780 Baseline Road

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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May 2022

PN: 2021-083

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1 Screening

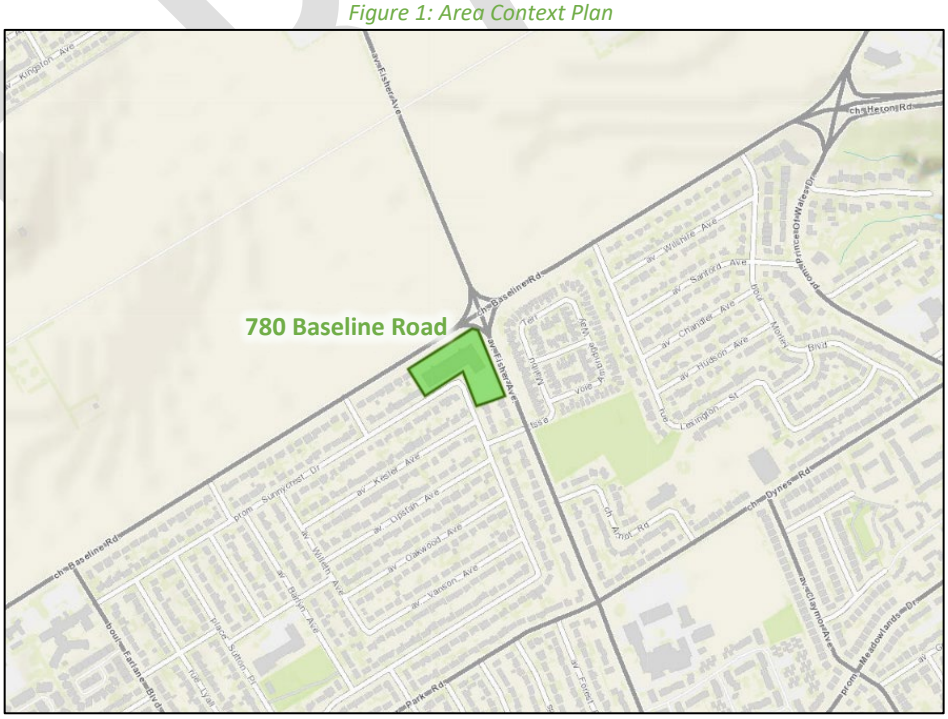
This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for the TIA Study PM. As shown in the Screening Form, a TIA is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

2 Existing and Planned Conditions

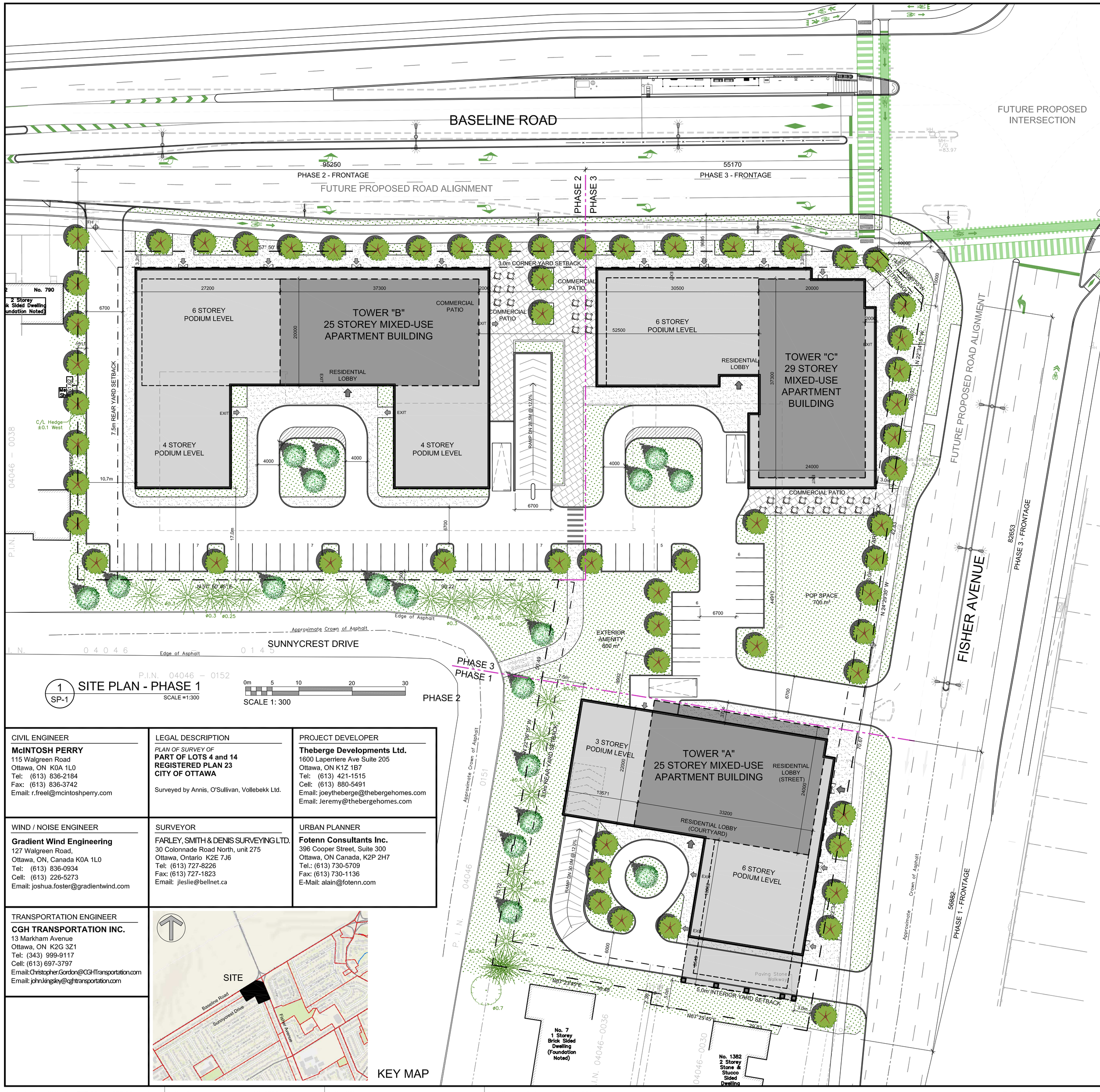
2.1 Proposed Development

The existing site, located at 780 Baseline Road, is zoned as General Mixed Use (GM) and includes a business strip consisting of retail, service, and restaurant land uses with surrounding surface parking lots. The proposed development is anticipated to include a total of 868 dwelling units and 31,169 sq. ft of commercial space in three mixed-used buildings and is to be constructed across multiple phases with the anticipated full build-out and occupancy horizon is 2034. The first phase is understood to consist of constructing a mixed-use building comprising a 25-storey tower at the south of the parcel in the present location of the surface parking lot. The remaining two phases are understood to include the demolition of the existing business strip and the construction of two mixed-use buildings, one 25-storey tower adjacent to the residential lands to the west, and a 29-storey tower at the Baseline Road and Fisher Avenue intersection. The development proposes the use of an existing right-in/right-out access onto Baseline Road and an existing full-movements access on Fisher Avenue and proposes the addition of one full-movements access on Fisher Avenue to the south of the existing access. A total of 376 residential parking, 157 visitor parking, 62 retail parking, and 404 bicycle parking spaces will be provided. The site is located within the Carleton Heights Secondary Plan area. 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: May 11, 2022



1 / SP-1 SITE PLAN - PHASE 1
SCALE =1:300

0m 5 10 20 30
SCALE 1: 300

KEY MAP

PROJECT INFORMATION

ZONING	GM
SITE AREA	14,294.4 sq. m. (153,864 sq. ft.)

REQUIRED

BUILDING HEIGHT	18.0m
MAXIMUM FLOOR SPACE INDEX	2.0
FRONT YARD SETBACK	3.0m
CORNER YARD SETBACK	3.0m
INTERIOR YARD SETBACK (VARIES)	0.0 - 5.0m
REAR YARD SETBACK (VARIES)	3.0m - 7.5m
MINIMUM WIDTH OF LANDSCAPE AREA (ABUTTING A STREET OR RESIDENTIAL ZONE)	3.0m
MINIMUM WIDTH OF LANDSCAPE BUFFER	0.0m / 3.0m
AMENITY SPACE - PER UNIT	6.0 sq. m.
PARKING - PER UNIT AFTER 12 UNITS	0.5
PARKING - VISITOR ONLY PER UNIT	0.2
PARKING - COMMERCIAL RESTAURANT	5.0 PER 100m² GFA
PARKING - COMMERCIAL RETAIL	1.25 PER 100m² GFA
PARKING - COMMERCIAL P.S.B.	1.25 PER 100m² GFA
BICYCLE PARKING - RESIDENTIAL PER UNIT	0.5
BICYCLE PARKING - COMMERCIAL	1 PER 250m² GFA
MAX. VEHICLE PARKING - PER UNIT	1.75
MAX. VEHICLE PARKING - COMMERCIAL	VARIES PER USE
AISLE & DRIVEWAY WIDTH - VARIES	6.0m - 6.7m

PROVIDED

BUILDING HEIGHT - BUILDING A	25 STOREY'S - 81.0m
BUILDING HEIGHT - BUILDING B	25 STOREY'S - 81.0m
BUILDING HEIGHT - BUILDING C	29 STOREY'S - 93.0m
GRADE - BUILDING A	84.5m geo. elev.
GRADE - BUILDING B	85.0m geo. elev.
GRADE - BUILDING C	84.3m geo. elev.
ALLOWABLE PROJECTION - AMENITY ROOM	4.0m h.t.
MAXIMUM FLOOR SPACE INDEX	4.1
UNIT COUNT	868 units
FRONT YARD SETBACK	3.0m
CORNER YARD SETBACK	3.2m
INTERIOR YARD SETBACK	5.0m 17.0m
REAR YARD SETBACK	7.5m - 10.7m
VEHICLE PARKING - TOTAL	655
VEHICLE PARKING - RESIDENTIAL UNIT	416
VEHICLE PARKING - VISITOR	174
VEHICLE PARKING - COMMERCIAL	65
BICYCLE PARKING - RESIDENTIAL	434
BICYCLE PARKING - COMMERCIAL	12
LOT COVERAGE	36.4%
TOTAL PROJECT G.F.A.	57,822.0 sq. m. 622,391 sq. ft.

CAR PARKING

REQUIRED - PROVIDED

RESIDENCE	-0.5 PER UNIT AFTER 12 UNITS		416
VISITOR	-0.2 PER UNIT		174
COMMERCIAL RESTAURANT	-5.0 PER 100m² GFA	700m²	35
COMMERCIAL RESTAURANT TAKE-OUT	-2.5 PER 100m² GFA	200m²	5
COMMERCIAL RETAIL	-1.25 PER 100m² GFA	700m²	9
COMMERCIAL P.S.B.	-1.25 PER 100m² GFA	1,300m²	16
TOTAL			655
MAXIMUM PARKING AS PER TABLE 103 = 1.75 PER UNIT			1,519

BICYCLE PARKING

REQUIRED - PROVIDED

RESIDENCE	- 0,5 PER UNIT (868 UNITS)	434
COMMERCIAL	- 1 PER 250m² GFA (2,695.7m²)	12
TOTAL		446

AMENITY SPACE

INTERIOR AMENITY - COMMUNAL =	600,0 sq. m.
EXTERIOR TERRACES - COMMUNAL =	600,0 sq. m.
EXTERIOR ROOF TOP - COMMUNAL =	600,0 sq. m.
INTERIOR ROOF TOP - COMMUNAL =	600,0 sq. m.
AT GRADE EXTERIOR- COMMUNAL =	800,0 sq. m.
PRIVATE BALCONIES =	2,400.0 sq. m.
TOTAL =	5,600 sq. m.
TOTAL COMMUNAL =	3,200 sq. m.
REQUIRED - 6.0M² PER UNIT (868) =	5,208 sq. m.
REQUIRED COMMUNAL @ 50% =	2,604 sq. m.

LAND PHASE AREA

PHASE 1 - BUILDING "A" =	3,340.0 sq. m.	23.4%
PHASE 2 - BUILDING "B" =	5,871.9 sq. m.	41.1%
PHASE 3 - BUILDING "C" =	5,082.5 sq. m.	35.5%
TOTAL =	14,294.4 sq. m.	100.00%

LOT COVERAGE

BUILDING FOOTPRINT - "A" =	1,476.5 sq. m.	10.3%
BUILDING FOOTPRINT - "B" =	2,157.8 sq. m.	15.1%
BUILDING FOOTPRINT - "C" =	1,564.8 sq. m.	11.0%
DRIVING SURFACE =	3,730.0 sq. m.	26.1%
LANDSCAPE SURFACE =	5,365.3 sq. m.	37.5%
TOTAL =	14,294.4 sq. m.	100.00%

GROSS BUILDING - AREAS

(CITY OF OTTAWA ZONING AREA)

BUILDING 'A'

TOTAL AREA		17,575,9 sq. m, 189,185 sq. ft.
TOWER FOOTPRINT		780,0 sq. m, 8,396 sq. ft.
UNIT COUNT		259
VEHICLE PARKING - RESIDENTIAL ONLY	124 + 52	176
BICYCLE PARKING	130 + 2	132
COMMERCIAL AREA		540,0 sq. m, 5,810 sq. ft.

BUILDING 'B'

TOTAL BUILDING AREA		20,041,6 sq. m, 215,726 sq. ft.
TOWER FOOTPRINT		780,0 sq. m, 8,396 sq. ft.
UNIT COUNT		291
VEHICLE PARKING - RESIDENTIAL ONLY	140 + 58	198
BICYCLE PARKING	146 + 6	152
COMMERCIAL AREA		1,415,0 sq. m, 15,230 sq. ft.

BUILDING 'C'

TOTAL AREA		20,204,6 sq. m, 217,480 sq. ft.
TOWER FOOTPRINT		598,1 sq. m, 6,438 sq. ft.
UNIT COUNT		318
VEHICLE PARKING - RESIDENTIAL ONLY	153 + 64	217
BICYCLE PARKING	159 + 4	163
COMMERCIAL AREA		941,0 sq. m, 10,129 sq. ft.

UNIT MIX - 868 UNITS

STUDIO UNIT	6.7%	58
ONE BEDROOM UNIT	51.8%	450
TWO BEDROOM UNIT	37.9%	329
THREE BEDROOM UNIT	3.6%	31
TOTAL UNITS	100%	868
COMMERCIAL AREA		2,895.7 sq. m, 31,169 sq. ft.

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- (00) INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- (00) INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (000) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- 00 / A000 — DETAIL NUMBER; TITLE; SCALE; DETAIL REFERENCE PAGE; DETAIL CROSS REFERENCE PAGE

No.	DESCRIPTION	DATE
8		
7		
6		
5		
4		
3		
2		
1	ISSUED FOR OWNER / CONSULTANT REVIEW	Mar. 10, 22

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — RODERICK J. LAHEY — LICENCE 4375 — SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT: THEBERGE HOMES — Theberge Developments Ltd.

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

PROJECT TITLE: 780 Baseline Road

OTTAWA ONTARIO

SHEET TITLE: SITE PLAN OVERALL

DRAWN:	CHECKED:
RV	T.Z.
SCALE: 1:300	SHEET No. SP-1
PROJECT No. 2131	

D07-12- -

CIVIL ENGINEER	LEGAL DESCRIPTION	PROJECT DEVELOPER
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Gradient Wind Engineering 127 Walgreen Road, Ottawa, ON, Canada K0A 1L0 Tel: (613) 836-0934 Cell: (613) 226-5273 Email: joshua.foster@gradientwind.com	FARLEY, SMITH & DENIS SURVEYING LTD. 30 Colonnade Road North, unit 275 Ottawa, Ontario K2E 7J6 Tel: (613) 727-8226 Fax: (613) 727-1823 Email: jleslie@bellnet.ca	**Fotenn Consultants Inc.** 396 Cooper Street, Suite 300 Ottawa, ON Canada, K2P 2H7 Tel.: (613) 730-5709 Fax: (613) 730-1136 E-Mail: alain@fotenn.com
TRANSPORTATION ENGINEER		
CGH TRANSPORTATION INC. 13 Markham Avenue Ottawa, ON K2G 3Z1 Tel: (343) 999-9117 Cell: (613) 697-3797 Email:Christopher.Gordon@CGHTransportation.com Email: john.kingsley@cghtransportation.com		

2.2 Existing Conditions

2.2.1 Area Road Network

Baseline Road: Baseline Road is a City of Ottawa arterial road with a divided four-lane urban cross-section. Sidewalks are provided on the south side of the roadway, at intersections and bus stops on the north side of the road to the west, and on both sides of the road to the east of Prince of Wales Drive. The posted speed limit is 60 km/h within the study area and the City-protected right of way is 44.5 metres. Baseline Road is designated as a truck route.

Heron Road: Heron Road is a City of Ottawa arterial road with a divided six-lane urban cross-section, including bus lanes and sidewalks on both sides of the road. Bike lanes are present over the Heron Bridge. The posted speed limit is 60 km/h within the study area and the City-protected right of way is 44.5 metres. Heron Road is designated as a truck route.

Fisher Avenue: Fisher Avenue is a City of Ottawa arterial road with a two-lane rural cross-section with paved shoulders on both sides of the road. North of Baseline Road, a sidewalk is present on the west side of the road and sidewalks are present on both sides of the road to the south. The posted speed limit is 50 km/h, the City-protected right of way is 34.0 metres north of Baseline Road, and the measured right of way varies between 24.5 and 30.0 metres south of Baseline Road within the study area. Fisher Avenue is designated as a truck route.

Prince of Wales Drive: Prince of Wales Drive is a City of Ottawa arterial road with a two-lane semi-urban cross-section to the north and a two-lane urban cross-section to the south of Baseline Road. To the north, a paved shoulder is provided on the west side of the road and a curbside bike lane with a sidewalk is provided on the east side of the road within the study area. South of Baseline Road, sidewalks are provided on both sides of the road and bike lanes transition to cycletracks. The posted speed limit is 60 km/h north of Baseline Road and 50 km/h south of Baseline Road. The city-protected right of way is 26.0 metres to the north, and the measured right of way varies between 28.5 and 73.5 metres to the south of Baseline Road. Prince of Wales Drive is designated as a truck route.

Deer Park Road: Deer Park Road is a City of Ottawa collector road with a two-lane urban cross-section. Sidewalks are present on both sides of the road east of Millbrook Crescent and on the south side of the road to the west. The posted speed limit is 40 km/h, and the City-protected right of way is 26.0 metres.

Dynes Road: Dynes Road is a City of Ottawa collector road with a two-lane urban cross-section. Sidewalks and bike lanes are present on both sides of the road. The posted speed limit is 50 km/h, and the measured right of way is 18.0 metres.

Sunnycrest Drive: Sunnycrest Drive is a City of Ottawa local road with a two-lane urban cross-section with on-street parking permitted on both sides of the road. The posted speed limit is 40 km/h and the measured right of way is 20.0 metres.

Hilliard Avenue: Hilliard Avenue is a City of Ottawa local road with a two-lane urban cross-section with on-street parking permitted on both sides of the road. The posted speed limit is 40 km/h and the measured right of way is 20.0 metres.

2.2.2 Existing Intersections

The existing signalized area intersections within 400 metres of the site have been summarized below and comprise only Baseline Road at Fisher Avenue. The intersection of Baseline Road/Heron Road at Prince of Wales Drive has additionally been included as a key intersection for the purposes of this study:

Fisher Avenue at Baseline Road	The intersection of Fisher Avenue at Baseline Road is a signalized intersection. The northbound and southbound approaches each consist of an auxiliary left-turn lane, two through lanes, and a channelized auxiliary right-turn lane. The eastbound approach consists of an auxiliary left-turn lane, two through lanes, and a channelized auxiliary right turn lane, and the westbound approach consists of two auxiliary left-turn lanes, a through lane and a shared through/channelized right-turn lane. Eastbound and westbound U-turn movements are prohibited, and trucks are prohibited from making westbound left turns.
Prince of Wales Drive at Baseline Road/Heron Road	The intersection of Prince of Wales Drive at Baseline Road and Heron Road is a signalized intersection. The northbound and southbound approaches each consist of an auxiliary left-turn lane, two through lanes, a floating bike lane, and a channelized auxiliary right-turn lane. The eastbound approach consists of an auxiliary left-turn lane, two through lanes, an auxiliary through lane, and a channelized auxiliary right-turn lane, and the westbound approach consists of two auxiliary left-turn lanes, two through lanes, a transit queue-jump lane, and a channelized auxiliary right-turn lane. No turn restrictions were noted.
Fisher Avenue at Deer Park Road / Dynes Road	The intersection of Fisher Avenue at Deer Park Road/Dynes Road is a signalized intersection. The northbound approach consists of a shared left-turn/through lane and a right-turn lane, and the southbound approach consists of a shared left-turn/through lane and an auxiliary through/right-turn lane. The eastbound and westbound approaches each consist of a shared all-movement lane. Cycle tracks are provided on all approaches. No turn restrictions were noted.

2.2.3 Existing Driveways

Within 200 metres of the site accesses, eight driveways semi-detached and detached dwellings are located on the west side of Baseline Road. Eight driveways semi-detached and detached dwellings are present on the south side of Fisher Avenue. None of the driveways within the area of consideration are significant traffic generators. Figure 3 illustrates the existing driveways.

Figure 3: Existing Driveways

Source: http://maps.ottawa.ca/geoOttawa/ Accessed: May 11, 2022

2.2.4 Cycling and Pedestrian Facilities

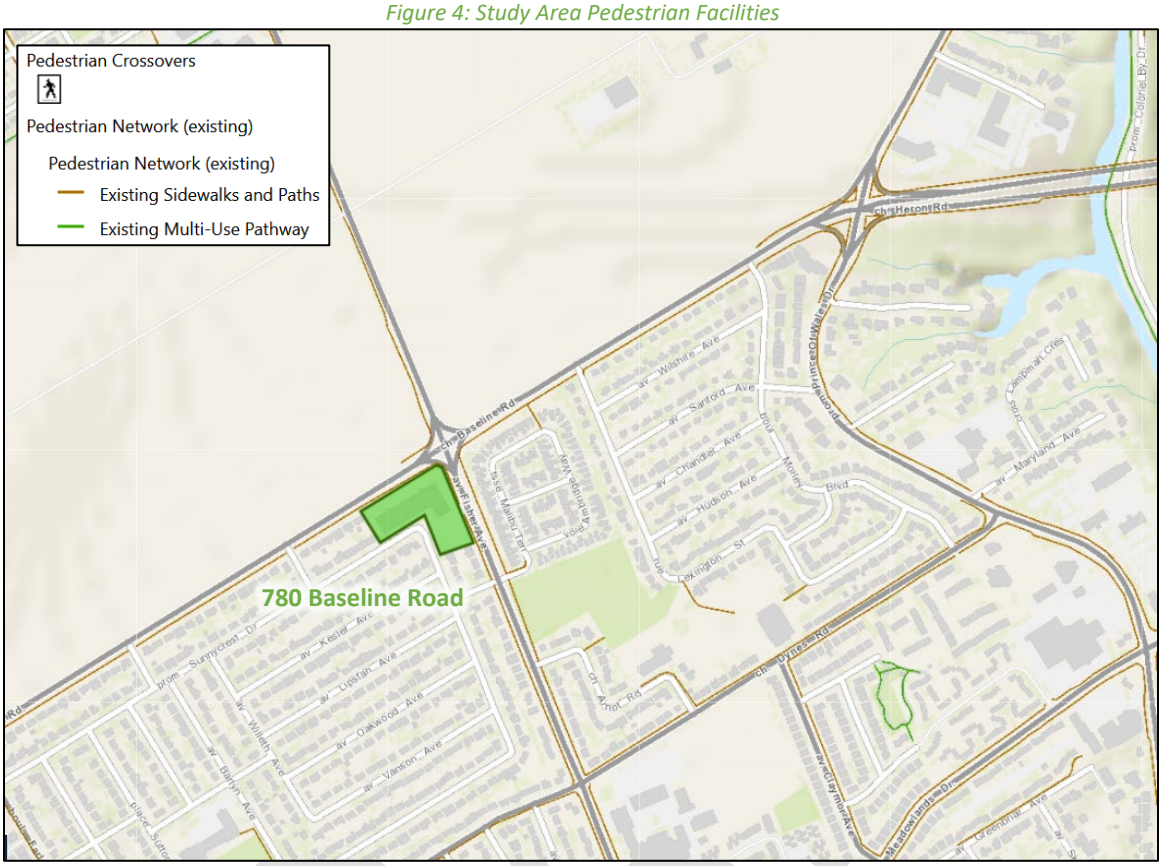
Figure 4 illustrates the pedestrian facilities in the study area and Figure 5 illustrates the cycling facilities.

Sidewalks are provided along the south side of Baseline Road and of Deer Park Road west of Millbrook Crescent, on the east side of Prince of Wales Drive, on the west side of Fisher Avenue north of Baseline Road, on both sides of Fisher Avenue south of Baseline Road, Dynes Road, and Deer Park Road east of Millbrook Crescent. Sidewalks are also present at intersections and bus stops on the north side of Baseline Road to the west of Fisher Avenue.

A paved shoulder is present on both sides of Fisher Avenue except through the intersection with Baseline Avenue where bike lanes are present and on the east side of the road between Malibu Terrace and the auxiliary northbound right turn lane taper at Baseline Road where a cycletrack is present. Cycletracks are also present at the Fisher Avenue at Deer Park Road/Dynes Road intersection, and bike lanes are present along Dynes Road.

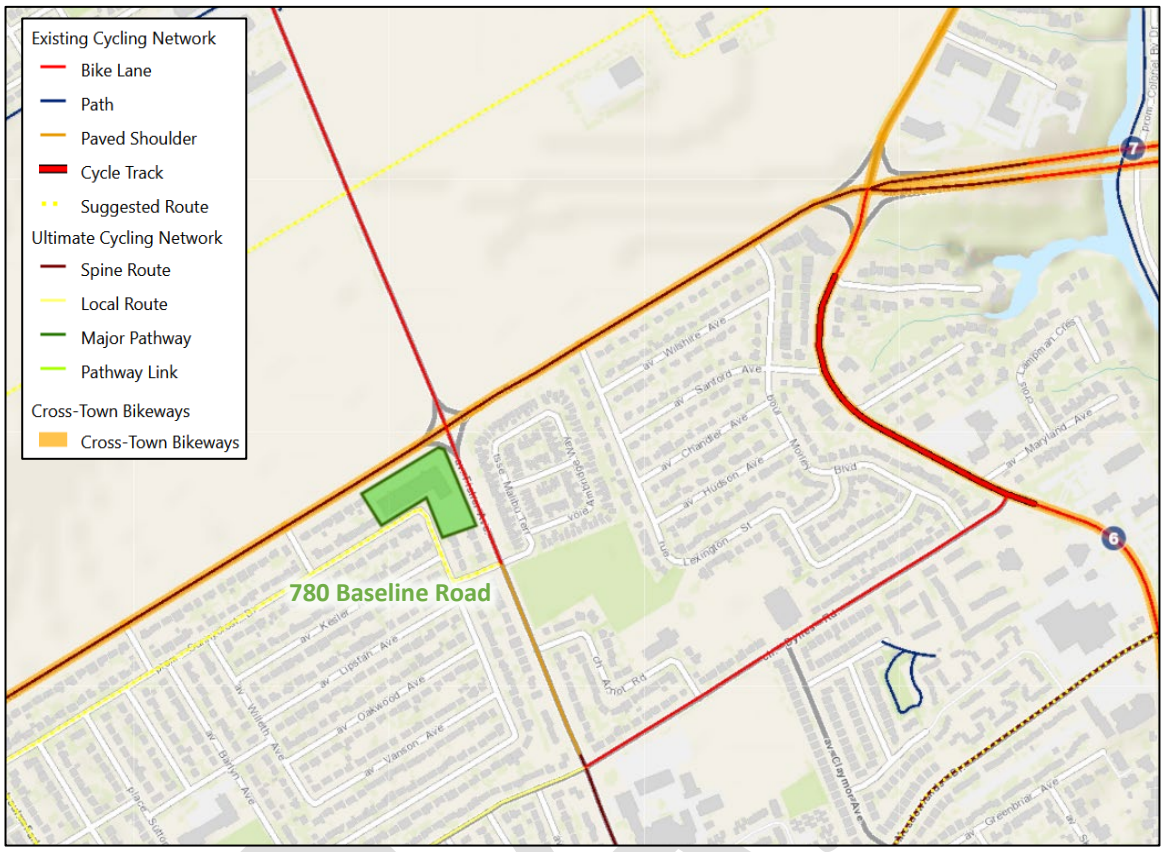
Fisher Avenue, Prince of Wales Drive, Baseline Road, and Heron Road are spine routes. Baseline Road, Heron Road and Prince of Wales Drive are cross-town bikeways. Malibu Terrace west of Fisher Avenue, Hilliard Avenue north of Malibu Terrace, Sunnycrest Drive, Deer Park Road, Dynes Road, and McCooey Lane are local routes.

Figure 4: Study Area Pedestrian Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: May 11, 2022

Figure 5: Study Area Cycling Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: May 11, 2022

Pedestrian and cyclist volumes included in study area intersection counts, presented in Section 2.2.7, have been compiled and are illustrated in Figure 6 and Figure 7 respectively.

