Ratio		0.30		0.47		0.53		0.36
Control Delay		25.5		32.2		7.3		11.4
Queue Delay		0.0		0.0		0.5		0.0
Total Delay		25.5		32.2		7.9		11.4
LOS		C		C		A		B
Approach Delay		25.5		32.2		7.9		11.4
Approach LOS		C		C		A		B
Queue Length 50th (m)		17.0		34.0		54.7		32.4
Queue Length 95th (m)		32.5		55.7		68.0		49.7
Internal Link Dist (m)		46.6		196.9		125.2		312.1
Turn Bay Length (m)								
Base Capacity (vph)		442		466		1021		1006
Starvation Cap Reductn		0		0		178		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.30		0.47		0.64		0.36

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 20 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 15.0 — Intersection LOS: B
Intersection Capacity Utilization 58.7% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Parkdale & Armstrong

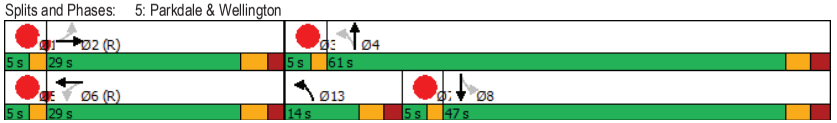
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	20	248	47	320	143	548	19	392				
Future Volume (vph)	20	248	47	320	143	548	19	392				
Lane Group Flow (vph)	0	336	0	393	143	602	19	445				
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA				
Protected Phases		2		6	13	4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	13	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.4	23.4	23.4	23.4	10.2	15.5	20.5	20.5	3.0	3.0	3.0	3.0
Total Split (s)	29.0	29.0	29.0	29.0	14.0	61.0	47.0	47.0	5.0	5.0	5.0	5.0
Total Split (%)	29.0%	29.0%	29.0%	29.0%	14.0%	61.0%	47.0%	47.0%	5%	5%	5%	5%
Maximum Green (s)	23.6	23.6	23.6	23.6	8.8	55.5	41.5	41.5	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	2.1	2.1	2.1	2.1	2.2	2.5	2.5	2.5	0.0	0.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)		5.4		5.4	5.2	5.5	5.5	5.5				
Lead/Lag	Lag	Lag	Lag	Lag	Lead				Lead		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		2.0	2.0	2.0				
Flash Dont Walk (s)	8.0	8.0	8.0	8.0		8.0	8.0	8.0				
Pedestrian Calls (#/hr)	173	173	157	157		91	97	97				
Act Effct Green (s)		28.6		28.6	60.8	60.5	46.5	46.5				
Actuated g/C Ratio		0.29		0.29	0.61	0.60	0.46	0.46				
v/c Ratio		0.46		0.52	0.32	0.60	0.07	0.59				
Control Delay		48.8		33.0	10.5	13.8	12.9	18.5				
Queue Delay		0.0		0.0	0.0	0.4	0.0	0.3				
Total Delay		48.8		33.0	10.5	14.2	12.9	18.9				
LOS		D		C	B	B	B	B				
Approach Delay		48.8		33.0		13.5		18.6				
Approach LOS		D		C		B		B				
Queue Length 50th (m)		32.0		33.5	10.7	53.9	1.6	43.9				
Queue Length 95th (m)		46.7		48.2	m17.0	79.3	m4.6	59.7				
Internal Link Dist (m)		223.4		216.2		26.9		125.2				
Turn Bay Length (m)					40.0		40.0					
Base Capacity (vph)		737		753	450	998	292	749				
Starvation Cap Reductn		0		0	0	109	0	55				
Spillback Cap Reductn		0		0	0	0	0	0				
Storage Cap Reductn		0		0	0	0	0	0				
Reduced v/c Ratio		0.46		0.52	0.32	0.68	0.07	0.64				

Intersection Summary

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

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 24.8 — Intersection LOS: C
Intersection Capacity Utilization 84.7% — ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Parkdale & Wellington



Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	217	626	41	404
Future Volume (vph)	217	626	41	404
Lane Group Flow (vph)	283	784	41	404
Turn Type	Perm	NA	Perm	NA
Protected Phases		2		6
Permitted Phases	8		6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	22.7	20.3	15.3	15.3
Total Split (s)	32.0	68.0	68.0	68.0
Total Split (%)	32.0%	68.0%	68.0%	68.0%
Maximum Green (s)	25.3	62.7	62.7	62.7
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.7	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.3	5.3	5.3
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		
Flash Dont Walk (s)	9.0	8.0		
Pedestrian Calls (#/hr)	27	21		
Act Effct Green (s)	25.3	62.7	62.7	62.7
Actuated g/C Ratio	0.25	0.63	0.63	0.63
v/c Ratio	0.74	0.75	0.16	0.37
Control Delay	47.5	15.3	6.9	6.9
Queue Delay	0.0	0.2	0.0	0.1
Total Delay	47.5	15.5	6.9	6.9
LOS	D	B	A	A
Approach Delay	47.5	15.5		6.9
Approach LOS	D	B		A
Queue Length 50th (m)	50.5	69.7	2.0	19.7
Queue Length 95th (m)	#86.0	m103.8	m3.6	26.5
Internal Link Dist (m)	224.2	197.3		88.5
Turn Bay Length (m)			85.0	
Base Capacity (vph)	383	1045	252	1094
Starvation Cap Reductn	0	23	0	0
Spillback Cap Reductn	0	0	0	98
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.74	0.77	0.16	0.41

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 12 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 19.0 — Intersection LOS: B
Intersection Capacity Utilization 72.8% — ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Parkdale & Gladstone

