Transportation Impact Assessment
Analysis Report

Halo Car Wash
585 West Hunt Club Road, Ottawa, Ontario

December 15, 2025
BTE Project 24-033

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INTRODUCTION

The purpose of this report is to assess the transportation impact of a proposed Halo car wash located at 585 West Hunt Club Road, Ottawa, Ontario. The project site is shown on **Figure 1**.

Figure 1: Project Location

The format of this report is consistent with the City of Ottawa's Transportation Impact Assessment (TIA) Guidelines (2017) with incorporation of the 2023 Revisions to the TIA Guidelines.

1 SCREENING

1.1 Summary of Development

Table 1 presents a description of the proposed development. A detailed layout is included in **Appendix B**.

Table 1: Description of Proposed Development

Municipal Address	585 West Hunt Club Road, Nepean, ON K2G 5X6
Description of Location	Parking lot east of Lancelot Drive, approx. 70 m north of West Hunt Club Road
Land Use Classification	Arterial Main Street Zone 10
Development Size (units)	1 car wash tunnel with 3 pay station lanes, and 14 vacuum stalls
Development Size (m²)	480 m² (car wash)
Number of Accesses and Locations	1 full access on Lancelot Drive, 1 exit on the east side of the project site (behind the LCBO).
Phase of Development	Single phase
Buildout Year	2026

1.2 Trip Generation Triggers

A TIA is warranted if the proposed development is anticipated to generate a significant number of person-trips that may affect the performance of the transportation network.

According to the ITE Trip Generation Manual 11th Edition, a car wash tunnel generates 50 to 100 trips during peak hours, although this is based on a small data set. The proposed provision of three queue lanes suggests high traffic expectations, so the TIA Guideline's threshold of 75 auto trips is considered met. Hence, a TIA is **warranted** based on trip generation.

1.3 Location Triggers

A TIA may be warranted based on location. **Table 2** presents the location triggers.

Table 2: Location Triggers

Location Trigger	Yes/No
Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Spine Bicycle Networks?	No
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?	No

Based on the information above, a TIA is **not warranted** based on location.

1.4 Safety Triggers

A TIA may be warranted based on safety. **Table 3** presents the safety triggers.

Table 3: Safety Triggers

Safety Trigger	Yes/No
Are posted speed limits on a boundary street 80 km/hr or greater?	No
Are there any horizontal/vertical curvatures on a boundary street which limit 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 the auxiliary lanes of an intersection?	No
Does the proposed driveway make use of an existing median break that serves an existing site?	No
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	No
Does the development include a drive-through facility?	Yes

Based on the information above, a TIA is **warranted** based on safety.

1.5 Summary

A TIA is warranted if any of the justifications in **Table 4** are met.

Table 4: Summary of TIA Triggers

Trigger Category	Yes/No
Does the development satisfy one of the trip generation triggers?	Yes
Does the development satisfy one of the location triggers?	No
Does the development satisfy one of the safety triggers?	Yes

Based on the information above, a TIA is **warranted**.

2 SCOPING

2.1 Existing and Planned Conditions

2.1.1 Proposed Development

The project consists of a car wash tunnel with 3 queue lanes to accommodate around 27 cars, as illustrated on the site plan, provided in **Appendix B**. A full access to the site is provided off Lancelot Drive. An exit is also provided on the east side of the project site, behind the LCBO store. The estimated year of occupancy is 2026.

2.1.2 Existing Conditions

2.1.2.1 Roadways

West Hunt Club Road (Regional Road 32) is a divided 4-lane arterial roadway that goes through the City of Ottawa in an east-west alignment from Richmond Road to the Ottawa River (where it becomes Hunt Club Road). The intersection with Merivale Road is signalized and provided with 2 eastbound left-turn lanes and a third westbound through lane. Accesses to the Nepean Crossroads Centre are signalized and provided with left-turn and right-turn lanes.

Lancelot Drive is an undivided 2-lane roadway that serves as a driveway to the Nepean Crossroads Centre off West Hunt Club Road. It continues south as Cleopatra Drive.

Merivale Road (Regional Road 17) is a divided 4-lane arterial roadway that goes through the City of Ottawa in a north-south alignment from Island Park Drive to the Barrhaven area.

2.1.2.2 Public Transportation

Figure 2 illustrates the available public transportation service near the project site. The project site is primarily served by Frequent Route 80 and Local Route 116.

Frequent Route 80 runs between Tunney's Pasture Station and Barrhaven Centre Station via Merivale Road. Service is provided 7 days a week, every 15 to 30 minutes. The nearest bus stops are located on Merivale Road immediately north of West Hunt Club Road.

Local Route 116 runs between Baseline Station and Greenboro Station via West Hunt Club Road. Service is provided 7 days a week, every 30 to 60 minutes. The nearest bus stops are located on West Hunt Club Road immediately east of Lancelot Drive.

Local Route 53 runs between Tunney's Pasture Station and Baseline Station via Merivale Road and Woodfield Drive (behind the Nepean Crossroads Centre). Service is provided 7 days a week, every 15 to 30 minutes. The nearest bus stops are located on Woodfield Drive behind the RONA hardware store, accessible via a multi-use path connection.

Figure 2: Public Transportation

2.1.2.3 Active Transportation Network

There is a sidewalk on both sides of West Hunt Club Road and on both sides of Merivale Road. There is also a sidewalk on the east side of Lancelot Drive between West Hunt Club Road and the RONA hardware store and another sidewalk runs alongside the east-west roadway through the Nepean Crossroads Centre.

There is a bicycle lane on both sides of West Hunt Club Road. No cycling facilities are available on Merivale Road (except for a short multi-use path section between Woodfield Drive and Colonnade Road) or through the Nepean Crossroads Centre.

A multi-use path is present immediately west of the Nepean Crossroads Centre. The path connects to a cycling network that allows cyclists to safely travel eastbound to Colonnade Road and Viewmount Drive, and westbound to Bells Corners.

Figure 3 below illustrates the existing sidewalks and cycling facilities near the project site.

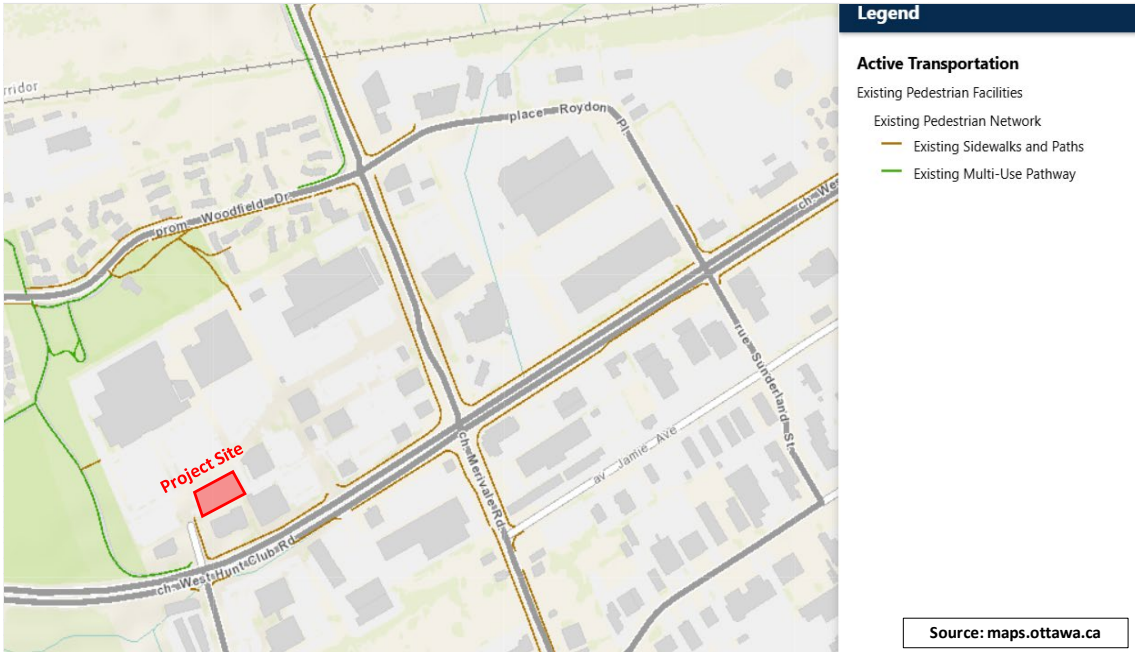


Figure 3: Existing Sidewalks and Multi-Use Pathways

2.1.2.4 Existing Traffic Volumes

Table 5 lists the traffic count reports that were acquired from the City of Ottawa for the signalized intersections, and the traffic counts that BTE performed for all the stop-controlled intersections, i.e. intersections 1, 2, 3, and 4, shown in **Figure 4**.

Table 5: Traffic Count Reports

Survey Source	Intersection	Control Type	Survey Date
City of Ottawa	West Hunt Club Road / Merivale Road	Signalized	February 10, 2020
	West Hunt Club Road near East Side Mario's	Signalized	February 7, 2018
	West Hunt Club Rd / Cleopatra Dr / Lancelot Dr	Signalized	January 14, 2020
	Merivale Road / Costco driveway	Signalized	February 10, 2020
BTE	Intersection 1	Stop-controlled	April 21, 2025
	Intersection 2	Stop-controlled	April 21, 2025
	Intersection 3	Stop-controlled	April 23, 2025
	Intersection 4	Stop-controlled	April 24, 2025

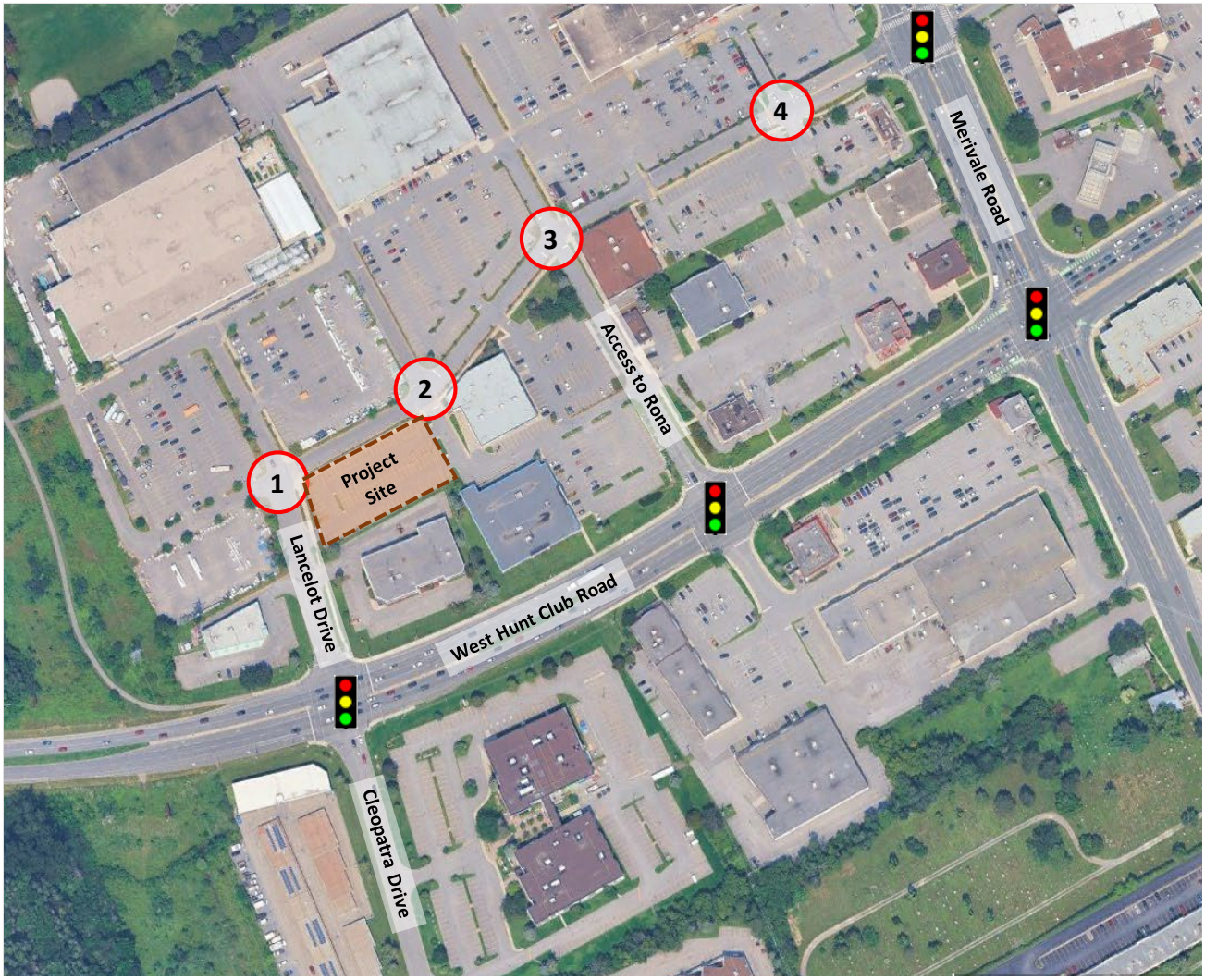


Figure 4: Intersections in the Study Area

Figure 5 presents the existing traffic volumes in the vicinity of the project site. Traffic count reports are provided in **Appendix C**. The traffic volumes at the stop-controlled intersections in 2025 are similar to the traffic volumes at the signalized intersections near the project site, which suggests that traffic has not increased significantly from 2020 to 2025.