Figure 6: Existing Pedestrian Volumes

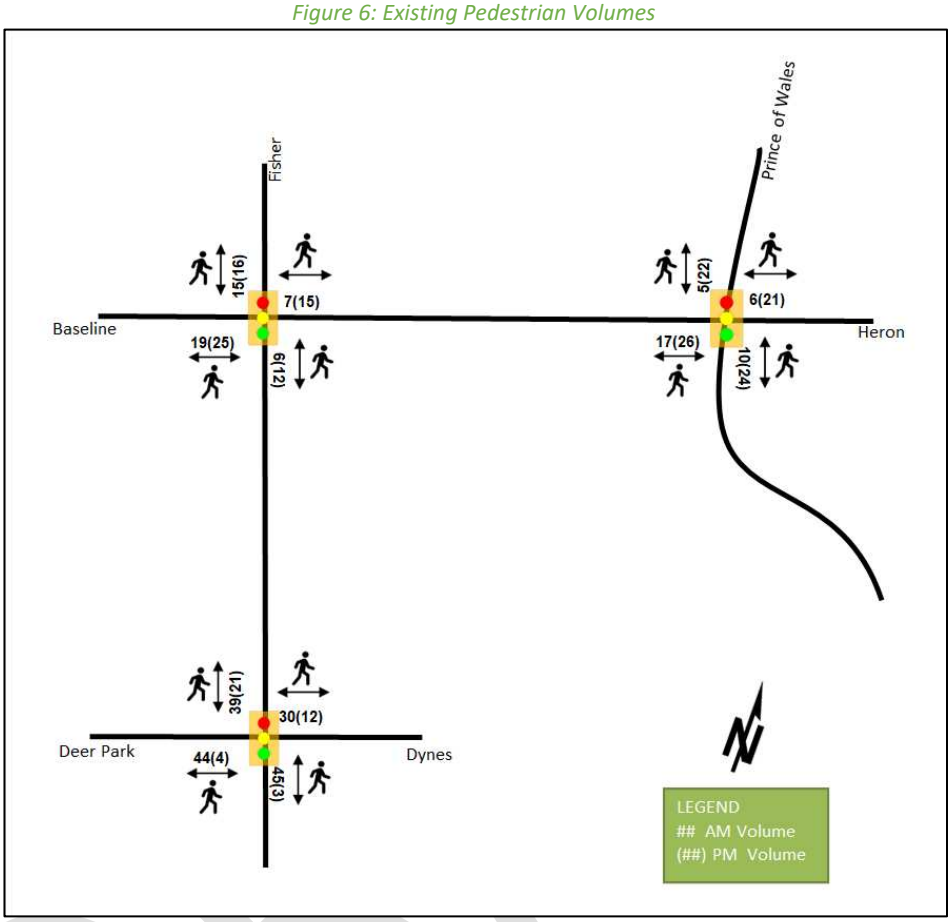
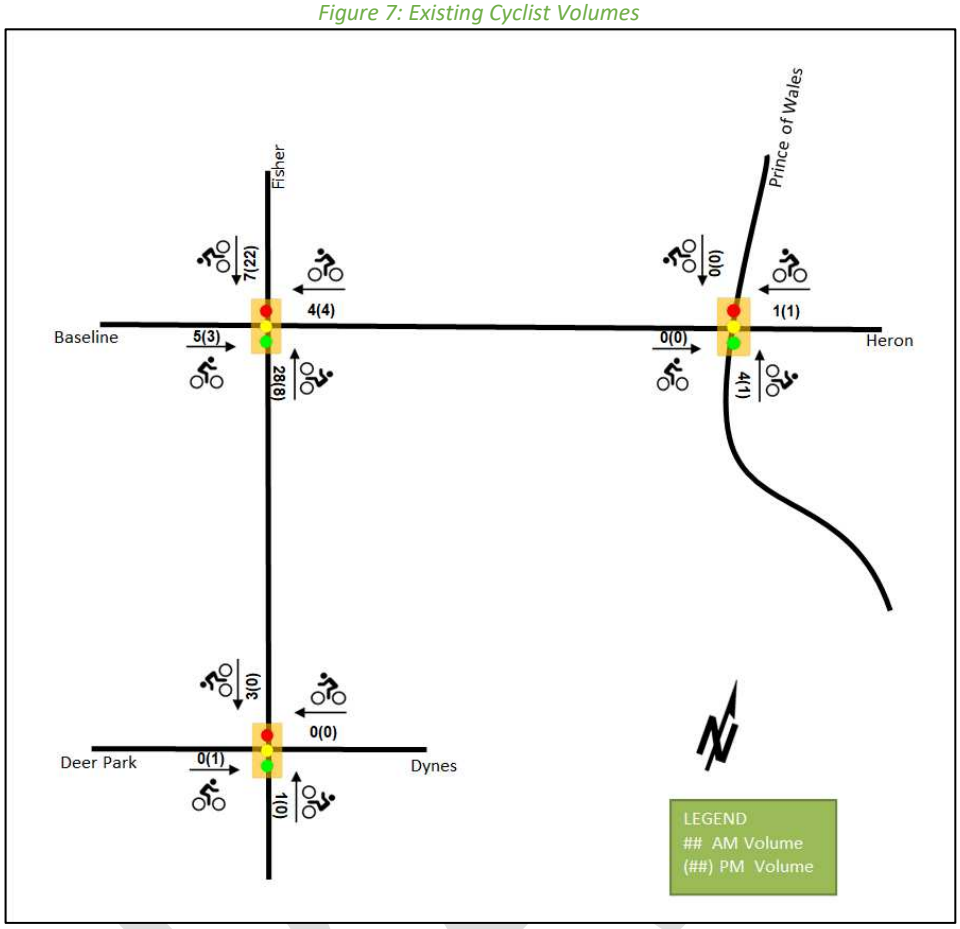


Figure 7: Existing Cyclist Volumes



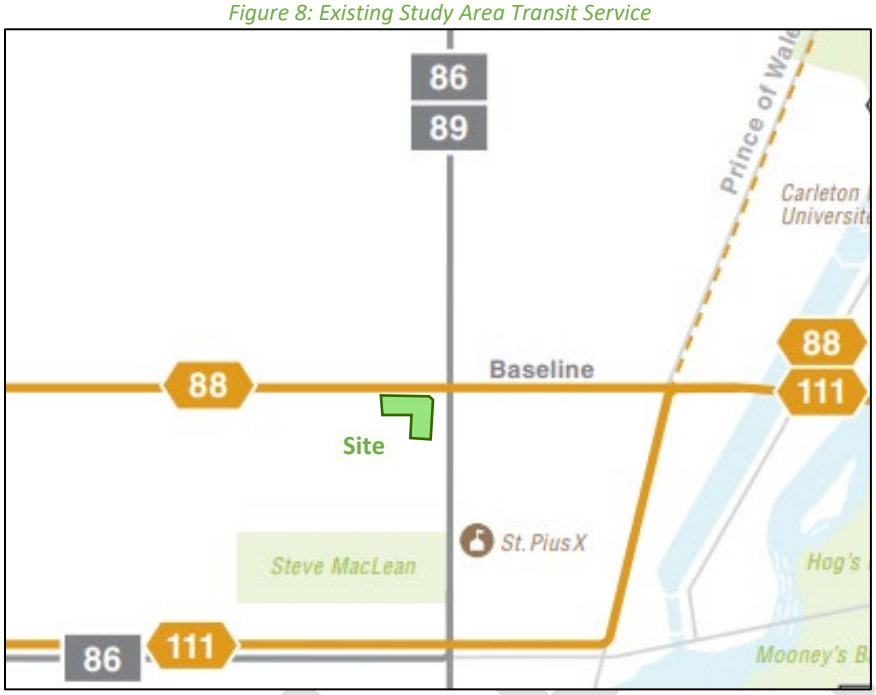
2.2.5 Existing Transit

Within the study area, routes #86 and #89 travel along Fisher Avenue, the route #88 travels along Baseline Road and Heron Road, and route #111 travels along Prince of Wales Drive, continuing along Heron Road. Primary stops are located at Marson Street at Baseline Road and Fisher Avenue at Baseline Road intersections. The frequency of these routes within proximity of the proposed site currently are:

- Route # 86 – 15-minute service in the peak period/direction, 30-minute service all day
- Route # 88 – 10-12-minute service in the peak period/direction, 15-minute service all day
- Route # 89 – 15-minute service in the peak period/direction, 30-minute service all day
- Route # 111 – 15-minute service all day

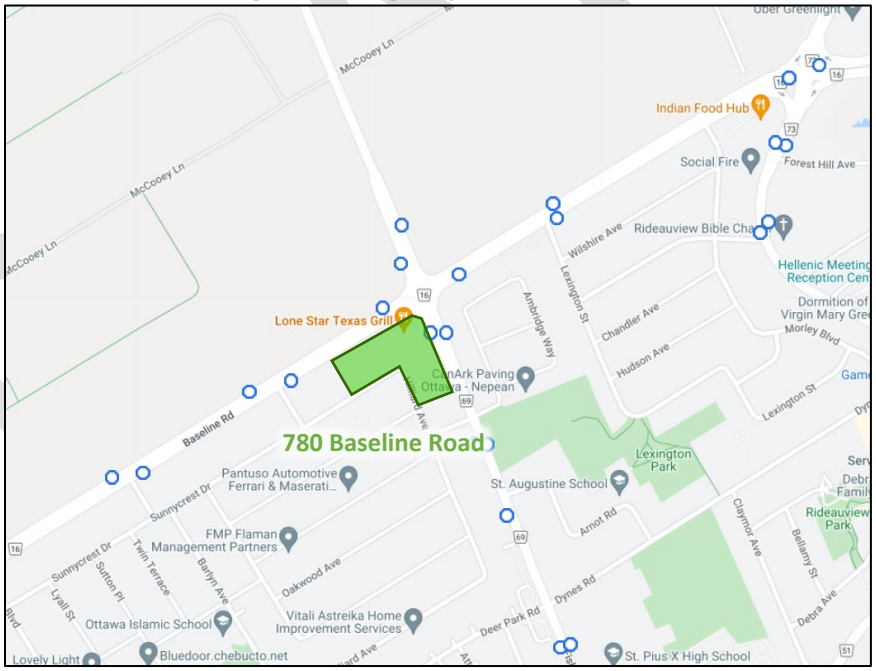
Figure 8 illustrates the transit system map in the study area and Figure 9 illustrates nearby transit stops.

Figure 8: Existing Study Area Transit Service



Source: http://www.octranspo.com/ Accessed: May 11, 2022

Figure 9: Existing Study Area Transit Stops



Source: http://www.octranspo.com/ Accessed: May 11, 2022

2.2.6 Existing Area Traffic Management Measures

The primary traffic calming measure within the study area is on-road messaging stating the speed limit on Sunnycrest Drive.

2.2.7 Existing Peak Hour Travel Demand

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

Table 1: Intersection Count Date

Intersection	Count Date
Fisher Avenue at Baseline Road	Wednesday, August 03, 2016
Prince of Wales Drive at Baseline Road/Heron Road	Wednesday, March 04, 2020
Fisher Avenue at Deer Park Road/Dynes Road	Wednesday, March 09, 2016

Figure 10 illustrates the existing traffic counts, balanced along the Baseline Road and Fisher Avenue corridors, and Table 2 summarizes the existing intersection operations. At the time of the Prince of Wales Drive at Baseline Road/Heron Road turning movement count, the Hog's Back Bridge was closed, and it is noted that the count includes detour volumes from this closure. The level of service for signalized intersections is based on the volume to capacity ratio (v/c) calculation 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 10: Existing Traffic Counts

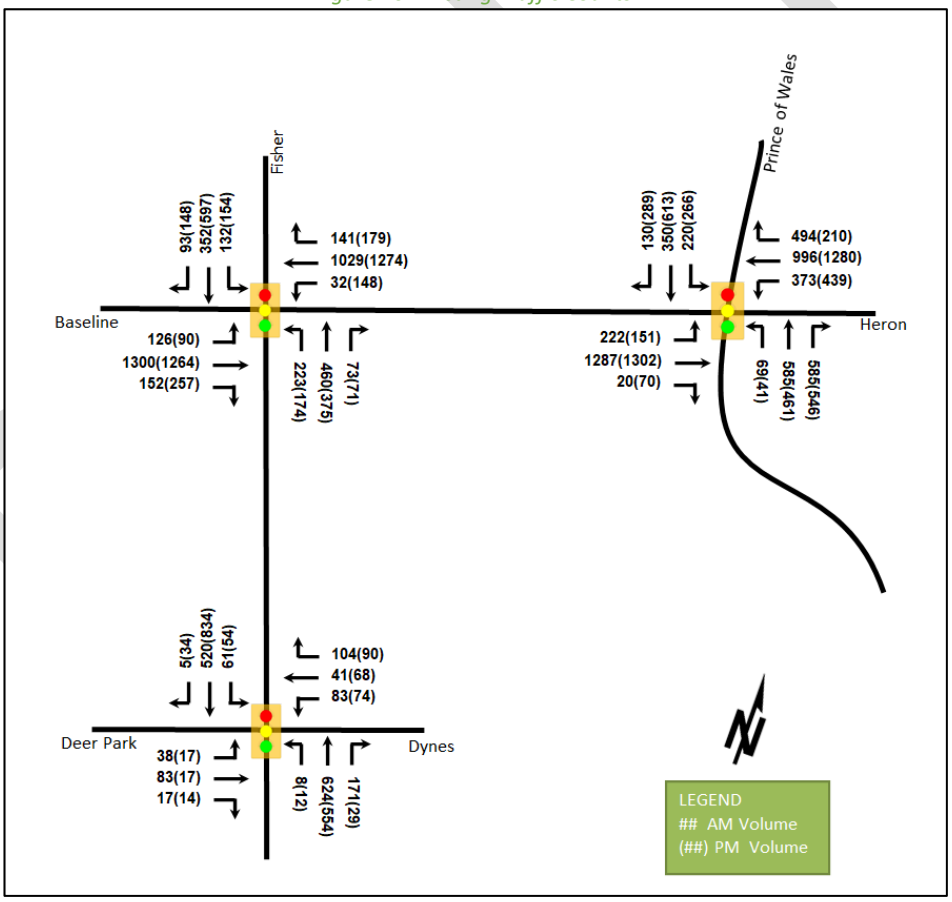


Table 2: Existing Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Fisher Avenue at Baseline Road *Signalized*	EBL	B	0.70	73.0	55.3	B	0.64	74.7	43.2
	EBT	E	0.95	49.6	**#272.2**	**F**	**1.08**	**86.2**	**#266.5**
	EBR	A	0.23	3.8	12.2	A	0.45	18.6	55.9
	WBL	A	0.23	**82.3**	m2.7	A	0.57	64.0	32.0
	WBT/R	**F**	**1.14**	**91.0**	**m112.3**	**F**	**1.26**	**156.8**	**#328.2**
	NBL	D	0.86	78.6	**#100.0**	D	0.85	**86.3**	**#86.3**
	NBT	C	0.73	53.6	81.1	B	0.65	53.7	70.5
	NBR	A	0.18	0.9	0.0	A	0.21	2.4	2.3
	SBL	C	0.76	79.3	**#62.8**	C	0.79	79.9	**#72.4**
	SBT	C	0.76	62.4	66.7	**F**	**1.07**	**106.8**	**#136.5**
	SBR	A	0.25	1.4	0.0	A	0.43	13.9	24.6
	Overall	**E**	**0.98**	**62.8**	**-**	**F**	**1.07**	**99.6**	**-**
Prince of Wales Drive at Baseline Road/Heron Road *Signalized*	EBL	**F**	**1.28**	**198.6**	**m#93.0**	**F**	**1.63**	**361.0**	**#107.8**
	EBT/R	**F**	**1.16**	**106.8**	**m#179.4**	**F**	**1.20**	**139.0**	**#206.3**
	WBL	D	0.82	66.1	70.2	**F**	**1.24**	**174.3**	**#114.8**
	WBT	**F**	**1.87**	**426.7**	**#268.6**	**F**	**1.59**	**305.7**	**#319.7**
	WBR	D	0.87	25.5	**#90.8**	A	0.42	7.1	19.8
	NBL	A	0.53	69.3	34.4	A	0.32	62.4	24.0
	NBT	D	0.82	56.2	105.8	B	0.62	47.5	81.0
	NBR	**F**	**1.05**	**71.4**	**#177.9**	**F**	**1.10**	**95.6**	**#196.2**
	SBL	**F**	**1.06**	**129.1**	**#120.1**	**F**	**1.13**	**144.4**	**#145.1**
	SBT/R	A	0.53	37.8	78.7	E	0.96	61.8	**#172.4**
	Overall	**F**	**1.03**	**144.8**	**-**	**F**	**1.34**	**156.2**	**-**
Fisher Avenue at Deer Park Road/Dynes Road *Signalized*	EB	A	0.44	26.4	31.2	A	0.18	23.0	14.2
	WB	B	0.69	30.3	46.5	C	0.80	48.3	62.2
	NBL/T	B	0.70	18.7	**#148.5**	A	0.57	12.9	105.0
	NBR	A	0.23	2.5	9.1	A	0.03	1.6	2.4
	SBL	A	0.44	11.6	46.4	A	0.55	11.3	77.7
	Overall	**B**	**0.69**	**16.8**	**-**	**B**	**0.62**	**16.7**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 0.90
V/C = volume-to-capacity ratio
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

Generally, the study area intersections experience capacity issues and significant delays during both AM and PM peak hours.

At the intersection of Fisher Avenue at Baseline Road, movements that are over theoretical capacity and may be subject to high delays and extended queues are the westbound shared through/right-turn movement during AM peak hour and the eastbound through, westbound shared through/right-turn, and southbound through movements during PM peak hour. Extended queues may also be exhibited on the eastbound through movement during AM peak hour, and on the northbound and southbound left-turn movements during both peak hours. High delays may be experienced on the westbound left-turn movement during AM peak hour and on the northbound left-turn movement during PM peak hour. The overall intersection operates over theoretical capacity with high delays during the PM peak hour.

The intersection of the Prince of Wales Drive at Baseline Road/Heron Road may exhibit extended queues on the westbound right-turn movement during AM peak hour and on the southbound shared through/right-turn movement during PM peak hour. The eastbound and southbound left-turn, eastbound shared through right-turn,

westbound through, and northbound right-turn movements are over theoretical capacity and may be subject to high delays and extended queues during both peak hours as with the westbound left-turn during PM peak hour. The overall intersection operates over theoretical capacity and may be subject to high delays during both peak hours.

At the intersection of Fisher Avenue at Deer Park Road/Dynes Road intersection, extended queues may be exhibited on the northbound left-turn/through movements during AM peak hour.

2.2.8 Collision Analysis

Collision data have been acquired from the City of Ottawa open data website (data.ottawa.ca) for five years prior to the commencement of this TIA for the surrounding study are road network. Table 3 summarizes the collision types and conditions in the study area, Figure 11 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		**133**	**100%**
Classification	**Fatality**	1	1%
	Non-Fatal Injury	24	18%
	Property Damage Only	108	82%
Initial Impact Type	**Angle**	8	6%
	Rear end	87	65%
	Sideswipe	17	13%
	Turning Movement	8	6%
	SMV Unattended	1	1%
	SMV Other	8	6%
	Other	4	3%
Road Surface Condition	**Dry**	95	71%
	Wet	19	14%
	Loose Snow	8	6%
	Slush	3	2%
	Packed Snow	5	4%
	Ice	3	2%
Pedestrian Involved		4	3%
Cyclists Involved		1	1%

Figure 11: Study Area Collision Records – Representation of 2015-2019

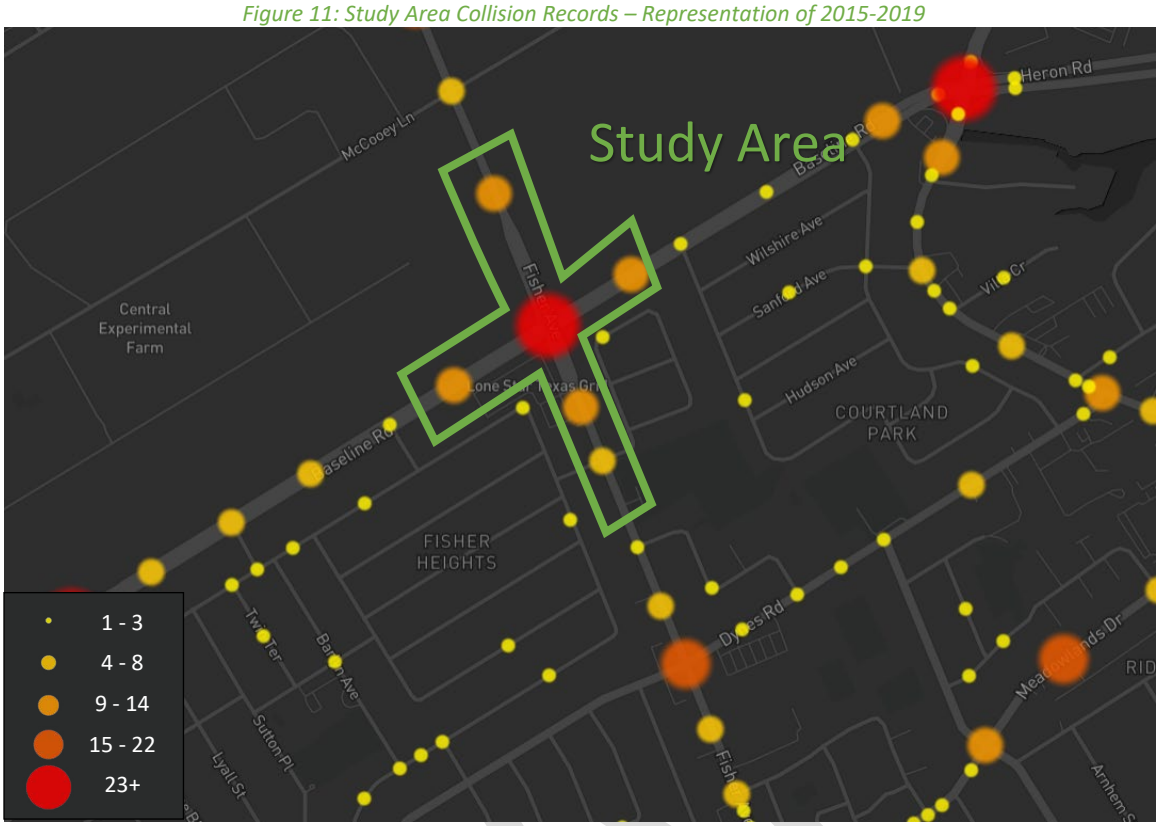


Table 4: Summary of Collision Locations, 2015-2019

	Number	%
Intersections / Segments	**133**	**100%**
Fisher Ave @ Baseline Rd	81	61%
Fisher Ave @ Malibu Ter	7	5%
Baseline Rd btwn Marson St & Fisher Ave	12	9%
Baseline Rd btwn Fisher Ave & Lexington St	10	8%
Fisher Ave btwn McCooey Lane & Baseline Rd	13	10%
Fisher Ave btwn Baseline Rd & Malibu Ter	10	8%

Within the study area, the intersection of Fisher Avenue at Baseline Road and segments of Baseline Road between Marson Street and Fisher Avenue, and Fisher Avenue between McCooey Lane and Baseline Road are noted to have experienced higher collisions than other locations. Table 5, Table 6 , and Table 7summarize the collision types and conditions for each of these locations respectively.

Table 5: Fisher Avenue at Baseline Road Collision Summary

		Number	%
Total Collisions		**81**	**100%**
Classification	**Fatality**	1	1%
	Non-Fatal Injury	9	11%
	Property Damage Only	71	88%
Initial Impact Type	**Angle**	2	2%
	Rear end	59	73%
	Sideswipe	11	14%
	Turning Movement	2	2%
	SMV Unattended	1	1%
	SMV Other	5	6%
	Other	1	1%
Road Surface Condition	**Dry**	60	74%
	Wet	7	9%
	Loose Snow	7	9%
	Slush	2	2%
	Packed Snow	2	2%
	Ice	3	4%
Pedestrian Involved		3	4%
Cyclists Involved		1	1%

The Fisher Avenue at Baseline Road intersection had a total of 81 collisions during the 2015-2019 time period, including one angle collision involving a fatality. The fatality occurred during the morning at 7:46 am in dry driving conditions in November 2018, where a pedestrian was killed as a result of a two-vehicle collision. Seventy-one collisions had property damage only and the remaining nine having non-fatal injuries. The collision types are most represented by rear end with 59, followed by 11 sideswipe collisions, five SMV other collisions, two collisions each for angle and turning movement, and with the remaining collisions as SMV unattended and other. Rear end collisions are typical of congested areas and the sideswipe collisions may be influenced by the channelized right-turn runout lanes and merging movements required around the intersection. No further patterns are noted. Weather conditions do not affect collisions at this location.

Table 6: Baseline Road between Marson Street and Fisher Avenue Collision Summary

		Number	%
Total Collisions		**12**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	4	33%
	Property Damage Only	8	67%
Initial Impact Type	**Rear end**	10	83%
	Sideswipe	2	17%
Road Surface Condition	**Dry**	7	58%
	Wet	4	33%
	Packed Snow	1	8%
Pedestrian Involved		0	0%
Cyclists Involved		0	0%

The segment of Baseline Road between Marson Street and Fisher Avenue had a total of 12 collisions during the 2015-2019 time period, with eight involving property damage only and the remaining four having non-fatal injuries. The collision types are most represented by rear end with ten collisions, followed by two sideswipe

collisions. Rear end collisions are typical of congested conditions. Weather conditions are not considered to affect collisions at this location.

Table 7: Fisher Avenue between McCooey Lane and Baseline Road Collision Summary

		Number	%
Total Collisions		**13**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	3	23%
	Property Damage Only	10	77%
Initial Impact Type	**Rear end**	7	54%
	Sideswipe	2	15%
	Turning Movement	2	15%
	SMV Other	2	15%
Road Surface Condition	**Dry**	8	62%
	Wet	3	23%
	Slush	1	8%
	Packed Snow	1	8%
Pedestrian Involved		0	0%
Cyclists Involved		0	0%

The segment of Fisher Avenue between McCooey Lane and Baseline Road had a total of 13 collisions during the 2015-2019 time period, with ten involving property damage only and the remaining three having non-fatal injuries. The collision types are most represented by rear end with the remaining collisions split between sideswipe, turning movement, and SMV other. As previously stated, rear end collisions are typical of congested areas and no further identifiable patterns are evident in the collision types. Weather conditions are not considered to affect collisions at this location.

2.3 Planned Conditions

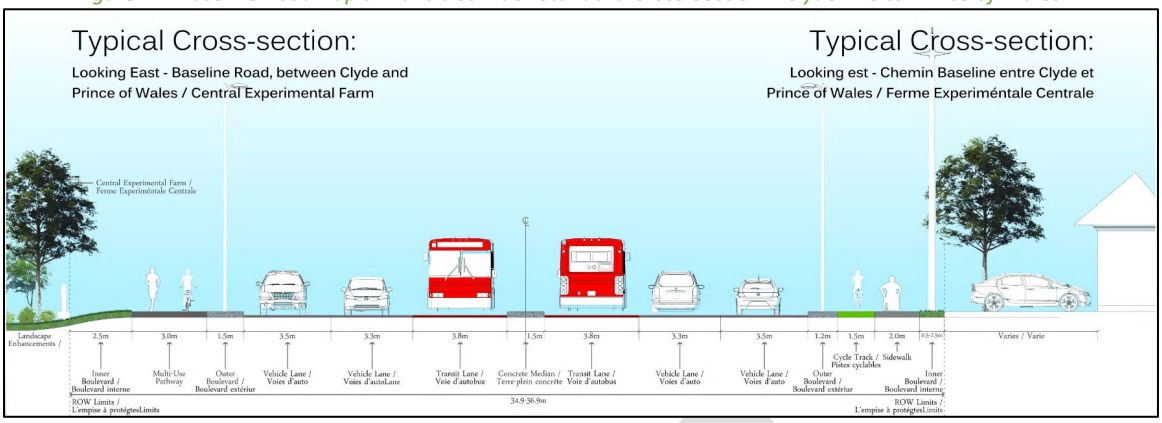
2.3.1 Changes to the Area Transportation Network

The Transportation Master Plan's (TMP) Rapid Transit and Transit Priority Network (RTTP) identifies Bus Rapid Transit (BRT) along Baseline Road and Heron Road, and isolated transit priority measures along Fisher Avenue within the Affordable Network diagram. Isolated transit priority measures are additionally noted in the Network Concept diagram on Prince of Wales Drive south of Baseline Road.

The timing of the Baseline Road Rapid Transit Corridor project is subject to the timing of funding sources. The standard cross-section for the segment of Baseline Road west of Prince of Wales Drive from the Baseline Road Rapid Transit Corridor Planning and Environmental Assessment Study is illustrated in Figure 12. It is noted that improved cycling infrastructure is included as part of the project.

The Baseline Road Rapid Transit Corridor project is assumed to be build-out prior to 2034 and will be analyzed in the future horizons. The future geometry is based upon the preliminary detailed design from the Baseline Road Rapid Transit Corridor project for the Baseline Road at Fisher Avenue intersection provided by the City, and the 1111 Prince of Wales Drive TIA (Novatech, 2020) for the intersection Baseline Road/Heron Road at Price and Price of Wales Drive intersection.

Figure 12: Baseline Road Rapid Transit Corridor Standard Cross-Section – Clyde Ave to Prince of Wales Dr



2.3.2 Other Study Area Developments

1111 Prince of Wales Drive

The proposed development includes a site plan for additional parking spaces for the office building. The reconfiguration is expected to provide a total of 319 parking spaces. No new trips are expected to / from the site, and the site trips will be reassigned due to the new driveway. (Novatech, 2020)

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersections of Fisher Avenue at Baseline Road, Prince of Wales Drive at Baseline Road/Heron Road, Fisher at Deer Park Road/Dynes Road, and the newly proposed site accesses onto Baseline Road and Fisher Avenue.

The boundary roads will be Baseline Road, Fisher Avenue, Sunnycrest Drive, and Hilliard Avenue. TRANS screenlines SL20 and SL27 are located to the east along the Rideau River/Canal and will not be assessed in this study.

3.2 Time Periods

As the proposed development is mixed-use development with residential units and commercial units, the AM and PM peak hours will be examined.

3.3 Horizon Years

The anticipated build-out year is 2034 for the entire site and this single horizon will be reviewed in support of the OPA/ZBA.

4 Exemption Review

Table 8 summarizes the exemptions for this TIA.

Table 8: Exemption Review

Module	Element	Explanation	Exempt/Required
Design Review Component			
4.1 Development Design	4.1.2 Circulation and Access	Only required for site plans	Required at Site Plan Application
	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	Required at Site Plan Application
	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 Application
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	Exempt
4.8 Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning	Exempt

5 Development-Generated Travel Demand

5.1 Mode Shares

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

Table 9: TRANS Trip Generation Manual Recommended Mode Shares – Merivale

Travel Mode	Multi-Unit (High-Rise)		Commercial Generator	
	AM	PM	AM	PM
Auto Driver	41%	41%	71%	61%
Auto Passenger	6%	11%	19%	16%
Transit	42%	33%	1%	8%
Cycling	2%	2%	0%	1%
Walking	8%	13%	9%	14%
Total	**100%**	**100%**	**100%**	**100%**

As a result of the planned cycling and Baseline Road Rapid Transit Corridor project, along which a station at Fisher Avenue will be provided, the site transit and cycling mode shares are expected to surpass the values recommended for the Merivale area. Table 10 summarizes the proposed mode share targets for the subject development.

Table 10: Proposed Development Mode Shares

Travel Mode	Multi-Unit (High-Rise)		Commercial Generator	
	AM	PM	AM	PM
Auto Driver	29%	29%	61%	51%
Auto Passenger	6%	11%	19%	16%
Transit	52%	43%	11%	18%
Cycling	4%	4%	0%	1%
Walking	8%	13%	9%	14%
Total	**100%**	**100%**	**100%**	**100%**

5.2 Trip Generation

This TIA has been prepared using the vehicle and person trip rates for the residential dwellings using the TRANS Trip Generation Manual (2020) and the vehicle trip rates and derived person trip rates for commercial component from the ITE Trip Generation Manual 10th Edition (2017) using the City-prescribed conversion factor of 1.28. Table 11 summarizes the person trip rates for the proposed residential land use for each peak period and the person trip rates for the non-residential land use by peak hour.

Table 11: Trip Generation Person Trip Rates by Peak Period

Land Use	Land Use Code	Peak Period	Vehicle Trip Rate	Person Trip Rates
Multi-Unit (High-Rise)	221 & 222 (TRANS)	AM	-	0.80
		PM	-	0.90
Land Use	**Land Use Code**	**Peak Hour**	**Vehicle Trip Rate**	**Person Trip Rates**
Retail (<40k sq. ft.)	822 (ITE)	AM	2.36	3.02
		PM	6.53	8.36

Using the above person trip rates, the total person trip generation has been estimated. Table 12 summarizes the total person trip generation for the residential land use and for the non-residential land use.