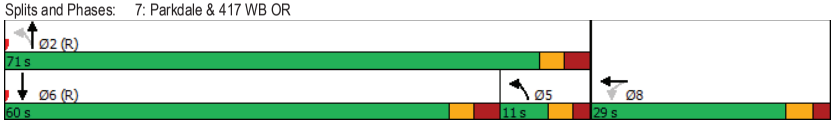
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	334	24	84	602	593
Future Volume (vph)	334	24	84	602	593
Lane Group Flow (vph)	334	541	84	602	832
Turn Type	Perm	NA	pm+pt	NA	NA
Protected Phases		8	5	2	6
Permitted Phases	8		2		
Detector Phase	8	8	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	20.5	20.5	10.2	27.3	21.3
Total Split (s)	29.0	29.0	11.0	71.0	60.0
Total Split (%)	29.0%	29.0%	11.0%	71.0%	60.0%
Maximum Green (s)	23.5	23.5	5.8	64.7	53.7
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0
All-Red Time (s)	2.2	2.2	2.2	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.2	6.3	6.3
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	8.0	8.0		14.0	8.0
Pedestrian Calls (#/hr)	3	3		23	15
Act Effct Green (s)	22.5	22.5	66.8	65.7	56.9
Actuated g/C Ratio	0.22	0.22	0.67	0.66	0.57
v/c Ratio	0.90	0.97	0.30	0.53	0.88
Control Delay	65.0	50.2	12.3	11.3	32.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	50.2	12.3	11.3	32.3
LOS	E	D	B	B	C
Approach Delay		55.9		11.4	32.3
Approach LOS		E		B	C
Queue Length 50th (m)	62.2	52.0	5.3	56.9	158.7
Queue Length 95th (m)	#108.8	#119.3	10.3	83.4	#227.8
Internal Link Dist (m)		462.5		38.8	197.3
Turn Bay Length (m)					
Base Capacity (vph)	389	568	280	1146	947
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.86	0.95	0.30	0.53	0.88

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 39 (39%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 34.9 — Intersection LOS: C
Intersection Capacity Utilization 103.2% — 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: 7: Parkdale & 417 WB OR



Lane Group	EBT	WBT	SBL	SBR
Lane Configurations				
Traffic Volume (vph)	395	409	54	20
Future Volume (vph)	395	409	54	20
Lane Group Flow (vph)	395	409	54	20
Turn Type	NA	NA	Prot	Perm
Protected Phases	2	6	8	
Permitted Phases				8
Detector Phase	2	6	8	8
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	15.3	26.3	17.5	17.5
Total Split (s)	57.0	57.0	18.0	18.0
Total Split (%)	76.0%	76.0%	24.0%	24.0%
Maximum Green (s)	51.7	51.7	12.5	12.5
Yellow Time (s)	3.3	3.3	3.0	3.0
All-Red Time (s)	2.0	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.5	5.5
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	None
Walk Time (s)		14.0	7.0	7.0
Flash Dont Walk (s)		7.0	5.0	5.0
Pedestrian Calls (#/hr)		165	64	64
Act Effct Green (s)	57.2	57.2	11.2	11.2
Actuated g/C Ratio	0.76	0.76	0.15	0.15
v/c Ratio	0.30	0.31	0.22	0.10
Control Delay	4.7	4.7	30.1	13.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.7	4.7	30.1	13.6
LOS	A	A	C	B
Approach Delay	4.7	4.7	25.6	
Approach LOS	A	A	C	
Queue Length 50th (m)	18.1	19.0	6.7	0.0
Queue Length 95th (m)	29.3	30.5	16.1	5.5
Internal Link Dist (m)	216.2	153.4	73.2	
Turn Bay Length (m)				30.0
Base Capacity (vph)	1330	1330	276	227
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.31	0.20	0.09

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 72 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.31
Intersection Signal Delay: 6.5 — Intersection LOS: A
Intersection Capacity Utilization 41.3% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 8: Wellington & Carruthers

Appendix J

Synchro Intersection Worksheets – 2030 Future Total Conditions

DRAFT

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	8	11	57	4	10	536	10	336
Future Volume (vph)	8	11	57	4	10	536	10	336
Lane Group Flow (vph)	0	50	0	113	0	567	0	351
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	29.3	29.3	29.3	29.3
Total Split (s)	24.0	24.0	24.0	24.0	76.0	76.0	76.0	76.0
Total Split (%)	24.0%	24.0%	24.0%	24.0%	76.0%	76.0%	76.0%	76.0%
Maximum Green (s)	18.5	18.5	18.5	18.5	70.7	70.7	70.7	70.7
Yellow Time (s)	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	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.3		5.3
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	24	24	17	17	67	67	74	74
Act Effct Green (s)		13.5		13.5		75.7		75.7
Actuated g/C Ratio		0.14		0.14		0.76		0.76
v/c Ratio		0.22		0.55		0.24		0.15
Control Delay		21.0		36.6		0.7		3.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		21.0		36.6		0.7		3.8
LOS		C		D		A		A
Approach Delay		21.0		36.6		0.7		3.8
Approach LOS		C		D		A		A
Queue Length 50th (m)		3.4		13.9		0.9		7.0
Queue Length 95th (m)		13.0		29.4		3.2		14.3
Internal Link Dist (m)		151.9		132.2		211.0		210.0
Turn Bay Length (m)								
Base Capacity (vph)		296		268		2350		2344
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.17		0.42		0.24		0.15

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 6.4 — Intersection LOS: A
Intersection Capacity Utilization 47.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Holland & Spencer

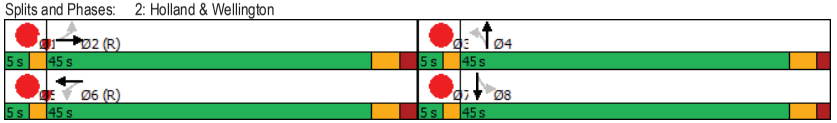
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	38	381	48	255	54	520	25	414				
Future Volume (vph)	38	381	48	255	54	520	25	414				
Lane Group Flow (vph)	38	444	48	298	0	625	0	465				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2		6		4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	4	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.6	23.6	24.5	24.5	20.1	20.1	20.1	20.1	3.0	3.0	3.0	3.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	5.0	5.0	5.0	5.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	5%	5%	5%	5%
Maximum Green (s)	39.4	39.4	39.4	39.4	39.9	39.9	39.9	39.9	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
All-Red Time (s)	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6		5.1		5.1				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	Max	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0				
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	13.0	13.0	13.0	13.0				
Pedestrian Calls (#/hr)	153	153	113	113	123	123	116	116				
Act Effct Green (s)	39.4	39.4	39.4	39.4		39.9		39.9				
Actuated g/C Ratio	0.39	0.39	0.39	0.39		0.40		0.40				
v/c Ratio	0.13	0.69	0.24	0.46		0.58		0.41				
Control Delay	20.9	31.8	23.2	25.2		26.2		20.1				
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0				
Total Delay	20.9	31.8	23.2	25.2		26.2		20.1				
LOS	C	C	C	C		C		C				
Approach Delay		30.9		24.9		26.2		20.1				
Approach LOS		C		C		C		C				
Queue Length 50th (m)	4.6	70.2	4.3	33.1		48.9		30.2				
Queue Length 95th (m)	11.6	105.3	13.7	61.0		66.6		39.2				
Internal Link Dist (m)		128.0		223.4		238.5		211.0				
Turn Bay Length (m)	30.0		30.0									
Base Capacity (vph)	295	647	203	653		1074		1147				
Starvation Cap Reductn	0	0	0	0		0		0				
Spillback Cap Reductn	0	0	0	0		0		0				
Storage Cap Reductn	0	0	0	0		0		0				
Reduced v/c Ratio	0.13	0.69	0.24	0.46		0.58		0.41				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 84 (84%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 25.7 — Intersection LOS: C
Intersection Capacity Utilization 85.5% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Holland & Wellington