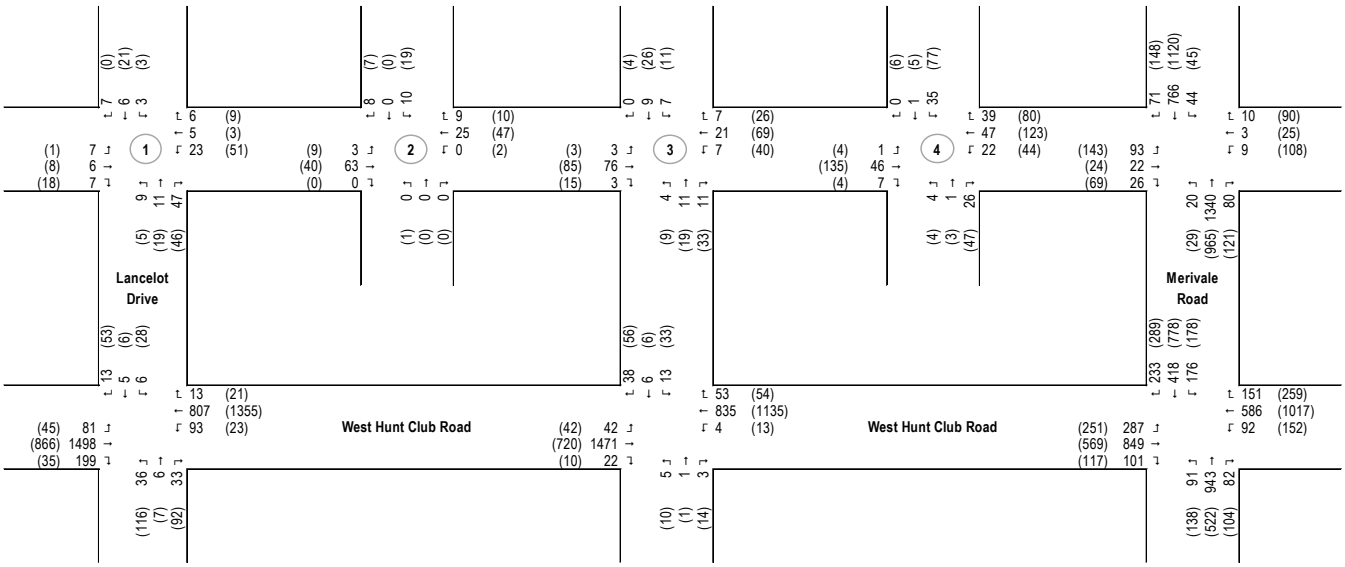


Figure 5: Existing Turning Movement Volumes, AM (PM) Peak Hour

2.1.2.5 Collision History

Collision data on West Hunt Club Road between Merivale Road and Lancelot Drive and on Merivale Road between West Hunt Club Road and the signalized intersection immediately north have been acquired from the City of Ottawa for the 6-year period between 2017 and 2022. A detailed collision history report is available in **Appendix D**.

A total of 259 collisions were reported during that period, including 45 collisions at West Hunt Club Road / Cleopatra Drive / Lancelot Drive, 33 collisions on West Hunt Club Road between Merivale Road and Lancelot Drive, 152 collisions at Merivale Road / West Hunt Club Road and 28 collisions on Merivale Road north of West Hunt Club Road.

Half of the collisions (50%) were classified as rear-end. Most of the other collisions were classified as sideswipe (22%), turning movement (13%) or angle (10%) collisions. This is not unusual for a busy arterial road filled with traffic signals.

Eighty-two percent (82%) of the collisions were property damage only while 17% involved non-fatal injuries. One fatal collision was reported in 2019 on West Hunt Club Road at the signalized intersection near East Side Mario's. This fatal collision involved a driver and a cyclist, was classified as a turning movement collision and occurred during daylight on a dry road with clear weather conditions.

No significant trend has been observed from the collision data other than a decrease of collision numbers during 2020 and 2021 (38 and 29 collisions respectively, compared to an average of 43 per year). It is assumed that this decrease is related to the reduction of traffic during the COVID-19 isolation measures.

2.1.3 Planned Conditions

2.1.3.1 Background Developments

According to the City of Ottawa's Development Application Search tool, no significant developments are planned near the project site as of April 2025.

2.1.3.2 Roadways

The 2013 Transportation Master Plan does not identify any roadway modifications near the project site under the 2031 Affordable Network.

2.1.3.3 Public Transportation

The 2013 Transportation Master Plan do not identify any planned changes to public transportation near the project site under the 2031 Affordable Network.

2.1.3.4 Active Transportation

The 2013 Transportation Master Plan does not identify any potential active transportation improvements near the project site under the 2031 Affordable Network.

2.2 Study Area and Time Period

2.2.1 Study Area

For this analysis, the study area includes the following signalized intersections:

- West Hunt Club Road / Merivale Road
- West Hunt Club Road at 200 m west of Merivale Road
- West Hunt Club Road / Cleopatra Drive / Lancelot Drive
- Merivale Road / Costco Driveway

The study area also includes 4 stop-controlled intersections in the vicinity of the project site, as identified in **Figure 4**.

2.2.2 Time Periods

The proposed development is expected to be in operation during extended business hours. The critical peak periods are expected to be the weekday afternoon peak hours.

2.2.3 Horizon Year

The project is anticipated to be completed by 2026. Therefore, the year 2031 (5 years after buildout) has been considered in the analysis.

2.3 Exemption Review

Table 6 presents the elements of the TIA Guidelines that can be exempted from the analysis.

Table 6: Possible TIA Exemptions

Element	Exemption	Exempt?
4.1.2 Circulation and Access	Only required for site plans	No
4.1.3 New Street Networks	Only required for plans of subdivision	Yes
4.2.1 Parking Supply	Only required for site plans	No
4.5 Transportation Demand Management	Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time	Yes
4.6.1 Neighbourhood Traffic Calming	Only required when the development relies on local or collector streets for access	Yes
4.7.1 Transit Route Capacity	Only required when the proposed development generates more than 75 transit trips	Yes
4.7.2 Transit Priority Requirements	Only required when the proposed development generates more than 75 auto trips	No
4.8 Network Concept	Only required when the proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by established zoning	Yes
4.9 Intersection Design	Only required when the proposed development generates more than 75 auto trips	No

3 FORECASTING

3.1 Development-Generated Travel Demand

3.1.1 Trip Generation and Mode Shares

According to the site plan, the proposed development is an automated car wash tunnel, including three queue lanes with a capacity of accommodating 27 vehicles.

The Institute of Transportation Engineer's (ITE) Trip Generation Manual, 11th Edition, was used to ascertain the trip generation on the proposed site. According to ITE land use code 948 (Automated Car Wash), the site is expected to generate no trips during the morning peak hour and 78 trips during the afternoon peak hour.

However, upon confirmation from the developer, the proposed automated car wash tunnel will also operate during the morning peak hours. Therefore, it is conservatively estimated that during the morning peak hour, the site would generate 50% of the afternoon peak hour trip rate, i.e., a total of 39 vehicular trips in the morning and 78 vehicular trips in the afternoon peak hour, as shown in the **Table 7** below.

It is assumed that all trips will be auto drivers only.

Table 7: Trip Generation

Land Use [ITE Code]	Unit	Item	Morning Peak Hour			Afternoon Peak Hour		
			Total	In	Out	Total	In	Out
Automated Car Wash [948]	Car Wash Tunnel	Quantity	1			1		
		ITE Trip Rate	38.75			77.5		
		Net Distribution	100%	50%	50%	100%	50%	50%
		Total Trips	39	20	20	78	39	39

For the simplicity of the analysis and to consider a worst-case scenario, it is assumed that there are no pass-by trips generated by the proposed car wash centre.

3.1.2 Trip Distribution and Assignment

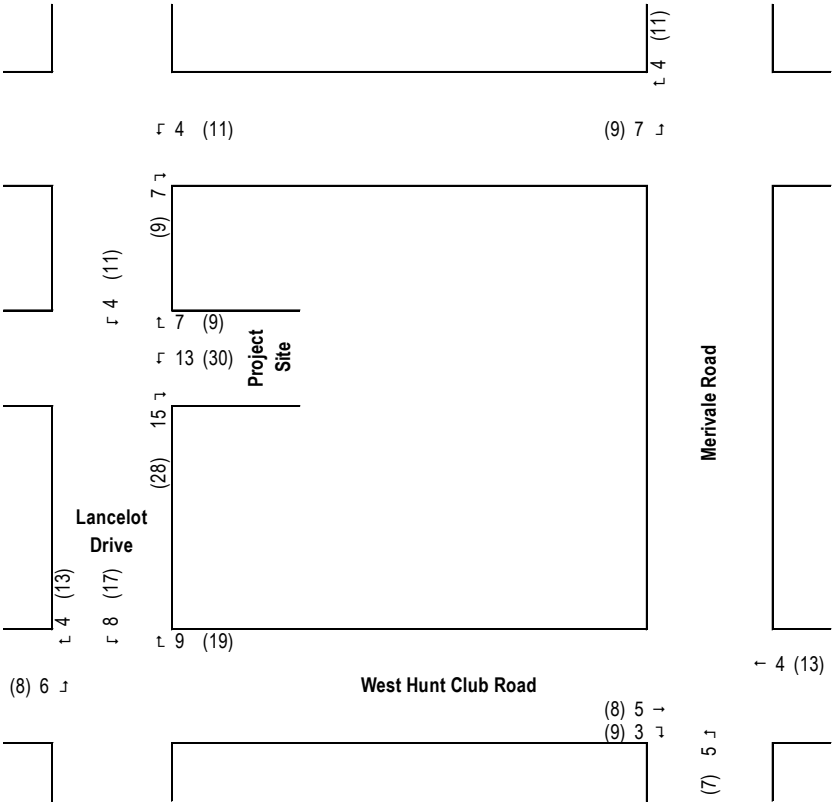


Figure 6: Trip Assignment, AM (PM) Peak Hour Volume

Figure 6 represents the trip assignment based on the number of auto trips generated by the proposed development during the morning and the afternoon peak hours.

3.2 Background Network Travel Demand

3.2.1 Transportation Network Plans

As mentioned in **Section 2.1.3**, no significant developments are planned near the project site that could affect existing or projected demand volumes.