Table 12: Total Residential Person Trip Generation by Peak Period

Land Use	Units	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Multi-Unit (High-Rise)	868	215	479	694	453	328	781
Land Use	**Units / GFA**	**AM Peak Hour**			**PM Peak Hour**		
		In	**Out**	**Total**	**In**	**Out**	**Total**
Retail (<40k sq. ft.)	31,169 SF	56	38	94	131	131	261

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 13 represent the percentage of trips to/from the retail use based on the residential component.

Table 13: Internal Capture Rates

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

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

Using the above mode share targets for a BRT area, the internal capture and pass-by rates, and the person trip rates, the person trips by mode have been projected. Trip generation by peak hour has been forecasted using the

prescribed peak period conversion factors presented in the TRANS Trip Generation Manual (2020) for the residential component. Table 14 summarizes the total trip generation.

Table 14: Trip Generation by Mode

Travel Mode		AM Peak Hour				PM Peak Hour			
		Mode Share	In	Out	Total	Mode Share	In	Out	Total
Multi-Unit (High-Rise)	Auto Driver	**29%**	30	66	96	**29%**	57	42	99
	Auto Passenger	**6%**	6	14	20	**11%**	22	16	38
	Transit	**52%**	62	137	199	**43%**	92	66	158
	Cycling	**4%**	5	11	16	**4%**	9	6	15
	Walking	**8%**	10	22	32	**13%**	31	22	53
	Total	**100%**	**108**	**240**	**363**	**100%**	**199**	**144**	**363**
Retail (<40k sq. ft.)	Auto Driver	**61%**	18	13	31	**51%**	39	32	71
	Auto Passenger	**19%**	9	6	15	**16%**	19	15	34
	Transit	**11%**	5	4	9	**18%**	21	17	39
	Cycling	**0%**	0	0	0	**1%**	1	1	2
	Walking	**9%**	4	3	7	**14%**	17	14	30
	Internal Capture	*varies*	*-10*	*-5*	*-15*	*varies*	*-13*	*-34*	*-47*
	Pass-by	*35%*	*-10*	*-7*	*-17*	*35%*	*-21*	*-17*	*-38*
	Total	**100%**	**36**	**26**	**62**	**100%**	**97**	**80**	**176**
Total	Auto Driver	-	48	79	127	-	96	74	170
	Auto Passenger	-	15	20	35	-	41	31	72
	Transit	-	67	141	208	-	113	83	197
	Cycling	-	5	11	16	-	10	7	17
	Walking	-	14	25	39	-	48	36	83
	Total	-	**144**	**266**	**425**	-	**296**	**224**	**539**

As shown above, a total of 127 AM and 170 PM new peak hour two-way vehicle trips are projected as a result of the proposed development.

5.3 Trip Distribution

To understand the travel patterns of the subject development, the OD Survey has been reviewed to determine the travel, and these patterns were applied based on the build-out of Merivale. Table 15 below summarizes the distributions.

Table 15: OD Survey Distribution – Merivale

To/From	% of Trips
North	30%
South	25%
East	20%
West	25%
Total	**100%**

5.4 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the study area road network. Table 16 summarizes the proportional assignment to the study area roadways, and Figure 13 and Figure 14 illustrate the new site generated volumes and pass-by volumes, respectively.

Table 16: Trip Assignment

To/From	Inbound Via	Outbound Via
North	20% Fisher Ave (N) 10% Prince of Wales Dr (N)	20% Fisher Ave (N) 10% Prince of Wales Dr (N)
South	10% Fisher Ave (S) 15% Baseline Rd (W)	25% Fisher Ave (S)
East	20% Heron Rd (E)	20% Heron Rd (E)
West	25% Baseline Rd (W)	25% Baseline Rd (W)
Total	**100%**	**100%**

Figure 13: New Site Generation Auto Volumes

95

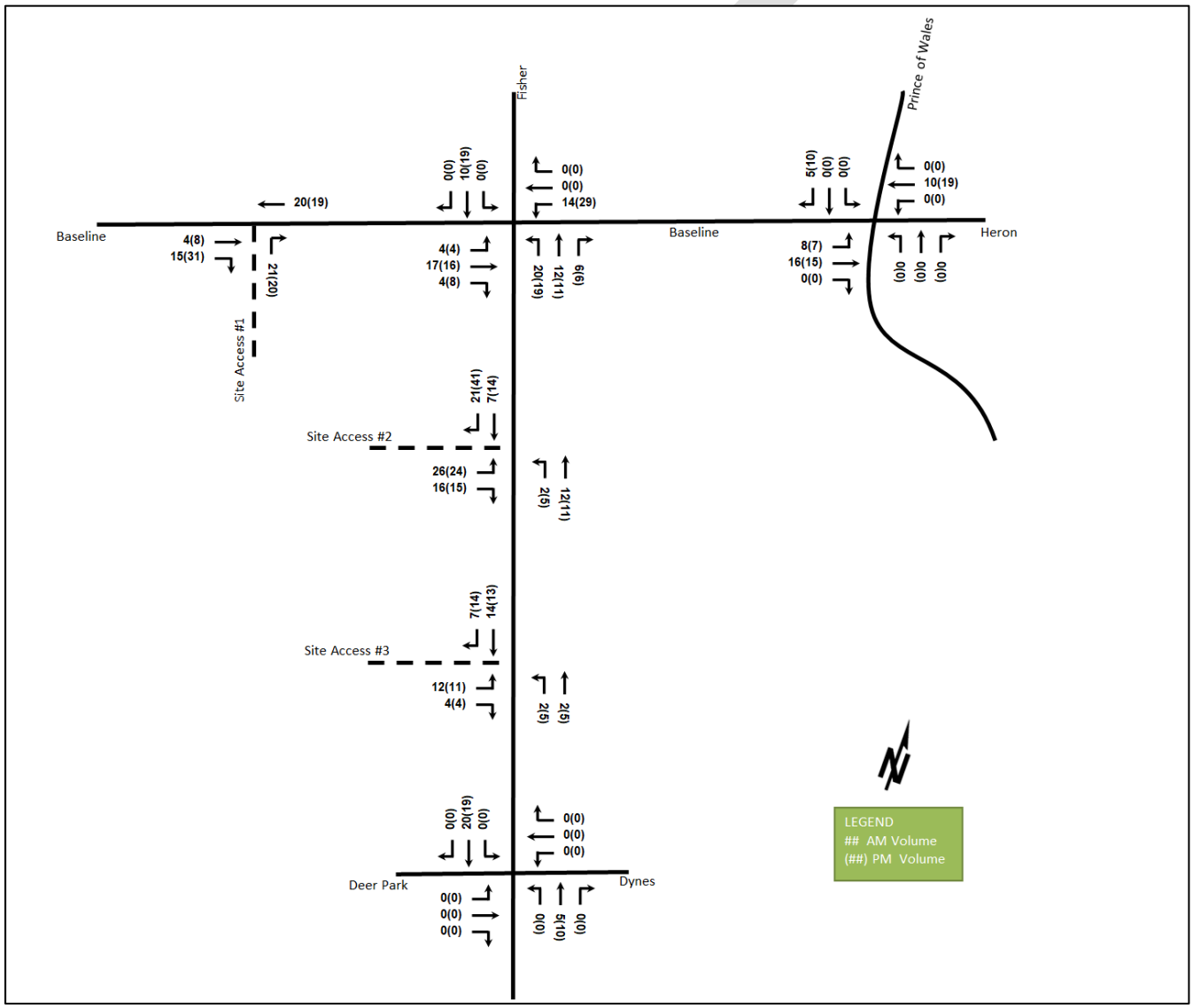
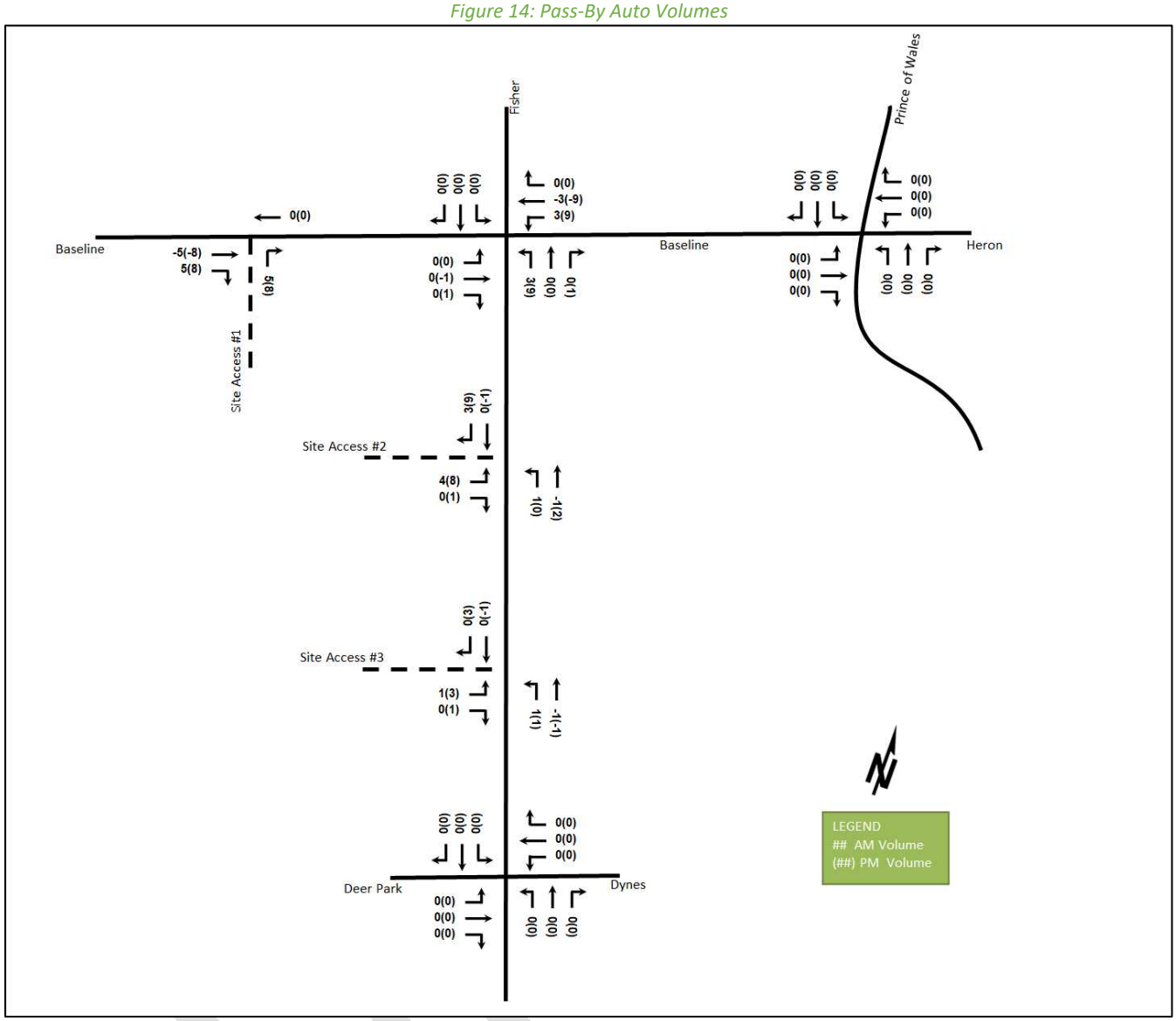


Figure 14: Pass-By Auto Volumes



6 Background Network Travel Demands

6.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3. The Baseline Road Rapid Transit Corridor project is the only confirmed project within the study and will be incorporated into the road network analysis. The future geometry is based upon the preliminary detailed design from the Baseline Road Rapid Transit Corridor project for the Baseline Road at Fisher Avenue intersection provided by the City, and the 1111 Prince of Wales Drive TIA (Novatech, 2020) for the intersection of Prince of Wales Drive at Baseline Road/Heron Road. No other improvements impacting the transportation network elements or traffic were noted within the study area.

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. The background TRANS model growth rates are summarized in Table 17 and the TRANS model plots are provided in Appendix E.

Table 17: TRANS Regional Model Projections – Study Area Growth Rates

Street	TRANS Rate	
	Eastbound	Westbound
Baseline Road	-0.28%	0.07%
Heron Road	-0.05%	0.41%
	Northbound	**Southbound**
Prince of Wales Drive	0.77%	0.72%
Fisher Avenue	0.61%	0.12%

The growth rates derived from the 2011 and 2031 TRANS model horizons are projected to be positive in the westbound direction along Baseline Road and Heron Road, and in the northbound and southbound directions along Prince of Wales Drive and Fisher Avenue. Annual growth rates rounded to the nearest 0.25% will be applied to the mainline volumes of the appropriate study area roads in the AM peak hour and reversed in the PM peak hour. Table 18 summarizes the growth rates applied.

Table 18: Study Area Growth Rates Applied

Street	AM Peak Hour		PM Peak Hour	
	Eastbound	Westbound	Eastbound	Westbound
Baseline Road	-	-	-	-
Heron Road	-	0.50%	0.50%	-
	Northbound	**Southbound**	**Northbound**	**Southbound**
Prince of Wales Drive	0.75%	0.75%	0.75%	0.75%
Fisher Avenue	0.50%	0.25%	0.25%	0.50%

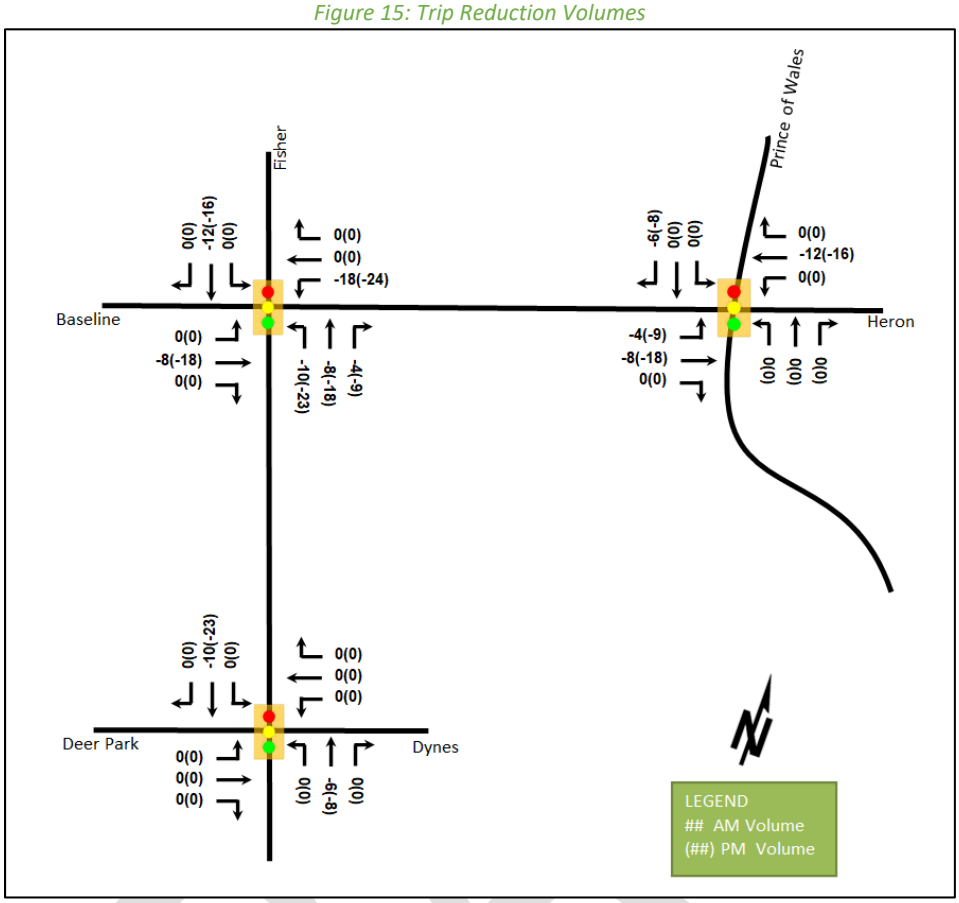
6.3 Other Developments

The background developments explicitly considered in the background conditions include 1111 Prince of Wales Drive and these volumes have been provided in Appendix F.

6.4 Trip Reductions from Existing Site Land Uses

The existing site comprises a 3,247 m^2 of commercial building and is estimated to produce 98 AM two-way auto trips in the AM peak hour and 169 two-way auto trips in the PM peak hour based on the existing land uses and the recommended area mode shares. These auto trips were assigned to the road network using the distribution presented in Section 5.3 and Figure 15 illustrates the trip reduction volumes from existing site.

Figure 15: Trip Reduction Volumes



7 Demand Rationalization

7.1 2034 Future Background Operations

Figure 16 illustrates the 2034 background volumes and Table 19 summarizes the 2034 background intersection operations which include signal timing adjustments for the new intersection approach configurations including the BRT corridor. The Prince of Wales Drive at Baseline Road/Heron Road intersection counts have been factored to remove the detour volumes. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. The synchro worksheets for the 2034 future background horizon are provided in Appendix G.

Figure 16: 2034 Future Background Volumes

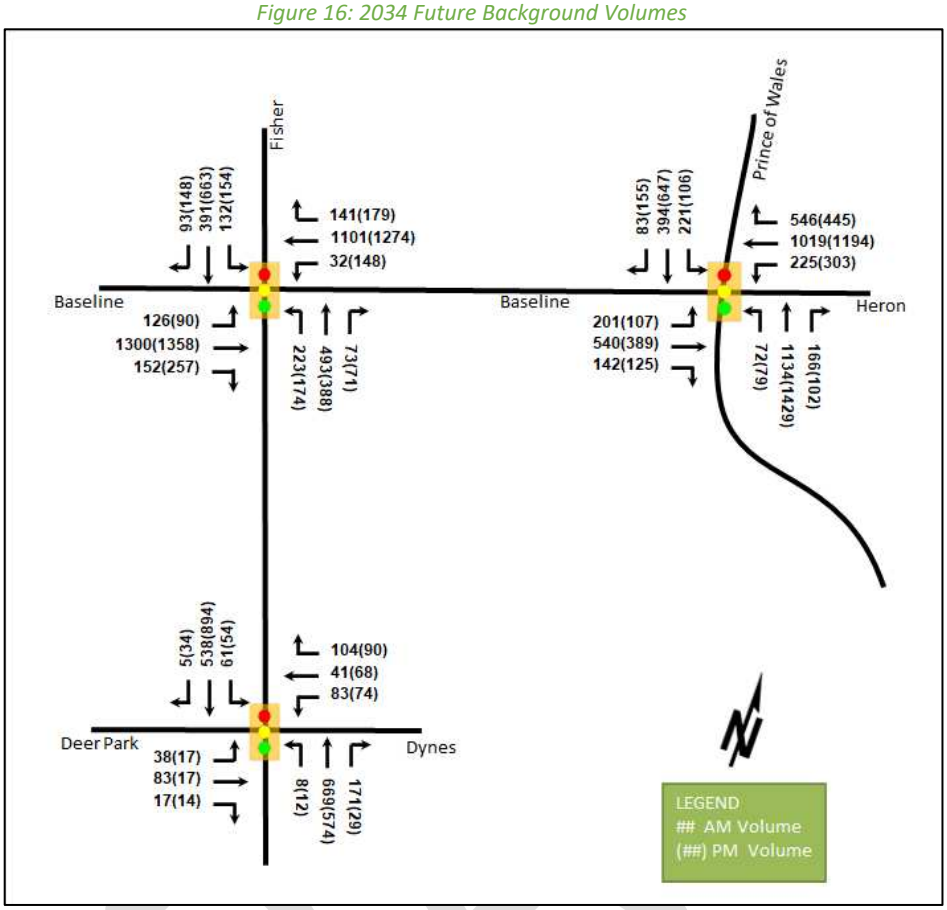


Table 19: 2034 Future Background Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Fisher Avenue at Baseline Road *Signalized*	EBL	C	0.71	78.0	**#73.4**	E	0.92	**131.2**	**#56.4**
	EBT	D	0.89	43.9	**#242.4**	**F**	**1.14**	**110.7**	**#255.3**
	EBR	A	0.24	26.9	45.5	A	0.50	36.3	77.1
	WBL	A	0.42	59.0	m10.6	**F**	**1.10**	**128.7**	**m#46.8**
	WBT	E	0.97	**88.0**	**m#169.6**	E	0.99	62.6	m123.1
	WBR	A	0.29	65.4	m40.9	A	0.32	42.2	m33.9
	NBL	E	0.95	**102.1**	**#105.9**	**F**	**1.09**	**151.1**	**#96.8**
	NBT/R	C	0.72	50.5	85.6	A	0.52	42.7	69.6
	SBL	C	0.73	78.9	**#55.0**	**F**	**1.02**	**136.1**	**#84.7**
	SBT/R	C	0.73	53.9	74.5	E	0.96	68.8	**#146.3**
	Overall	**E**	**0.92**	**62.7**	-	**F**	**1.07**	**81.7**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Prince of Wales Drive at Baseline Road/Heron Road *Signalized*	EBL	**F**	**1.20**	**156.5**	**m#82.4**	**F**	**1.18**	**126.9**	**m#28.5**
	EBT/R	D	0.81	69.9	m111.3	D	0.87	63.8	m67.1
	WBL	E	0.95	**101.6**	**#107.1**	E	0.98	**100.0**	**#135.5**
	WBT	**F**	**1.02**	**78.7**	**#186.8**	**F**	**1.13**	**110.9**	**#228.2**
	WBR	**F**	**1.24**	**165.2**	**#240.9**	E	0.99	**83.4**	**#180.7**
	NBL	A	0.53	70.1	32.9	A	0.53	70.1	36.2
	NBT/R	**F**	**1.18**	**129.8**	**#252.3**	**F**	**1.21**	**138.8**	**#294.4**
	SBL	**F**	**1.26**	**204.0**	**#62.3**	D	0.85	**110.7**	**#31.1**
	SBT/R	A	0.45	37.3	71.3	C	0.75	44.1	119.8
	Overall	**F**	**1.22**	**107.3**	**-**	**F**	**1.19**	**100.6**	**-**
Fisher Avenue at Deer Park Road/Dynes Road *Signalized*	EB	A	0.40	25.9	29.4	A	0.17	23.6	13.1
	WB	B	0.63	27.5	42.2	C	0.76	45.9	54.7
	NBL/T	B	0.67	16.7	117.4	A	0.52	11.3	93.7
	NBR	A	0.20	2.3	8.2	A	0.03	1.3	2.1
	SB	A	0.38	10.5	39.0	A	0.51	10.1	72.1
	Overall	**B**	**0.64**	**15.3**	**-**	**A**	**0.57**	**15.1**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

The planned geometric changes at the Baseline Road intersections focus on the development and facilitation of transit service along the corridor and will not directly mitigate auto operational constraints.

At the intersection of Fisher Avenue and Baseline Road, the future geometry and background growth are forecasted to change operations. During the AM peak hour, the eastbound left turn movement is anticipated to exhibit extended queues and the northbound left turn movement may be subject to high delays at this horizon. During the PM peak hour, the eastbound left movement may be subject to high delays and extended queues, the westbound left movement is forecasted to be over theoretical capacity with high delays and extended queues, the northbound left movement is forecasted to be over theoretical capacity and the southbound left movement is forecasted to be over theoretical capacity with high delays.

At the intersection of Prince of Wales Drive and Baseline Road/Heron Road, the geometric changes, background growth, and the reversion to the condition without the detour volumes are anticipated to be associated with operations that are different and improved from the existing horizon. Under these conditions, during the AM peak hour the eastbound left, westbound through, westbound right, northbound through/right and southbound left movements are anticipated to be over capacity with high delays and extended queues, the westbound left movement is anticipated to be subject to high delays and extended queues, and the overall intersection is forecasted to be over theoretical capacity with high delays. During the PM peak hour, the eastbound left, westbound through, and northbound through/right movements are anticipated to be over theoretical capacity with high delays and extended queues, the westbound left, westbound right, and southbound left movements are anticipated to be subject to high delays and extended queues, and the overall intersection is forecasted to be over theoretical capacity with high delays.

The Fisher Avenue and Deer Park Road/Dynes Road intersection is anticipated to continue to operate well.

7.2 Demand Rationalization Conclusions

Overall, the proposed development is anticipated to contribute negligible volumes to the study area above the existing land uses, as described in Section 6.4. From a review of the permitted uses for the existing zoning, a

permitted office building may generate a minimum of 175 additional AM and 102 additional PM peak hour auto volumes above the existing land use, subject to the Section 5.1 new development proposed mode shares. No specific development-generated demand rationalization is therefore required for the subject site.

With respect to rationalization of background traffic, is anticipated that residual trip capacity will be available in the Baseline Road corridor will be available in the form of transit and cycling trips once the improvements are completed. For the BRT corridor to maintain intersection operations commensurate with the existing conditions, shifts from auto trips to transit trips of 3% of the volumes at the intersection of Fisher Avenue and Baseline Road in the PM peak hour. For the intersection of Prince of Wales Drive at Baseline Road/Heron Road, the intersection is anticipated to be overcapacity with delay and queuing issues in the future even if shifts to transit in area and regional trips are achieved through the construction of the BRT corridor based upon the high regional demand.

8 Transportation Demand Management

8.1 Context for TDM

The mode shares used within the TIA represent a shift from auto modes to transit and cycling modes. As the future Baseline Road Rapid Transit Corridor project will enhance the cycling connectivity and transit access of the development and result in residual trip capacity for these modes, the increases in these mode shares is likely to be achieved. Supportive TDM measures should be included aimed at ensuring this outcome and encouraging further shifts towards transit.

The subject site is not within a design priority area. Total bedrooms within the development are subject to the unit breakdown. No age restrictions are noted.

8.2 Need and Opportunity

The subject site has been assumed to rely on auto travel and transit with an increase in transit and cycling ridership with the immediate proximity to the future BRT corridor, and those assumptions have been carried through the analysis. Risks associated with failing to meet mode share targets may be increased volumes on the existing overcapacity movements at the intersections of Fisher Avenue at Baseline Road and Prince of Wales Drive at Baseline Road/Heron Road. The presence of further operational issues will, however, encourage transit uptake.

8.3 TDM Program

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

- Display local area maps with walking and cycling routes, and transit route information and schedules at major entrances
- Provide real-time arrival information display at entrances
- Provide a multimodal travel option information package to new residents
- Contract with providers to install on-site bikeshare (or other micro-mobility, e.g., scootershare)
- Contract with providers to install on-site carshare spaces
- Inclusion of a 1-year 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

9 Transit

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

Table 20: Trip Generation by Transit Mode

Travel Mode	Mode Share	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Transit	Varies	67	141	208	113	83	197

The proposed development is anticipated to generate an additional 208 AM peak hour transit trips and 197 PM peak hour transit trips. Of these trips, 141 outbound AM trips and 113 inbound PM trips are anticipated. From the trip distribution found in Section 5.3, site-generated transit ridership impacts can be forecasted on the area network.

The existing routes #86 and #89 are northbound and southbound routes and routes #88 and #111 are eastbound and westbound routes. Each route provides up to four buses during peak period. Trips to the north and south may also be taken by connecting to the LRT Trillium Line east of the site via the routes #88 and #111.

Along the future BRT corridor, it is estimated that transit planning will need to an additional 58 outbound trips to the east (including trips to the LRT line) and 35 outbound trips to the west during the AM peak hour. During the PM peak hour, it is forecasted that 28 inbound trips from the west and 44 inbound trips from the east (including trips from the LRT line) generated by the development will need to be accommodated on the Baseline BRT corridor. The ridership increase is anticipated to be approximately one additional bus per peak hour in each direction on the BRT corridor.

Ridership increases of approximately 15 outbound trips to the north and 33 outbound trips to the south during the AM peak hour are anticipated on the routes #86 and #89. During the PM peak hour, it is forecasted that approximately 14 inbound trips from the north and 27 inbound trips from the south are anticipated on these routes. To accommodate the ridership increase, an equivalent of half a single bus capacity would be required in the off-peak direction for routes #86 and #89.

9.1 Transit Priority

Examining the study area intersection operations, negligible impacts on delay are anticipated on transit movements at the study area intersections as a result of the development site traffic.

10 Network Intersection Design

10.1 Network Intersection Control

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

10.2 Network Intersection Design

10.2.1 2034 Future Total Operations

Figure 17 illustrates the 2034 total volumes and Table 21 summarizes the 2034 total intersection operations including signal timing adjustments as in the background conditions. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. The synchro worksheets for the 2034 total horizon are provided in Appendix H.