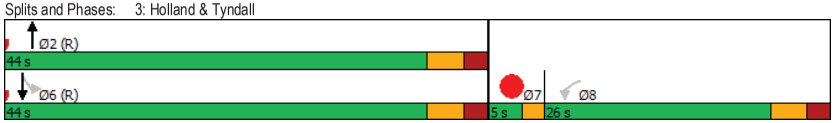


Lane Group	WBL	NBT	SBL	SBT	Ø7
Lane Configurations					
Traffic Volume (vph)	42	492	128	540	
Future Volume (vph)	42	492	128	540	
Lane Group Flow (vph)	218	534	128	540	
Turn Type	Perm	NA	Perm	NA	
Protected Phases		2		6	7
Permitted Phases	8		6		
Detector Phase	8	2	6	6	
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	10.0	1.0
Minimum Split (s)	23.5	25.7	15.7	15.7	3.0
Total Split (s)	26.0	44.0	44.0	44.0	5.0
Total Split (%)	34.7%	58.7%	58.7%	58.7%	7%
Maximum Green (s)	20.5	38.3	38.3	38.3	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.2	2.4	2.4	2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.7	5.7	5.7	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	Max
Walk Time (s)	5.0	10.0			
Flash Dont Walk (s)	13.0	10.0			
Pedestrian Calls (#/hr)	38	47			
Act Effct Green (s)	16.3	42.5	42.5	42.5	
Actuated g/C Ratio	0.22	0.57	0.57	0.57	
v/c Ratio	0.70	0.29	0.30	0.55	
Control Delay	38.6	9.3	12.2	13.8	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	38.6	9.3	12.2	13.8	
LOS	D	A	B	B	
Approach Delay	38.6	9.3		13.5	
Approach LOS	D	A		B	
Queue Length 50th (m)	27.7	19.2	9.2	46.6	
Queue Length 95th (m)	46.7	30.5	21.6	80.4	
Internal Link Dist (m)	197.1	156.5		238.5	
Turn Bay Length (m)					
Base Capacity (vph)	395	1849	427	989	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.55	0.29	0.30	0.55	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.8 — Intersection LOS: B
Intersection Capacity Utilization 55.8% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Holland & Tyndall



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		✣		✣		✣		✣
Traffic Volume (vph)	27	75	12	47	22	372	12	227
Future Volume (vph)	27	75	12	47	22	372	12	227
Lane Group Flow (vph)	0	117	0	72	0	417	0	261
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	25.2	25.2	25.2	25.2
Total Split (s)	27.0	27.0	27.0	27.0	73.0	73.0	73.0	73.0
Total Split (%)	27.0%	27.0%	27.0%	27.0%	73.0%	73.0%	73.0%	73.0%
Maximum Green (s)	21.5	21.5	21.5	21.5	67.8	67.8	67.8	67.8
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.2	2.2	2.2	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.2		5.2
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	28	28	25	25	33	33	32	32
Act Effct Green (s)		21.5		21.5		67.8		67.8
Actuated g/C Ratio		0.22		0.22		0.68		0.68
v/c Ratio		0.35		0.21		0.37		0.23
Control Delay		34.7		29.8		3.0		6.5
Queue Delay		0.0		0.0		0.4		0.0
Total Delay		34.7		29.8		3.4		6.5
LOS		C		C		A		A
Approach Delay		34.7		29.8		3.4		6.5
Approach LOS		C		C		A		A
Queue Length 50th (m)		18.1		9.9		3.9		16.4
Queue Length 95th (m)		34.3		21.7		4.2		26.2
Internal Link Dist (m)		46.6		196.9		125.2		312.1
Turn Bay Length (m)								
Base Capacity (vph)		336		345		1141		1136
Starvation Cap Reductn		0		0		328		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.35		0.21		0.51		0.23

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 52 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.37
Intersection Signal Delay: 10.8 — Intersection LOS: B
Intersection Capacity Utilization 54.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Parkdale & Armstrong

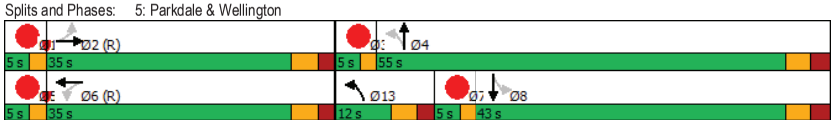
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	32	309	27	196	72	396	20	267				
Future Volume (vph)	32	309	27	196	72	396	20	267				
Lane Group Flow (vph)	0	428	0	241	72	481	20	290				
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA				
Protected Phases		2		6	13	4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	13	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.4	23.4	23.4	23.4	10.2	15.5	20.5	20.5	3.0	3.0	3.0	3.0
Total Split (s)	35.0	35.0	35.0	35.0	12.0	55.0	43.0	43.0	5.0	5.0	5.0	5.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	12.0%	55.0%	43.0%	43.0%	5%	5%	5%	5%
Maximum Green (s)	29.6	29.6	29.6	29.6	6.8	49.5	37.5	37.5	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	2.1	2.1	2.1	2.1	2.2	2.5	2.5	2.5	0.0	0.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)		5.4		5.4	5.2	5.5	5.5	5.5				
Lead/Lag	Lag	Lag	Lag	Lag	Lead				Lead		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		2.0	2.0	2.0				
Flash Dont Walk (s)	8.0	8.0	8.0	8.0		8.0	8.0	8.0				
Pedestrian Calls (#/hr)	89	89	74	74		65	60	60				
Act Effct Green (s)		34.6		34.6	54.8	54.5	42.5	42.5				
Actuated g/C Ratio		0.35		0.35	0.55	0.54	0.42	0.42				
v/c Ratio		0.46		0.25	0.15	0.55	0.07	0.41				
Control Delay		14.6		24.3	3.5	7.9	16.3	19.2				
Queue Delay		0.0		0.0	0.0	0.2	0.0	0.0				
Total Delay		14.6		24.3	3.5	8.1	16.3	19.2				
LOS		B		C	A	A	B	B				
Approach Delay		14.6		24.3		7.5		19.1				
Approach LOS		B		C		A		B				
Queue Length 50th (m)		12.5		17.4	2.0	44.9	2.1	31.2				
Queue Length 95th (m)		23.4		26.8	m3.1	52.6	m5.7	45.4				
Internal Link Dist (m)		223.4		216.2		26.9		125.2				
Turn Bay Length (m)					40.0		40.0					
Base Capacity (vph)		926		954	490	869	305	714				
Starvation Cap Reductn		0		0	0	58	0	0				
Spillback Cap Reductn		0		0	0	0	0	0				
Storage Cap Reductn		0		0	0	0	0	0				
Reduced v/c Ratio		0.46		0.25	0.15	0.59	0.07	0.41				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 14.5 — Intersection LOS: B
Intersection Capacity Utilization 79.7% — ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Parkdale & Wellington