3.2.2 Background Growth

As mentioned in **Section 2.1.2.4**, the traffic volumes at the stop-controlled intersections within the Nepean Crossroads Centre (from 2025 traffic counts) almost match the traffic volumes at the signalized intersections near the project site (from January/February 2020 traffic counts). This suggests that traffic has not increased significantly from 2020 to 2025.

A review of the 2046 traffic volume projections from the TRANS regional model indicates that traffic on Merivale Road and on West Hunt Club Road near the project site will increase by less than 0.5% per year from 2022 to 2046.

Hence, for the purpose of this TIA study, the traffic growth between 2018 and 2025 is assumed as 0.0% and the traffic growth between 2025 and the horizon year 2031 is assumed as 0.5% per year.

Figure 7 presents the background traffic volume projection for the horizon year 2031.

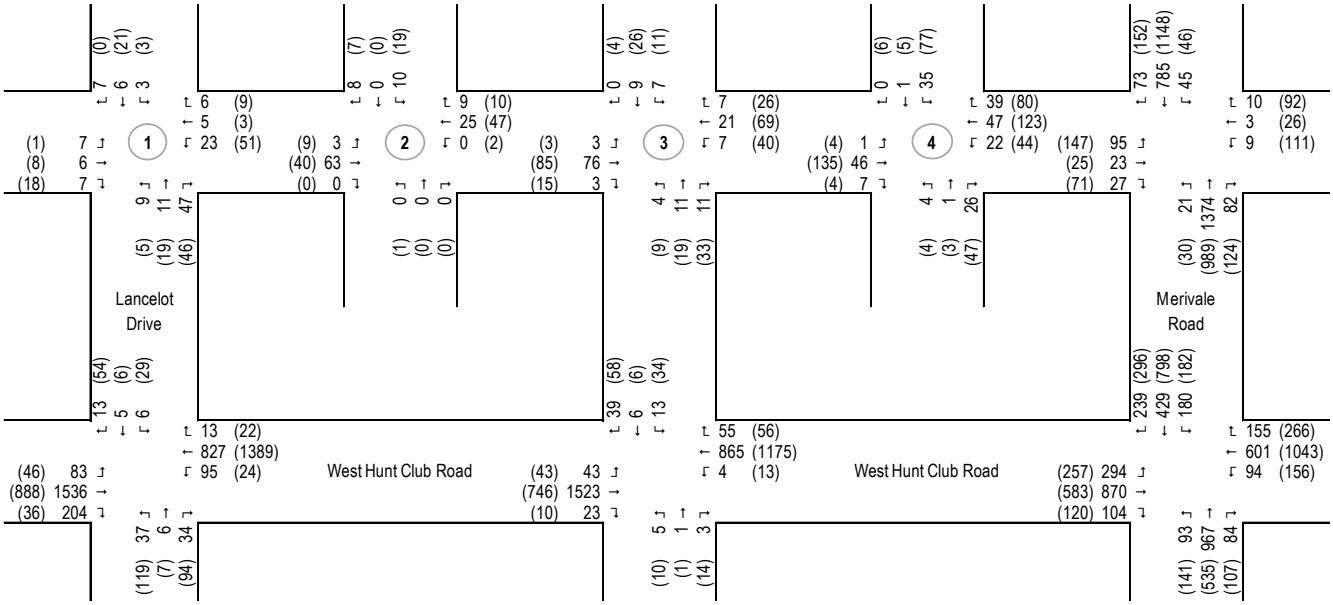


Figure 7: 2031 Background Turning Movement Volumes, AM (PM) Peak Hour

3.2.3 Other Developments

As mentioned in **Section 2.1.3.1**, no significant developments are planned near the project site that could affect existing or projected demand volumes.

3.3 Demand Rationalization

Figure 8 present the 2031 projection with the proposed development in place.

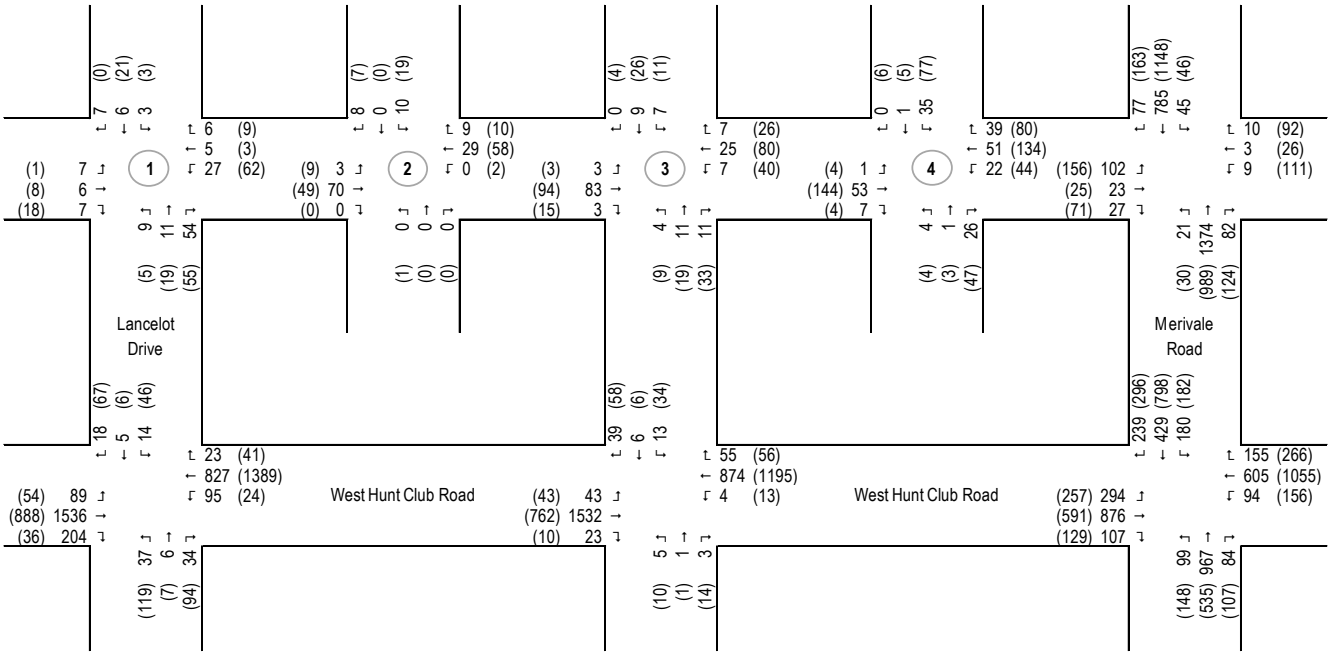


Figure 8: 2031 Total Turning Movement Volumes, AM (PM) Peak Hour

While some changes to the transportation system may encourage alternative modes of transportation, including faster or more frequent bus service, and the provision of cycling lanes physically separated from the road, it is unlikely that these changes would result in a significant impact on the mode distribution, especially considering that the proposed development provides services exclusively to car drivers. Therefore, the demand projection for 2031 is considered reasonable.

4 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

A completed TDM-Supportive Development Design and Infrastructure Checklist is provided in **Appendix F**.

While TDM-supportive facilities like a walking connection from the sidewalk to the building could be beneficial to the car wash staff, it is assumed that the proposed car wash is intended for car drivers exclusively.

4.1.2 Circulation and Access

A vehicle tracking analysis has been undertaken on the site plan to ensure that the car wash entrance is wide enough to accommodate cars and that delivery vehicles can access the project site. The analysis

results are presented in **Appendix G** and confirm that cars and medium single-unit (MSU) trucks can circulate through the site.

4.1.3 New Street Networks

[Exempt]

4.2 Parking

According to the City of Ottawa Zoning By-law, Section 101, a car wash does not require any parking spaces. According to the site plan dated April 2025, a total of 17 parking spaces is provided, including 14 equipped with vacuum cleaners (vacuum stalls). One of the parking stalls is designed as accessible.

4.3 Boundary Street Design

This section determines design elements of boundary streets required to accommodate the proposed development, consistent with the City's complete street philosophy and its urban design objectives for the development area.

The proposed development itself does not need to accommodate active or public transportation facilities. However, a multimodal level of service (MMLOS) analysis is required to ensure that the proposed development does not negatively impact the surrounding transportation system or public realm.

A MMLOS analysis has been conducted for Lancelot Drive **(Table 8**), for the east-west roadway through the Nepean Crossroads Centre (**Table 9**) and for West Hunt Club Road between Lancelot Drive and Merivale Road (**Table 10**). The selected LOS targets are those of the City's "Outer Urban or Suburban" land use designation as documented in the MMLOS Guidelines Update (2025). Detailed reports are available in **Appendix H**.

Table 8: MMLOS Results Summary – Lancelot Drive

Mode	LOS Target	Overall Score		Critical Score		Deviation
		West Side	East Side	West Side	East Side	
Pedestrian	C	–	A	–	F	-3
Bicycle	C	D	D	D	D	-1
Public Realm	–	D	B	–	–	–

A 2 m sidewalk with a 2 m boulevard is provided on the east side of Lancelot Drive along the edge of the project side. However, the section of the sidewalk between the project site and West Hunt Club Road is narrower, i.e. 1.3 m. A sidewalk width less than 1.5 m automatically yields a pedestrian LOS F regardless of any other factors. The City of Ottawa should consider widening the sidewalk to 2 m for

consistency with the sidewalk network within the Nepean Crossroads Centre. It is noted that the proposed development does not require a wider sidewalk.

Cyclists are expected to use the same facilities as car drivers. This is appropriate within a commercial plaza where car traffic is expected to move slowly. The bicycle LOS can be improved in theory by reducing the speed limit to 40 km/h or 30 km/h.

The public realm LOS is not affected by the proposed development.

Table 9: MMLOS Results Summary – East-West Roadway through Nepean Crossroads Centre

Mode	LOS Target	Overall Score		Critical Score		Deviation
		North Side	South Side	North Side	South Side	
Pedestrian	C	–	A	–	E	-2
Bicycle	C	D	D	D	D	-1
Public Realm	–	D	B	–	–	–

A 2 m sidewalk with a 2 m boulevard is provided on the south side of the east-west roadway through the Nepean Crossroads Centre. However, the existing sidewalk is located within the limits of the project site, and the proposed development includes a relocation of the sidewalk closer to the roadway. The proposed sidewalk is 1.6 m wide; a sidewalk width less than 1.8 m automatically yields a pedestrian LOS E. A sidewalk width of at least 1.8 m (ideally 2.0 m) is recommended to properly accommodate pedestrians.

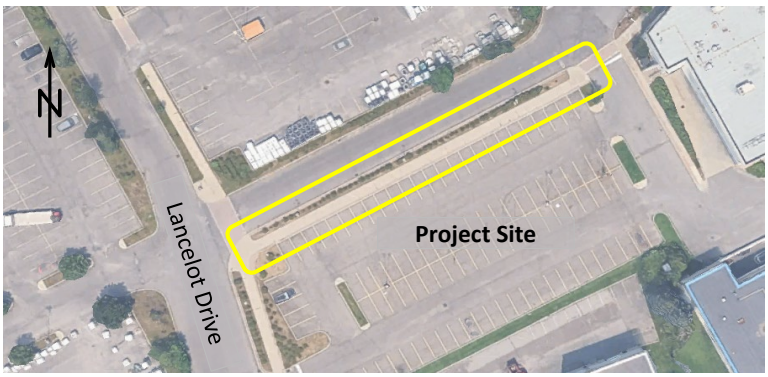


Figure 9: Existing Sidewalk Proposed to be Relocated

As mentioned previously, the bicycle LOS can be improved in theory by reducing the speed limit to 40 km/h or 30 km/h.

Since the sidewalk is replaced instead removed, the public realm LOS remains the same.