Figure 17: 2034 Future Total Volumes

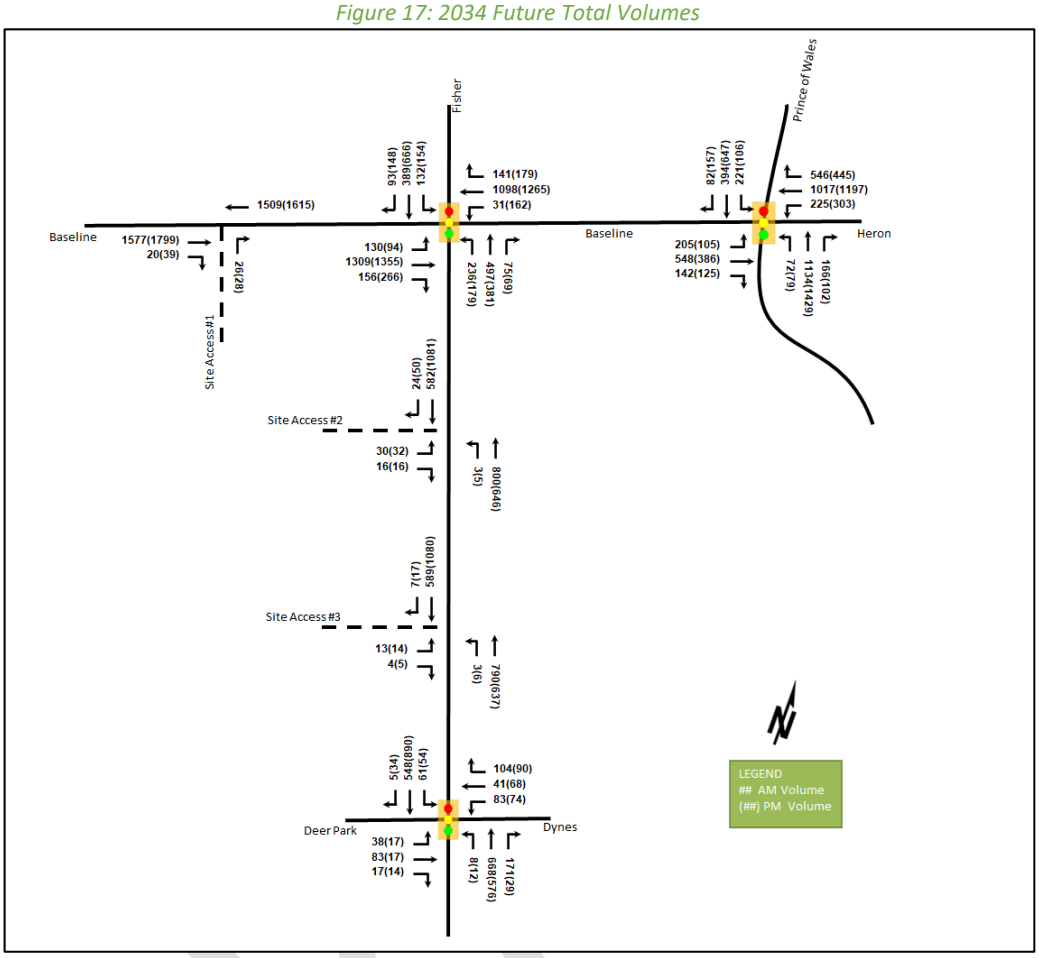


Table 21: 2034 Future Total Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Fisher Avenue at Baseline Road ***Signalized***	EBL	B	0.70	76.4	**#76.1**	E	0.96	**140.9**	**#59.0**
	EBT	D	0.90	44.6	**#245.0**	**F**	**1.13**	**109.8**	**#254.8**
	EBR	A	0.25	27.0	46.7	A	0.52	36.9	80.0
	WBL	A	0.41	58.8	m10.2	**F**	**1.20**	**161.9**	**m#53.6**
	WBT	E	0.98	**90.7**	**m#169.7**	E	0.99	61.0	m122.3
	WBR	A	0.29	65.9	m41.3	A	0.32	42.2	m34.0
	NBL	E	1.00	**115.1**	**#113.9**	**F**	**1.13**	**161.7**	**#100.5**
	NBT/R	C	0.73	50.8	86.5	A	0.51	42.5	68.3
	SBL	C	0.73	78.9	**#55.0**	**F**	**1.02**	**136.1**	**#84.7**
	SBT/R	C	0.73	53.7	74.2	E	0.96	69.1	**#147.1**
	Overall	**E**	**0.94**	**64.3**	-	**F**	**1.09**	**83.0**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Prince of Wales Drive at Baseline Road/Heron Road *Signalized*	EBL	**F**	**1.22**	**164.7**	**m#84.0**	**F**	**1.15**	**118.5**	**m#27.7**
	EBT/R	D	0.82	70.1	m111.8	D	0.86	63.7	m66.8
	WBL	E	0.95	**101.6**	**#107.1**	E	0.98	**100.0**	**#135.5**
	WBT	**F**	**1.02**	**78.2**	**#186.3**	**F**	**1.13**	**111.9**	**#228.7**
	WBR	**F**	**1.24**	**165.2**	**#240.9**	E	0.99	**83.4**	**#180.7**
	NBL	A	0.53	70.1	32.9	A	0.53	70.1	36.2
	NBT/R	**F**	**1.18**	**129.8**	**#252.3**	**F**	**1.21**	**138.8**	**#294.4**
	SBL	**F**	**1.26**	**204.0**	**#62.3**	D	0.85	**110.7**	**#31.1**
	SBT/R	A	0.45	37.2	71.3	C	0.76	44.1	120.3
	Overall	**F**	**1.22**	**107.6**	-	**F**	**1.19**	**100.7**	-
Fisher Avenue at Deer Park Road/Dynes Road *Signalized*	EB	A	0.40	25.9	29.4	A	0.17	23.6	13.1
	WB	B	0.63	27.5	42.2	C	0.76	45.9	54.7
	NBL/T	B	0.67	16.6	117.2	A	0.52	11.4	94.3
	NBR	A	0.20	2.3	8.2	A	0.03	1.3	2.1
	SB	A	0.39	10.5	39.6	A	0.51	10.1	71.8
	Overall	**B**	**0.64**	**15.3**	-	**A**	**0.57**	**15.1**	-

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

The study area intersections at the 2034 future total horizon operate similarly to the 2034 background conditions. Impacts from the redevelopment are forecasted to be negligible. No new capacity issues are noted during either peak hour.

10.2.2 Network Intersection MMLOS

Table 22 summarizes the MMLOS analysis for the network intersections within the study area. The existing and future conditions for both intersections will be the same and are considered in one row. The intersection analysis of Fisher Avenue at Baseline Road and Prince of Wales Drive at Baseline Road/Heron Road are based on the policy area within 600 metres of a rapid transit station, and Fisher Avenue at Deer Park Road/Dynes Road is based on the policy area of within 300 metres of a school. The MMLOS worksheets has been provided in Appendix J.

Table 22: Study Area Intersection MMLOS Analysis

Intersection	Horizon	Pedestrian LOS		Bicycle LOS		Transit LOS		Truck LOS		Auto LOS	
		PLOS	Target	BLOS	Target	TLOS	Target	TrLOS	Target	ALOS	Target
Fisher Ave at Baseline Rd	Existing	**F**	A	**F**	A	**F**	A	A	D	**F**	E
	Future	**F**	A	A	A	**F**	A	A	D	**F**	E
Prince of Wales Dr at Baseline Rd/ Heron Rd	Existing	**F**	A	**F**	A	**F**	A	A	D	**F**	E
	Future	**F**	A	A	A	**F**	A	A	D	**F**	E
Fisher Ave at Deer Park Rd/ Dynes Rd	Existing /Future	**E**	A	A	B	C	D	-	-	B	E

The pedestrian LOS will not be met at the intersections throughout the study area. As is typical for arterial roads, the crossing distances do not permit the targets to be met. To meet pedestrian LOS targets, the maximum crossing distance on all pedestrian crossings would need to be reduced to two lane-widths.

The bicycle LOS will not be met at the existing intersections of Fisher Avenue at Baseline Road and Prince of Wales Drive at Baseline Road/Heron Road, but it will be met once the planned modifications are completed.

The transit LOS will not be met at the intersections throughout the study area except for Fisher Avenue at Deer Park Road/Dynes Road intersection. To meet transit LOS, the delay would need to be reduced to zero seconds on all transit movements. The future Baseline Road Rapid Transit Corridor is anticipated to improve the eastbound and westbound operations, but the northbound and southbound movements will not meet the transit LOS.

The auto LOS will not be met throughout the study area except for Fisher Avenue at Deer Park Road/Dynes Road intersection.

The MMLOS scores for the future conditions are highlighted for the City's review given their planned improvements for these intersections, and meeting these targets are not considered the responsibility of the developer.

10.2.3 Recommended Design Elements

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

11 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 three mixed-use buildings with a total of 868 dwelling units and 31,169 sq. ft of commercial space
- The first phase of development is to include the construction of the southern building in the location of an existing parking lot, and the remaining phases are to involve the demolition of the strip retail plaza
- The development proposes the use of an existing right-in/right-out access on Baseline Road, an existing full-movements access on Fisher Avenue, and proposes the addition of one full-movement access on Fisher Avenue to the south of the existing access
- The development is proposed to be completed across multiple phases in 2034
- The trip generation, location, and safety triggers were met for the TIA Screening
- This report accompanies an Official Plan amendment and zoning by-law amendment

Existing Conditions

- Baseline Road, Heron Road, Fisher Avenue, Prince of Wales Drive are arterial roads in the study area, and Deer Park Road and Dynes Road are collector roads
- Sidewalks are provided along the south side of Baseline Road and of Deer Park Road west of Millbrook Crescent, on the east side of Prince of Wales Drive, on the west side of Fisher Avenue north of Baseline Road, on both sides of Fisher Avenue south of Baseline Road, Dynes Road, and Deer Park Road east of Millbrook Crescent
- A paved shoulder is present on both sides of Fisher Avenue except through the intersection with Baseline Avenue where bike lanes are present and on Fisher Avenue of the road between Malibu Terrace and the auxiliary northbound right turn lane taper at Baseline Road where a cycletrack is present
- Cycletracks are also present at the Fisher Avenue at Deer Park Road/Dynes Road intersection, and bike lanes are present along Dynes Road
- Fisher Avenue, Prince of Wales Drive, Baseline Road, and Heron Road are spine routes, and Baseline Road, Heron Road and Prince of Wales Drive are cross-town bikeways
- Malibu Terrace west of Fisher Avenue, Hilliard Avenue north of Malibu Terrace, Sunnycrest Drive, Deer Park Road, Dynes Road, and McCooey Lane are local routes

- The high volumes roadways have produced a high number of collisions at the study area intersections, primarily at the Fisher Avenue at Baseline Road intersection
- The Fisher Avenue at Baseline Road intersection had an angle collision involving a fatality where a pedestrian was killed as a result of a two-vehicle collision, but the remaining collisions are largely associated with congestion
- The study area intersections of Fisher Avenue at Baseline Road and of Prince of Wales Drive at Baseline Road/Heron Road experience capacity issues and significant delay and queuing during both peak hours
- Existing volumes were noted to include detour volumes from the closure of the Hog's Back Bridge

Development Generated Travel Demand

- The proposed development is forecasted produce 127 two-way vehicle trips during the AM peak hour and 170 two-way vehicle trips during the PM peak hour based upon an increase in transit and cycling from the typical district mode shares given the proximity of the Baseline BRT improvements
- Of the forecasted trips, 30% are anticipated to travel north, 25% to the south and the west, and 20% to the east

Background Conditions

- The annual background growth derived from the two TRANS model horizons was rounded to the nearest 0.25% and applied in the AM peak hour and reversed int the PM peak hour.
- Changes from the Baseline Road Rapid Transit Corridor project are included in future horizons and volumes at the intersection of Prince of Wales Drive and Baseline Road/Heron Road have been factored to remove the detour volumes
- The existing site comprises a 3,247 m^2 of commercial building and is estimated to produce 98 AM two-way auto trips in the AM peak hour and 169 two-way auto trips in the PM peak hour based on the existing land uses and the recommended area mode shares
- The planned geometric changes at the Baseline Road intersections are not anticipated to directly mitigate operations, which are anticipated to persist at the 2034 future background horizon
- Operational improvements are noted at the intersection of Prince of Wales Drive and Baseline Road/Heron Road where the detour volumes are not included

Demand Rationalization

- The development traffic increase above the existing conditions is forecasted to be negligible, and over 100 two-way vehicles lower in each peak hour than permitted land uses
- Residual trip capacity will be available via the Baseline BRT corridor for the transit and cycling modes
- To maintain operations to a similar performance to the existing conditions, a reduction in auto traffic of 3% is required at the intersection of Fisher Avenue at Baseline Road via a shift in auto traffic to transit
- Given the high regional demand, capacity issues are anticipated to persist despite shifts from auto to transit at the intersection of Prince of Wales Drive and Baseline Road/Heron Road

TDM

- A TDM program should be employed to utilize the added trip capacity from the BRT corridor improvements
- Supportive TDM measures to be included within the proposed development should include:

- Display local area maps with walking and cycling routes, and transit route information and schedules at major entrances
- Provide a multimodal travel option information package to new residents
- Contract with providers to install on-site bikeshare (or other micro-mobility, e.g., scootershare)
- Contract with providers to install on-site carshare spaces
- Inclusion of a 1-year 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

Transit

- The proposed development is anticipated to generate an additional 208 AM peak hour transit trips and 197 PM peak hour transit trips
- It is estimated that approximately 58 outbound trips to the east and 35 outbound trips to the west during the AM peak hour and 28 inbound trips from the west and 44 inbound trips from the east generated by the development will need to be accommodated on the Baseline BRT corridor
- Ridership increases for routes #86 and #89 of approximately 15 outbound trips to the north and 33 outbound trips to the south during the AM peak hour, and approximately 14 inbound trips from the north and 27 inbound trips from the south are anticipated from the development
- To accommodate the ridership increase, an equivalent of half a single bus capacity would be required in the off-peak direction for routes #86 and #89 and approximately one bus per peak hour and direction on the BRT corridor
- Negligible impacts are anticipated on transit movement delays at the study area intersections from the subject development

Network Intersection Design

- The future total operations are similar to the future background operation and the traffic impacts from the redevelopment are anticipated to be negligible
- The pedestrian, transit, and auto LOS will not be met at the intersections of Fisher Avenue at Baseline Road and Prince of Wales Drive at Baseline Road/Heron Road in the existing or future conditions
- The bicycle LOS at the future intersections of Fisher Avenue at Baseline Road and Prince of Wales Drive at Baseline Road/Heron Road will be met but are not met in the existing conditions, and the pedestrian LOS will not be met at the intersection of Fisher Avenue at Deer Park Road/Dynes Road
- The MMLOS scores for the future conditions are highlighted for the City's review given their planned improvements for these intersections, and meeting these targets are not considered the responsibility of the developer

12 Next Steps

Following the circulation and review of the TIA, any outstanding comments will be documents within the context of the Official Plan amendment and zoning by-law 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.

Appendix A

TIA Screening Form and PM Certification Form

13 Markham Avenue
Ottawa ON K2G 3Z1

City of Ottawa 2017 TIA Guidelines
Step 1 - Screening Form

Date: 25-Feb-22
Project Number: 2021-083
Project Reference: 780 Baseline Road

1.1 Description of Proposed Development	
Municipal Address	780 Baseline Road
Description of Location	Ward 9. 1.36 ha parcel area on south side of Baseline Rd and West side of Fisher Ave
Land Use Classification	General Mixed Use (GM)
Development Size	900 residential units and approximatly 25,000 sq.ft commercial space
Accesses	One on Baseline Road, Two on Fisher Avenue
Phase of Development	Two
Buildout Year	2027
TIA Requirement	Full TIA Required

1.2 Trip Generation Trigger		
Land Use Type	Townhomes or apartments	
Development Size	900	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?	Yes	Transit Priority, Rapid Transt, and Spine
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?	No	
Location Trigger	Yes	

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

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Infrastructure Services and Community Sustainability
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Tél. : 613-580-2424
Télécopieur: 613-560-6006

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

Name: _____Andrew Harte_____
(Please Print)

Professional Title: _____Professional Engineer_____

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

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

Appendix B

Turning Movement Counts

Transportation Services - Traffic Services

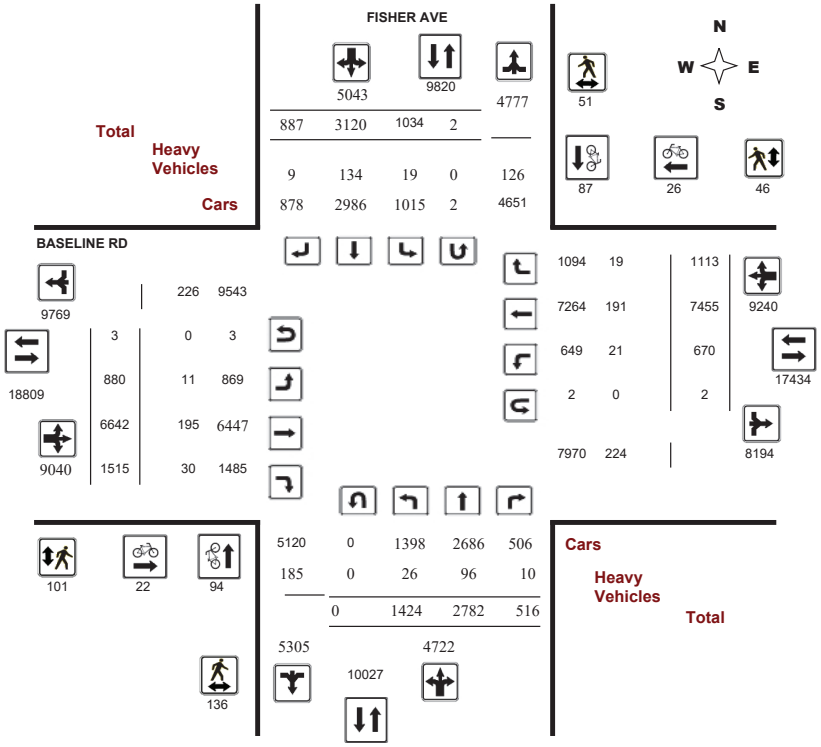
Turning Movement Count - Study Results

BASELINE RD @ FISHER AVE

Survey Date: Wednesday, August 03, 2016 **WO No:** 36121

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

Full Study Diagram



Transportation Services - Traffic Services

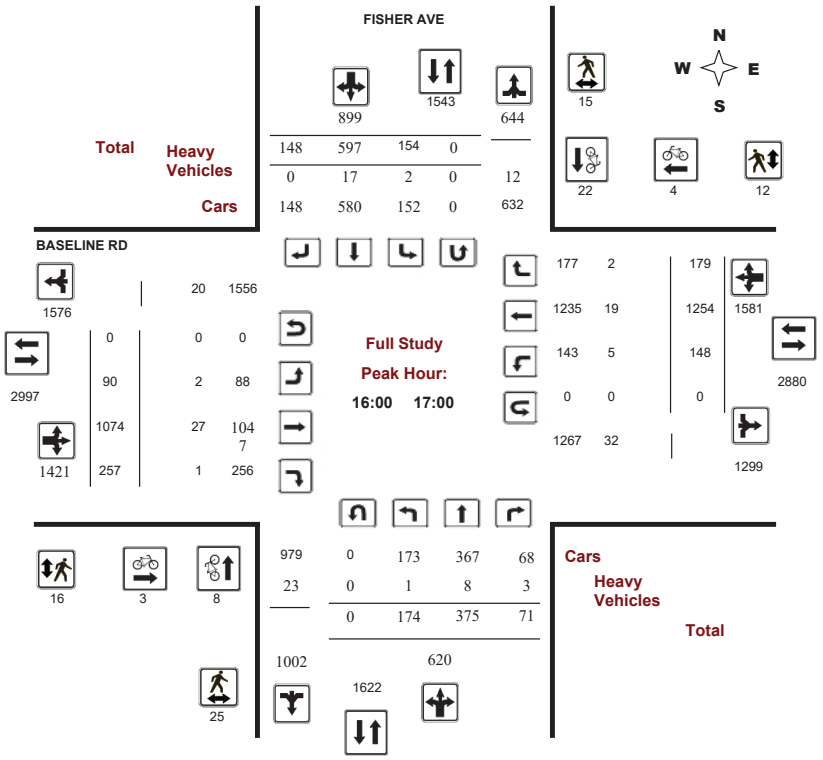
Turning Movement Count - Study Results

BASELINE RD @ FISHER AVE

Survey Date: Wednesday, August 03, 2016 **WO No:** 36121

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

Full Study Peak Hour Diagram



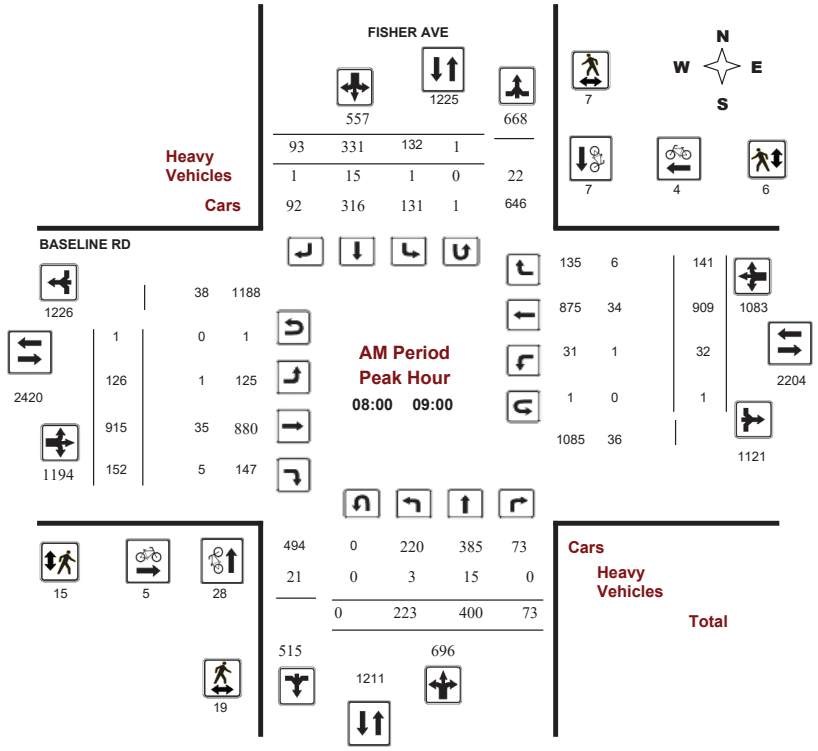
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BASELINE RD @ FISHER AVE

Survey Date: Wednesday, August 03, 2016 **WO No:** 36121

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



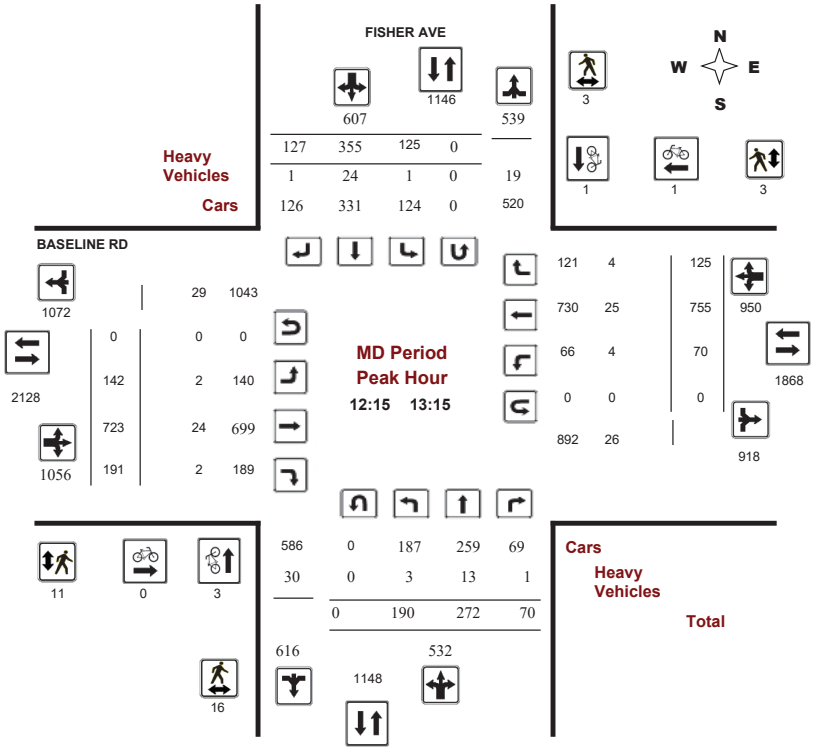
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BASELINE RD @ FISHER AVE

Survey Date: Wednesday, August 03, 2016 **WO No:** 36121

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



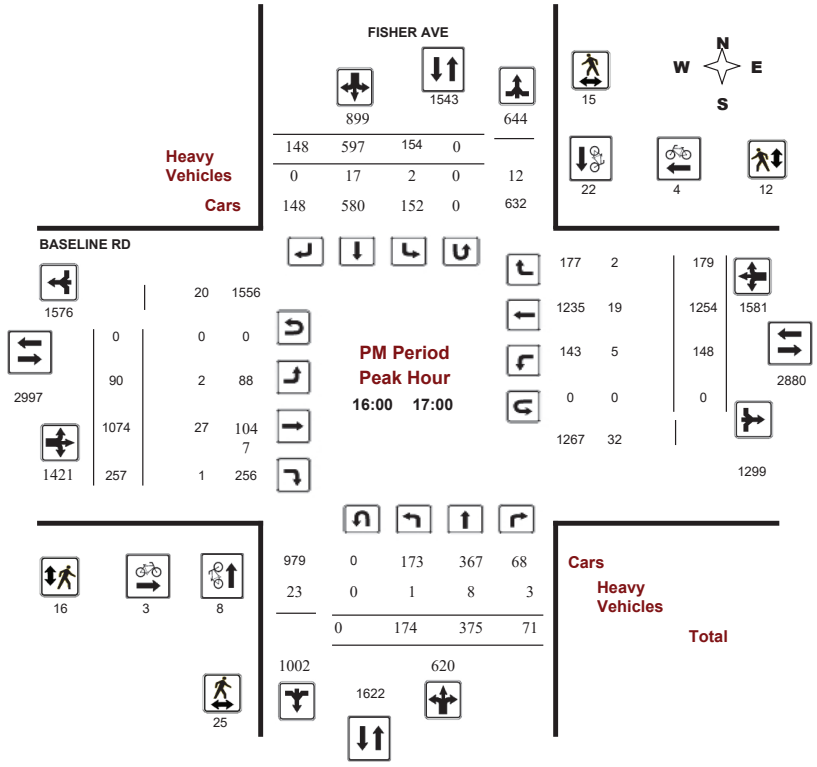
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BASELINE RD @ FISHER AVE

Survey Date: Wednesday, August 03, 2016 **WO No:** 36121

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BASELINE RD @ FISHER AVE

Survey Date: Wednesday, August 03, 2016 **WO No:** 36121

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, August 03, 2016

Total Observed U-Turns

Northbound: 0 Southbound: 2

Eastbound: 3 Westbound: 2

AADT Factor .90

	FISHER AVE								BASELINE RD								
	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	174	406	68	**648**	121	309	57	**487**	**1135**	104	835	106	**1045**	36	702	105	**843**	**1888**	**3023**
08:00 09:00	223	400	73	**696**	132	331	93	**556**	**1252**	126	915	152	**1193**	32	909	141	**1082**	**2275**	**3527**
09:00 10:00	172	343	55	**570**	121	269	96	**486**	**1056**	70	670	151	**891**	58	685	120	**863**	**1754**	**2810**
11:30 12:30	172	276	59	**507**	121	365	135	**621**	**1128**	128	658	187	**973**	71	802	123	**996**	**1969**	**3097**
12:30 13:30	168	283	68	**519**	108	337	124	**569**	**1088**	139	707	211	**1057**	71	718	125	**914**	**1971**	**3059**
15:00 16:00	153	345	52	**550**	128	442	120	**690**	**1240**	115	848	212	**1175**	113	1179	173	**1465**	**2640**	**3880**
16:00 17:00	174	375	71	**620**	154	597	148	**899**	**1519**	90	1074	257	**1421**	148	1254	179	**1581**	**3002**	**4521**
17:00 18:00	188	354	70	**612**	149	470	114	**733**	**1345**	108	935	239	**1282**	141	1206	147	**1494**	**2776**	**4121**
Sub Total	1424	2782	516	**4722**	1034	3120	887	**5041**	**9763**	880	6642	1515	**9037**	670	7455	1113	**9238**	**18275**	**28038**
U Turns	0			**0**	2			**2**	**2**	3			**3**	2			**2**	**5**	**7**
Total	1424	2782	516	**4722**	1036	3120	887	**5043**	**9765**	883	6642	1515	**9040**	672	7455	1113	**9240**	**18280**	**28045**
EQ 12Hr	1979	3867	717	**6563**	1440	4337	1233	**7010**	**13573**	1227	9232	2106	**12565**	934	10362	1547	**12843**	**25408**	**38981**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	1781	3480	645	**5906**	1296	3903	1110	**6309**	**12215**	1104	8309	1895	**11308**	841	9326	1392	**11559**	**22867**	**35082**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**.90**					
AVG 24Hr	2333	4559	845	**7737**	1698	5113	1454	**8265**	**16002**	1446	10885	2482	**14813**	1102	12217	1824	**15143**	**29956**	**45958**
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

BASELINE RD @ FISHER AVE

Survey Date: Wednesday, August 03, 2016 **WO No:** 36121

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

Full Study 15 Minute Increments

		FISHER AVE									BASELINE RD									
		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	34	104	20	158	20	70	7	97	**255**	14	183	22	219	5	120	21	146	**365**	**620**
07:15	07:30	34	92	19	145	25	68	13	106	**251**	33	202	21	256	8	165	23	196	**452**	**703**
07:30	07:45	53	100	15	168	44	91	16	151	**319**	23	232	34	289	10	214	23	247	**536**	**855**
07:45	08:00	53	110	14	177	32	80	21	133	**310**	34	218	29	281	13	203	38	254	**535**	**845**
08:00	08:15	52	77	16	145	30	98	16	144	**289**	34	255	32	321	8	206	38	252	**573**	**862**
08:15	08:30	53	103	13	169	40	73	20	133	**302**	40	202	38	280	10	223	32	265	**545**	**847**
08:30	08:45	63	106	18	187	21	77	18	116	**303**	23	251	47	321	8	240	30	278	**599**	**902**
08:45	09:00	55	114	26	195	42	83	39	164	**359**	30	207	35	272	7	240	41	288	**560**	**919**
09:00	09:15	43	109	12	164	39	61	25	125	**289**	17	193	36	246	14	186	28	228	**474**	**763**
09:15	09:30	33	91	14	138	22	77	23	122	**260**	19	177	42	238	16	154	23	193	**431**	**691**
09:30	09:45	53	68	10	131	35	61	22	118	**249**	16	155	41	212	13	184	30	227	**439**	**688**
09:45	10:00	43	75	19	137	25	70	26	121	**258**	18	145	32	195	15	161	39	215	**410**	**668**
11:30	11:45	33	69	14	116	23	84	41	148	**264**	40	153	54	247	19	185	28	232	**479**	**743**
11:45	12:00	42	65	22	129	28	93	29	150	**279**	25	146	55	226	20	195	37	252	**478**	**757**
12:00	12:15	43	76	11	130	28	88	30	146	**276**	36	177	41	254	12	197	28	237	**491**	**767**
12:15	12:30	54	66	12	132	42	100	35	177	**309**	29	182	37	248	21	225	30	276	**524**	**833**
12:30	12:45	52	78	11	141	22	93	29	144	**285**	41	179	45	265	14	162	33	209	**474**	**759**
12:45	13:00	41	58	31	130	38	86	23	147	**277**	42	187	50	279	15	181	29	225	**504**	**781**
13:00	13:15	43	70	16	129	23	76	40	139	**268**	30	175	59	264	20	187	33	240	**504**	**772**
13:15	13:30	32	77	10	119	25	82	32	139	**258**	26	166	57	249	22	188	30	240	**489**	**747**
15:00	15:15	33	75	16	124	30	104	34	168	**292**	30	196	44	270	20	257	37	314	**584**	**876**
15:15	15:30	38	80	10	128	27	96	31	154	**282**	31	165	52	248	33	313	38	384	**632**	**914**
15:30	15:45	36	106	12	154	37	115	31	183	**337**	28	239	52	319	30	281	48	359	**678**	**1015**
15:45	16:00	46	84	14	144	34	127	24	185	**329**	26	248	64	338	30	328	50	408	**746**	**1075**
16:00	16:15	48	91	13	152	42	139	44	225	**377**	27	299	50	376	32	323	39	394	**770**	**1147**
16:15	16:30	41	106	25	172	37	159	31	227	**399**	25	291	66	382	38	318	40	396	**778**	**1177**
16:30	16:45	40	85	16	141	34	144	24	202	**343**	21	264	74	359	40	300	50	390	**749**	**1092**
16:45	17:00	45	93	17	155	41	155	49	245	**400**	17	220	67	304	38	313	50	401	**705**	**1105**
17:00	17:15	56	103	11	170	39	119	30	188	**358**	23	248	67	338	44	333	43	420	**758**	**1116**
17:15	17:30	39	86	20	145	38	132	36	206	**351**	27	222	52	301	46	327	38	411	**712**	**1063**
17:30	17:45	48	96	19	163	38	89	31	158	**321**	32	229	60	321	27	312	35	374	**695**	**1016**
17:45	18:00	45	69	20	134	35	130	17	182	**316**	26	236	60	322	24	234	31	289	**611**	**927**
Total:		1424	2782	516	4722	1036	3120	887	5043	**9765**	883	6642	1515	9040	672	7455	1113	9240	**9765**	**28,045**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BASELINE RD @ FISHER AVE