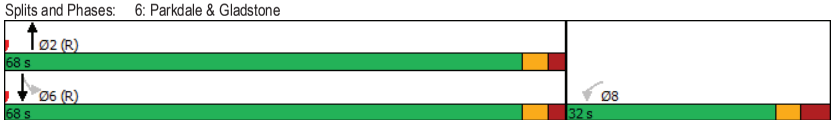


Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	134	515	34	399
Future Volume (vph)	134	515	34	399
Lane Group Flow (vph)	165	646	34	399
Turn Type	Perm	NA	Perm	NA
Protected Phases		2		6
Permitted Phases	8		6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	22.7	20.3	15.3	15.3
Total Split (s)	32.0	68.0	68.0	68.0
Total Split (%)	32.0%	68.0%	68.0%	68.0%
Maximum Green (s)	25.3	62.7	62.7	62.7
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.7	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.3	5.3	5.3
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		
Flash Dont Walk (s)	9.0	8.0		
Pedestrian Calls (#/hr)	16	8		
Act Effct Green (s)	25.3	62.7	62.7	62.7
Actuated g/C Ratio	0.25	0.63	0.63	0.63
v/c Ratio	0.41	0.61	0.10	0.36
Control Delay	35.0	12.0	9.6	11.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	35.0	12.0	9.6	11.4
LOS	C	B	A	B
Approach Delay	35.0	12.0		11.3
Approach LOS	C	B		B
Queue Length 50th (m)	26.7	62.6	2.3	36.4
Queue Length 95th (m)	45.8	76.4	m6.2	56.1
Internal Link Dist (m)	224.2	197.3		88.5
Turn Bay Length (m)			85.0	
Base Capacity (vph)	398	1054	344	1094
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	0.61	0.10	0.36

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 12 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 14.8 — Intersection LOS: B
Intersection Capacity Utilization 60.5% — ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Parkdale & Gladstone



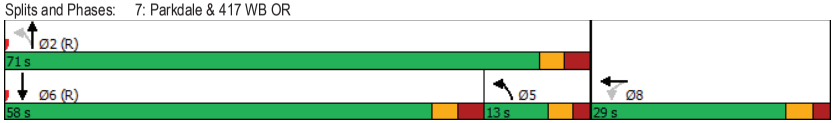
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	345	0	202	354	513
Future Volume (vph)	345	0	202	354	513
Lane Group Flow (vph)	345	544	202	354	812
Turn Type	Perm	NA	pm+pt	NA	NA
Protected Phases		8	5	2	6
Permitted Phases	8		2		
Detector Phase	8	8	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	20.5	20.5	10.2	27.3	21.3
Total Split (s)	29.0	29.0	13.0	71.0	58.0
Total Split (%)	29.0%	29.0%	13.0%	71.0%	58.0%
Maximum Green (s)	23.5	23.5	7.8	64.7	51.7
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0
All-Red Time (s)	2.2	2.2	2.2	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.2	6.3	6.3
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	8.0	8.0		14.0	8.0
Pedestrian Calls (#/hr)	1	1		24	11
Act Effct Green (s)	22.7	22.7	66.6	65.5	52.5
Actuated g/C Ratio	0.23	0.23	0.67	0.66	0.52
v/c Ratio	0.92	0.77	0.69	0.31	0.93
Control Delay	68.4	13.3	34.6	8.5	45.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	13.3	34.6	8.5	45.5
LOS	E	B	C	A	D
Approach Delay		34.7		18.0	45.5
Approach LOS		C		B	D
Queue Length 50th (m)	64.9	8.2	13.7	27.5	159.6
Queue Length 95th (m)	#113.6	47.2	#32.4	41.7	#226.6
Internal Link Dist (m)		462.5		38.8	197.3
Turn Bay Length (m)					
Base Capacity (vph)	389	716	291	1143	872
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.89	0.76	0.69	0.31	0.93

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 26 (26%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 34.5 — Intersection LOS: C
Intersection Capacity Utilization 109.8% — 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: 7: Parkdale & 417 WB OR



Lane Group	EBT	WBT	SBL	SBR
Lane Configurations				
Traffic Volume (vph)	466	238	63	13
Future Volume (vph)	466	238	63	13
Lane Group Flow (vph)	466	238	63	13
Turn Type	NA	NA	Prot	Perm
Protected Phases	2	6	8	
Permitted Phases				8
Detector Phase	2	6	8	8
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	15.3	26.3	25.5	25.5
Total Split (s)	49.0	49.0	26.0	26.0
Total Split (%)	65.3%	65.3%	34.7%	34.7%
Maximum Green (s)	43.7	43.7	20.5	20.5
Yellow Time (s)	3.3	3.3	3.0	3.0
All-Red Time (s)	2.0	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.5	5.5
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max
Walk Time (s)		14.0	15.0	15.0
Flash Dont Walk (s)		7.0	5.0	5.0
Pedestrian Calls (#/hr)		75	66	66
Act Effct Green (s)	43.7	43.7	20.5	20.5
Actuated g/C Ratio	0.58	0.58	0.27	0.27
v/c Ratio	0.46	0.23	0.14	0.03
Control Delay	10.8	8.3	21.7	11.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.8	8.3	21.7	11.0
LOS	B	A	C	B
Approach Delay	10.8	8.3	19.9	
Approach LOS	B	A	B	
Queue Length 50th (m)	34.0	14.7	6.7	0.0
Queue Length 95th (m)	54.2	25.4	15.4	3.8
Internal Link Dist (m)	216.2	153.4	73.2	
Turn Bay Length (m)				30.0
Base Capacity (vph)	1016	1016	453	385
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.46	0.23	0.14	0.03