Table 10: MMLOS Results Summary – West Hunt Club Road

Mode	LOS Target	Overall Score		Critical Score		Deviation
		North Side	South Side	North Side	South Side	
Pedestrian	C	B	B	B	F	-3
Bicycle	C	D	D	D	D	-1
Transit	E	D	D	–	–	+1
Public Realm	–	C	C	–	–	–

A 2 m sidewalk is provided on both sides of West Hunt Club Road, except for a small section on the south side where no sidewalk is provided (yielding a pedestrian LOS F). There is no boulevard between the sidewalks and the roadway, but a bicycle lane is provided on the roadway, creating a buffer between the sidewalk and vehicular traffic.

Painted bicycle lanes on a high-capacity, high-speed roadway are not ideal, hence the bicycle LOS D.

Bus service is provided on West Hunt Club Road. The service exceeds the transit LOS target.

The public realm LOS is not affected by the proposed development.

4.4 Access Intersection Design

The proposed driveway on Lancelot Drive replaces an existing driveway at the same location, i.e. about 70 m north of West Hunt Club Road and 25 m south of the east-west roadway through the Nepean Crossroads Centre. Its 9.0 m width meets the recommended 7.2 m to 12 m width for a commercial development, and its throat length of approximately 15 m meets the recommended 8 to 15 m that would be required off a collector road, according to Table 8.9.3 from the Transportation Association of Canada's Geometric Design Guide for Canadian Roads.

The proposed driveway on the northeast of the project site also replaces an existing driveway at the same location. This driveway will be an exit-only access, so it is not expected to interfere with existing traffic on the receiving roadway.

The existing driveway on the southeast corner of the project site is eliminated.

4.5 Transportation Demand Management

[Exempt]

4.6 Neighbourhood Traffic Management

[Exempt]

4.7 Transit

4.7.1 Route Capacity

[Exempt]

4.7.2 Transit Priority

While transit priority measures may improve the transit service on West Hunt Club Road and on Merivale Road, the proposed development is not expected to generate a significant number of transit trips. Therefore, transit priority measures are not warranted in the context of this project.

4.8 Review of Network Concept

[Exempt]

4.9 Intersection Design

4.9.1 Multimodal LOS

This section determines design elements of signalized intersections required to accommodate the proposed development, consistent with the City's complete street philosophy and its urban design objectives for the development area.

The proposed development itself does not need to accommodate active or public transportation facilities. However, a MMLOS analysis is required to identify any existing non-auto transportation needs that the proposed development might be able to accommodate.

A MMLOS analysis has been conducted for the signalized intersections listed in **Section 2.2.1**. The selected LOS targets correspond to either the City's "Outer Urban or Suburban" land use designation or, in the case of the intersections on Merivale Road, the "Mainstreet Corridor" transect, as documented in the MMLOS Guidelines Update (2025).

The results of the MMLOS analysis for signalized intersections are presented in **Table 11**. Detailed reports are available in **Appendix H**. The methodology for the Auto LOS calculations is described in **Section** Error! Reference source not found. **Error! Reference source not found.**.

Table 11: MMLOS Results Summary – Signalized Intersections

Intersection	Mode	Target LOS	Overall	Deviation
West Hunt Club Road / Cleopatra Drive / Lancelot Drive	Pedestrian	C	C	0
	Bicycle	C	E	-2
	Transit	E	E	0
	Auto	E	C	+2
West Hunt Club Road at 200 m west of Merivale Road	Pedestrian	C	C	0
	Bicycle	C	D	-1
	Transit	E	E	0
	Auto	E	B	+3
Merivale Road / West Hunt Club Road	Pedestrian	B	E	-3
	Bicycle	C	E	-2
	Transit	E	E	0
	Auto	E	E	0
Merivale Road at 170 m north of West Hunt Club Road	Pedestrian	B	C	-1
	Bicycle	C	D	-1
	Transit	E	E	0
	Auto	E	D	+1

The MMLOS analysis indicates that the auto LOS and the transit LOS at all four signalized intersections meet or exceed their target whereas the bicycle LOS is consistently below its target and the pedestrian LOS either meets or is slightly below the target.

The pedestrian LOS could be improved by reducing the crossing distances (for example, by removing some car lanes), providing median refuges, and/or converting the existing right-turn channels to smart channels. The bicycle LOS could be improved by converting the painted lanes to cycle tracks, adding cycling facilities on Merivale Road and/or reducing the posted speed on West Hunt Club Road.

However, the need for better pedestrian or bicycle LOS is not triggered by the proposed development.

4.9.2 Vehicular Capacity

The performance of vehicular traffic at the intersections under study has been analyzed in further details using Synchro. Three measures of effectiveness are used for comparison: the volume-to-capacity ratio (V/C), the average delay in seconds, and the 95th percentile queue length in metres.

The auto LOS at unsignalized intersections is based on the average delay; LOS A is attributed to a delay of 10 seconds or less while LOS F is attributed to a delay of more than 50 seconds. As per the MMLOS

Guidelines, the auto LOS at signalized intersections is based on V/C; LOS A is attributed to V/C ≤ 0.60 while LOS F is attributed to V/C > 1.00.

The traffic signals have been coded in Synchro using the timing and phasing plans provided by the City of Ottawa, including the cycle lengths and the amber, all-red and pedestrian clearances, but with optimized split times.

By default, the values presented in the tables below represent 2025 traffic conditions **with and without** the proposed development. Where there is a difference, the values within brackets represent the 2031 traffic conditions with the proposed development.

Table 12 presents the auto capacity analysis at each of the four signalized intersections under study and **Table 13** presents the auto capacity analysis at each of the four Stop-controlled intersections within the Nepean Crossroads Centre. Detailed Synchro reports are provided in **Appendix I**.

Table 12: Auto Capacity Analysis – Signalized Intersections

Intersection	Turning Movement	Morning Peak Hour				Afternoon Peak Hour			
		V/C	LOS	Delay (s)	95th Q (m)	V/C	LOS	Delay (s)	95th Q (m)
West Hunt Club Road / Cleopatra Drive / Lancelot Drive	Eastbound Left	0.20 [0.22]	A	7	16 [17]	0.24 [0.28]	A	10	10 [12]
	Eastbound Through	0.73	C	19	283	0.43	A	13	110
	Eastbound Right	0.22	A	5	27	0.04	A	0	0
	Westbound Left	0.47	A	31	28	0.07	A	4	3
	Westbound Through	0.41	A	6	23	0.70	B	10	76 [79]
	Westbound Right	0.02 [0.03]	A	0	0	0.02 [0.04]	A	0	0
	Northbound Left	0.32	A	55	17	0.64 [0.65]	B	63 [64]	44
	Northbound Through/Right	0.21	A	19	10	0.34	A	12	15
	Southbound Left	0.06 [0.14]	A	44 [48]	5 [8]	0.15 [0.25]	A	44 [47]	13 [20]
	Southbound Through/Right	0.11 [0.13]	A	24 [22]	7 [8]	0.22 [0.26]	A	13 [12]	12 [13]
	Overall	**0.73**	**C**	**14**	**–**	**0.70**	**B**	**14**	**–**

Table 12: Auto Capacity Analysis – Signalized Intersections (continued)

Intersection	Turning Movement	Morning Peak Hour				Afternoon Peak Hour			
		V/C	LOS	Delay (s)	95th Q (m)	V/C	LOS	Delay (s)	95th Q (m)
West Hunt Club Road at 200 m west of Merivale Road	Eastbound Left	0.11	A	3	3	0.16	A	3	2
	Eastbound Through/Right	0.62	B	6	64 [66]	0.31 [0.32]	A	2	12
	Westbound Left	0.03	A	5	0	0.03	A	4	1
	Westbound Through/Right	0.29	A	3	21 [22]	0.38 [0.39]	A	4	94
	Northbound All	0.07	A	39	6	0.17	A	29	10
	Southbound Left	0.13	A	51	8	0.29	A	55	17
	Southbound Through/Right	0.28	A	20	11	0.33	A	17	13
	Overall	**0.62**	**B**	**6**	**–**	**0.38 [0.39]**	**A**	**5**	**–**
Merivale Road / West Hunt Club Road	Eastbound Left	0.74	C	80	56	0.90	D	95	64
	Eastbound Through/Right	0.96 [0.97]	E	51 [52]	179 [182]	0.83 [0.85]	D	49	107 [110]
	Westbound Left	0.87	D	113	59	0.92	E	106	86
	Westbound Through/Right	0.65	B	43	82	0.96 [0.97]	E	58	159 [162]
	Northbound Left	0.73 [0.75]	C	85 [88]	49 [53]	0.89 [0.92]	D [E]	102	78 [83]
	Northbound Through	0.97	E	82	184	0.61	B	44	89
	Northbound Right	0.16	A	1	0	0.23	A	4	9
	Southbound Left	0.88	D	107 [106]	49	0.65	B	80	41
	Southbound Through	0.51	A	36	44	0.96	E	59	153
	Southbound Right	0.44	A	7	21	0.56	A	11	34
	Overall	**0.97**	**E**	**58 [59]**	**–**	**0.96 [0.97]**	**E**	**57 [58]**	**–**

Table 12: Auto Capacity Analysis – Signalized Intersections (continued)

Intersection	Turning Movement	Morning Peak Hour				Afternoon Peak Hour			
		V/C	LOS	Delay (s)	95th Q (m)	V/C	LOS	Delay (s)	95th Q (m)
Merivale Road at 170 m north of West Hunt Club Road	Eastbound Left	0.58 [0.60]	A	62 [63]	37 [40]	0.82 [0.83]	D	80	59 [62]
	Eastbound Through/Right	0.20	A	26 [25]	15	0.28	A	15	19
	Westbound All	0.06	A	28	5	0.46 [0.44]	A	28	27
	Northbound Left	0.14	A	74 [75]	4	0.19	A	63	6
	Northbound Through	0.68 [0.69]	B	7	181	0.54	A	10 [11]	50
	Northbound Right	0.09	A	0	0	0.15	A	1	1
	Southbound Left	0.47	A	73	26	0.43	A	68 [69]	25
	Southbound Through	0.38 [0.39]	A	11 [12]	91	0.60	A	18	157
	Southbound Right	0.08	A	3	7 [8]	0.17 [0.18]	A	5	16 [17]
	Overall	**0.68 [0.69]**	**B**	**13**	**–**	**0.82 [0.83]**	**D**	**19**	**–**

Table 13: Auto Capacity Analysis – All-Way Stop-Controlled Intersections

Int.	Turning Movement	Morning Peak Hour			Afternoon Peak Hour		
		V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
1	Eastbound All	0.03	7	A	0.03	7	A
	Westbound All	0.04 [0.05]	7	A	0.08 [0.10]	8	A
	Northbound All	0.07 [0.08]	7	A	0.08 [0.09]	7	A
	Southbound All	0.02	7	A	0.03	7	A
2	Eastbound All	0.08 [0.09]	7	A	0.06 [0.07]	7	A
	Westbound All	0.04	7	A	0.07 [0.08]	7	A
	Northbound All	(no traffic volume)			0.00	7	A
	Southbound All	0.02	7	A	0.03	7	A

Table 13: Auto Capacity Analysis – All-Way Stop-Controlled Intersections (continued)

Int.	Turning Movement	Morning Peak Hour			Afternoon Peak Hour		
		V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
3	Eastbound All	0.10 [0.11]	8	A	0.13 [0.14]	8	A
	Westbound All	0.04 [0.05]	7	A	0.17 [0.19]	8	A
	Northbound All	0.03	7	A	0.08	8	A
	Southbound All	0.02	7	A	0.06	8	A
4	Eastbound All	0.07 [0.08]	8	A	0.20 [0.22]	9	A
	Westbound Left/Through	0.10 [0.11]	7	A	0.26 [0.28]	9	A
	Westbound Right	0.05	6	A	0.11	7	A
	Northbound All	0.04	7	A	0.07	8	A
	Southbound All	0.05	8	A	0.14	9	A

The results indicate that, while the signalized intersections are operating near capacity with optimized timings, the proposed development has a very minor impact on traffic performance. Therefore, no mitigation measures are required to accommodate the proposed development.