Survey Date: Wednesday, August 03, 2016 **WO No:** 36121

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

Full Study Cyclist Volume

		FISHER AVE			BASELINE RD			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	5	4	**9**	0	0	**0**	**9**
07:15	07:30	5	2	**7**	0	0	**0**	**7**
07:30	07:45	12	2	**14**	0	0	**0**	**14**
07:45	08:00	8	2	**10**	1	2	**3**	**13**
08:00	08:15	7	2	**9**	2	0	**2**	**11**
08:15	08:30	9	1	**10**	1	2	**3**	**13**
08:30	08:45	10	4	**14**	1	0	**1**	**15**
08:45	09:00	2	0	**2**	1	2	**3**	**5**
09:00	09:15	3	4	**7**	2	1	**3**	**10**
09:15	09:30	1	1	**2**	0	2	**2**	**4**
09:30	09:45	0	0	**0**	0	0	**0**	**0**
09:45	10:00	2	2	**4**	0	0	**0**	**4**
11:30	11:45	1	1	**2**	0	0	**0**	**2**
11:45	12:00	0	0	**0**	1	0	**1**	**1**
12:00	12:15	0	1	**1**	0	1	**1**	**2**
12:15	12:30	2	1	**3**	0	0	**0**	**3**
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	1	0	**1**	0	0	**0**	**1**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	2	2	**4**	1	0	**1**	**5**
15:15	15:30	1	1	**2**	3	0	**3**	**5**
15:30	15:45	0	3	**3**	0	0	**0**	**3**
15:45	16:00	1	5	**6**	1	0	**1**	**7**
16:00	16:15	2	2	**4**	0	0	**0**	**4**
16:15	16:30	4	7	**11**	2	3	**5**	**16**
16:30	16:45	1	9	**10**	0	1	**1**	**11**
16:45	17:00	1	4	**5**	1	0	**1**	**6**
17:00	17:15	2	8	**10**	1	3	**4**	**14**
17:15	17:30	5	6	**11**	2	6	**8**	**19**
17:30	17:45	4	8	**12**	1	0	**1**	**13**
17:45	18:00	3	5	**8**	1	2	**3**	**11**
Total		94	87	**181**	22	26	**48**	**229**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BASELINE RD @ FISHER AVE

Survey Date: Wednesday, August 03, 2016 **WO No:** 36121

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

Full Study Pedestrian Volume

		FISHER AVE			BASELINE RD			
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	6	3	**9**	5	3	**8**	**17**
07:15	07:30	2	2	**4**	3	3	**6**	**10**
07:30	07:45	5	1	**6**	3	3	**6**	**12**
07:45	08:00	4	2	**6**	4	2	**6**	**12**
08:00	08:15	3	1	**4**	4	1	**5**	**9**
08:15	08:30	5	3	**8**	3	3	**6**	**14**
08:30	08:45	3	2	**5**	4	1	**5**	**10**
08:45	09:00	8	1	**9**	4	1	**5**	**14**
09:00	09:15	0	1	**1**	2	1	**3**	**4**
09:15	09:30	3	1	**4**	3	2	**5**	**9**
09:30	09:45	0	1	**1**	1	1	**2**	**3**
09:45	10:00	1	0	**1**	1	1	**2**	**3**
11:30	11:45	1	1	**2**	1	1	**2**	**4**
11:45	12:00	0	0	**0**	0	0	**0**	**0**
12:00	12:15	1	0	**1**	1	1	**2**	**3**
12:15	12:30	4	0	**4**	2	1	**3**	**7**
12:30	12:45	5	0	**5**	3	0	**3**	**8**
12:45	13:00	2	2	**4**	3	2	**5**	**9**
13:00	13:15	5	1	**6**	3	0	**3**	**9**
13:15	13:30	3	1	**4**	2	0	**2**	**6**
15:00	15:15	5	0	**5**	8	0	**8**	**13**
15:15	15:30	0	3	**3**	2	1	**3**	**6**
15:30	15:45	3	3	**6**	1	1	**2**	**8**
15:45	16:00	15	0	**15**	4	1	**5**	**20**
16:00	16:15	6	10	**16**	6	4	**10**	**26**
16:15	16:30	7	1	**8**	1	0	**1**	**9**
16:30	16:45	9	3	**12**	3	4	**7**	**19**
16:45	17:00	3	1	**4**	6	4	**10**	**14**
17:00	17:15	8	2	**10**	5	1	**6**	**16**
17:15	17:30	10	2	**12**	4	0	**4**	**16**
17:30	17:45	5	2	**7**	6	2	**8**	**15**
17:45	18:00	4	1	**5**	3	1	**4**	**9**
Total	.....	136	51	**187**	101	46	**147**	**334**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BASELINE RD @ FISHER AVE

Survey Date: Wednesday, August 03, 2016 **WO No:** 36121

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

Full Study Heavy Vehicles

		FISHER AVE									BASELINE RD									
		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	7	0	**10**	1	1	0	**2**	**12**	0	4	0	**4**	0	6	0	**6**	**10**	**22**
07:15	07:30	1	1	0	**2**	0	5	0	**5**	**7**	0	7	1	**8**	0	8	1	**9**	**17**	**24**
07:30	07:45	0	6	0	**6**	0	2	0	**2**	**8**	0	5	0	**5**	0	5	0	**5**	**10**	**18**
07:45	08:00	1	4	0	**5**	0	3	1	**4**	**9**	1	10	1	**12**	0	4	2	**6**	**18**	**27**
08:00	08:15	0	2	0	**2**	0	4	0	**4**	**6**	0	8	0	**8**	0	8	2	**10**	**18**	**24**
08:15	08:30	2	6	0	**8**	1	4	0	**5**	**13**	1	6	4	**11**	0	7	1	**8**	**19**	**32**
08:30	08:45	0	3	0	**3**	0	2	0	**2**	**5**	0	11	1	**12**	1	9	2	**12**	**24**	**29**
08:45	09:00	1	4	0	**5**	0	5	1	**6**	**11**	0	10	0	**10**	0	10	1	**11**	**21**	**32**
09:00	09:15	3	2	0	**5**	0	4	0	**4**	**9**	0	6	2	**8**	0	13	0	**13**	**21**	**30**
09:15	09:30	1	3	1	**5**	0	6	0	**6**	**11**	1	6	2	**9**	1	6	0	**7**	**16**	**27**
09:30	09:45	0	3	0	**3**	3	2	1	**6**	**9**	1	5	1	**7**	0	9	0	**9**	**16**	**25**
09:45	10:00	1	2	0	**3**	1	3	0	**4**	**7**	0	3	2	**5**	2	6	0	**8**	**13**	**20**
11:30	11:45	1	3	2	**6**	2	2	1	**5**	**11**	0	8	2	**10**	0	5	1	**6**	**16**	**27**
11:45	12:00	2	3	1	**6**	0	2	0	**2**	**8**	0	3	2	**5**	1	6	1	**8**	**13**	**21**
12:00	12:15	3	2	0	**5**	0	4	1	**5**	**10**	1	7	1	**9**	0	8	0	**8**	**17**	**27**
12:15	12:30	0	3	1	**4**	0	7	1	**8**	**12**	1	6	1	**8**	2	8	1	**11**	**19**	**31**
12:30	12:45	0	3	0	**3**	0	8	0	**8**	**11**	1	4	0	**5**	0	7	2	**9**	**14**	**25**
12:45	13:00	2	4	0	**6**	1	5	0	**6**	**12**	0	5	1	**6**	2	4	1	**7**	**13**	**25**
13:00	13:15	1	3	0	**4**	0	4	0	**4**	**8**	0	9	0	**9**	0	6	0	**6**	**15**	**23**
13:15	13:30	0	3	0	**3**	1	3	1	**5**	**8**	1	7	2	**10**	1	8	1	**10**	**20**	**28**
15:00	15:15	1	3	0	**4**	1	6	0	**7**	**11**	0	5	0	**5**	1	6	0	**7**	**12**	**23**
15:15	15:30	0	2	0	**2**	1	4	1	**6**	**8**	0	5	2	**7**	0	4	0	**4**	**11**	**19**
15:30	15:45	0	6	0	**6**	1	4	0	**5**	**11**	1	6	1	**8**	1	6	0	**7**	**15**	**26**
15:45	16:00	2	2	0	**4**	0	3	0	**3**	**7**	0	5	1	**6**	1	3	1	**5**	**11**	**18**
16:00	16:15	0	1	1	**2**	1	4	0	**5**	**7**	1	8	0	**9**	1	6	1	**8**	**17**	**24**
16:15	16:30	0	2	1	**3**	0	4	0	**4**	**7**	0	6	0	**6**	1	4	0	**5**	**11**	**18**
16:30	16:45	0	2	0	**2**	0	4	0	**4**	**6**	1	11	1	**13**	1	5	0	**6**	**19**	**25**
16:45	17:00	1	3	1	**5**	1	5	0	**6**	**11**	0	2	0	**2**	2	4	1	**7**	**9**	**20**
17:00	17:15	0	1	0	**1**	2	5	0	**7**	**8**	0	4	0	**4**	1	4	0	**5**	**9**	**17**
17:15	17:30	0	3	0	**3**	1	7	0	**8**	**11**	0	3	0	**3**	2	2	0	**4**	**7**	**18**
17:30	17:45	0	3	1	**4**	0	5	1	**6**	**10**	0	6	0	**6**	0	3	0	**3**	**9**	**19**
17:45	18:00	0	1	1	**2**	1	7	0	**8**	**10**	0	4	2	**6**	0	1	0	**1**	**7**	**17**
Total:	None	26	96	10	**132**	19	134	9	**162**	**294**	11	195	30	**236**	21	191	19	**231**	**467**	**761**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BASELINE RD @ FISHER AVE

Survey Date: Wednesday, August 03, 2016 **WO No:** 36121

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

Full Study 15 Minute U-Turn Total

Time Period		FISHER AVE Northbound U-Turn Total	FISHER AVE Southbound U-Turn Total	BASELINE RD Eastbound U-Turn Total	BASELINE RD 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	1	1	0	**2**
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	1	**1**
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	1	1	**2**
11:45	12:00	0	0	0	0	**0**
12:00	12:15	0	0	1	0	**1**
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	1	0	0	**1**
Total		0	2	3	2	**7**

Transportation Services - Traffic Services

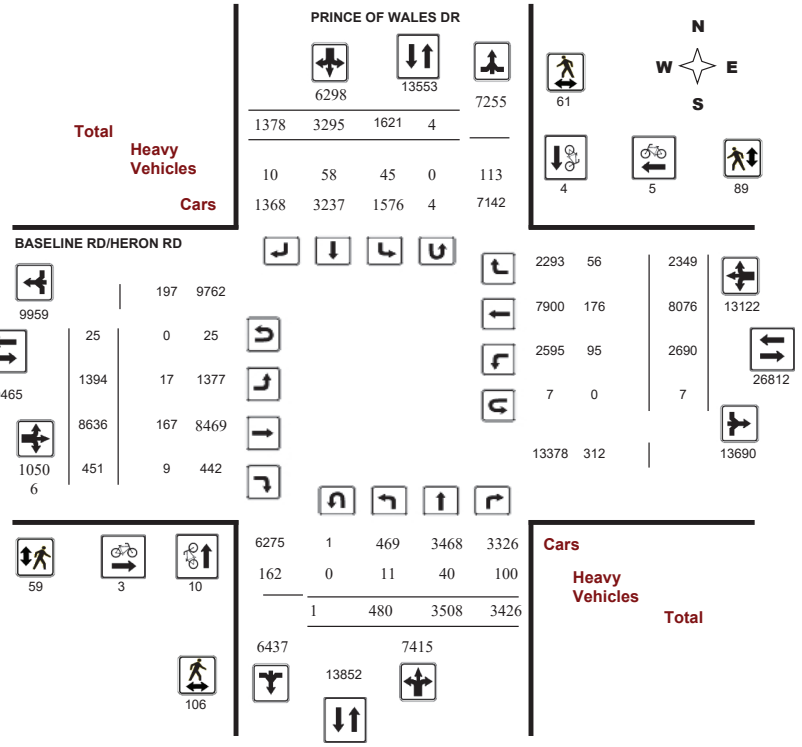
Turning Movement Count - Study Results

BASELINE RD/HERON RD @ PRINCE OF WALES DR

Survey Date: Wednesday, March 04, 2020 **WO No:** 39636

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

Full Study Diagram



5478543 - MAR 4, 2020 - 8HR REIMPORT

Transportation Services - Traffic Services

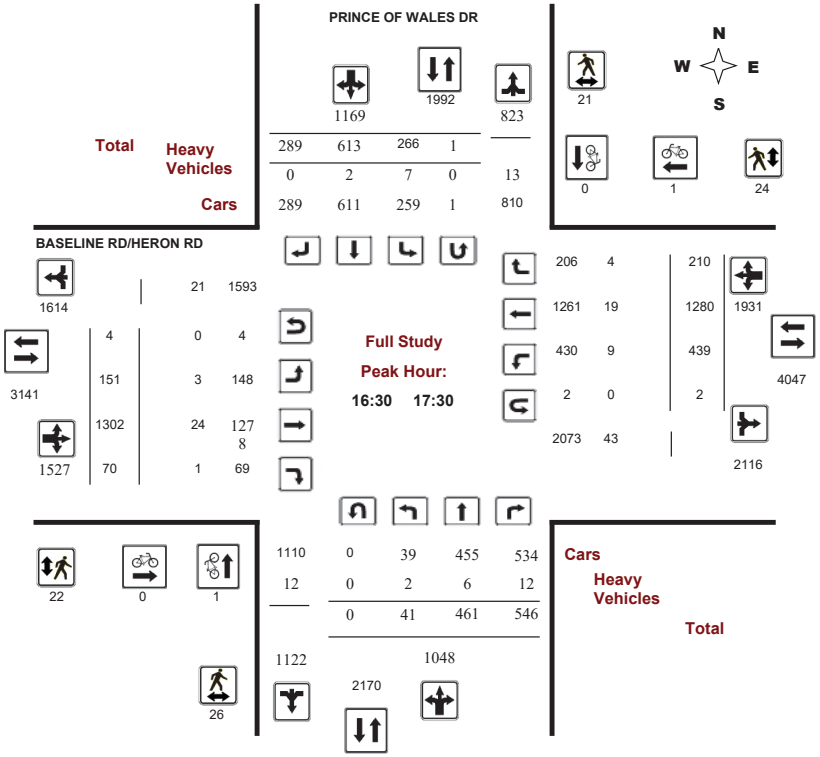
Turning Movement Count - Study Results

BASELINE RD/HERON RD @ PRINCE OF WALES DR

Survey Date: Wednesday, March 04, 2020 **WO No:** 39636

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

Full Study Peak Hour Diagram



5478543 - MAR 4, 2020 - 8HR REIMPORT

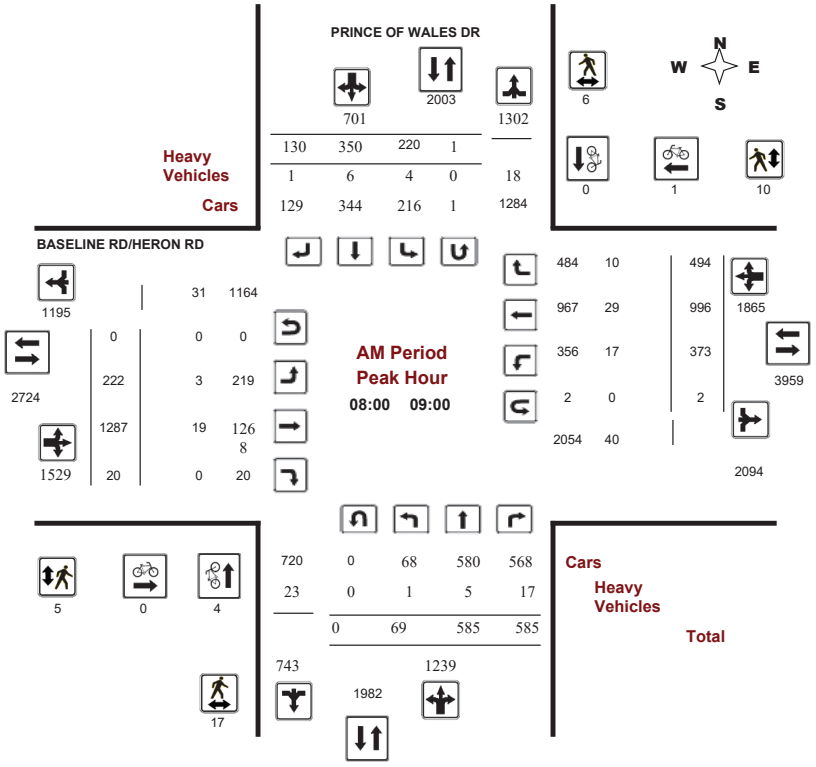
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BASELINE RD/HERON RD @ PRINCE OF WALES DR

Survey Date: Wednesday, March 04, 2020 **WO No:** 39636

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



Comments 5478543 - MAR 4, 2020 - 8HR REIMPORT

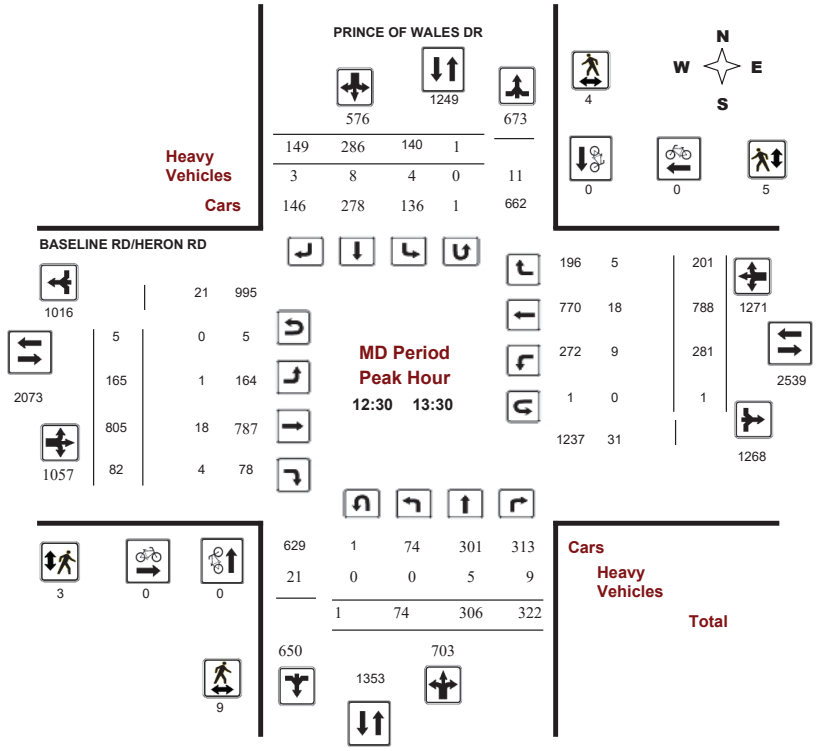
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BASELINE RD/HERON RD @ PRINCE OF WALES DR

Survey Date: Wednesday, March 04, 2020 **WO No:** 39636

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



Comments 5478543 - MAR 4, 2020 - 8HR REIMPORT

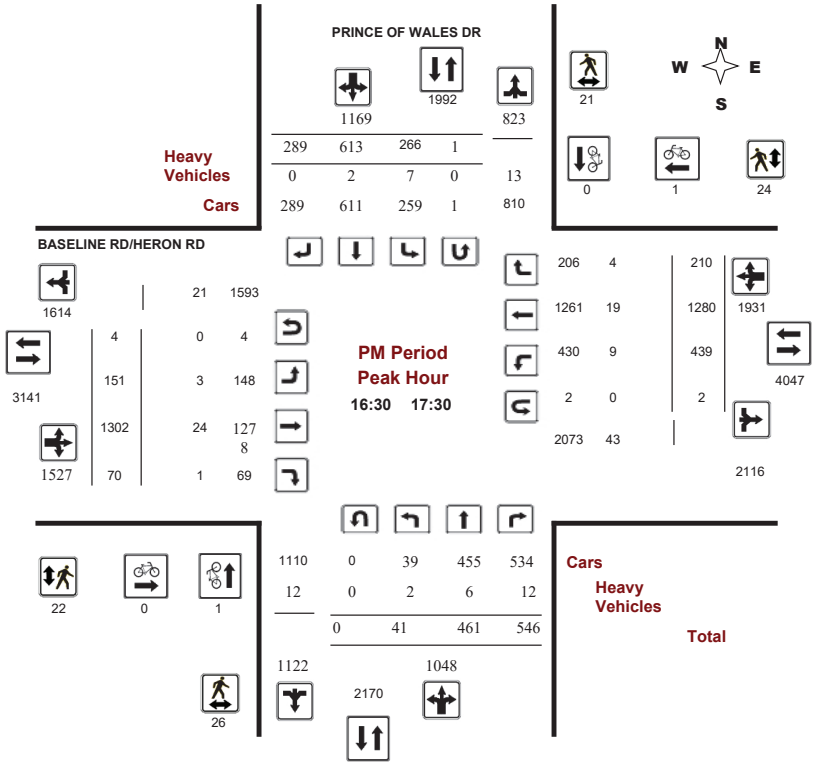
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BASELINE RD/HERON RD @ PRINCE OF WALES DR

Survey Date: Wednesday, March 04, 2020 **WO No:** 39636

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



Comments 5478543 - MAR 4, 2020 - 8HR REIMPORT

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BASELINE RD/HERON RD @ PRINCE OF WALES DR

Survey Date: Wednesday, March 04, 2020 **WO No:** 39636

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, March 04, 2020

Total Observed U-Turns

Northbound: 1 Southbound: 4

Eastbound: 25 Westbound: 7

AADT Factor 1.00

	PRINCE OF WALES DR									BASELINE RD/HERON RD									
	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	53	669	421	**1143**	179	315	73	**567**	**1710**	205	1201	40	**1446**	274	809	433	**1516**	**2962**	**4672**
08:00 09:00	69	585	585	**1239**	220	350	130	**700**	**1939**	222	1287	20	**1529**	373	996	494	**1863**	**3392**	**5331**
09:00 10:00	68	436	359	**863**	155	282	103	**540**	**1403**	186	977	55	**1218**	264	826	269	**1359**	**2577**	**3980**
11:30 12:30	70	272	290	**632**	163	302	153	**618**	**1250**	130	695	44	**869**	272	848	198	**1318**	**2187**	**3437**
12:30 13:30	74	306	322	**702**	140	286	149	**575**	**1277**	165	805	82	**1052**	281	788	201	**1270**	**2322**	**3599**
15:00 16:00	57	387	414	**858**	234	572	218	**1024**	**1882**	161	1101	73	**1335**	368	1213	325	**1906**	**3241**	**5123**
16:00 17:00	41	430	528	**999**	287	607	292	**1186**	**2185**	160	1265	70	**1495**	426	1278	208	**1912**	**3407**	**5592**
17:00 18:00	48	423	507	**978**	243	581	260	**1084**	**2062**	165	1305	67	**1537**	432	1318	221	**1971**	**3508**	**5570**
Sub Total	480	3508	3426	**7414**	1621	3295	1378	**6294**	**13708**	1394	8636	451	**10481**	2690	8076	2349	**13115**	**23596**	**37304**
U Turns				**1**				**4**	**5**				**25**				**7**	**32**	**37**
Total	480	3508	3426	**7415**	1621	3295	1378	**6298**	**13713**	1394	8636	451	**10506**	2690	8076	2349	**13122**	**23628**	**37341**
EQ 12Hr	667	4876	4762	**10307**	2253	4580	1915	**8754**	**19061**	1938	12004	627	**14603**	3739	11226	3265	**18240**	**32843**	**51904**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	629	4595	4488	**9714**	2124	4316	1805	**8250**	**19061**	1826	11313	591	**13763**	3524	10580	3077	**17190**	**32843**	**51904**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1**					
AVG 24Hr	824	6020	5879	**12725**	2782	5655	2365	**10808**	**23533**	2392	14820	774	**18029**	4616	13859	4031	**22519**	**40548**	**64081**
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

BASELINE RD/HERON RD @ PRINCE OF WALES DR

Survey Date: Wednesday, March 04, 2020 **WO No:** 39636

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

Full Study 15 Minute Increments

		PRINCE OF WALES DR									BASELINE RD/HERON RD									
		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	13	142	88	243	37	62	12	111	6	47	265	5	317	60	184	88	332	6	1003
07:15	07:30	7	169	91	267	41	74	14	129	7	67	333	12	412	61	198	111	370	7	1178
07:30	07:45	18	171	109	298	54	80	27	161	12	44	339	7	391	75	209	110	394	12	1244
07:45	08:00	15	187	133	335	47	99	20	166	12	47	264	16	327	78	218	124	420	12	1248
08:00	08:15	16	140	134	290	53	73	34	160	5	58	297	4	359	112	253	144	511	5	1320
08:15	08:30	16	143	124	283	59	81	25	165	11	55	332	5	392	79	228	137	444	11	1284
08:30	08:45	22	151	152	325	56	78	46	180	10	45	323	3	371	106	257	119	482	10	1358
08:45	09:00	15	151	175	341	52	118	25	196	8	64	335	8	407	76	258	94	428	8	1372
09:00	09:15	19	126	116	261	39	77	23	139	9	65	340	10	416	76	236	80	392	9	1208
09:15	09:30	13	109	98	220	29	68	22	119	13	40	231	13	286	74	216	77	367	13	992
09:30	09:45	15	96	79	190	42	71	25	138	13	51	223	12	286	52	160	51	263	13	877
09:45	10:00	21	105	66	192	45	66	33	144	7	30	183	20	233	62	214	61	337	7	906
11:30	11:45	16	62	70	148	35	72	31	138	10	34	144	13	194	62	223	49	335	10	815
11:45	12:00	15	71	58	144	39	76	45	160	7	28	210	12	251	80	220	48	348	7	903
12:00	12:15	22	70	78	170	37	71	51	160	6	25	186	10	222	79	209	44	332	6	884
12:15	12:30	17	69	84	170	52	83	26	161	8	43	155	9	209	51	196	57	304	8	844
12:30	12:45	13	83	87	183	40	77	44	161	6	45	210	25	282	53	209	55	317	6	943
12:45	13:00	20	56	76	152	34	74	33	142	8	32	223	19	275	68	190	56	314	8	883
13:00	13:15	18	75	76	169	34	54	35	123	8	52	192	25	269	83	194	40	318	8	879
13:15	13:30	23	92	83	199	32	81	37	150	7	36	180	13	231	77	195	50	322	7	902
15:00	15:15	18	70	90	178	46	115	64	225	4	34	234	22	290	74	356	81	511	4	1204
15:15	15:30	17	106	105	228	65	141	59	265	10	49	243	19	311	94	298	84	476	10	1280
15:30	15:45	14	109	99	222	60	172	47	279	13	32	274	19	326	82	255	86	423	13	1250
15:45	16:00	8	102	120	230	63	144	48	255	6	46	350	13	410	118	304	74	496	6	1391
16:00	16:15	8	101	133	242	76	163	47	286	13	58	278	20	356	118	307	55	481	13	1365
16:15	16:30	8	89	123	220	75	134	88	297	6	29	352	17	398	100	342	45	487	6	1402
16:30	16:45	17	122	146	285	55	147	90	292	11	38	334	19	392	108	344	64	517	11	1486
16:45	17:00	8	118	126	252	81	163	67	311	11	35	301	14	352	100	285	44	430	11	1345
17:00	17:15	11	104	147	262	61	136	71	268	4	41	344	16	401	111	320	40	471	4	1402
17:15	17:30	5	117	127	249	69	167	61	298	3	37	323	21	382	120	331	62	513	3	1442
17:30	17:45	13	110	124	247	62	156	59	277	9	43	333	15	393	86	313	67	466	9	1383
17:45	18:00	19	92	109	220	51	122	69	242	1	44	305	15	365	115	354	52	521	1	1348
Total:		480	3508	3426	7415	1621	3295	1378	6298	264	1394	8636	451	10506	2690	8076	2349	13122	264	37,341

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BASELINE RD/HERON RD @ PRINCE OF WALES DR

Survey Date: Wednesday, March 04, 2020 **WO No:** 39636

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

Full Study Cyclist Volume

Time Period		PRINCE OF WALES DR			BASELINE RD/HERON RD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	1	1	0	0	0	1
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	0	0	0	1	0	1	1
07:45	08:00	0	1	1	0	0	0	1
08:00	08:15	0	0	0	0	0	0	0
08:15	08:30	0	0	0	0	0	0	0
08:30	08:45	4	0	4	0	1	1	5
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	0	0	0
09:30	09:45	0	0	0	0	1	1	1
09:45	10:00	2	0	2	1	0	1	3
11:30	11:45	0	0	0	0	0	0	0
11:45	12:00	2	0	2	1	0	1	3
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	0	0	0	0	0	0
15:30	15:45	0	1	1	0	0	0	1
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	1	1	1
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	1	1	1
17:00	17:15	0	0	0	0	0	0	0
17:15	17:30	1	0	1	0	0	0	1
17:30	17:45	1	0	1	0	0	0	1
17:45	18:00	0	0	0	0	0	0	0
Total		10	4	**14**	3	5	8	22

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BASELINE RD/HERON RD @ PRINCE OF WALES DR

Survey Date: Wednesday, March 04, 2020 **WO No:** 39636

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

Full Study Pedestrian Volume

Time Period	PRINCE OF WALES DR			BASELINE RD/HERON RD			
	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	0	**0**	0	4	**4**	**4**
07:15 07:30	4	0	**4**	0	2	**2**	**6**
07:30 07:45	3	0	**3**	2	3	**5**	**8**
07:45 08:00	3	4	**7**	4	4	**8**	**15**
08:00 08:15	6	2	**8**	0	3	**3**	**11**
08:15 08:30	4	3	**7**	5	1	**6**	**13**
08:30 08:45	6	0	**6**	0	4	**4**	**10**
08:45 09:00	1	1	**2**	0	2	**2**	**4**
09:00 09:15	0	1	**1**	1	3	**4**	**5**
09:15 09:30	0	0	**0**	0	0	**0**	**0**
09:30 09:45	5	0	**5**	0	5	**5**	**10**
09:45 10:00	6	0	**6**	0	6	**6**	**12**
11:30 11:45	2	2	**4**	2	2	**4**	**8**
11:45 12:00	2	0	**2**	0	3	**3**	**5**
12:00 12:15	0	2	**2**	2	0	**2**	**4**
12:15 12:30	1	0	**1**	0	2	**2**	**3**
12:30 12:45	1	0	**1**	0	0	**0**	**1**
12:45 13:00	4	0	**4**	1	1	**2**	**6**
13:00 13:15	3	2	**5**	1	4	**5**	**10**
13:15 13:30	1	2	**3**	1	0	**1**	**4**
15:00 15:15	1	1	**2**	1	1	**2**	**4**
15:15 15:30	2	0	**2**	0	3	**3**	**5**
15:30 15:45	4	0	**4**	0	0	**0**	**4**
15:45 16:00	4	2	**6**	2	1	**3**	**9**
16:00 16:15	1	7	**8**	4	3	**7**	**15**
16:15 16:30	7	7	**14**	6	2	**8**	**22**
16:30 16:45	6	5	**11**	4	5	**9**	**20**
16:45 17:00	7	2	**9**	3	12	**15**	**24**
17:00 17:15	9	10	**19**	5	5	**10**	**29**
17:15 17:30	4	4	**8**	10	2	**12**	**20**
17:30 17:45	8	4	**12**	3	6	**9**	**21**
17:45 18:00	1	0	**1**	2	0	**2**	**3**
Total	106	61	**167**	59	89	**148**	**315**