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Natural Cycle: 55
Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 10.9	Intersection LOS: B
Intersection Capacity Utilization 51.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Wellington & Carruthers

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	24	153	61	55	380	16	484
Future Volume (vph)	12	24	153	61	55	380	16	484
Lane Group Flow (vph)	0	66	0	244	0	463	0	514
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	29.3	29.3	29.3	29.3
Total Split (s)	31.0	31.0	31.0	31.0	69.0	69.0	69.0	69.0
Total Split (%)	31.0%	31.0%	31.0%	31.0%	69.0%	69.0%	69.0%	69.0%
Maximum Green (s)	25.5	25.5	25.5	25.5	63.7	63.7	63.7	63.7
Yellow Time (s)	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	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.3		5.3
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	24	24	23	23	95	95	85	85
Act Effct Green (s)		21.9		21.9		67.3		67.3
Actuated g/C Ratio		0.22		0.22		0.67		0.67
v/c Ratio		0.19		0.82		0.26		0.25
Control Delay		19.7		58.3		1.1		7.2
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		19.7		58.3		1.1		7.2
LOS		B		E		A		A
Approach Delay		19.7		58.3		1.1		7.2
Approach LOS		B		E		A		A
Queue Length 50th (m)		5.5		43.0		1.7		19.4
Queue Length 95th (m)		15.7		#74.6		m2.4		28.3
Internal Link Dist (m)		151.9		132.2		211.0		210.0
Turn Bay Length (m)								
Base Capacity (vph)		403		343		1811		2063
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.16		0.71		0.26		0.25

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 38 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 15.4 Intersection LOS: B
Intersection Capacity Utilization 74.6% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Holland & Spencer

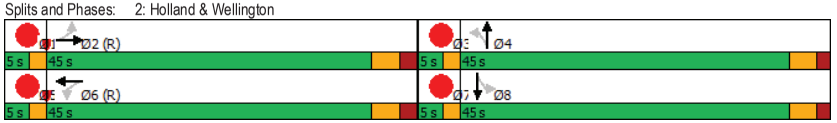
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	21	390	80	570	44	419	29	652				
Future Volume (vph)	21	390	80	570	44	419	29	652				
Lane Group Flow (vph)	21	471	80	594	0	523	0	745				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		2		6		4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	4	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.6	23.6	24.5	24.5	20.1	20.1	20.1	20.1	3.0	3.0	3.0	3.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	5.0	5.0	5.0	5.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	5%	5%	5%	5%
Maximum Green (s)	39.4	39.4	39.4	39.4	39.9	39.9	39.9	39.9	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
All-Red Time (s)	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6		5.1		5.1				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	Max	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0				
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	13.0	13.0	13.0	13.0				
Pedestrian Calls (#/hr)	241	241	166	166	165	165	146	146				
Act Effct Green (s)	39.4	39.4	39.4	39.4		39.9		39.9				
Actuated g/C Ratio	0.39	0.39	0.39	0.39		0.40		0.40				
v/c Ratio	0.18	0.75	0.44	0.88		0.53		0.66				
Control Delay	24.8	34.8	20.1	31.2		17.7		23.4				
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0				
Total Delay	24.8	34.8	20.1	31.2		17.7		23.4				
LOS	C	C	C	C		B		C				
Approach Delay		34.3		29.9		17.7		23.4				
Approach LOS		C		C		B		C				
Queue Length 50th (m)	2.6	76.8	6.4	52.3		29.0		45.4				
Queue Length 95th (m)	8.5	115.6	m12.1	#168.2		36.0		68.2				
Internal Link Dist (m)		128.0		223.4		238.5		211.0				
Turn Bay Length (m)	30.0		30.0									
Base Capacity (vph)	116	631	183	675		985		1137				
Starvation Cap Reductn	0	0	0	0		0		0				
Spillback Cap Reductn	0	0	0	0		0		0				
Storage Cap Reductn	0	0	0	0		0		0				
Reduced v/c Ratio	0.18	0.75	0.44	0.88		0.53		0.66				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 72 (72%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 26.2 — Intersection LOS: C
Intersection Capacity Utilization 98.8% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Holland & Wellington

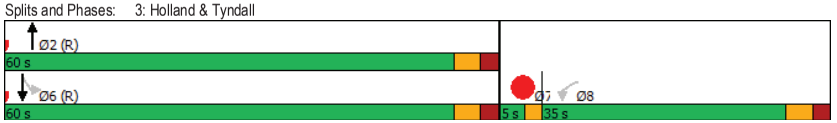


Lane Group	WBL	NBT	SBL	SBT	Ø7
Lane Configurations					
Traffic Volume (vph)	49	625	145	585	
Future Volume (vph)	49	625	145	585	
Lane Group Flow (vph)	236	654	145	585	
Turn Type	Perm	NA	Perm	NA	
Protected Phases		2		6	7
Permitted Phases	8		6		
Detector Phase	8	2	6	6	
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	10.0	1.0
Minimum Split (s)	23.5	25.7	15.7	15.7	3.0
Total Split (s)	35.0	60.0	60.0	60.0	5.0
Total Split (%)	35.0%	60.0%	60.0%	60.0%	5%
Maximum Green (s)	29.5	54.3	54.3	54.3	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.2	2.4	2.4	2.4	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.7	5.7	5.7	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	Max
Walk Time (s)	5.0	10.0			
Flash Dont Walk (s)	13.0	10.0			
Pedestrian Calls (#/hr)	15	22			
Act Effct Green (s)	21.0	62.8	62.8	62.8	
Actuated g/C Ratio	0.21	0.63	0.63	0.63	
v/c Ratio	0.75	0.32	0.35	0.53	
Control Delay	51.7	9.9	6.8	6.8	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	51.7	9.9	6.8	6.8	
LOS	D	A	A	A	
Approach Delay	51.7	9.9		6.8	
Approach LOS	D	A		A	
Queue Length 50th (m)	43.2	28.0	5.8	26.5	
Queue Length 95th (m)	63.0	46.3	m11.1	39.6	
Internal Link Dist (m)	197.1	156.5		238.5	
Turn Bay Length (m)					
Base Capacity (vph)	439	2062	410	1095	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.54	0.32	0.35	0.53	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 24 (24%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 14.6 — Intersection LOS: B
Intersection Capacity Utilization 57.9% — ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Holland & Tyndall