CONCLUSIONS

The proposed development, an automated car wash comprising of a car wash tunnel with 3 queue lanes and 14 vacuum stalls, is located within an existing commercial plaza, the Nepean Crossroads Centre, on the northwest quadrant of the Merivale Road / West Hunt Club Road intersection.

It is provided with a full access off Lancelot Drive and an exit-only access on the other (east) side of the property. Traffic generated by the development is expected to be car traffic only and most of the generated traffic is expected to come from West Hunt Club Road.

Trips generated by the proposed development will not significantly impact traffic operations on Merivale Road and West Hunt Club Road and do no trigger any requirements for modifications to the existing roadway system.

The proposed development includes the relocation of the sidewalk bordering the north side of the project site. To avoid a degradation of the pedestrian level of service, it is recommended that the new sidewalk be at least 1.8 m, preferably 2.0 m to match the width of the existing sidewalks within the Nepean Crossroads Centre. Otherwise, the proposed development is not expected to cause any significant impacts on non-auto modes of transportation or the public realm.

Appendix A

TIA Certificate

Certification Form for TIA Study PM

TIA Plan Reports

On April 14, 2022, the Province's Bill 109 received Royal Assent providing legislative direction to implement the More Homes for Everyone Act, 2022 aiming to increase the supply of a range of housing options to make housing more affordable. Revisions have been made to the TIA guidelines to comply with Bill 109 and streamline the process for applicants and staff.

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 they meet the four criteria listed below.

CERTIFICATION

- ☑ 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; (Update effective July 2023)
- ☑ 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;
- ☑ 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
- ☑ I am either a licensed or registered[1] professional in good standing, whose field of expertise
  - ☑ is either transportation engineering
  - ☐ or transportation planning.

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

City Of Ottawa
Planning, Real Estate and Economic Development
110 Laurier Avenue West, 4th fl.
Ottawa, ON
K1P 1J1
Tel. : 613-580-2424
Fax: 613-560-6006

Revision Date: June 2023

Dated at Ottawa (City) this 23rd day of October, 20 24.

Name : Daniel Riendeau

Professional title: Transportation Engineer

Signature of individual certifier that s/he/they meet the above criteria

Office Contact Information (Please Print)
Address: 201-100 Craig Henry Drive
City / Postal Code: Ottawa, ON K2G 5W3
Telephone / Extension: 613-228-4813
Email Address: daniel.riendeau@bteng.ca

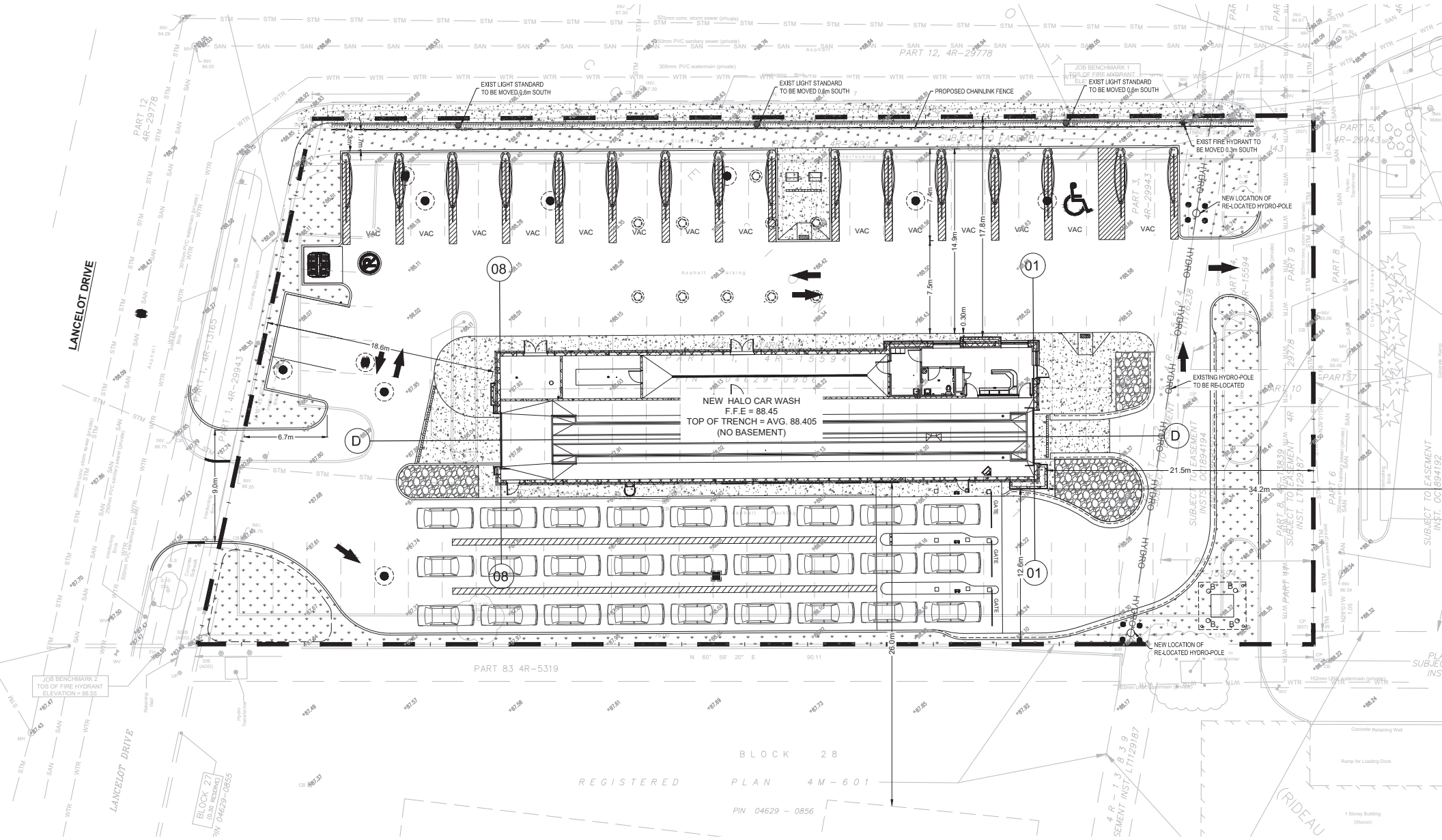
Stamp

LICENSED PROFESSIONAL ENGINEER
D. RIENDEAU
100149941
2024-10-23
PROVINCE OF ONTARIO

Revision Date: June 2023

Appendix B

Site Plan


LANCELOT DRIVE
EXIST LIGHT STANDARD TO BE MOVED 0.6m SOUTH
EXIST LIGHT STANDARD TO BE MOVED 0.6m SOUTH
PROPOSED CHAINLINK FENCE
EXIST LIGHT STANDARD TO BE MOVED 0.6m SOUTH
EXIST FIRE HYDRANT TO BE MOVED 0.3m SOUTH
NEW LOCATION OF RE-LOCATED HYDRO-POLE
EXISTING HYDRO-POLE TO BE RE-LOCATED
NEW LOCATION OF RE-LOCATED HYDRO-POLE
NEW HALO CAR WASH
F.F.E = 88.45
TOP OF TRENCH = AVG. 88.405
(NO BASEMENT)
JOB BENCHMARK 1
TOS OF FIRE HYDRANT
ELEVATION = 88.55
JOB BENCHMARK 2
TOS OF FIRE HYDRANT
ELEVATION = 88.55
PART 83 4R-5319
BLOCK 28
REGISTERED PLAN 4M-601
PIN 04629 - 0856
LANCELOT DRIVE
(RIDEAU

Appendix C

Traffic Count Reports

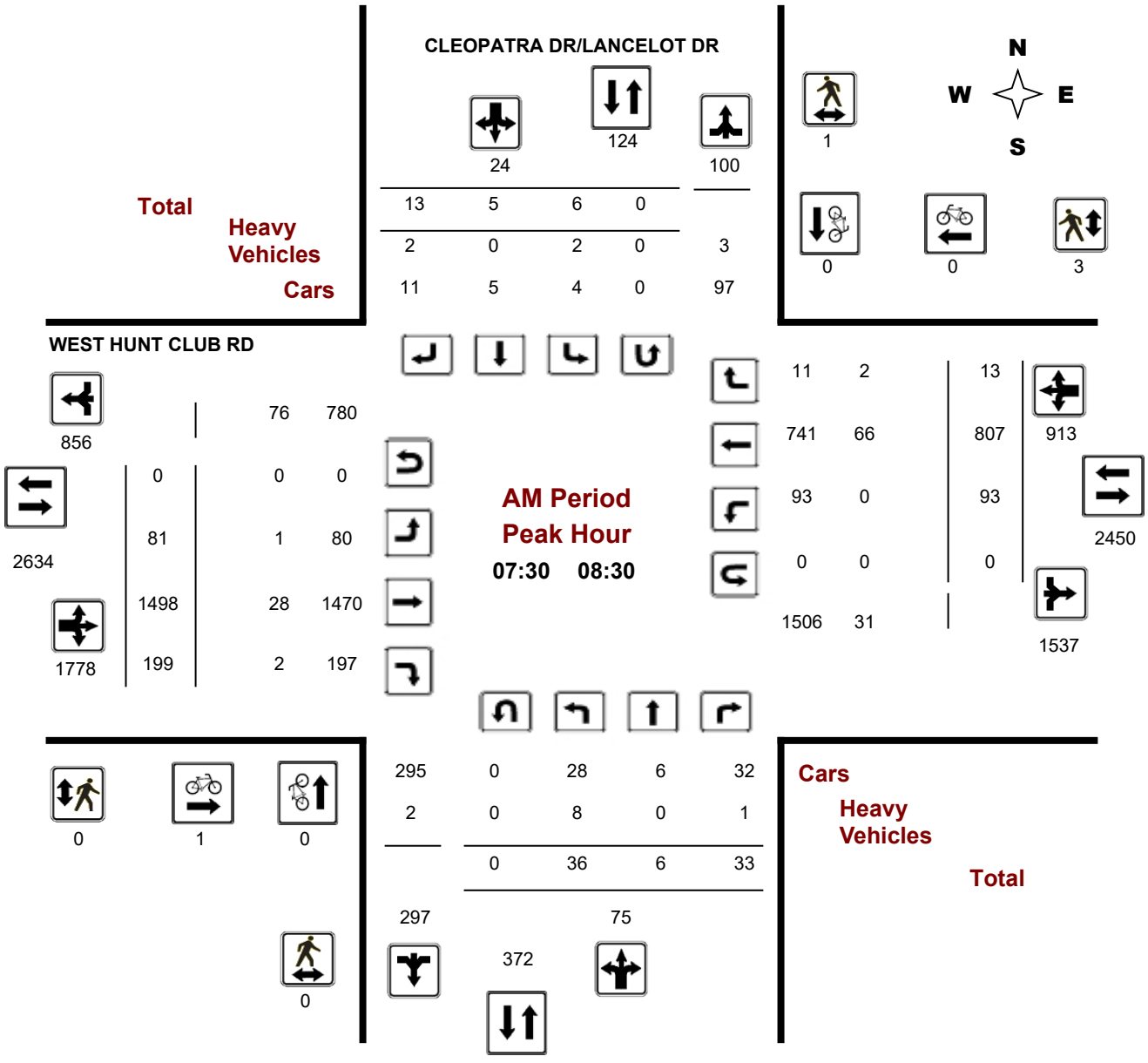
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR

Survey Date: Tuesday, January 14, 2020 **WO No:** 39313

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



Comments: 5470792 - TUE JAN 14, 2020 - 8HRS - LORETTA

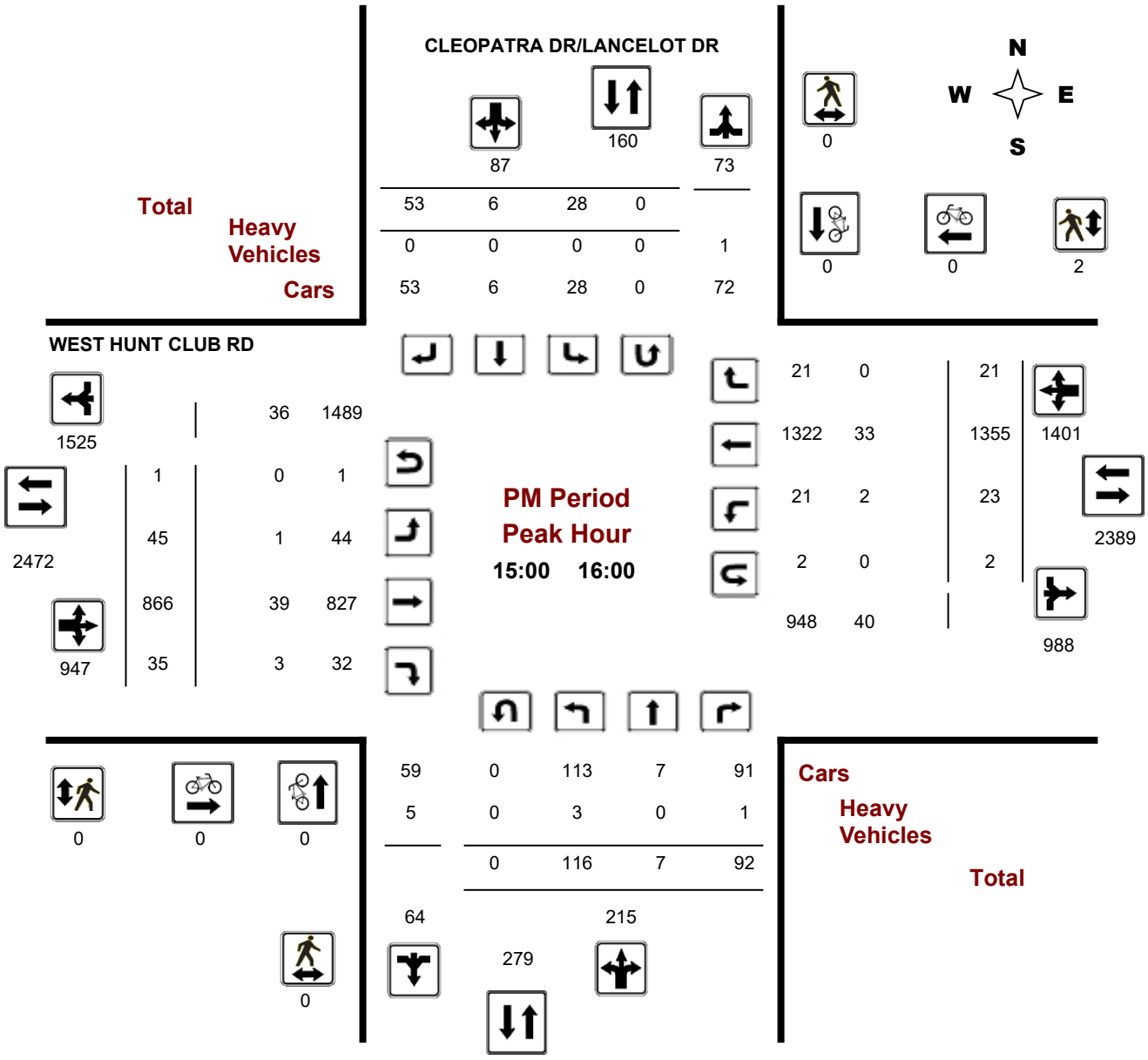
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR

Survey Date: Tuesday, January 14, 2020 **WO No:** 39313

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



Comments: 5470792 - TUE JAN 14, 2020 - 8HRS - LORETTA

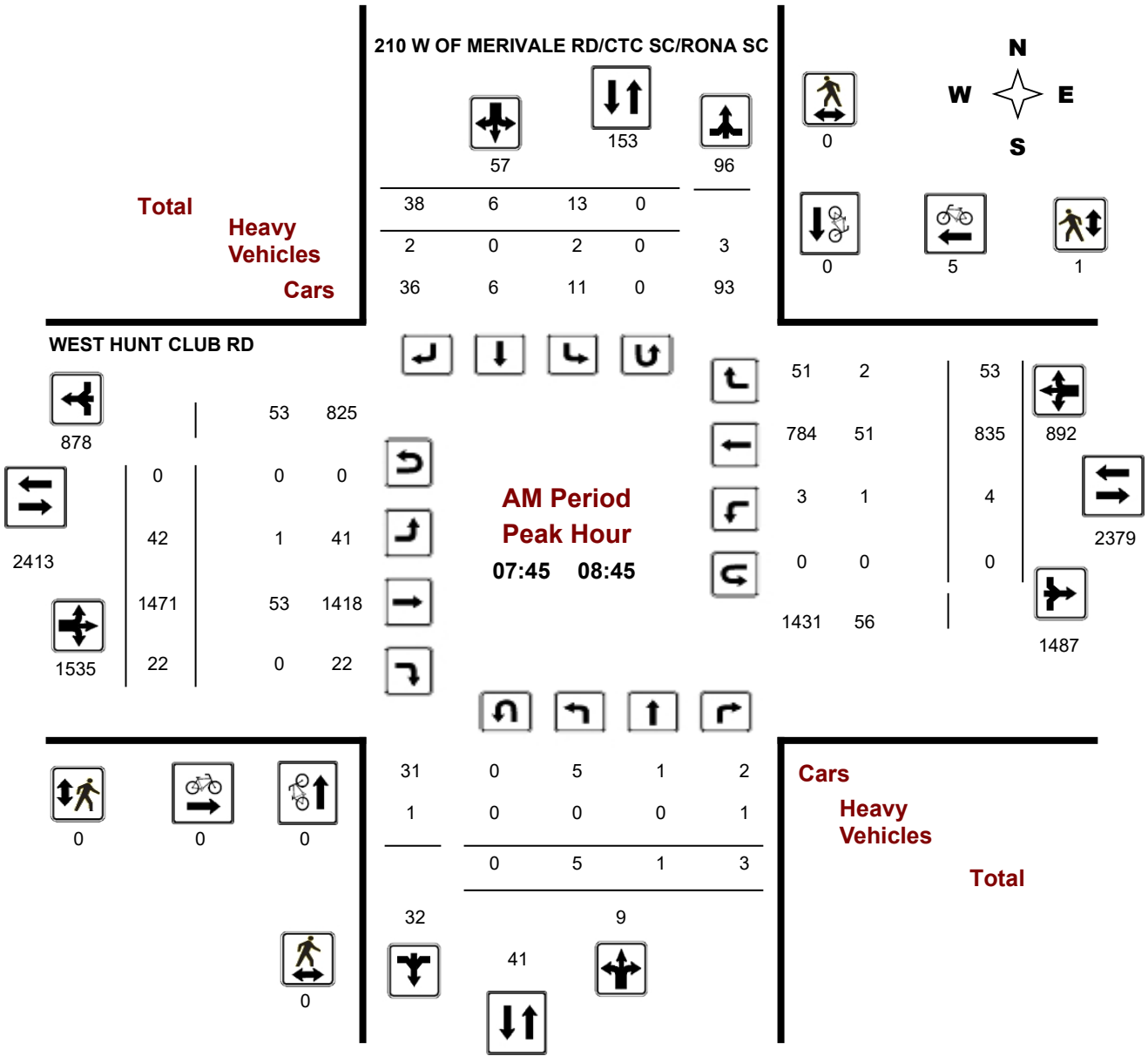
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

210 W OF MERIVALE RD/CTC SC/RONA SC @ WEST HUNT CLUB RD

Survey Date: Wednesday, February 07, 2018 **WO No:** 37513

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



Comments:

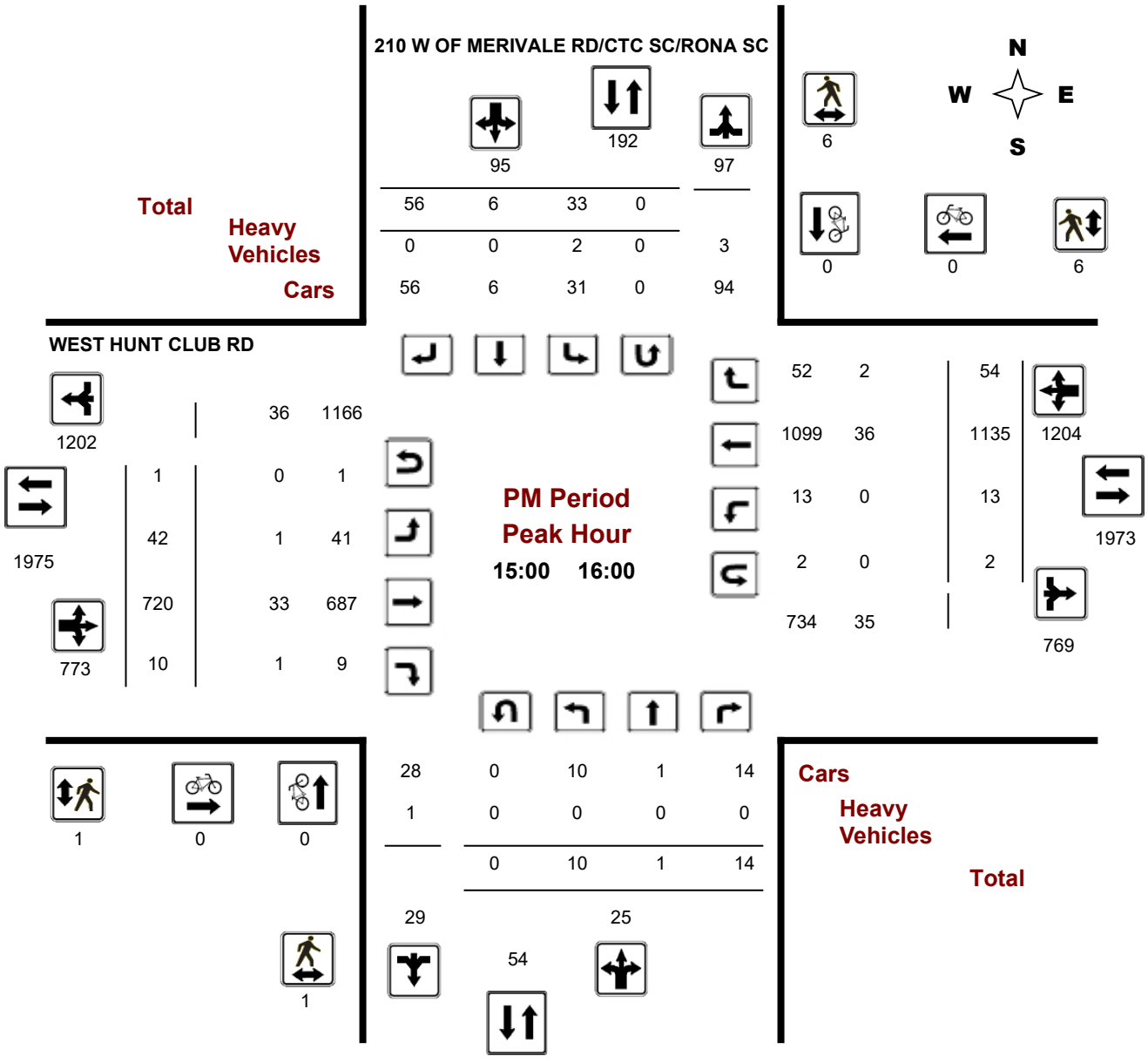
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

210 W OF MERIVALE RD/CTC SC/RONA SC @ WEST HUNT CLUB RD

Survey Date: Wednesday, February 07, 2018 **WO No:** 37513

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



Comments:

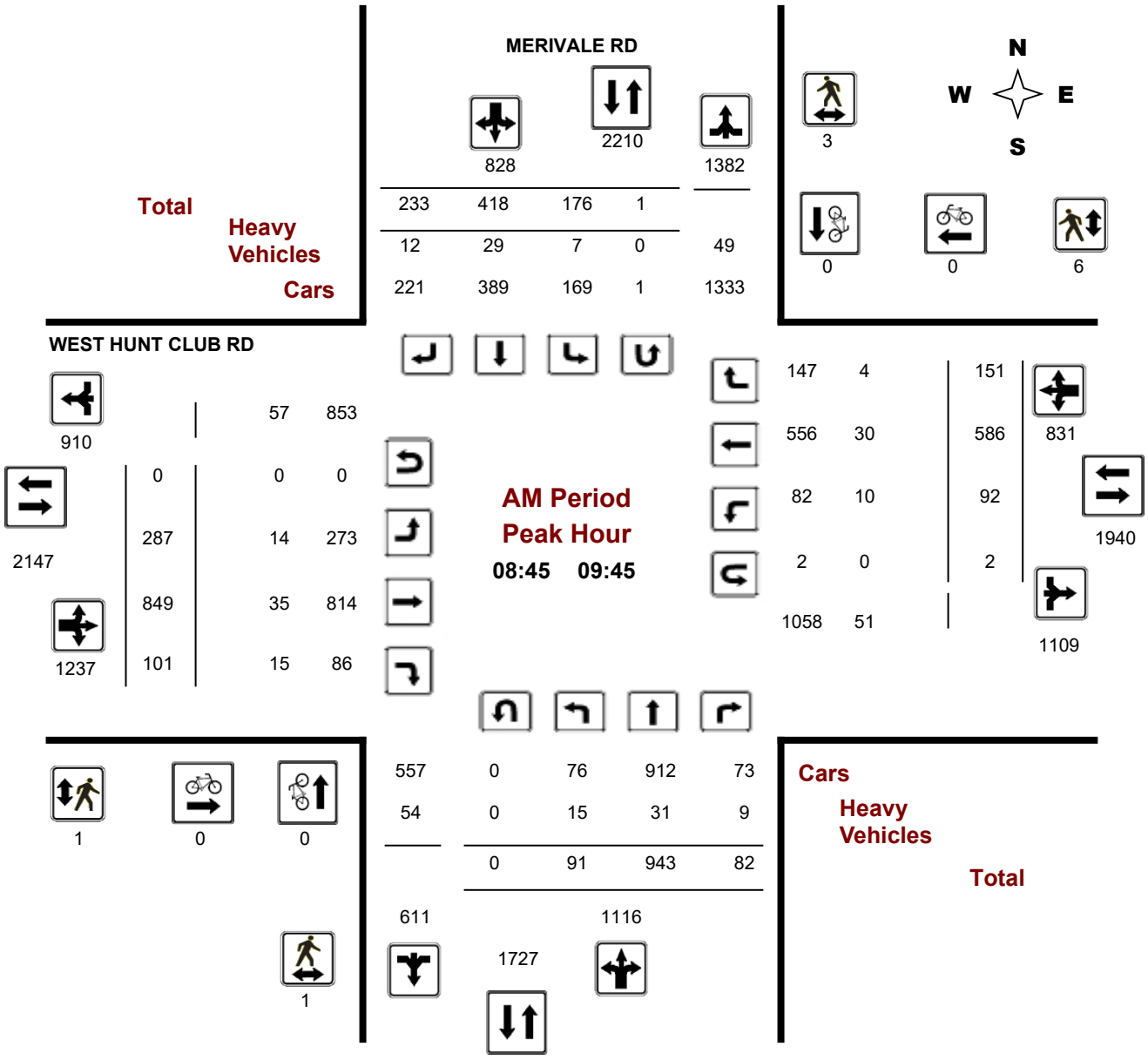
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MERIVALE RD @ WEST HUNT CLUB RD

Survey Date: Monday, February 10, 2020 **WO No:** 39439

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



Comments:

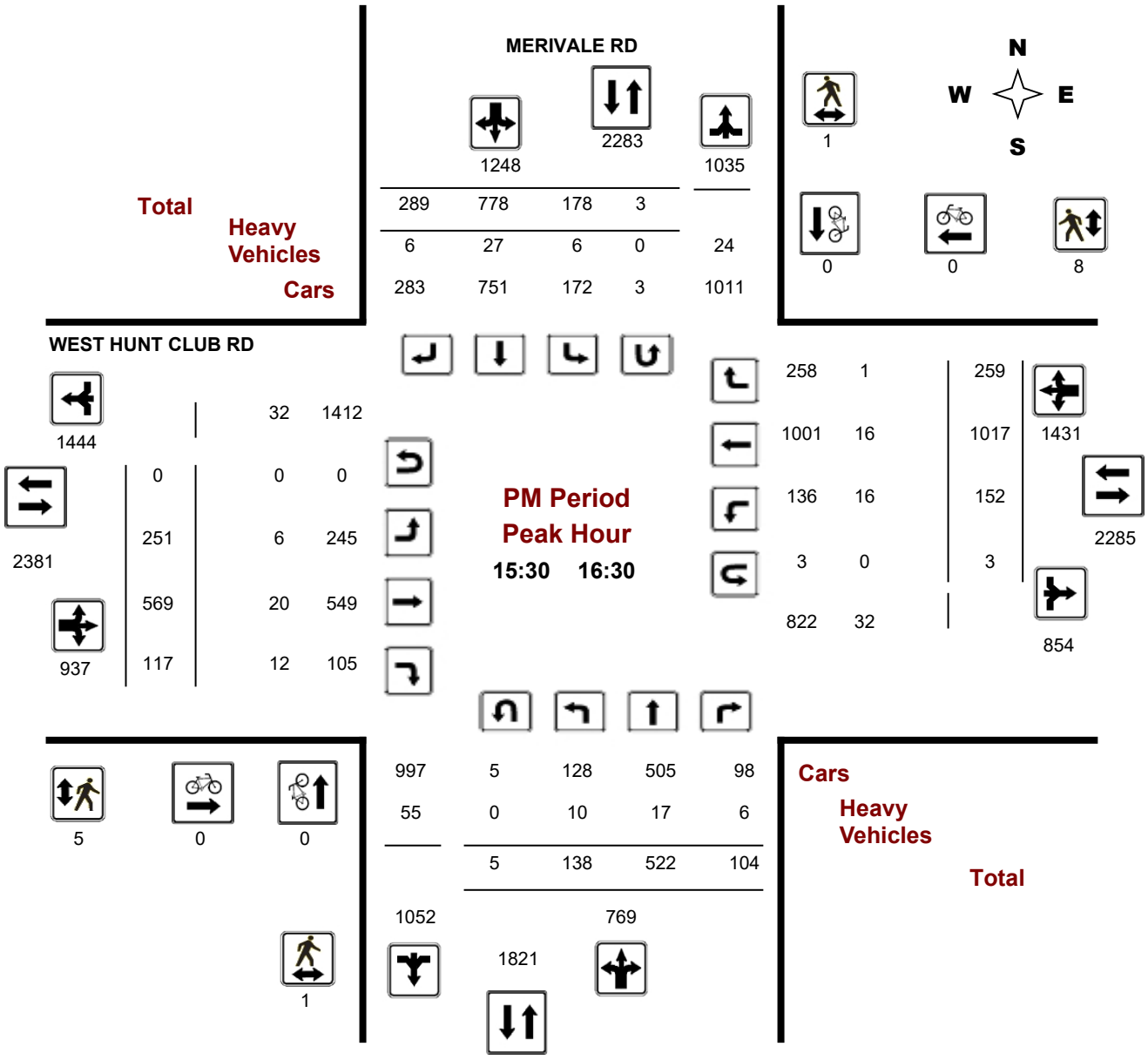
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MERIVALE RD @ WEST HUNT CLUB RD

Survey Date: Monday, February 10, 2020 **WO No:** 39439

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



Comments:

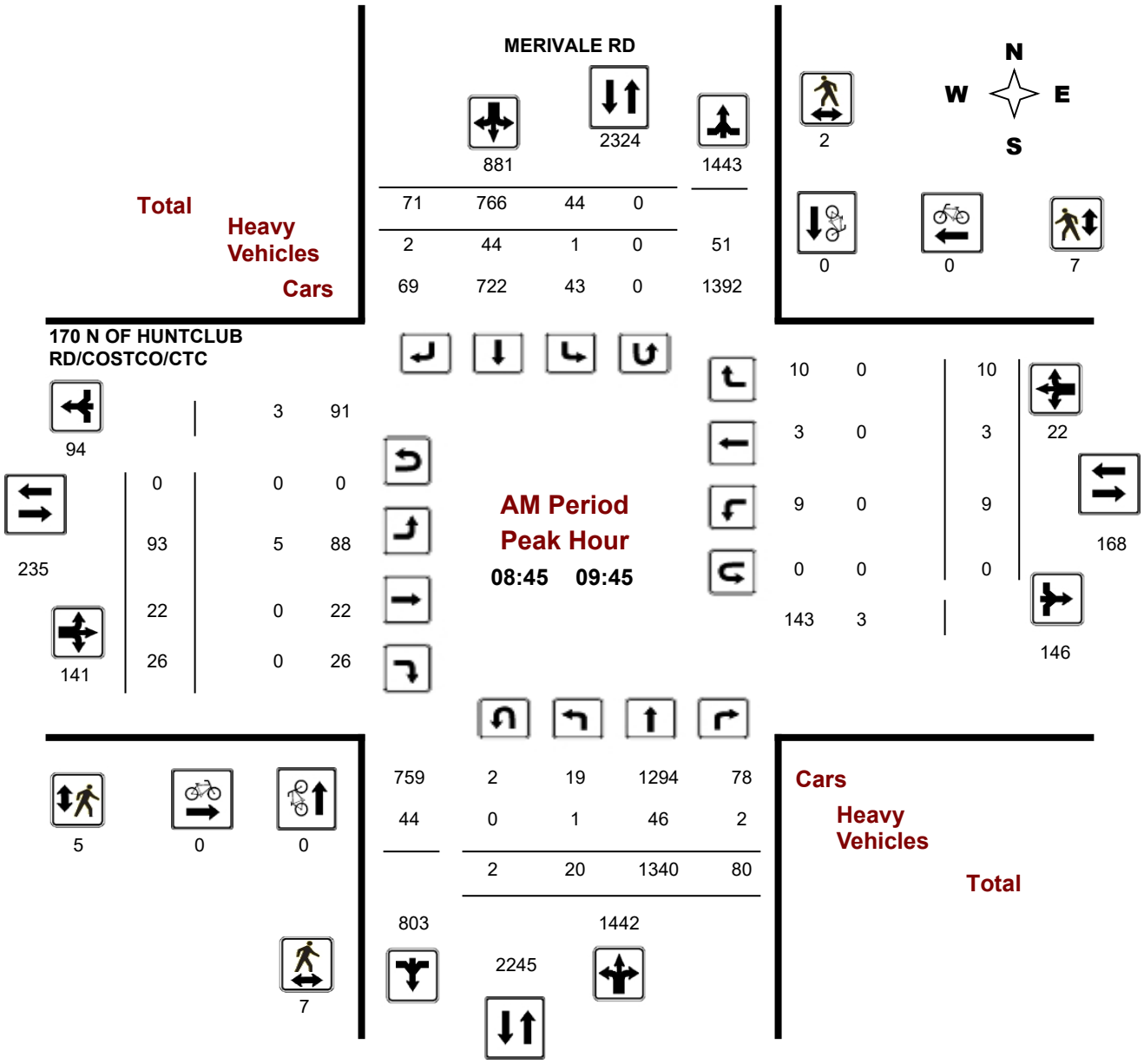
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MERIVALE RD @ 170 N OF HUNTCLUB RD/COSTCO/CTC