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Transportation Services - Traffic Services

Turning Movement Count - Study Results

BASELINE RD/HERON RD @ PRINCE OF WALES DR

Survey Date: Wednesday, March 04, 2020 **WO No:** 39636

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

Full Study Heavy Vehicles

PRINCE OF WALES DR **BASELINE RD/HERON RD**

Time Period		Northbound				Southbound					Eastbound				Westbound						
		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	1	3	**4**	1	1	0	**2**	**6**	0	0	1	**1**	2	3	2	**7**	**8**	**14**
07:15	07:30	0	2	4	**6**	0	0	1	**1**	**7**	0	6	0	**6**	4	3	3	**10**	**16**	**23**
07:30	07:45	0	2	2	**4**	2	5	1	**8**	**12**	2	1	0	**3**	5	7	3	**15**	**18**	**30**
07:45	08:00	0	2	6	**8**	2	2	0	**4**	**12**	1	5	0	**6**	6	7	3	**16**	**22**	**34**
08:00	08:15	0	0	4	**4**	1	0	0	**1**	**5**	0	3	0	**3**	4	13	2	**19**	**22**	**27**
08:15	08:30	0	2	4	**6**	1	3	1	**5**	**11**	0	4	0	**4**	7	6	4	**17**	**21**	**32**
08:30	08:45	1	2	5	**8**	1	1	0	**2**	**10**	3	5	0	**8**	2	5	2	**9**	**17**	**27**
08:45	09:00	0	1	4	**5**	1	2	0	**3**	**8**	0	7	0	**7**	4	5	2	**11**	**18**	**26**
09:00	09:15	1	2	5	**8**	0	1	0	**1**	**9**	1	7	0	**8**	2	10	2	**14**	**22**	**31**
09:15	09:30	1	3	5	**9**	1	2	1	**4**	**13**	1	5	0	**6**	4	4	1	**9**	**15**	**28**
09:30	09:45	1	1	3	**5**	0	7	1	**8**	**13**	1	5	1	**7**	3	3	2	**8**	**15**	**28**
09:45	10:00	0	0	1	**1**	2	4	0	**6**	**7**	0	9	1	**10**	0	5	0	**5**	**15**	**22**
11:30	11:45	0	0	5	**5**	2	3	0	**5**	**10**	1	4	0	**5**	3	2	2	**7**	**12**	**22**
11:45	12:00	0	2	3	**5**	0	1	1	**2**	**7**	0	4	0	**4**	3	7	4	**14**	**18**	**25**
12:00	12:15	0	1	3	**4**	2	0	0	**2**	**6**	1	3	0	**4**	6	6	2	**14**	**18**	**24**
12:15	12:30	2	0	2	**4**	2	1	1	**4**	**8**	1	3	0	**4**	1	2	4	**7**	**11**	**19**
12:30	12:45	0	1	1	**2**	0	2	2	**4**	**6**	0	4	0	**4**	3	3	2	**8**	**12**	**18**
12:45	13:00	0	1	2	**3**	2	2	1	**5**	**8**	0	5	2	**7**	1	3	1	**5**	**12**	**20**
13:00	13:15	0	1	4	**5**	0	3	0	**3**	**8**	1	5	1	**7**	3	8	1	**12**	**19**	**27**
13:15	13:30	0	2	2	**4**	2	1	0	**3**	**7**	0	4	1	**5**	2	4	1	**7**	**12**	**19**
15:00	15:15	2	0	2	**4**	0	0	0	**0**	**4**	0	6	0	**6**	2	3	0	**5**	**11**	**15**
15:15	15:30	0	1	2	**3**	5	2	0	**7**	**10**	0	6	0	**6**	3	6	1	**10**	**16**	**26**
15:30	15:45	0	1	5	**6**	2	5	0	**7**	**13**	1	6	1	**8**	1	15	2	**18**	**26**	**39**
15:45	16:00	0	0	2	**2**	2	2	0	**4**	**6**	0	9	0	**9**	5	7	3	**15**	**24**	**30**
16:00	16:15	0	4	5	**9**	1	3	0	**4**	**13**	0	11	0	**11**	1	6	0	**7**	**18**	**31**
16:15	16:30	0	2	1	**3**	3	0	0	**3**	**6**	0	7	0	**7**	2	5	0	**7**	**14**	**20**
16:30	16:45	1	4	6	**11**	0	0	0	**0**	**11**	1	11	1	**13**	2	4	3	**9**	**22**	**33**
16:45	17:00	0	2	4	**6**	4	1	0	**5**	**11**	1	5	0	**6**	1	5	1	**7**	**13**	**24**
17:00	17:15	0	0	2	**2**	2	0	0	**2**	**4**	1	6	0	**7**	4	5	0	**9**	**16**	**20**
17:15	17:30	1	0	0	**1**	1	1	0	**2**	**3**	0	2	0	**2**	2	5	0	**7**	**9**	**12**
17:30	17:45	1	0	2	**3**	3	3	0	**6**	**9**	0	5	0	**5**	4	4	2	**10**	**15**	**24**
17:45	18:00	0	0	1	**1**	0	0	0	**0**	**1**	0	4	0	**4**	3	5	1	**9**	**13**	**14**
Total:	None	11	40	100	**151**	45	58	10	**113**	**264**	17	167	9	**193**	95	176	56	**327**	**520**	**784**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BASELINE RD/HERON RD @ PRINCE OF WALES DR

Survey Date: Wednesday, March 04, 2020 **WO No:** 39636

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

Full Study 15 Minute U-Turn Total

PRINCE OF WALES DR **BASELINE RD/HERON RD**

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	1	0	1
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	2	2
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	1	0	0	1
09:00	09:15	0	0	1	0	1
09:15	09:30	0	0	2	0	2
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	3	1	4
11:45	12:00	0	0	1	0	1
12:00	12:15	0	1	1	0	2
12:15	12:30	0	0	2	0	2
12:30	12:45	0	0	2	0	2
12:45	13:00	0	1	1	0	2
13:00	13:15	0	0	0	1	1
13:15	13:30	1	0	2	0	3
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	1	0	1
15:45	16:00	0	0	1	0	1
16:00	16:15	0	0	0	1	1
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	1	1	2
16:45	17:00	0	0	2	1	3
17:00	17:15	0	0	0	0	0
17:15	17:30	0	1	1	0	2
17:30	17:45	0	0	2	0	2
17:45	18:00	0	0	1	0	1
Total		1	4	25	7	37

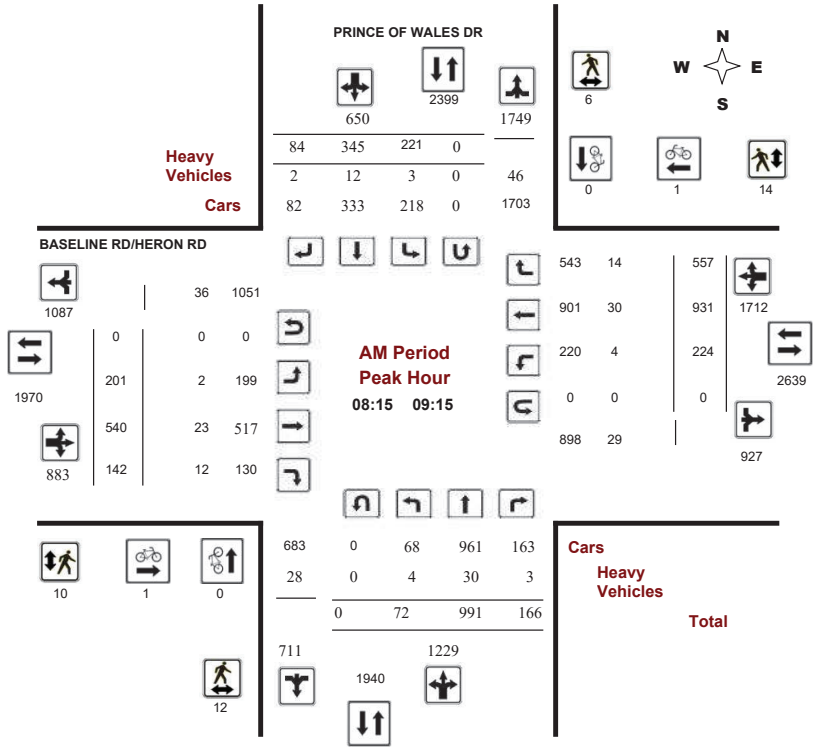
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BASELINE RD/HERON RD @ PRINCE OF WALES DR

Survey Date: Tuesday, January 19, 2016 **WO No:** 35667

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



Comments

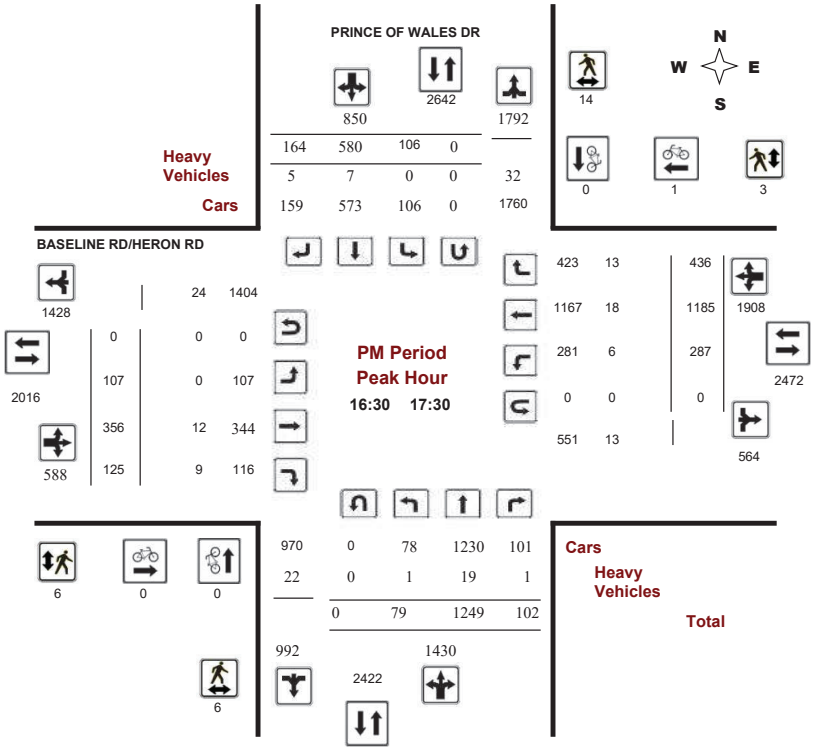
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BASELINE RD/HERON RD @ PRINCE OF WALES DR

Survey Date: Tuesday, January 19, 2016 **WO No:** 35667

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



Comments

Appendix C

Synchro Intersection Worksheets – Existing Conditions

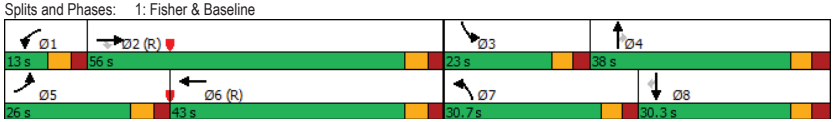
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	1300	152	32	1029	141	223	400	73	132	331	93
Future Volume (vph)	126	1300	152	32	1029	141	223	400	73	132	331	93
Satd. Flow (prot)	1658	3252	1469	3185	3183	0	1658	3252	1483	1658	3221	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1655	3252	1356	3162	3183	0	1634	3252	1414	1649	3221	1418
Satd. Flow (RTOR)			180		12				181			231
Lane Group Flow (vph)	140	1444	169	36	1300	0	248	444	81	147	368	103
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2						4			8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	29.1	29.1	11.3	29.1		10.9	30.3	30.3	10.9	30.3	30.3
Total Split (s)	26.0	56.0	56.0	13.0	43.0		30.7	38.0	38.0	23.0	30.3	30.3
Total Split (%)	20.0%	43.1%	43.1%	10.0%	33.1%		23.6%	29.2%	29.2%	17.7%	23.3%	23.3%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.6	2.4	2.4	2.6	2.4		2.6	3.0	3.0	2.6	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.1	6.1	6.3	6.1		5.9	6.3	6.3	5.9	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	15.7	61.0	61.0	6.4	46.9		22.7	27.6	27.6	15.2	20.2	20.2
Actuated g/C Ratio	0.12	0.47	0.47	0.05	0.36		0.17	0.21	0.21	0.12	0.16	0.16
v/c Ratio	0.70	0.95	0.23	0.23	1.13		0.86	0.64	0.18	0.76	0.74	0.25
Control Delay	73.0	48.0	3.9	82.8	85.4		78.6	50.9	0.9	79.3	61.4	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.0	48.0	3.9	82.8	85.4		78.6	50.9	0.9	79.3	61.4	1.4
LOS	E	D	A	F	F		E	D	A	E	E	A
Approach Delay		45.8			85.3			54.5			55.6	
Approach LOS		D			F			D			E	
Queue Length 50th (m)	34.8	~216.3	0.0	4.2	~212.8		61.1	54.9	0.0	36.5	48.0	0.0
Queue Length 95th (m)	55.3	#272.2	12.3	m2.7	m112.3		#100.0	69.8	0.0	#62.8	62.8	0.0
Internal Link Dist (m)		145.0			585.3			126.3			158.3	
Turn Bay Length (m)	138.0		58.5	134.0			127.0		85.0	65.0		60.0
Base Capacity (vph)	251	1526	731	165	1155		316	792	481	218	594	450
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.95	0.23	0.22	1.13		0.78	0.56	0.17	0.67	0.62	0.23

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 119 (92%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.13
Intersection Signal Delay: 60.4 Intersection LOS: E
Intersection Capacity Utilization 89.5% ICU Level of Service E
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Fisher & Baseline



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	1287	20	373	996	494	69	585	585	220	350	130
Future Volume (vph)	222	1287	20	373	996	494	69	585	585	220	350	130
Satd. Flow (prot)	1658	4752	0	3124	3283	1483	1658	3316	1469	1658	3164	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1654	4752	0	3104	3283	1449	1653	3316	1428	1649	3164	0
Satd. Flow (RTOR)		2				452			364		38	
Lane Group Flow (vph)	247	1452	0	414	1107	549	77	650	650	244	533	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases						6			4			
Detector Phase	5	2		1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	12.0	12.0	5.0	12.0	
Minimum Split (s)	11.8	29.5		11.8	29.8	29.8	10.9	37.8	37.8	10.9	37.8	
Total Split (s)	22.0	38.0		30.0	30.0	30.0	24.0	38.0	38.0	24.0	38.0	
Total Split (%)	16.9%	29.2%		23.1%	23.1%	23.1%	18.5%	29.2%	29.2%	18.5%	29.2%	
Yellow Time (s)	3.7	3.0		3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.1	2.8		3.1	2.8	2.8	2.2	3.1	3.1	2.2	3.1	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.8	5.8		6.8	6.5	6.5	5.9	6.8	6.8	5.9	6.8	
Lead/Lag	Lag				Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes				Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Min	Min	None	Min	
Act Effct Green (s)	15.2	34.3		21.1	23.5	23.5	11.4	31.2	31.2	18.1	40.5	
Actuated g/C Ratio	0.12	0.26		0.16	0.18	0.18	0.09	0.24	0.24	0.14	0.31	
v/c Ratio	1.28	1.16		0.82	1.87	0.87	0.53	0.82	1.05	1.06	0.53	
Control Delay	198.7	107.1		66.1	426.7	25.5	69.3	56.2	71.4	129.1	37.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	198.7	107.1		66.1	426.7	25.5	69.3	56.2	71.4	129.1	37.8	
LOS	F	F		E	F	C	E	E	E	F	D	
Approach Delay		120.4			248.1			64.1			66.5	
Approach LOS		F			F			E			E	
Queue Length 50th (m)	~78.3	~160.8		52.8	~226.9	24.0	19.2	83.3	~105.5	~68.4	56.6	
Queue Length 95th (m)	m#94.1	m#181.7		70.2	#268.6	#90.8	34.4	105.8	#177.9	#120.1	78.7	
Internal Link Dist (m)		188.2			220.4			142.9			135.6	
Turn Bay Length (m)	125.0			115.0		184.0	117.0		40.0	66.0		
Base Capacity (vph)	193	1254		557	593	632	230	795	619	230	1011	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.28	1.16		0.74	1.87	0.87	0.33	0.82	1.05	1.06	0.53	

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 42 (32%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Lane Group	Ø13	Ø14
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	13	14
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	3.0	3.0
Total Split (s)	8.0	8.0
Total Split (%)	6%	6%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	Max	Max
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

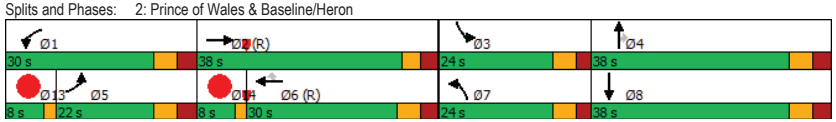
Intersection Summary

Maximum v/c Ratio: 1.87

Intersection Signal Delay: 144.9	Intersection LOS: F
Intersection Capacity Utilization 96.1%	ICU Level of Service F
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Prince of Wales & Baseline/Heron



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1264	257	148	1274	179	174	375	71	154	597	148
Future Volume (vph)	90	1264	257	148	1274	179	174	375	71	154	597	148
Satd. Flow (prot)	1658	3283	1483	3185	3240	0	1658	3316	1455	1658	3283	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1653	3283	1401	3153	3240	0	1641	3316	1396	1640	3283	1390
Satd. Flow (RTOR)			130		13				128			142
Lane Group Flow (vph)	100	1404	286	164	1615	0	193	417	79	171	663	164
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2						4			8
Detector Phase	5	2	2	1	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	29.1	29.1	11.3	29.1		10.9	30.3	30.3	10.9	30.3	30.3
Total Split (s)	21.0	54.0	54.0	21.0	54.0		24.7	30.3	30.3	24.7	30.3	30.3
Total Split (%)	16.2%	41.5%	41.5%	16.2%	41.5%		19.0%	23.3%	23.3%	19.0%	23.3%	23.3%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.6	2.4	2.4	2.6	2.4		2.6	3.0	3.0	2.6	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.1	6.1	6.3	6.1		5.9	6.3	6.3	5.9	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	12.3	51.8	51.8	11.9	51.3		17.8	24.8	24.8	17.0	24.0	24.0
Actuated g/C Ratio	0.09	0.40	0.40	0.09	0.39		0.14	0.19	0.19	0.13	0.18	0.18
v/c Ratio	0.64	1.07	0.45	0.57	1.25		0.85	0.66	0.21	0.79	1.09	0.44
Control Delay	74.7	85.4	18.3	64.0	155.7		86.3	54.6	2.5	79.9	113.7	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.7	85.4	18.3	64.0	155.7		86.3	54.6	2.5	79.9	113.7	14.3
LOS	E	F	B	E	F		F	D	A	E	F	B
Approach Delay		74.1			147.2			57.5			91.6	
Approach LOS		E			F			E			F	
Queue Length 50th (m)	24.9	~214.3	28.4	21.0	~278.9		48.5	53.0	0.0	42.3	~100.8	4.7
Queue Length 95th (m)	43.2	#266.1	55.4	32.0	#327.8		#86.3	70.8	2.6	#72.4	#138.3	25.1
Internal Link Dist (m)		142.5			582.5			115.0			126.1	
Turn Bay Length (m)	138.0		50.0	134.0			127.0		85.0	65.0		60.0
Base Capacity (vph)	187	1307	636	360	1287		239	633	370	239	606	372
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.53	1.07	0.45	0.46	1.25		0.81	0.66	0.21	0.72	1.09	0.44

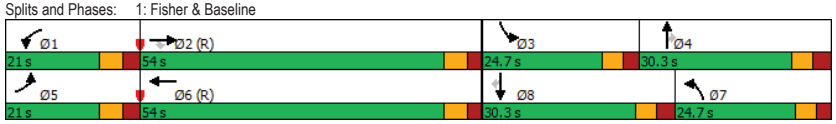
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 123 (95%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.25

Intersection Signal Delay: 100.0	Intersection LOS: F
Intersection Capacity Utilization 97.8%	ICU Level of Service F
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: 1: Fisher & Baseline



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	1302	70	439	1280	210	41	461	546	266	613	289
Future Volume (vph)	151	1302	70	439	1280	210	41	461	546	266	613	289
Satd. Flow (prot)	1658	4713	0	3216	3316	1483	1610	3316	1483	1642	3117	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1650	4713	0	3187	3316	1412	1599	3316	1420	1617	3117	0
Satd. Flow (RTOR)		6				233			261		63	
Lane Group Flow (vph)	168	1525	0	488	1422	233	46	512	607	296	1002	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases						6			4			
Detector Phase	5	2		1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	12.0	12.0	12.0	5.0	10.0	
Minimum Split (s)	11.8	29.5		11.8	29.5	29.5	17.9	37.8	37.8	10.9	37.8	
Total Split (s)	15.0	42.0		23.0	42.0	42.0	17.9	38.0	38.0	27.0	49.0	
Total Split (%)	11.4%	31.8%		17.4%	31.8%	31.8%	13.6%	28.8%	28.8%	20.5%	37.1%	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.1	2.8		3.1	2.8	2.8	2.2	3.1	3.1	2.2	3.1	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.8	6.5		6.8	6.5	6.5	5.9	6.8	6.8	5.9	6.8	
Lead/Lag	Lag						Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes						Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	Min	Min	Min	None	None	
Act Effct Green (s)	8.2	35.5		16.2	35.5	35.5	12.0	33.1	33.1	21.1	42.2	
Actuated g/C Ratio	0.06	0.27		0.12	0.27	0.27	0.09	0.25	0.25	0.16	0.32	
v/c Ratio	1.63	1.20		1.24	1.59	0.42	0.32	0.62	1.10	1.13	0.96	
Control Delay	361.0	139.0		174.3	305.7	7.1	62.4	47.5	95.6	144.4	61.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	361.0	139.0		174.3	305.7	7.1	62.4	47.5	95.6	144.4	61.8	
LOS	F	F		F	F	A	E	D	F	F	E	
Approach Delay		161.0			243.3			73.2			80.6	
Approach LOS		F			F			E			F	
Queue Length 50th (m)	~62.9	~176.1		~80.8	~277.4	0.0	11.4	62.4	~124.9	~89.0	128.1	
Queue Length 95th (m)	#107.8	#206.3		#114.8	#319.7	19.8	24.0	81.0	#196.2	#145.1	#172.4	
Internal Link Dist (m)		190.6			284.9			145.3			127.0	
Turn Bay Length (m)	125.0			115.0		243.0	117.0		40.0	66.0		
Base Capacity (vph)	103	1272		394	892	550	146	832	551	262	1040	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.63	1.20		1.24	1.59	0.42	0.32	0.62	1.10	1.13	0.96	

Intersection Summary
Cycle Length: 131.9
Actuated Cycle Length: 131.9
Offset: 84 (64%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Lane Group	Ø13
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	13
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	6.0
Total Split (s)	8.0
Total Split (%)	6%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

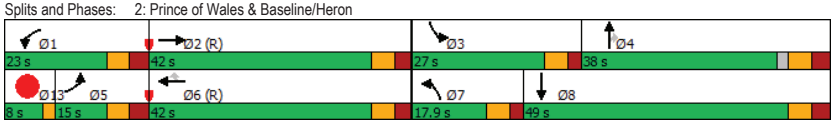
Intersection Summary	

Maximum v/c Ratio: 1.63

Intersection Signal Delay: 156.2	Intersection LOS: F
Intersection Capacity Utilization 106.2%	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: 2: Prince of Wales & Baseline/Heron