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	34	63	39	160	13	530	15	331
Future Volume (vph)	34	63	39	160	13	530	15	331
Lane Group Flow (vph)	0	134	0	220	0	565	0	362
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.5	23.5	23.5	23.5	25.2	25.2	25.2	25.2
Total Split (s)	35.0	35.0	35.0	35.0	65.0	65.0	65.0	65.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%
Maximum Green (s)	29.5	29.5	29.5	29.5	59.8	59.8	59.8	59.8
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.2	2.2	2.2	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.2		5.2
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	10.0	10.0	10.0	10.0	15.0	15.0	15.0	15.0
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Pedestrian Calls (#/hr)	19	19	22	22	37	37	32	32
Act Effct Green (s)		29.5		29.5		59.8		59.8
Actuated g/C Ratio		0.30		0.30		0.60		0.60
v/c Ratio		0.30		0.47		0.55		0.36
Control Delay		25.5		32.2		7.4		11.4
Queue Delay		0.0		0.0		0.6		0.0
Total Delay		25.5		32.2		8.0		11.4
LOS		C		C		A		B
Approach Delay		25.5		32.2		8.0		11.4
Approach LOS		C		C		A		B
Queue Length 50th (m)		17.0		34.0		57.1		32.9
Queue Length 95th (m)		32.5		55.7		68.7		50.2
Internal Link Dist (m)		46.6		196.9		125.2		312.1
Turn Bay Length (m)								
Base Capacity (vph)		442		466		1024		1005
Starvation Cap Reductn		0		0		177		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.30		0.47		0.67		0.36

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 20 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 15.0 — Intersection LOS: B
Intersection Capacity Utilization 60.2% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Parkdale & Armstrong

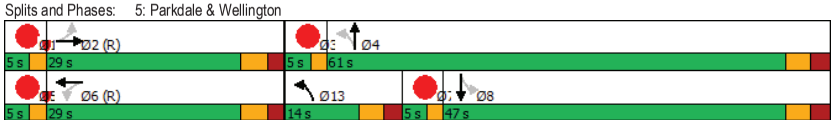
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø1	Ø3	Ø5	Ø7
Lane Configurations												
Traffic Volume (vph)	20	280	47	375	143	576	19	397				
Future Volume (vph)	20	280	47	375	143	576	19	397				
Lane Group Flow (vph)	0	368	0	448	143	630	19	450				
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA				
Protected Phases		2		6	13	4		8	1	3	5	7
Permitted Phases	2		6		4		8					
Detector Phase	2	2	6	6	13	4	8	8				
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	23.4	23.4	23.4	23.4	10.2	15.5	20.5	20.5	3.0	3.0	3.0	3.0
Total Split (s)	29.0	29.0	29.0	29.0	14.0	61.0	47.0	47.0	5.0	5.0	5.0	5.0
Total Split (%)	29.0%	29.0%	29.0%	29.0%	14.0%	61.0%	47.0%	47.0%	5%	5%	5%	5%
Maximum Green (s)	23.6	23.6	23.6	23.6	8.8	55.5	41.5	41.5	3.0	3.0	3.0	3.0
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
All-Red Time (s)	2.1	2.1	2.1	2.1	2.2	2.5	2.5	2.5	0.0	0.0	0.0	0.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)		5.4		5.4	5.2	5.5	5.5	5.5				
Lead/Lag	Lag	Lag	Lag	Lag	Lead				Lead		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		2.0	2.0	2.0				
Flash Dont Walk (s)	8.0	8.0	8.0	8.0		8.0	8.0	8.0				
Pedestrian Calls (#/hr)	173	173	157	157		91	97	97				
Act Effct Green (s)		28.6		28.6	60.8	60.5	46.5	46.5				
Actuated g/C Ratio		0.29		0.29	0.61	0.60	0.46	0.46				
v/c Ratio		0.49		0.59	0.32	0.63	0.07	0.60				
Control Delay		50.0		34.3	10.9	14.6	12.9	18.6				
Queue Delay		0.0		0.0	0.0	0.5	0.0	0.3				
Total Delay		50.0		34.3	10.9	15.1	12.9	19.0				
LOS		D		C	B	B	B	B				
Approach Delay		50.0		34.3		14.4		18.7				
Approach LOS		D		C		B		B				
Queue Length 50th (m)		35.6		39.1	10.8	57.1	1.7	44.3				
Queue Length 95th (m)		m50.2		55.1	m17.2	86.0	m4.5	60.1				
Internal Link Dist (m)		223.4		216.2		26.9		125.2				
Turn Bay Length (m)					40.0		40.0					
Base Capacity (vph)		747		765	446	1000	283	750				
Starvation Cap Reductn		0		0	0	107	0	53				
Spillback Cap Reductn		0		0	0	0	0	0				
Storage Cap Reductn		0		0	0	0	0	0				
Reduced v/c Ratio		0.49		0.59	0.32	0.71	0.07	0.65				

Intersection Summary

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

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 26.1 Intersection LOS: C
Intersection Capacity Utilization 88.6% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Parkdale & Wellington



Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	217	658	41	409
Future Volume (vph)	217	658	41	409
Lane Group Flow (vph)	283	816	41	409
Turn Type	Perm	NA	Perm	NA
Protected Phases		2		6
Permitted Phases	8		6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	22.7	20.3	15.3	15.3
Total Split (s)	32.0	68.0	68.0	68.0
Total Split (%)	32.0%	68.0%	68.0%	68.0%
Maximum Green (s)	25.3	62.7	62.7	62.7
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.7	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	5.3	5.3	5.3
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		
Flash Dont Walk (s)	9.0	8.0		
Pedestrian Calls (#/hr)	27	21		
Act Effct Green (s)	25.3	62.7	62.7	62.7
Actuated g/C Ratio	0.25	0.63	0.63	0.63
v/c Ratio	0.74	0.78	0.18	0.37
Control Delay	47.5	15.8	7.0	6.7
Queue Delay	0.0	0.3	0.0	0.1
Total Delay	47.5	16.1	7.0	6.8
LOS	D	B	A	A
Approach Delay	47.5	16.1		6.8
Approach LOS	D	B		A
Queue Length 50th (m)	50.5	72.9	2.0	19.7
Queue Length 95th (m)	#86.0	m104.4	m3.4	26.5
Internal Link Dist (m)	224.2	197.3		88.5
Turn Bay Length (m)			85.0	
Base Capacity (vph)	383	1047	231	1094
Starvation Cap Reductn	0	26	0	0
Spillback Cap Reductn	0	0	0	107
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.74	0.80	0.18	0.41