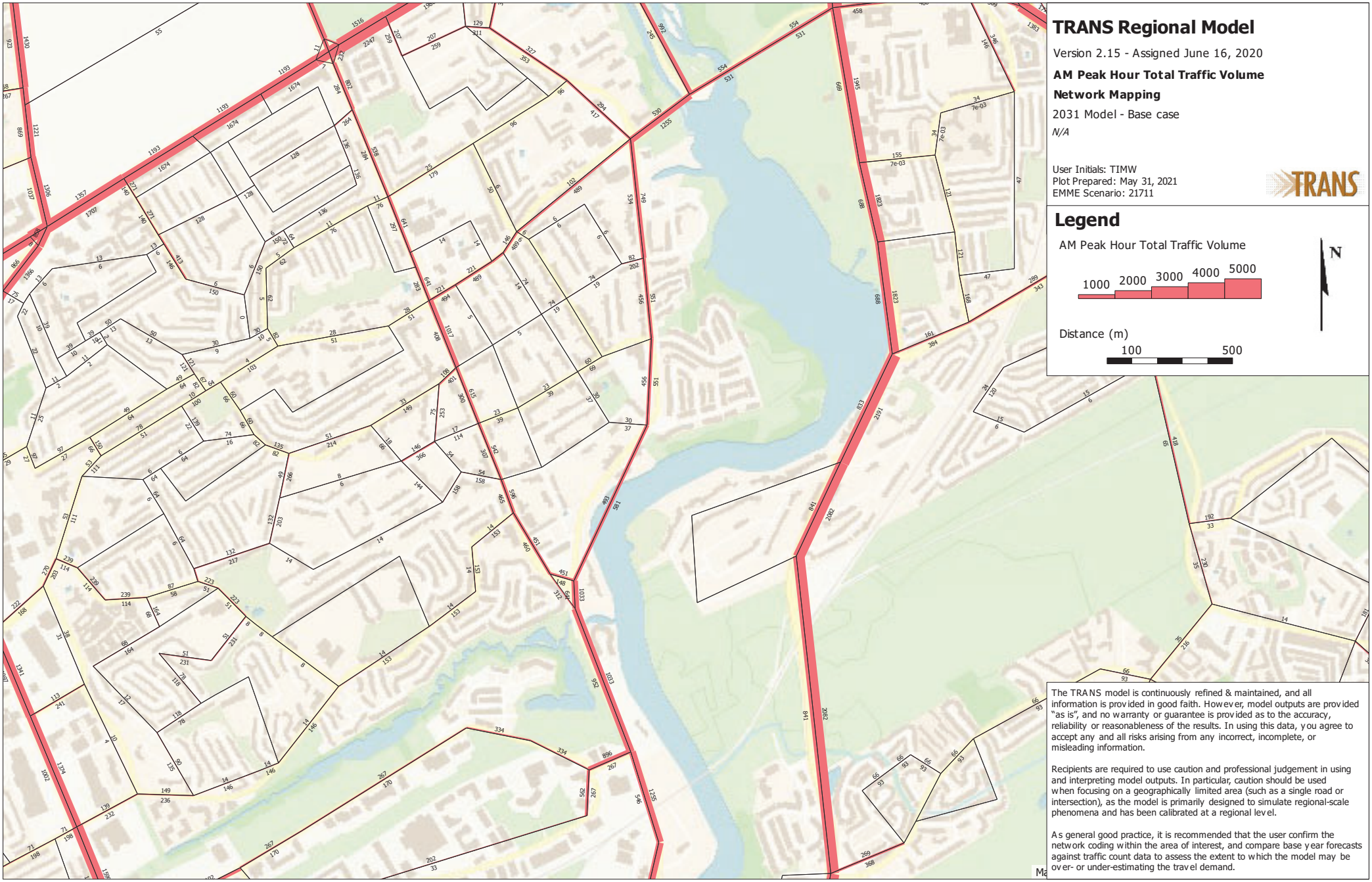
Appendix D

Collision Data

Accident Date	Accident Year	Accident Time	Location	Environment Condition	Light	Traffic Control	Traffic Control Condition	Classification Of Accident	Initial Impact Type	Road Surface Condition
3/6/2015	2015	14:51	BASELINE RD btwn MARSON ST & FISHER AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
3/27/2015	2015	8:11	BASELINE RD btwn MARSON ST & FISHER AVE	03 - Snow	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	02 - Wet
12/2/2015	2015	18:23	BASELINE RD btwn MARSON ST & FISHER AVE	01 - Clear	07 - Dark	10 - No control		03 - P.D. only	03 - Rear end	02 - Wet
8/8/2017	2017	17:09	BASELINE RD btwn MARSON ST & FISHER AVE	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	03 - Rear end	01 - Dry
9/12/2017	2017	10:35	BASELINE RD btwn MARSON ST & FISHER AVE	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	03 - Rear end	01 - Dry
1/4/2017	2017	15:21	BASELINE RD btwn MARSON ST & FISHER AVE	03 - Snow	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	05 - Packed snow
1/24/2018	2018	18:06	BASELINE RD btwn MARSON ST & FISHER AVE (__3ZA4JL)	01 - Clear	07 - Dark	10 - No control		02 - Non-fatal injury	03 - Rear end	01 - Dry
6/19/2018	2018	6:40	BASELINE RD btwn MARSON ST & FISHER AVE (__3ZA4JL)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	04 - Sideswipe	01 - Dry
9/21/2018	2018	8:36	BASELINE RD btwn MARSON ST & FISHER AVE (__3ZA4JL)	02 - Rain	01 - Daylight	10 - No control		02 - Non-fatal injury	03 - Rear end	02 - Wet
1/10/2019	2019	13:42	BASELINE RD btwn MARSON ST & FISHER AVE (__3ZA4JL)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	02 - Wet
9/11/2019	2019	13:04	BASELINE RD btwn MARSON ST & FISHER AVE (__3ZA4JL)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	04 - Sideswipe	01 - Dry
12/5/2019	2019	17:00	BASELINE RD btwn MARSON ST & FISHER AVE (__3ZA4JL)	01 - Clear	07 - Dark	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
7/14/2015	2015	16:33	FISHER AVE btwn MCCOOEY LANE & BASELINE RD	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
10/13/2015	2015	9:20	FISHER AVE btwn MCCOOEY LANE & BASELINE RD	02 - Rain	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	02 - Wet
10/27/2015	2015	10:43	FISHER AVE btwn MCCOOEY LANE & BASELINE RD	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	04 - Sideswipe	01 - Dry
10/17/2016	2016	16:36	FISHER AVE btwn MCCOOEY LANE & BASELINE RD	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	03 - Rear end	01 - Dry
3/23/2016	2016	17:56	FISHER AVE btwn MCCOOEY LANE & BASELINE RD	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	03 - Rear end	01 - Dry
6/4/2016	2016	11:05	FISHER AVE btwn MCCOOEY LANE & BASELINE RD	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
10/27/2017	2017	10:19	FISHER AVE btwn MCCOOEY LANE & BASELINE RD	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	05 - Turning movement	01 - Dry
2/12/2018	2018	16:44	FISHER AVE btwn MCCOOEY LANE & BASELINE RD (__3ZA4JS)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	05 - Turning movement	05 - Packed snow
5/4/2018	2018	21:32	FISHER AVE btwn MCCOOEY LANE & BASELINE RD (__3ZA4JS)	06 - Strong wind	07 - Dark	10 - No control		03 - P.D. only	07 - SMV other	01 - Dry
5/25/2018	2018	17:53	FISHER AVE btwn MCCOOEY LANE & BASELINE RD (__3ZA4JS)	02 - Rain	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	02 - Wet
12/6/2018	2018	8:54	FISHER AVE btwn MCCOOEY LANE & BASELINE RD (__3ZA4JS)	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	07 - SMV other	02 - Wet
1/25/2019	2019	15:30	FISHER AVE btwn MCCOOEY LANE & BASELINE RD (__3ZA4JS)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	04 - Sideswipe	04 - Slush
9/17/2019	2019	7:50	FISHER AVE btwn MCCOOEY LANE & BASELINE RD (__3ZA4JS)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
1/2/2015	2015	20:32	FISHER AVE btwn BASELINE RD & MALIBU TER	01 - Clear	07 - Dark	10 - No control		03 - P.D. only	02 - Angle	01 - Dry
5/29/2015	2015	15:54	FISHER AVE btwn BASELINE RD & MALIBU TER	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	99 - Other	01 - Dry
9/28/2015	2015	5:30	FISHER AVE btwn BASELINE RD & MALIBU TER	02 - Rain	07 - Dark	10 - No control		03 - P.D. only	03 - Rear end	02 - Wet
12/17/2015	2015	16:15	FISHER AVE btwn BASELINE RD & MALIBU TER	02 - Rain	05 - Dusk	10 - No control		03 - P.D. only	05 - Turning movement	02 - Wet
9/30/2015	2015	16:28	FISHER AVE btwn BASELINE RD & MALIBU TER	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
8/26/2016	2016	18:16	FISHER AVE btwn BASELINE RD & MALIBU TER	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	03 - Rear end	01 - Dry
10/22/2016	2016	8:27	FISHER AVE btwn BASELINE RD & MALIBU TER	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	05 - Turning movement	01 - Dry
12/7/2017	2017	17:30	FISHER AVE btwn BASELINE RD & MALIBU TER	01 - Clear	07 - Dark	10 - No control		03 - P.D. only	02 - Angle	01 - Dry
4/30/2018	2018	17:22	FISHER AVE btwn BASELINE RD & MALIBU TER (__3ZA4JK)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	99 - Other	01 - Dry
8/17/2019	2019	13:14	FISHER AVE btwn BASELINE RD & MALIBU TER (__3ZA4JK)	02 - Rain	01 - Daylight	10 - No control		02 - Non-fatal injury	02 - Angle	02 - Wet
5/9/2015	2015	12:49	BASELINE RD btwn FISHER AVE & LEXINGTON ST	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
4/22/2015	2015	9:30	BASELINE RD btwn FISHER AVE & LEXINGTON ST	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	04 - Sideswipe	01 - Dry
5/11/2016	2016	17:43	BASELINE RD btwn FISHER AVE & LEXINGTON ST	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
11/8/2016	2016	17:55	BASELINE RD btwn FISHER AVE & LEXINGTON ST	01 - Clear	07 - Dark	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
6/5/2017	2017	8:40	BASELINE RD btwn FISHER AVE & LEXINGTON ST	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
9/15/2018	2018	13:06	BASELINE RD btwn FISHER AVE & LEXINGTON ST (__3ZA4JR)	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	03 - Rear end	01 - Dry
10/30/2018	2018	17:53	BASELINE RD btwn FISHER AVE & LEXINGTON ST (__3ZA4JR)	01 - Clear	05 - Dusk	10 - No control		02 - Non-fatal injury	03 - Rear end	01 - Dry
2/12/2019	2019	17:47	BASELINE RD btwn FISHER AVE & LEXINGTON ST (__3ZA4JR)	03 - Snow	05 - Dusk	10 - No control		03 - P.D. only	04 - Sideswipe	03 - Loose snow
6/25/2019	2019	15:49	BASELINE RD btwn FISHER AVE & LEXINGTON ST (__3ZA4JR)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
11/10/2019	2019	20:17	BASELINE RD btwn FISHER AVE & LEXINGTON ST (__3ZA4JR)	01 - Clear	07 - Dark	10 - No control		03 - P.D. only	99 - Other	01 - Dry
2/27/2015	2015	8:39	FISHER AVE @ MALIBU TER	01 - Clear	01 - Daylight	02 - Stop sign		02 - Non-fatal injury	02 - Angle	01 - Dry
2/14/2015	2015	20:39	FISHER AVE @ MALIBU TER	03 - Snow	07 - Dark	02 - Stop sign		03 - P.D. only	05 - Turning movement	05 - Packed snow
6/3/2015	2015	8:14	FISHER AVE @ MALIBU TER	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	02 - Angle	01 - Dry
9/30/2017	2017	10:05	FISHER AVE @ MALIBU TER	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	02 - Angle	01 - Dry
2/15/2018	2018	16:01	FISHER AVE @ MALIBU TER (0003121)	01 - Clear	01 - Daylight	02 - Stop sign		02 - Non-fatal injury	05 - Turning movement	02 - Wet
10/18/2018	2018	8:00	FISHER AVE @ MALIBU TER (0003121)	01 - Clear	01 - Daylight	02 - Stop sign		02 - Non-fatal injury	07 - SMV other	01 - Dry
1/26/2019	2019	10:40	FISHER AVE @ MALIBU TER (0003121)	01 - Clear	01 - Daylight	02 - Stop sign		02 - Non-fatal injury	03 - Rear end	02 - Wet
7/4/2015	2015	13:17	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	01 - Dry
2/4/2015	2015	10:15	BASELINE RD @ FISHER AVE	03 - Snow	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	03 - Loose snow
3/4/2015	2015	16:30	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
1/4/2015	2015	19:50	BASELINE RD @ FISHER AVE	04 - Freezing Rain	07 - Dark	01 - Traffic signal		03 - P.D. only	99 - Other	06 - Ice
8/18/2015	2015	17:10	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
3/6/2015	2015	16:32	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
3/15/2015	2015	7:37	BASELINE RD @ FISHER AVE	03 - Snow	01 - Daylight	01 - Traffic signal		03 - P.D. only	07 - SMV other	03 - Loose snow
2/19/2015	2015	13:10	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	02 - Wet
2/19/2015	2015	13:29	BASELINE RD @ FISHER AVE	05 - Drifting Snow	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	03 - Loose snow
6/23/2015	2015	8:45	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
3/27/2015	2015	19:37	BASELINE RD @ FISHER AVE	03 - Snow	07 - Dark	01 - Traffic signal		03 - P.D. only	03 - Rear end	03 - Loose snow
5/13/2015	2015	10:38	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
4/26/2015	2015	11:30	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
6/26/2015	2015	14:56	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
11/12/2015	2015	16:50	BASELINE RD @ FISHER AVE	02 - Rain	05 - Dusk	01 - Traffic signal		03 - P.D. only	03 - Rear end	02 - Wet
9/18/2015	2015	17:51	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
8/4/2015	2015	14:16	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
12/31/2015	2015	16:43	BASELINE RD @ FISHER AVE	03 - Snow	05 - Dusk	01 - Traffic signal		03 - P.D. only	03 - Rear end	03 - Loose snow
4/1/2016	2016	16:56	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	07 - SMV other	01 - Dry
9/20/2016	2016	17:20	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
10/15/2016	2016	12:50	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
1/5/2016	2016	9:17	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
1/28/2016	2016	16:44	BASELINE RD @ FISHER AVE	01 - Clear	05 - Dusk	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
7/16/2016	2016	20:52	BASELINE RD @ FISHER AVE	01 - Clear	05 - Dusk	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
3/22/2016	2016	12:14	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
11/2/2016	2016	18:06	BASELINE RD @ FISHER AVE	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
7/20/2016	2016	16:30	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
10/11/2016	2016	16:15	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
10/19/2016	2016	3:08	BASELINE RD @ FISHER AVE	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
12/21/2016	2016	16:48	BASELINE RD @ FISHER AVE	01 - Clear	05 - Dusk	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
11/26/2016	2016	21:20	BASELINE RD @ FISHER AVE	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	02 - Angle	01 - Dry
7/21/2017	2017	9:19	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	04 - Sideswipe	01 - Dry
9/11/2017	2017	16:16	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
9/7/2017	2017	7:30	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	01 - Dry
10/6/2017	2017	9:29	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	01 - Dry
10/3/2017	2017	13:32	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
12/11/2017	2017	17:30	BASELINE RD @ FISHER AVE	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
12/6/2017	2017	16:43	BASELINE RD @ FISHER AVE	01 - Clear	05 - Dusk	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
1/5/2017	2017	10:47	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	05 - Packed snow
2/15/2017	2017	10:48	BASELINE RD @ FISHER AVE	03 - Snow	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	07 - SMV other	03 - Loose snow
1/12/2017	2017	17:55	BASELINE RD @ FISHER AVE	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	03 - Rear end	02 - Wet
3/5/2017	2017	9:38	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
3/9/2017	2017	11:52	BASELINE RD @ FISHER AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
12/23/2017	2017	12:15	BASELINE RD @ FISHER AVE	03 - Snow	01 - Daylight	01 - Traffic signal		03 - P.D. only	05 - Turning movement	04 - Slush
1/2/2018	2018	17:00	BASELINE RD @ FISHER AVE (0002346)	03 - Snow	05 - Dusk	01 - Traffic signal		03 - P.D. only	03 - Rear end	05 - Packed snow
2/27/2018	2018	16:26	BASELINE RD @ FISHER AVE (0002346)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
3/16/2018	2018	17:31	BASELINE RD @ FISHER AVE (0002346)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
3/16/2018	2018	20:07	BASELINE RD @ FISHER AVE (0002346)	01 - Clear	07 - Dark	01 - Traffic signal		03 - P.D. only	03 - Rear end	03 - Loose snow

Appendix E

TRANS Model Plots



TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Network Mapping

2031 Model - Base case

N/A

User Initials: TIMW
Plot Prepared: May 31, 2021
EMME Scenario: 21711

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

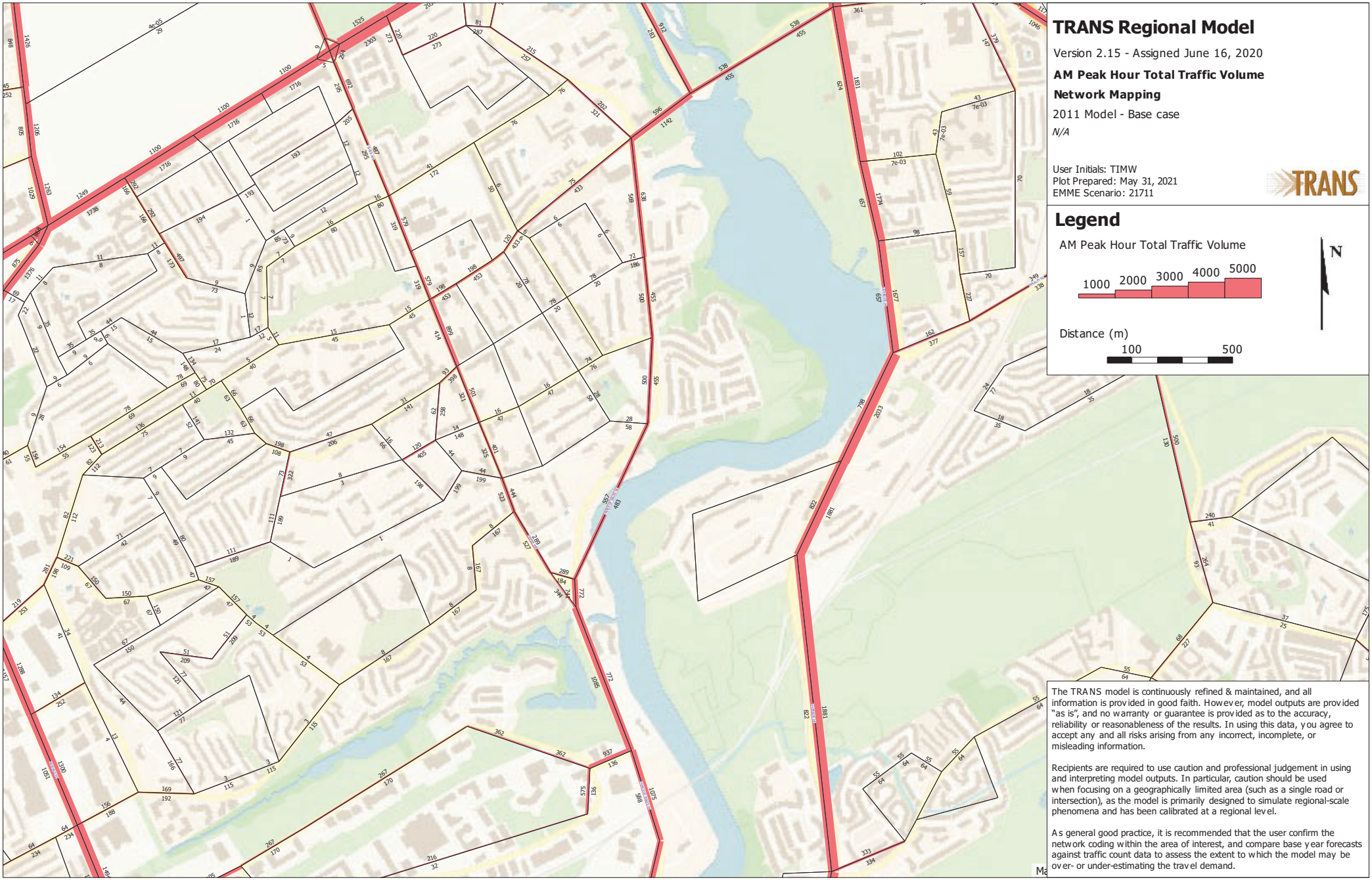
Distance (m)

100 500

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

Network Mapping

2011 Model - Base case

N/A

User Initials: TIMW
Plot Prepared: May 31, 2021
EMME Scenario: 21711

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

100 500

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.

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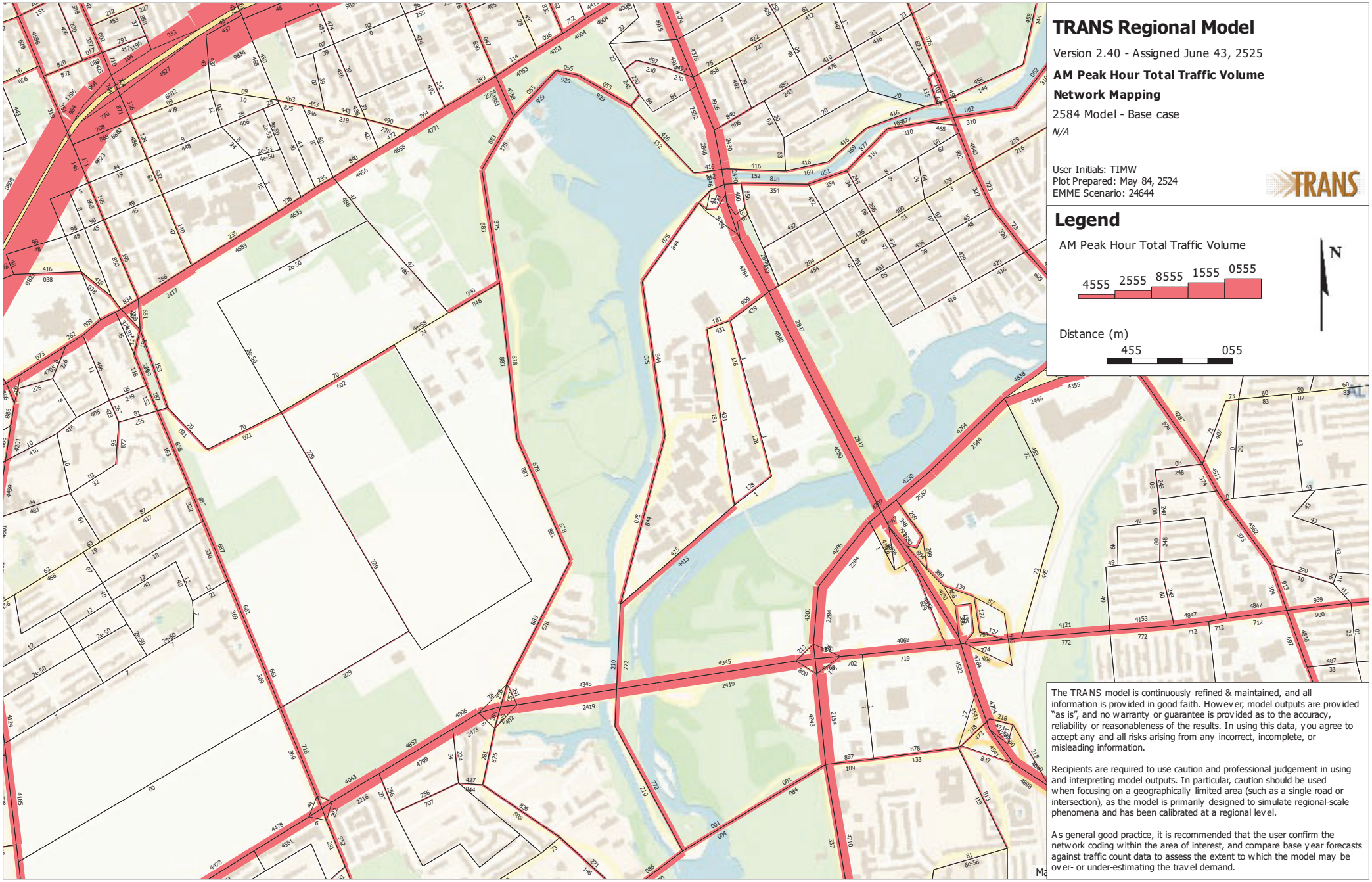

TRANS Regional Model

Version 2.40 - Assigned June 43, 2525

AM Peak Hour Total Traffic Volume

Network Mapping

2584 Model - Base case

N/A

User Initials: TIMW
Plot Prepared: May 84, 2524
EMME Scenario: 24644

TRANS

Legend

AM Peak Hour Total Traffic Volume

4555 2555 8555 1555 0555

N

Distance (m)

455 055

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.

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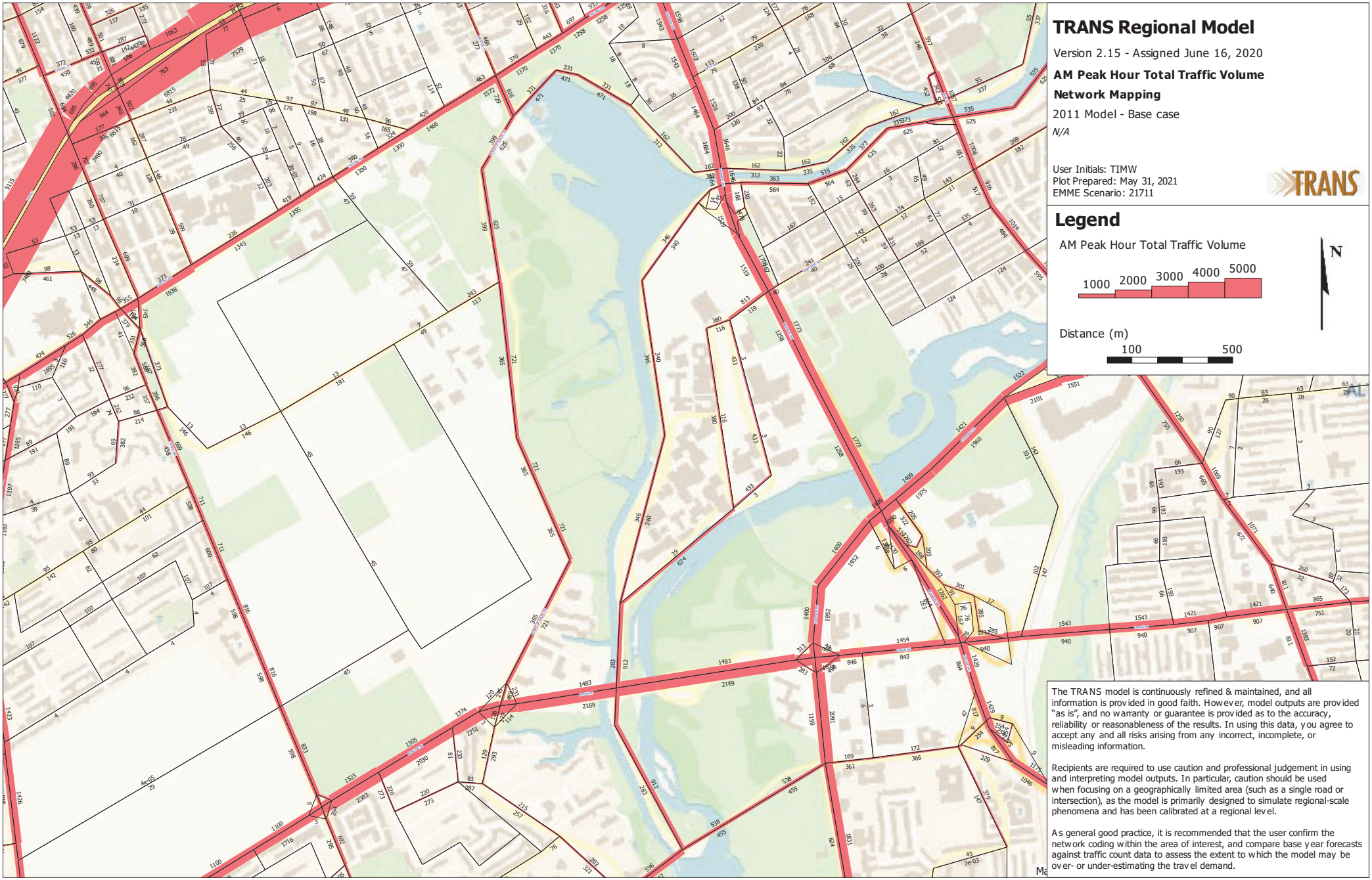
As general good practice, it is recommended that the user confirm the network coding within the area of interest, and compare base year forecasts against traffic count data to assess the extent to which the model may be over- or under-estimating the travel demand.



TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Network Mapping

2011 Model - Base case

N/A

User Initials: TIMW
Plot Prepared: May 31, 2021
EMME Scenario: 21711

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

100 500

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.

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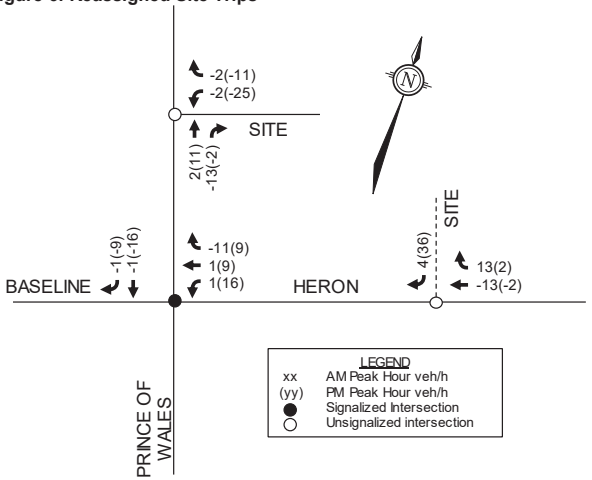
As general good practice, it is recommended that the user confirm the network coding within the area of interest, and compare base year forecasts against traffic count data to assess the extent to which the model may be over- or under-estimating the travel demand.

Appendix F

Synchro Intersection Worksheets – 2027 Future Background Conditions

Figure 6: Reassigned Site Trips



5.2 Background Traffic

5.2.1 Future Background Traffic

For the 'Inner Suburbs' area of Ottawa, Exhibit 2.10 of the 2013 TMP projects population and employment growth rates of approximately 0.3% and 1.2% per annum, respectively. To reflect the study area's development as an employment area, a 1% background growth rate has been applied to non-site traffic in this area.

This 1% background growth rate is in line with the annual historical (2000 to 2016) growth rate for this area (-2% to 2%) identified by the City of Ottawa (See **Figure 7**).

2020 and 2025 background traffic volumes for the study area are shown in **Figure 8** and **Figure 9**, respectively.

Appendix G

Synchro Intersection Worksheets – 2032 Future Background Conditions

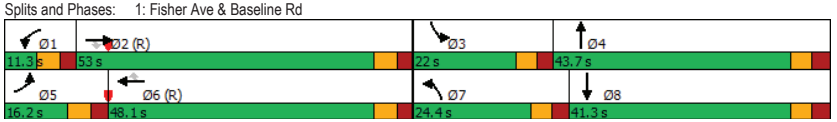
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	1300	152	32	1101	141	223	493	73	132	391	93
Future Volume (vph)	126	1300	152	32	1101	141	223	493	73	132	391	93
Satd. Flow (prot)	1658	3252	1469	1642	3252	1455	1658	3182	0	1658	3124	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1654	3252	1407	1634	3252	1419	1644	3182	0	1653	3124	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	126	1300	152	32	1101	141	223	566	0	132	484	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.3	41.2	41.2	11.3	41.2	41.2	10.9	41.3		10.9	41.3	
Total Split (s)	16.2	53.0	53.0	11.3	48.1	48.1	24.4	43.7		22.0	41.3	
Total Split (%)	12.5%	40.8%	40.8%	8.7%	37.0%	37.0%	18.8%	33.6%		16.9%	31.8%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.5	2.5	2.6	2.5	2.5	2.6	3.0		2.6	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.2	6.2	6.3	6.2	6.2	5.9	6.3		5.9	6.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	13.9	58.1	58.1	6.1	45.3	45.3	18.5	31.9		14.2	27.6	
Actuated g/C Ratio	0.11	0.45	0.45	0.05	0.35	0.35	0.14	0.25		0.11	0.21	
v/c Ratio	0.71	0.89	0.24	0.42	0.97	0.29	0.95	0.72		0.73	0.73	
Control Delay	78.0	43.9	26.9	59.0	88.0	65.4	102.1	50.5		78.9	53.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	78.0	43.9	26.9	59.0	88.0	65.4	102.1	50.5		78.9	53.9	
LOS	E	D	C	E	F	E	F	D		E	D	
Approach Delay		45.0			84.8			65.1			59.3	
Approach LOS		D			F			E			E	
Queue Length 50th (m)	30.6	170.6	25.5	8.6	~161.2	37.6	57.4	73.1		32.8	62.6	
Queue Length 95th (m)	#73.4	#242.4	45.5	m10.6	m#169.6	m40.9	#105.9	85.6		#55.0	74.5	
Internal Link Dist (m)		271.5			796.1			86.9			158.3	
Turn Bay Length (m)	124.5		100.0	134.0		91.5				65.0		
Base Capacity (vph)	177	1453	628	77	1132	494	235	915		205	841	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.71	0.89	0.24	0.42	0.97	0.29	0.95	0.62		0.64	0.58	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97
Intersection Signal Delay: 62.7 Intersection LOS: E
Intersection Capacity Utilization 96.2% ICU Level of Service F
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Fisher Ave & Baseline Rd



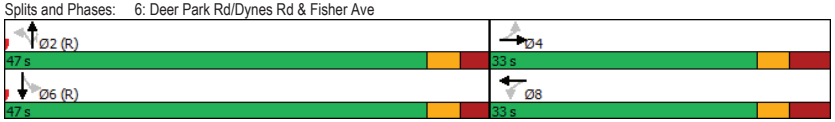
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	83	17	83	41	104	8	669	171	61	538	5
Future Volume (vph)	38	83	17	83	41	104	8	669	171	61	538	5
Satd. Flow (prot)	0	1660	0	0	1577	0	0	1710	1483	0	3293	0
Flt Permitted		0.849			0.843			0.993			0.799	
Satd. Flow (perm)	0	1421	0	0	1336	0	0	1699	1289	0	2644	0
Satd. Flow (RTOR)		9			56				171		1	
Lane Group Flow (vph)	0	138	0	0	228	0	0	677	171	0	604	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	31.1	31.1		31.1	31.1		27.2	27.2	27.2	27.2	27.2	
Total Split (s)	33.0	33.0		33.0	33.0		47.0	47.0	47.0	47.0	47.0	
Total Split (%)	41.3%	41.3%		41.3%	41.3%		58.8%	58.8%	58.8%	58.8%	58.8%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	4.1	4.1		4.1	4.1		2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		7.1			7.1			6.2	6.2		6.2	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)		19.0			19.0			47.7	47.7		47.7	
Actuated g/C Ratio		0.24			0.24			0.60	0.60		0.60	
v/c Ratio		0.40			0.63			0.67	0.20		0.38	
Control Delay		25.9			27.5			16.7	2.3		10.5	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		25.9			27.5			16.7	2.3		10.5	
LOS		C			C			B	A		B	
Approach Delay		25.9			27.5			13.8			10.5	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		15.0			21.1			74.5	0.0		27.1	
Queue Length 95th (m)		29.4			42.2			117.4	8.2		39.0	
Internal Link Dist (m)		152.1			156.9			172.3			30.0	
Turn Bay Length (m)												
Base Capacity (vph)		466			470			1013	837		1577	
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		0.30			0.49			0.67	0.20		0.38	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 78 (98%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 15.3	Intersection LOS: B
Intersection Capacity Utilization 93.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Deer Park Rd/Dynes Rd & Fisher Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	540	142	225	1019	546	72	1134	166	221	394	83
Future Volume (vph)	201	540	142	225	1019	546	72	1134	166	221	394	83
Satd. Flow (prot)	1658	3186	0	1610	3283	1483	1658	3237	0	3216	3219	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1654	3186	0	1592	3283	1450	1652	3237	0	3205	3219	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	201	682	0	225	1019	546	72	1300	0	221	477	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases						6						
Detector Phase	5	2		1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	12.0		5.0	12.0	
Minimum Split (s)	11.8	29.5		11.8	29.8	29.8	10.9	37.8		10.9	37.8	
Total Split (s)	20.0	40.0		26.0	46.0	46.0	20.4	51.0		13.0	43.6	
Total Split (%)	15.4%	30.8%		20.0%	35.4%	35.4%	15.7%	39.2%		10.0%	33.5%	
Yellow Time (s)	3.7	3.0		3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	3.1	2.8		3.1	2.8	2.8	2.2	3.1		2.2	3.1	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	5.8		6.8	6.5	6.5	5.9	6.8		5.9	6.8	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Min		None	Min	
Act Effct Green (s)	13.2	34.2		19.2	39.5	39.5	10.8	44.2		7.1	43.0	
Actuated g/C Ratio	0.10	0.26		0.15	0.30	0.30	0.08	0.34		0.05	0.33	
v/c Ratio	1.20	0.81		0.95	1.02	1.24	0.53	1.18		1.26	0.45	
Control Delay	156.5	69.9		101.6	78.7	165.2	70.1	129.8		204.0	37.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	156.5	69.9		101.6	78.7	165.2	70.1	129.8		204.0	37.3	
LOS	F	E		F	E	F	E	F		F	D	
Approach Delay		89.7			108.0			126.7			90.1	
Approach LOS		F			F			F			F	
Queue Length 50th (m)	~64.3	98.6		57.9	~145.7	~173.4	18.0	~210.0		~36.5	52.1	
Queue Length 95th (m)	m#82.4	m111.3		#107.1	#186.8	#240.9	32.9	#252.3		#62.3	71.3	
Internal Link Dist (m)		796.1			320.4			142.9			135.6	
Turn Bay Length (m)	125.0			118.0		184.0	117.0			74.0		
Base Capacity (vph)	168	838		237	997	440	184	1100		175	1064	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.20	0.81		0.95	1.02	1.24	0.39	1.18		1.26	0.45	

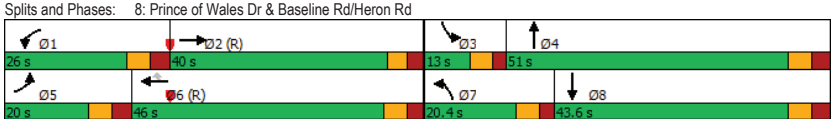
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.26
Intersection Signal Delay: 107.3 — Intersection LOS: F
Intersection Capacity Utilization 108.6% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Prince of Wales Dr & Baseline Rd/Heron Rd



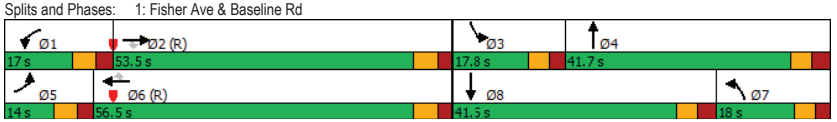
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1358	257	148	1274	179	174	388	71	154	663	148
Future Volume (vph)	90	1358	257	148	1274	179	174	388	71	154	663	148
Satd. Flow (prot)	1658	3283	1483	1642	3316	1483	1658	3214	0	1658	3173	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	3283	1410	1633	3316	1431	1648	3214	0	1646	3173	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	90	1358	257	148	1274	179	174	459	0	154	811	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.3	33.2	33.2	11.3	33.2	33.2	10.9	41.5		10.9	41.5	
Total Split (s)	14.0	53.5	53.5	17.0	56.5	56.5	18.0	41.7		17.8	41.5	
Total Split (%)	10.8%	41.2%	41.2%	13.1%	43.5%	43.5%	13.8%	32.1%		13.7%	31.9%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.5	2.5	2.6	2.5	2.5	2.6	3.0		2.6	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.2	6.2	6.3	6.2	6.2	5.9	6.3		5.9	6.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	7.7	47.3	47.3	10.7	50.3	50.3	12.5	35.4		11.9	34.8	
Actuated g/C Ratio	0.06	0.36	0.36	0.08	0.39	0.39	0.10	0.27		0.09	0.27	
v/c Ratio	0.92	1.14	0.50	1.10	0.99	0.32	1.09	0.52		1.02	0.96	
Control Delay	131.2	110.7	36.3	128.7	62.6	42.2	151.1	42.7		136.1	68.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	131.2	110.7	36.3	128.7	62.6	42.2	151.1	42.7		136.1	68.8	
LOS	F	F	D	F	E	D	F	D		F	E	
Approach Delay		100.6			66.4			72.5			79.6	
Approach LOS		F			E			E			E	
Queue Length 50th (m)	23.4	~213.1	50.9	~43.6	130.7	33.5	~51.5	52.6		~40.8	107.5	
Queue Length 95th (m)	#56.4	#255.3	77.1	m#46.8	m123.1	m33.9	#96.8	69.6		#84.7	#146.3	
Internal Link Dist (m)		192.5			794.8			85.7			126.1	
Turn Bay Length (m)	124.5		100.0	134.0		91.5	127.0			65.0		
Base Capacity (vph)	98	1194	513	135	1283	553	160	875		151	859	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.92	1.14	0.50	1.10	0.99	0.32	1.09	0.52		1.02	0.94	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.14
Intersection Signal Delay: 81.7 Intersection LOS: F
Intersection Capacity Utilization 105.5% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Fisher Ave & Baseline Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	17	14	74	68	90	12	574	29	54	894	34
Future Volume (vph)	17	17	14	74	68	90	12	574	29	54	894	34
Satd. Flow (prot)	0	1640	0	0	1611	0	0	1743	1483	0	3251	0
Flt Permitted		0.830			0.875			0.976			0.885	
Satd. Flow (perm)	0	1381	0	0	1431	0	0	1703	1441	0	2885	0
Satd. Flow (RTOR)		14			33				47		6	
Lane Group Flow (vph)	0	48	0	0	232	0	0	586	29	0	982	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	31.1	31.1		31.1	31.1		27.2	27.2	27.2	27.2	27.2	
Total Split (s)	33.0	33.0		33.0	33.0		62.0	62.0	62.0	62.0	62.0	
Total Split (%)	34.7%	34.7%		34.7%	34.7%		65.3%	65.3%	65.3%	65.3%	65.3%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	4.1	4.1		4.1	4.1		2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		7.1			7.1			6.2	6.2		6.2	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)		18.6			18.6			63.1	63.1		63.1	
Actuated g/C Ratio		0.20			0.20			0.66	0.66		0.66	
v/c Ratio		0.17			0.76			0.52	0.03		0.51	
Control Delay		23.6			45.9			11.3	1.3		10.1	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		23.6			45.9			11.3	1.3		10.1	
LOS		C			D			B	A		B	
Approach Delay		23.6			45.9			10.9			10.1	
Approach LOS		C			D			B			B	
Queue Length 50th (m)		5.2			34.7			49.3	0.0		42.9	
Queue Length 95th (m)		13.1			54.7			93.7	2.1		72.1	
Internal Link Dist (m)		145.0			146.3			187.2			22.4	
Turn Bay Length (m)												
Base Capacity (vph)		386			414			1131	973		1919	
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		0.12			0.56			0.52	0.03		0.51	

Intersection Summary
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 10 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 15.1	Intersection LOS: B
Intersection Capacity Utilization 96.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Deer Park Rd/Dynes Rd & Fisher Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	389	125	303	1194	445	79	1429	102	106	647	155
Future Volume (vph)	107	389	125	303	1194	445	79	1429	102	106	647	155
Satd. Flow (prot)	1658	3153	0	1658	3316	1483	1610	3273	0	3185	3195	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1647	3153	0	1622	3316	1413	1596	3273	0	3166	3195	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	107	514	0	303	1194	445	79	1531	0	106	802	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases						6						
Detector Phase	5	2		1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	12.0	12.0		5.0	10.0	
Minimum Split (s)	11.8	29.5		11.8	29.5	29.5	17.9	37.8		10.9	37.8	
Total Split (s)	14.0	31.0		31.0	48.0	48.0	18.0	57.0		11.0	50.0	
Total Split (%)	10.8%	23.8%		23.8%	36.9%	36.9%	13.8%	43.8%		8.5%	38.5%	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	3.1	2.8		3.1	2.8	2.8	2.2	3.1		2.2	3.1	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.5		6.8	6.5	6.5	5.9	6.8		5.9	6.8	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	Min	Min		None	None	
Act Effct Green (s)	7.2	24.5		24.2	41.5	41.5	12.0	50.2		5.1	43.3	
Actuated g/C Ratio	0.06	0.19		0.19	0.32	0.32	0.09	0.39		0.04	0.33	
v/c Ratio	1.18	0.87		0.98	1.13	0.99	0.53	1.21		0.85	0.75	
Control Delay	126.9	63.8		100.0	110.9	83.4	70.1	138.8		110.7	44.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	126.9	63.8		100.0	110.9	83.4	70.1	138.8		110.7	44.1	
LOS	F	E		F	F	F	E	F		F	D	
Approach Delay		74.6			102.9			135.5			51.9	
Approach LOS		E			F			F			D	
Queue Length 50th (m)	~32.7	74.0		78.1	~186.2	113.2	19.6	~251.8		14.1	96.0	
Queue Length 95th (m)	m#28.5	m67.1		#135.5	#228.2	#180.7	36.2	#294.4		#31.1	119.8	
Internal Link Dist (m)		794.8			323.7			145.3			127.9	
Turn Bay Length (m)	125.0			118.0		184.0	117.0			74.0		
Base Capacity (vph)	91	594		308	1058	451	149	1263		124	1063	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.18	0.87		0.98	1.13	0.99	0.53	1.21		0.85	0.75	

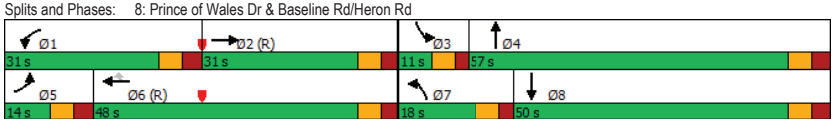
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.21
Intersection Signal Delay: 100.6 — Intersection LOS: F
Intersection Capacity Utilization 112.2% — ICU Level of Service H
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Prince of Wales Dr & Baseline Rd/Heron Rd



Appendix H

Synchro Intersection Worksheets – 2034 Future Total Conditions

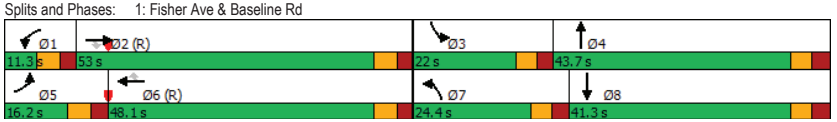
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	1309	156	31	1098	141	236	497	75	132	389	93
Future Volume (vph)	130	1309	156	31	1098	141	236	497	75	132	389	93
Satd. Flow (prot)	1658	3252	1469	1642	3252	1455	1658	3178	0	1658	3124	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1654	3252	1407	1634	3252	1419	1644	3178	0	1653	3124	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	130	1309	156	31	1098	141	236	572	0	132	482	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.3	41.2	41.2	11.3	41.2	41.2	10.9	41.3		10.9	41.3	
Total Split (s)	16.2	53.0	53.0	11.3	48.1	48.1	24.4	43.7		22.0	41.3	
Total Split (%)	12.5%	40.8%	40.8%	8.7%	37.0%	37.0%	18.8%	33.6%		16.9%	31.8%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.5	2.5	2.6	2.5	2.5	2.6	3.0		2.6	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.2	6.2	6.3	6.2	6.2	5.9	6.3		5.9	6.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	14.5	58.1	58.1	6.1	44.6	44.6	18.5	32.0		14.2	27.6	
Actuated g/C Ratio	0.11	0.45	0.45	0.05	0.34	0.34	0.14	0.25		0.11	0.21	
v/c Ratio	0.70	0.90	0.25	0.41	0.98	0.29	1.00	0.73		0.73	0.73	
Control Delay	76.4	44.6	27.0	58.8	90.7	65.9	115.1	50.8		78.9	53.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	76.4	44.6	27.0	58.8	90.7	65.9	115.1	50.8		78.9	53.7	
LOS	E	D	C	E	F	E	F	D		E	D	
Approach Delay		45.4			87.1			69.6			59.1	
Approach LOS		D			F			E			E	
Queue Length 50th (m)	31.5	173.4	26.4	8.2	~164.1	37.7	~61.3	73.8		32.8	62.0	
Queue Length 95th (m)	#76.1	#245.0	46.7	m10.2	m#169.7	m41.3	#113.9	86.5		#55.0	74.2	
Internal Link Dist (m)		271.5			796.1			86.9			158.3	
Turn Bay Length (m)	124.5		100.0	134.0		91.5				65.0		
Base Capacity (vph)	185	1452	628	76	1116	487	235	914		205	841	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.70	0.90	0.25	0.41	0.98	0.29	1.00	0.63		0.64	0.57	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00
Intersection Signal Delay: 64.3 Intersection LOS: E
Intersection Capacity Utilization 97.2% ICU Level of Service F
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Fisher Ave & Baseline Rd



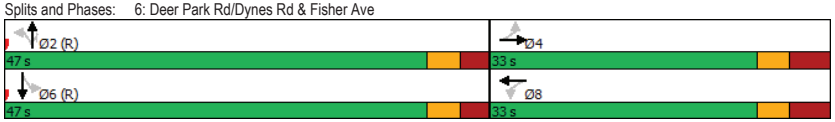
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	83	17	83	41	104	8	668	171	61	548	5
Future Volume (vph)	38	83	17	83	41	104	8	668	171	61	548	5
Satd. Flow (prot)	0	1660	0	0	1577	0	0	1710	1483	0	3293	0
Flt Permitted		0.849			0.843			0.993			0.801	
Satd. Flow (perm)	0	1421	0	0	1336	0	0	1699	1289	0	2651	0
Satd. Flow (RTOR)		9			56				171		1	
Lane Group Flow (vph)	0	138	0	0	228	0	0	676	171	0	614	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	31.1	31.1		31.1	31.1		27.2	27.2	27.2	27.2	27.2	
Total Split (s)	33.0	33.0		33.0	33.0		47.0	47.0	47.0	47.0	47.0	
Total Split (%)	41.3%	41.3%		41.3%	41.3%		58.8%	58.8%	58.8%	58.8%	58.8%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	4.1	4.1		4.1	4.1		2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		7.1			7.1			6.2	6.2		6.2	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)		19.0			19.0			47.7	47.7		47.7	
Actuated g/C Ratio		0.24			0.24			0.60	0.60		0.60	
v/c Ratio		0.40			0.63			0.67	0.20		0.39	
Control Delay		25.9			27.5			16.6	2.3		10.5	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		25.9			27.5			16.6	2.3		10.5	
LOS		C			C			B	A		B	
Approach Delay		25.9			27.5			13.7			10.5	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		15.0			21.1			74.3	0.0		27.7	
Queue Length 95th (m)		29.4			42.2			117.2	8.2		39.6	
Internal Link Dist (m)		152.1			156.9			172.3			30.0	
Turn Bay Length (m)												
Base Capacity (vph)		466			470			1013	837		1581	
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		0.30			0.49			0.67	0.20		0.39	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 78 (98%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 15.3	Intersection LOS: B
Intersection Capacity Utilization 93.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Deer Park Rd/Dynes Rd & Fisher Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	548	142	225	1017	546	72	1134	166	221	394	82
Future Volume (vph)	205	548	142	225	1017	546	72	1134	166	221	394	82
Satd. Flow (prot)	1658	3186	0	1610	3283	1483	1658	3237	0	3216	3219	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1654	3186	0	1593	3283	1450	1652	3237	0	3205	3219	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	205	690	0	225	1017	546	72	1300	0	221	476	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases						6						
Detector Phase	5	2		1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	12.0		5.0	12.0	
Minimum Split (s)	11.8	29.5		11.8	29.8	29.8	10.9	37.8		10.9	37.8	
Total Split (s)	20.0	40.0		26.0	46.0	46.0	20.4	51.0		13.0	43.6	
Total Split (%)	15.4%	30.8%		20.0%	35.4%	35.4%	15.7%	39.2%		10.0%	33.5%	
Yellow Time (s)	3.7	3.0		3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	3.1	2.8		3.1	2.8	2.8	2.2	3.1		2.2	3.1	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	5.8		6.8	6.5	6.5	5.9	6.8		5.9	6.8	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Min		None	Min	
Act Effct Green (s)	13.2	34.2		19.2	39.5	39.5	10.8	44.2		7.1	43.0	
Actuated g/C Ratio	0.10	0.26		0.15	0.30	0.30	0.08	0.34		0.05	0.33	
v/c Ratio	1.22	0.82		0.95	1.02	1.24	0.53	1.18		1.26	0.45	
Control Delay	164.7	70.1		101.6	78.2	165.2	70.1	129.8		204.0	37.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	164.7	70.1		101.6	78.2	165.2	70.1	129.8		204.0	37.2	
LOS	F	E		F	E	F	E	F		F	D	
Approach Delay		91.8			107.7			126.7			90.1	
Approach LOS		F			F			F			F	
Queue Length 50th (m)	~66.4	99.7		57.9	~145.1	~173.4	18.0	~210.0		~36.5	51.9	
Queue Length 95th (m)	m#84.0	m111.8		#107.1	#186.3	#240.9	32.9	#252.3		#62.3	71.3	
Internal Link Dist (m)		796.1			320.4			142.9			135.6	
Turn Bay Length (m)	125.0			118.0		184.0	117.0			74.0		
Base Capacity (vph)	168	838		237	997	440	184	1100		175	1064	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.22	0.82		0.95	1.02	1.24	0.39	1.18		1.26	0.45	

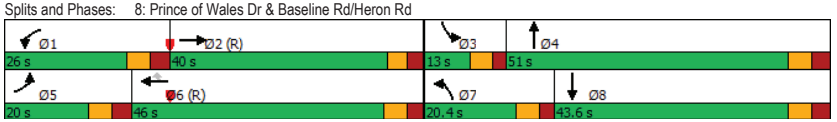
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.26
Intersection Signal Delay: 107.6 — Intersection LOS: F
Intersection Capacity Utilization 108.8% — 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Prince of Wales Dr & Baseline Rd/Heron Rd



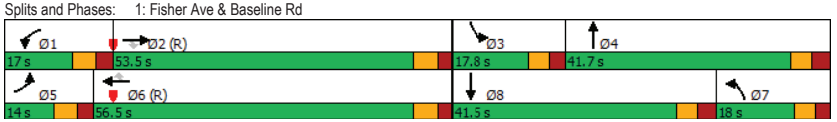
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	1355	266	162	1265	179	179	381	69	154	666	148
Future Volume (vph)	94	1355	266	162	1265	179	179	381	69	154	666	148
Satd. Flow (prot)	1658	3283	1483	1642	3316	1483	1658	3214	0	1658	3173	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	3283	1410	1633	3316	1431	1648	3214	0	1646	3173	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	94	1355	266	162	1265	179	179	450	0	154	814	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.3	33.2	33.2	11.3	33.2	33.2	10.9	41.5		10.9	41.5	
Total Split (s)	14.0	53.5	53.5	17.0	56.5	56.5	18.0	41.7		17.8	41.5	
Total Split (%)	10.8%	41.2%	41.2%	13.1%	43.5%	43.5%	13.8%	32.1%		13.7%	31.9%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.5	2.5	2.6	2.5	2.5	2.6	3.0		2.6	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.2	6.2	6.3	6.2	6.2	5.9	6.3		5.9	6.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	7.7	47.3	47.3	10.7	50.3	50.3	12.5	35.4		11.9	34.8	
Actuated g/C Ratio	0.06	0.36	0.36	0.08	0.39	0.39	0.10	0.27		0.09	0.27	
v/c Ratio	0.96	1.13	0.52	1.20	0.99	0.32	1.13	0.51		1.02	0.96	
Control Delay	140.9	109.8	36.9	161.9	61.0	42.2	161.7	42.5		136.1	69.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	140.9	109.8	36.9	161.9	61.0	42.2	161.7	42.5		136.1	69.1	
LOS	F	F	D	F	E	D	F	D		F	E	
Approach Delay		100.2			69.1			76.4			79.8	
Approach LOS		F			E			E			E	
Queue Length 50th (m)	24.5	~212.2	53.1	~50.9	129.7	33.6	~54.2	51.5		~40.8	108.1	
Queue Length 95th (m)	#59.0	#254.8	80.0	m#53.6	m122.3	m34.0	#100.5	68.3		#84.7	#147.1	
Internal Link Dist (m)		192.5			794.8			85.7			126.1	
Turn Bay Length (m)	124.5		100.0	134.0		91.5	127.0			65.0		
Base Capacity (vph)	98	1194	513	135	1283	553	159	875		151	859	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.96	1.13	0.52	1.20	0.99	0.32	1.13	0.51		1.02	0.95	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.20
Intersection Signal Delay: 83.0 Intersection LOS: F
Intersection Capacity Utilization 106.6% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Fisher Ave & Baseline Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	17	14	74	68	90	12	576	29	54	890	34
Future Volume (vph)	17	17	14	74	68	90	12	576	29	54	890	34
Satd. Flow (prot)	0	1640	0	0	1611	0	0	1743	1483	0	3251	0
Flt Permitted		0.830			0.875			0.976			0.884	
Satd. Flow (perm)	0	1381	0	0	1431	0	0	1703	1441	0	2882	0
Satd. Flow (RTOR)		14			33				47		6	
Lane Group Flow (vph)	0	48	0	0	232	0	0	588	29	0	978	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	31.1	31.1		31.1	31.1		27.2	27.2	27.2	27.2	27.2	
Total Split (s)	33.0	33.0		33.0	33.0		62.0	62.0	62.0	62.0	62.0	
Total Split (%)	34.7%	34.7%		34.7%	34.7%		65.3%	65.3%	65.3%	65.3%	65.3%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	4.1	4.1		4.1	4.1		2.9	2.9	2.9	2.9	2.9	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		7.1			7.1			6.2	6.2		6.2	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)		18.6			18.6			63.1	63.1		63.1	
Actuated g/C Ratio		0.20			0.20			0.66	0.66		0.66	
v/c Ratio		0.17			0.76			0.52	0.03		0.51	
Control Delay		23.6			45.9			11.4	1.3		10.1	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		23.6			45.9			11.4	1.3		10.1	
LOS		C			D			B	A		B	
Approach Delay		23.6			45.9			10.9			10.1	
Approach LOS		C			D			B			B	
Queue Length 50th (m)		5.2			34.7			49.6	0.0		42.6	
Queue Length 95th (m)		13.1			54.7			94.3	2.1		71.8	
Internal Link Dist (m)		145.0			146.3			187.2			22.4	
Turn Bay Length (m)												
Base Capacity (vph)		386			414			1131	973		1917	
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		0.12			0.56			0.52	0.03		0.51	

Intersection Summary
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 10 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 15.1	Intersection LOS: B
Intersection Capacity Utilization 96.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Deer Park Rd/Dynes Rd & Fisher Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	386	125	303	1197	445	79	1429	102	106	647	157
Future Volume (vph)	105	386	125	303	1197	445	79	1429	102	106	647	157
Satd. Flow (prot)	1658	3150	0	1658	3316	1483	1610	3273	0	3185	3195	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1647	3150	0	1622	3316	1413	1596	3273	0	3166	3195	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	105	511	0	303	1197	445	79	1531	0	106	804	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases						6						
Detector Phase	5	2		1	6	6	7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	12.0	12.0		5.0	10.0	
Minimum Split (s)	11.8	29.5		11.8	29.5	29.5	17.9	37.8		10.9	37.8	
Total Split (s)	14.0	31.0		31.0	48.0	48.0	18.0	57.0		11.0	50.0	
Total Split (%)	10.8%	23.8%		23.8%	36.9%	36.9%	13.8%	43.8%		8.5%	38.5%	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	3.1	2.8		3.1	2.8	2.8	2.2	3.1		2.2	3.1	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	6.5		6.8	6.5	6.5	5.9	6.8		5.9	6.8	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	Min	Min		None	None	
Act Effct Green (s)	7.2	24.5		24.2	41.5	41.5	12.0	50.2		5.1	43.3	
Actuated g/C Ratio	0.06	0.19		0.19	0.32	0.32	0.09	0.39		0.04	0.33	
v/c Ratio	1.15	0.86		0.98	1.13	0.99	0.53	1.21		0.85	0.76	
Control Delay	118.5	63.7		100.0	111.9	83.4	70.1	138.8		110.7	44.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	118.5	63.7		100.0	111.9	83.4	70.1	138.8		110.7	44.1	
LOS	F	E		F	F	F	E	F		F	D	
Approach Delay		73.1			103.6			135.5			51.9	
Approach LOS		E			F			F			D	
Queue Length 50th (m)	~31.7	73.6		78.1	~187.0	113.2	19.6	~251.8		14.1	96.3	
Queue Length 95th (m)	m#27.7	m66.8		#135.5	#228.7	#180.7	36.2	#294.4		#31.1	120.3	
Internal Link Dist (m)		794.8			323.7			145.3			127.9	
Turn Bay Length (m)	125.0			118.0		184.0	117.0			74.0		
Base Capacity (vph)	91	593		308	1058	451	149	1263		124	1063	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.15	0.86		0.98	1.13	0.99	0.53	1.21		0.85	0.76	

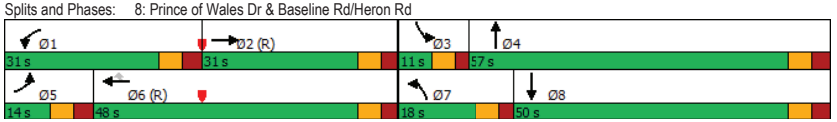
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.21
Intersection Signal Delay: 100.7 — Intersection LOS: F
Intersection Capacity Utilization 112.2% — ICU Level of Service H
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Prince of Wales Dr & Baseline Rd/Heron Rd



Appendix I

TDM Checklist

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: *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 J

MMLOS Analysis

Multi-Modal Level of Service - Intersections Form

Consultant	**CGH Transportation Inc.**	**Project**	**2021-083**
Scenario	**Existing/Future**	**Date**	**2022-04-20**
Comments			

	INTERSECTIONS	Fisher Avenue at Baseline Road (Existing)				Prince of Wales Drive at Baseline Road/Heron Road (Existing)				Fisher Avenue at Baseline Road (Future)				Prince of Wales Drive at Baseline Road/Heron Road (Future)				Fisher Avenue at Deer Park Road/Dynes Road			
	Crossing Side	**NORTH**	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**
Pedestrian	Lanes	6	7	6	7	7	6	9	9	7	9	10+	10+	7	7	9	9	5	5	3	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	Median > 2.4 m	Median > 2.4 m	Median > 2.4 m	Median > 2.4 m	Median > 2.4 m	Median > 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m
	Conflicting Left Turns	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Permissive	Permissive	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	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 allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR prohibited	RTOR prohibited	RTOR prohibited	RTOR prohibited	RTOR prohibited	RTOR prohibited	RTOR prohibited	RTOR prohibited	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed
	Ped Signal Leading Interval?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Right Turn Channel	Conventional with Receiving Lane	Conventional with Receiving Lane	Conventional with Receiving Lane	Conventional with Receiving Lane	Conv'tl without Receiving Lane	Conv'tl without Receiving Lane	Conventional with Receiving Lane	Conv'tl without Receiving Lane	No Channel	No Channel	No Channel	No Channel	Conv'tl without Receiving Lane	Conv'tl without Receiving Lane	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel
	Corner Radius	15-25m	15-25m	15-25m	15-25m	>25m	>25m	>25m	>25m	15-25m	15-25m	15-25m	15-25m	>25m	>25m	>25m	>25m	10-15m	10-15m	15-25m	10-15m
	Crosswalk Type	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings
	PETSI Score	**27**	**11**	**27**	**11**	**16**	**32**	**-20**	**-17**	**13**	**-20**	**-26**	**-26**	**25**	**25**	**-9**	**-9**	**40**	**40**	**71**	**73**
	Ped. Exposure to Traffic LoS	**F**	**F**	**F**	**F**	**F**	**E**	**#N/A**	**#N/A**	**F**	**#N/A**	**#N/A**	**#N/A**	**F**	**F**	**F**	**F**	**E**	**E**	**C**	**C**
	Cycle Length	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	95	95	95	95
	Effective Walk Time	7	7	21	34	10	10	11	19	9	7	28	31	10	10	11	19	83	83	76	76
	Average Pedestrian Delay	**58**	**58**	**46**	**35**	**55**	**55**	**54**	**47**	**56**	**58**	**40**	**38**	**55**	**55**	**54**	**47**	**1**	**1**	**2**	**2**
	Pedestrian Delay LoS	**E**	**E**	**E**	**D**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**D**	**E**	**E**	**E**	**E**	**A**	**A**	**A**	**A**
	Level of Service	**F**	**F**	**F**	**F**	**F**	**E**	**#N/A**	**#N/A**	**F**	**#N/A**	**#N/A**	**#N/A**	**F**	**F**	**F**	**F**	**E**	**E**	**C**	**C**
		F				**#N/A**				**#N/A**				**F**				**E**			
	Approach From	**NORTH**	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**
Bicycle	Bicycle Lane Arrangement on Approach	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Mixed Traffic	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Mixed Traffic	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP
	Right Turn Lane Configuration	Not Applicable	Not Applicable	> 50 m	> 50 m	Not Applicable	Not Applicable	> 50 m	> 50 m	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Right Turning Speed	Not Applicable	Not Applicable	>25 km/h	>25 km/h	Not Applicable	Not Applicable	>25 km/h	>25 km/h	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Cyclist relative to RT motorists	**Not Applicable**	**Not Applicable**	**F**	**F**	**Not Applicable**	**Not Applicable**	**F**	**F**	**Not Applicable**	**Not Applicable**	**Not Applicable**	**Not Applicable**	**Not Applicable**	**Not Applicable**	**Not Applicable**	**Not Applicable**	**Not Applicable**	**Not Applicable**	**Not Applicable**	**Not Applicable**
	Separated or Mixed Traffic	**Separated**	**Separated**	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**	**Separated**	**Separated**	**Separated**	**Separated**	**Separated**	**Separated**	**Separated**	**Separated**	**Separated**	**Separated**
	Left Turn Approach	≥ 2 lanes crossed	≥ 2 lanes crossed	One lane crossed	One lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	2-stage, LT box	2-stage, LT box	2-stage, LT box	2-stage, LT box	2-stage, LT box	2-stage, LT box	2-stage, LT box	2-stage, LT box	2-stage, LT box	2-stage, LT box	2-stage, LT box	2-stage, LT box
	Operating Speed	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	> 50 to < 60 km/h
	Left Turning Cyclist	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**
	Level of Service	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**
		F				**F**				**A**				**A**				**A**			
Transit	Average Signal Delay	> 40 sec	> 40 sec	> 40 sec	> 40 sec		> 40 sec	> 40 sec	> 40 sec	> 40 sec	> 40 sec	> 40 sec	> 40 sec		> 40 sec	> 40 sec	> 40 sec	≤ 20 sec	≤ 20 sec		
	Level of Service	**F**	**F**	**F**	**F**	**-**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**-**	**F**	**F**	**F**	**C**	**C**	**-**	**-**
		F				**F**				**F**				**F**				**C**			
Truck	Effective Corner Radius	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m				
	Number of Receiving Lanes on Departure from Intersection	≥ 2	≥ 2	≥ 2	≥ 2	≥ 2	≥ 2	≥ 2	≥ 2	≥ 2	≥ 2	≥ 2	≥ 2	≥ 2	≥ 2	≥ 2	≥ 2				
	Level of Service	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**-**	**-**	**-**	**-**
		A				**A**				**A**				**A**				**-**			
Auto	Volume to Capacity Ratio	> 1.00				> 1.00				> 1.00				> 1.00				0.61 - 0.70			
	Level of Service	**F**				**F**				**F**				**F**				**B**			