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 12 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 19.1 — Intersection LOS: B
Intersection Capacity Utilization 74.6% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Parkdale & Gladstone

Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	360	24	89	632	601
Future Volume (vph)	360	24	89	632	601
Lane Group Flow (vph)	360	580	89	632	855
Turn Type	Perm	NA	pm+pt	NA	NA
Protected Phases		8	5	2	6
Permitted Phases	8		2		
Detector Phase	8	8	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	20.5	20.5	10.2	27.3	21.3
Total Split (s)	29.0	29.0	11.0	71.0	60.0
Total Split (%)	29.0%	29.0%	11.0%	71.0%	60.0%
Maximum Green (s)	23.5	23.5	5.8	64.7	53.7
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0
All-Red Time (s)	2.2	2.2	2.2	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.2	6.3	6.3
Lead/Lag			Lag		Lead
Lead-Lag Optimize?			Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	8.0	8.0		14.0	8.0
Pedestrian Calls (#/hr)	3	3		23	15
Act Effct Green (s)	23.5	23.5	65.8	64.7	55.9
Actuated g/C Ratio	0.24	0.24	0.66	0.65	0.56
v/c Ratio	0.93	1.05	0.35	0.56	0.92
Control Delay	69.1	72.7	15.1	12.2	37.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	69.1	72.7	15.1	12.2	37.2
LOS	E	E	B	B	D
Approach Delay		71.3		12.5	37.2
Approach LOS		E		B	D
Queue Length 50th (m)	68.4	~78.0	5.6	61.5	164.6
Queue Length 95th (m)	#120.5	#142.6	10.9	89.9	#237.9
Internal Link Dist (m)		462.5		38.8	197.3
Turn Bay Length (m)					
Base Capacity (vph)	389	553	254	1129	930
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	5	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.93	1.05	0.35	0.56	0.92

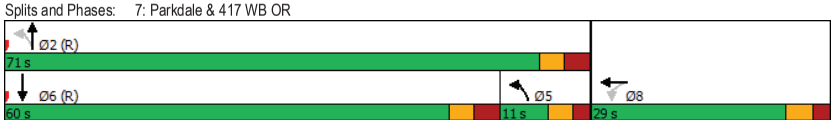
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 39 (39%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 120

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 42.9	Intersection LOS: D
Intersection Capacity Utilization 107.5%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Parkdale & 417 WB OR



Lane Group	EBT	WBT	SBL	SBR
Lane Configurations				
Traffic Volume (vph)	446	480	54	20
Future Volume (vph)	446	480	54	20
Lane Group Flow (vph)	446	480	54	20
Turn Type	NA	NA	Prot	Perm
Protected Phases	2	6	8	
Permitted Phases				8
Detector Phase	2	6	8	8
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	15.3	26.3	17.5	17.5
Total Split (s)	57.0	57.0	18.0	18.0
Total Split (%)	76.0%	76.0%	24.0%	24.0%
Maximum Green (s)	51.7	51.7	12.5	12.5
Yellow Time (s)	3.3	3.3	3.0	3.0
All-Red Time (s)	2.0	2.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.5	5.5
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	None
Walk Time (s)		14.0	7.0	7.0
Flash Dont Walk (s)		7.0	5.0	5.0
Pedestrian Calls (#/hr)		165	64	64
Act Effct Green (s)	57.2	57.2	11.2	11.2
Actuated g/C Ratio	0.76	0.76	0.15	0.15
v/c Ratio	0.34	0.36	0.22	0.10
Control Delay	4.9	5.1	30.1	13.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.9	5.1	30.1	13.6
LOS	A	A	C	B
Approach Delay	4.9	5.1	25.6	
Approach LOS	A	A	C	
Queue Length 50th (m)	21.3	23.5	6.7	0.0
Queue Length 95th (m)	34.0	37.4	16.1	5.5
Internal Link Dist (m)	216.2	153.4	73.2	
Turn Bay Length (m)				30.0
Base Capacity (vph)	1330	1330	276	227
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.34	0.36	0.20	0.09

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 72 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 6.5	Intersection LOS: A
Intersection Capacity Utilization 45.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Wellington & Carruthers

Appendix K

MMLOS Analysis

DRAFT

Multi-Modal Level of Service - Intersections Form

Consultant	**CGH Transportation Inc.**	**Project**	**2020-62**
Scenario	**Existing/Future**	**Date**	**2021-06-25**
Comments			

INTERSECTIONS		Holland Ave & Spencer St				Holland Ave & Wellington St W				Holland Ave & Tyndall St			
	Crossing Side	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pedestrian	Lanes	4	4	4	3	4	4	4	4	4	4	3	
	Median	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	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	
	Conflicting Left Turns	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	No left turn / Prohib.	Permissive	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	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	
	Right Turns on Red (RToR) ?	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR prohibited	RTOR prohibited	RTOR prohibited	RTOR prohibited	RTOR prohibited	RTOR allowed	RTOR prohibited	
	Ped Signal Leading Interval?	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	
	Right Turn Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Right Turn	No Channel	
	Corner Radius	3-5m	5-10m	3-5m	3-5m	3-5m	3-5m	5-10m	5-10m	5-10m	No Right Turn	5-10m	
	Crosswalk Type	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement	Std transverse markings	Std transverse markings	Std transverse markings	
	PETSI Score	**55**	**54**	**55**	**72**	**63**	**63**	**62**	**62**	**67**	**65**	**74**	
	Ped. Exposure to Traffic LoS	**D**	**D**	**D**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**-**
	Cycle Length												
	Effective Walk Time												
	Average Pedestrian Delay												
	Pedestrian Delay LoS	-	-	-	-	-	-	-	-	-	-	-	-
	Level of Service	**D**	**D**	**D**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**-**
		D				**C**				**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**	**A**	**A**	**-**
	Separated or Mixed Traffic	-	-	-	-	-	-	-	-	-	-	-	-
	Left Turn Approach	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	2-stage, LT box	
	Operating Speed	> 50 to < 60 km/h	> 50 to < 60 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	≤ 40 km/h	≤ 40 km/h	> 40 to ≤ 50 km/h	
	Left Turning Cyclist	**C**	**C**	**B**	**B**	**C**	**C**	**C**	**C**	**B**	**B**	**A**	**-**
	Level of Service	**C**	**C**	**B**	**B**	**C**	**C**	**C**	**C**	**B**	**B**	**A**	**-**
		C				**C**				**B**			
Transit	Average Signal Delay	≤ 10 sec	≤ 10 sec			≤ 30 sec	≤ 30 sec	≤ 40 sec	≤ 40 sec	≤ 10 sec	≤ 10 sec		
	Level of Service	**B**	**B**	**-**	**-**	**D**	**D**	**E**	**E**	**B**	**B**	**-**	**-**
		B				**E**				**B**			
Truck	Effective Corner Radius					< 10 m	< 10 m	< 10 m	< 10 m				
	Number of Receiving Lanes on Departure from Intersection					1	1	1	1				
	Level of Service	**-**	**-**	**-**	**-**	**F**	**F**	**F**	**F**	**-**	**-**	**-**	**-**
		-				**F**				**-**			
Auto	Volume to Capacity Ratio	0.0 - 0.60				0.71 - 0.80				0.0 - 0.60			
	Level of Service	**A**				**C**				**A**			

Parkdale Ave & Armstrong St			
NORTH	SOUTH	EAST	WEST
3	3	0 - 2	0 - 2
No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m
Permissive	Permissive	Permissive	Permissive
Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control
RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed
No	No	No	No
No Channel	No Channel	No Channel	No Channel
3-5m	3-5m	3-5m	3-5m
Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings
72	**72**	**87**	**87**
C	**C**	**B**	**B**
-	-	-	-
C	**C**	**B**	**B**
C			
NORTH	SOUTH	EAST	WEST
A	**A**	**A**	**A**
-	-	-	-
No lane crossed	No lane crossed	No lane crossed	No lane crossed
> 50 to < 60 km/h	> 50 to < 60 km/h	> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h
C	**C**	**B**	**B**
C	**C**	**B**	**B**
C			
≤ 20 sec	≤ 10 sec		
C	**B**	-	-
C			
-	-	-	-
-			
0.0 - 0.60			
A			

Parkdale Ave & Wellington St W			
NORTH	SOUTH	EAST	WEST
3	3	4	3
No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m
Permissive	Permissive	Permissive	Protected/ Permissive
Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control
RTOR prohibited	RTOR prohibited	RTOR prohibited	RTOR prohibited
Yes	Yes	Yes	Yes
No Channel	No Channel	No Channel	No Channel
3-5m	5-10m	3-5m	3-5m
Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement
80	**79**	**63**	**80**
B	**B**	**C**	**B**
-	-	-	-
B	**B**	**C**	**B**
C			
NORTH	SOUTH	EAST	WEST
A	**A**	**A**	**A**
-	-	-	-
No lane crossed	No lane crossed	No lane crossed	No lane crossed
> 50 to < 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h
C	**C**	**C**	**C**
C	**C**	**C**	**C**
C			
≤ 20 sec	≤ 20 sec	≤ 40 sec	> 40 sec
C	**C**	**E**	**F**
F			
-	-	-	-
-			
0.61 - 0.70			
B			

Parkdale Ave & Gladstone Ave			
NORTH	SOUTH	EAST	WEST
3	3	3	
No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	
No left turn / Prohib.	Permissive	Permissive	
Permissive or yield control	No right turn	Permissive or yield control	
RTOR prohibited	RTOR prohibited	RTOR prohibited	
No	No	No	
No Channel	No Right Turn	No Channel	
5-10m	No Right Turn	5-10m	
Std transverse markings	Std transverse markings	Std transverse markings	
82	**88**	**74**	
B	**B**	**C**	**-**
-	-	-	-
B	**B**	**C**	**-**
C			
NORTH	SOUTH	EAST	WEST
A	-	**A**	-
-	-	-	-
No lane crossed		2-stage, LT box	
> 50 to < 60 km/h		> 50 to < 60 km/h	
C	-	**A**	-
C	**-**	**A**	**-**
C			
≤ 20 sec	≤ 20 sec	≤ 20 sec	
C	**C**	**C**	**-**
C			
-	-	-	-
-			
0.71 - 0.80			
C			

Parkdale Ave & Highway 417 WB			
NORTH	SOUTH	EAST	WEST
3		5	3
No Median - 2.4 m		No Median - 2.4 m	No Median - 2.4 m
No left turn / Prohib.		No left turn / Prohib.	Protected/ Permissive
Permissive or yield control		No right turn	Permissive or yield control
RTOR allowed		RTOR allowed	RTOR prohibited
No		No	No
No Channel		No Right Turn	No Channel
10-15m		No Right Turn	5-10m
Std transverse markings		Std transverse markings	Std transverse markings
78		**60**	**74**
B	-	**C**	**C**
-	-	-	-
B	**-**	**C**	**C**
C			
NORTH	SOUTH	EAST	WEST
A	**A**	**A**	**A**
-	-	-	-
A	**A**	**A**	**A**
A	**A**	**A**	**A**
A			
> 40 sec	≤ 20 sec		
F	**C**	-	-
F			
-	-	-	-
-			
0.91 - 1.00			
E			

Carruthers Ave & Wellington St W			
NORTH	SOUTH	EAST	WEST
3		0 - 2	3
No Median - 2.4 m		No Median - 2.4 m	No Median - 2.4 m
No left turn / Prohib.		Permissive	No left turn / Prohib.
No right turn		No right turn	Permissive or yield control
RTOR allowed		RTOR prohibited	RTOR prohibited
No		No	No
No Right Turn		No Right Turn	No Channel
No Right Turn		No Right Turn	3-5m
Textured/coloured pavement		Textured/coloured pavement	Textured/coloured pavement
96		**106**	**86**
A	-	**A**	**B**
-	-	-	-
A	**-**	**A**	**B**
B			
NORTH	SOUTH	EAST	WEST
A	-	-	-
-	-	-	-
No lane crossed			
> 40 to ≤ 50 km/h			
B	-	-	-
B	**-**	**-**	**-**
B			
		≤ 10 sec	≤ 20 sec
-	-	**B**	**C**
C			
-	-	-	-
-			
0.0 - 0.60			
A			