Survey Date: Monday, February 10, 2020 **WO No:** 39601

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



Comments: 5474752 - FEB 10 2020 - 8 HRS - LORETTA

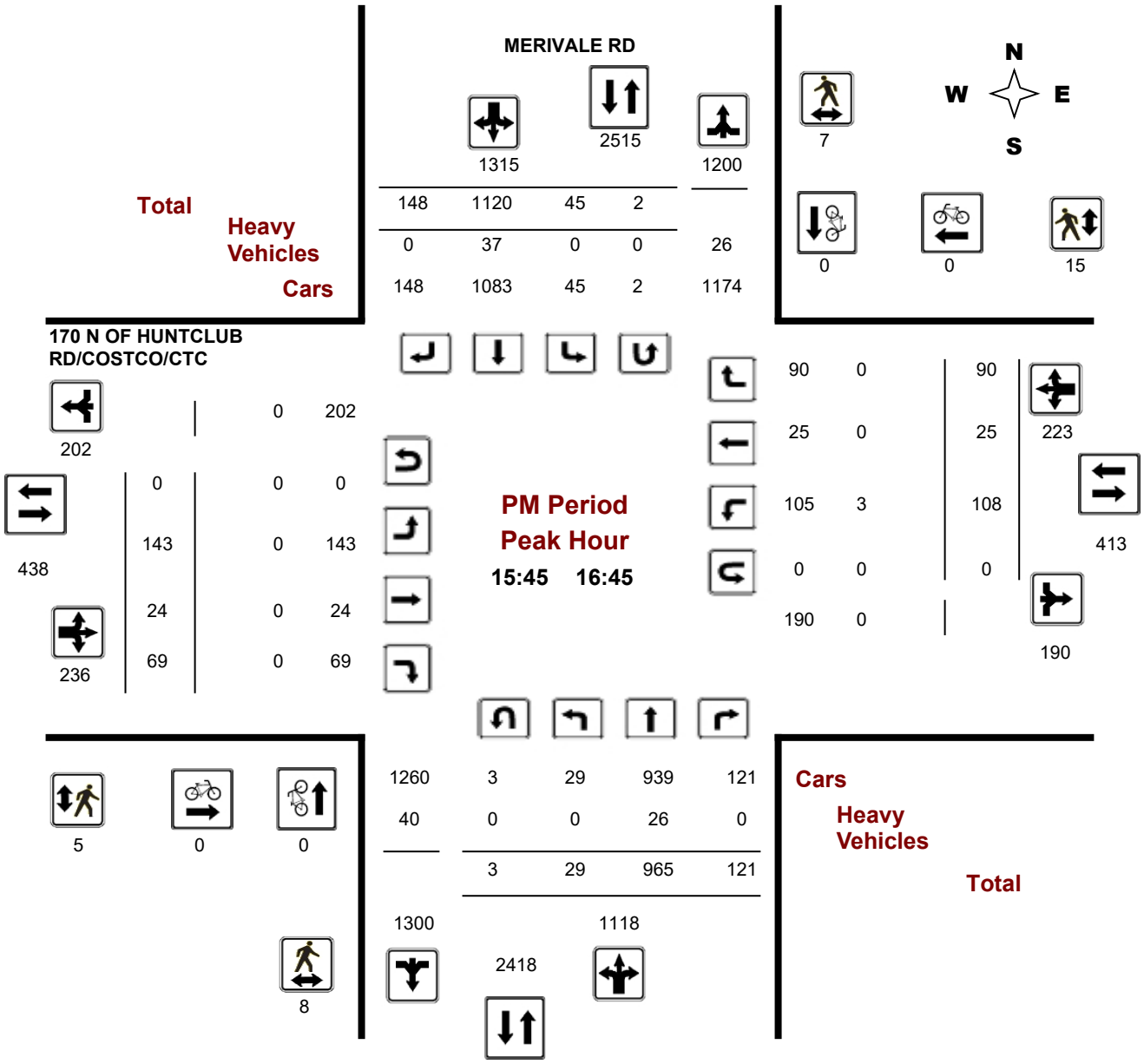
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MERIVALE RD @ 170 N OF HUNTCLUB RD/COSTCO/CTC

Survey Date: Monday, February 10, 2020 **WO No:** 39601

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



Comments: 5474752 - FEB 10 2020 - 8 HRS - LORETTA

BT ENGINEERING

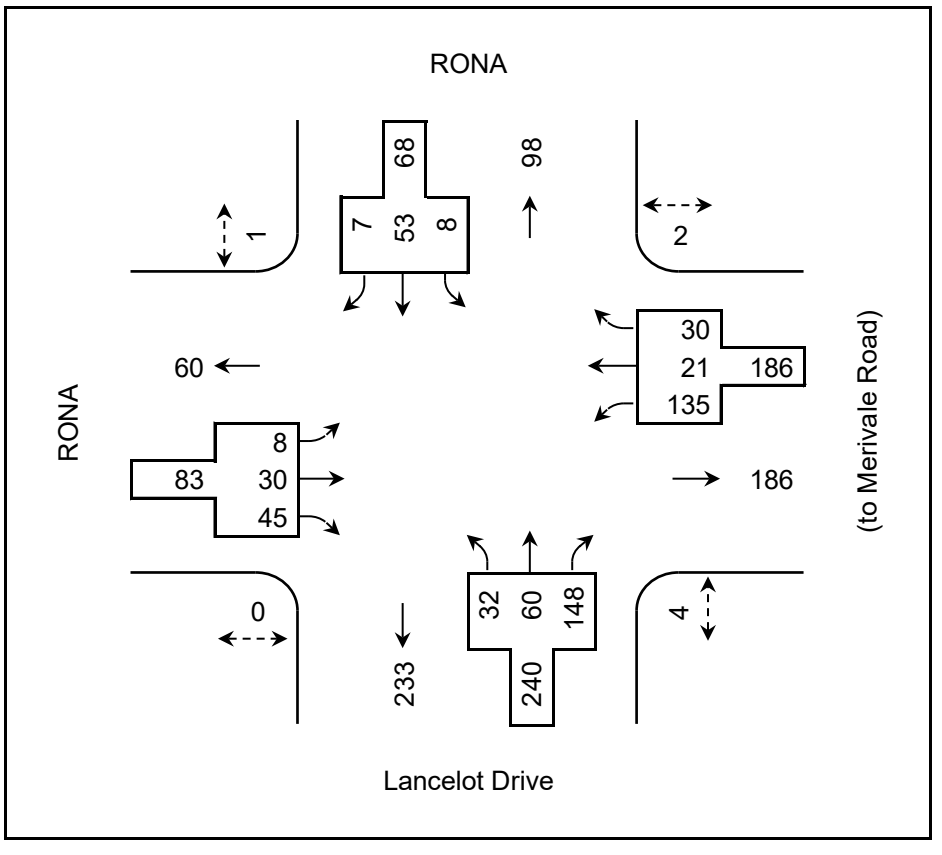
Vehicular Turning Movements – All Vehicles and Pedestrians

Nepean Crosstown Centre – Intersection 1 (Lancelot Drive near RONA)

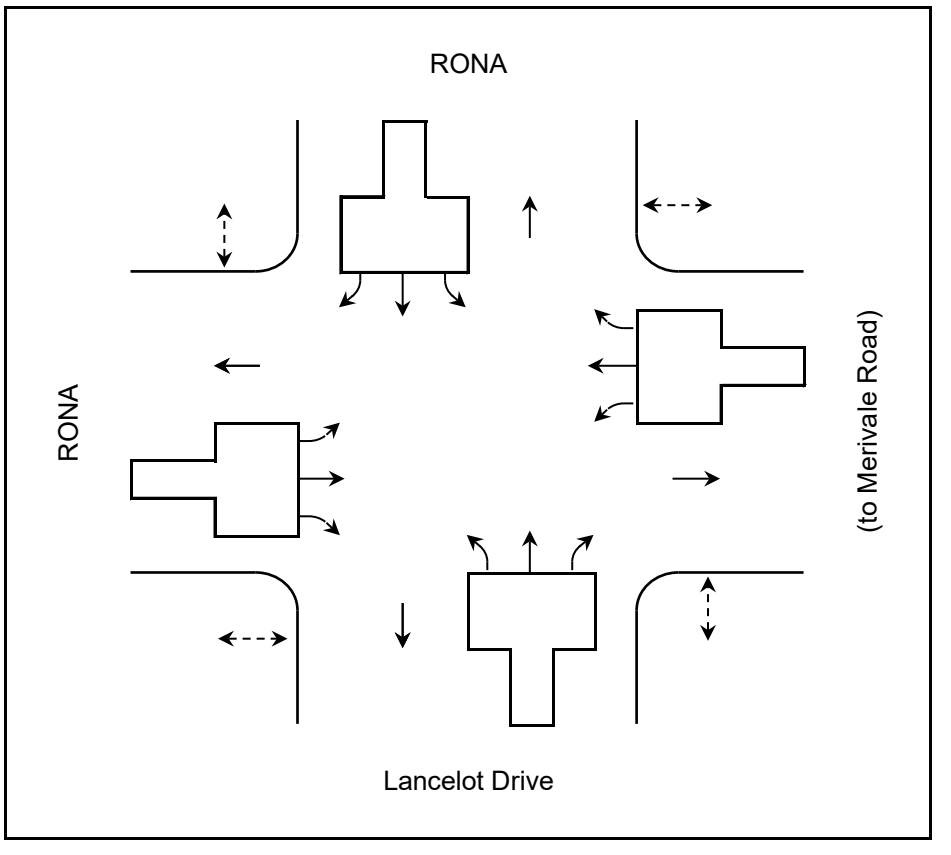
Survey Date: Tuesday, 15 April 2025
Performed By: BTE

N

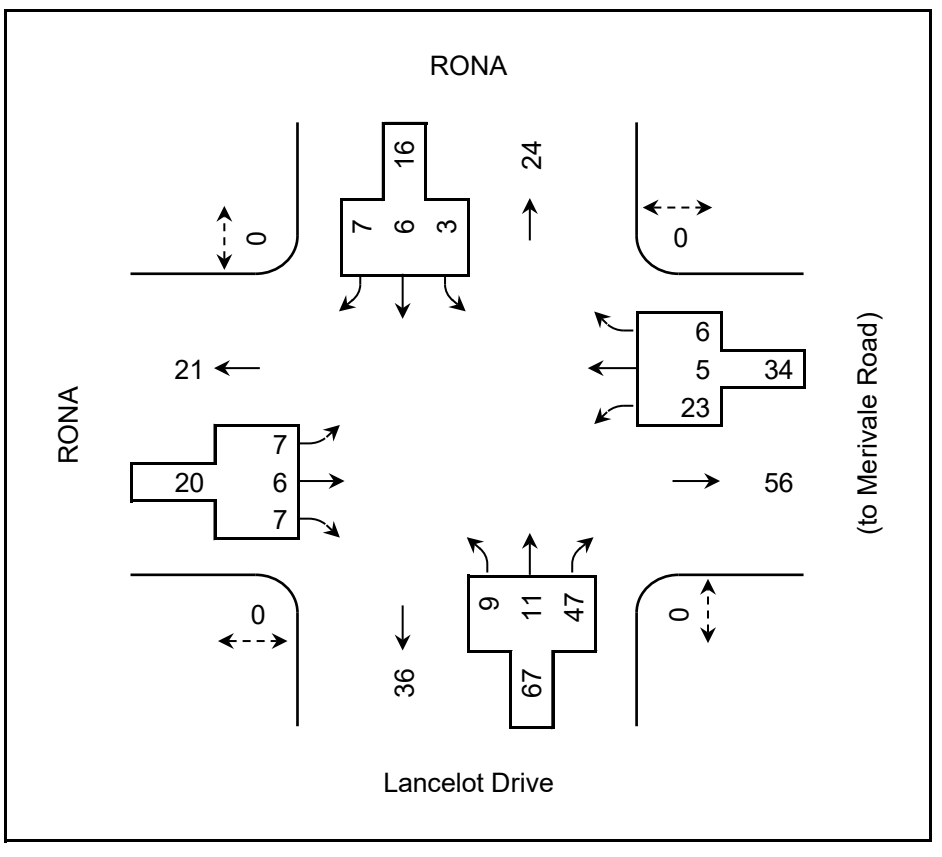
Full Period (4 hours)



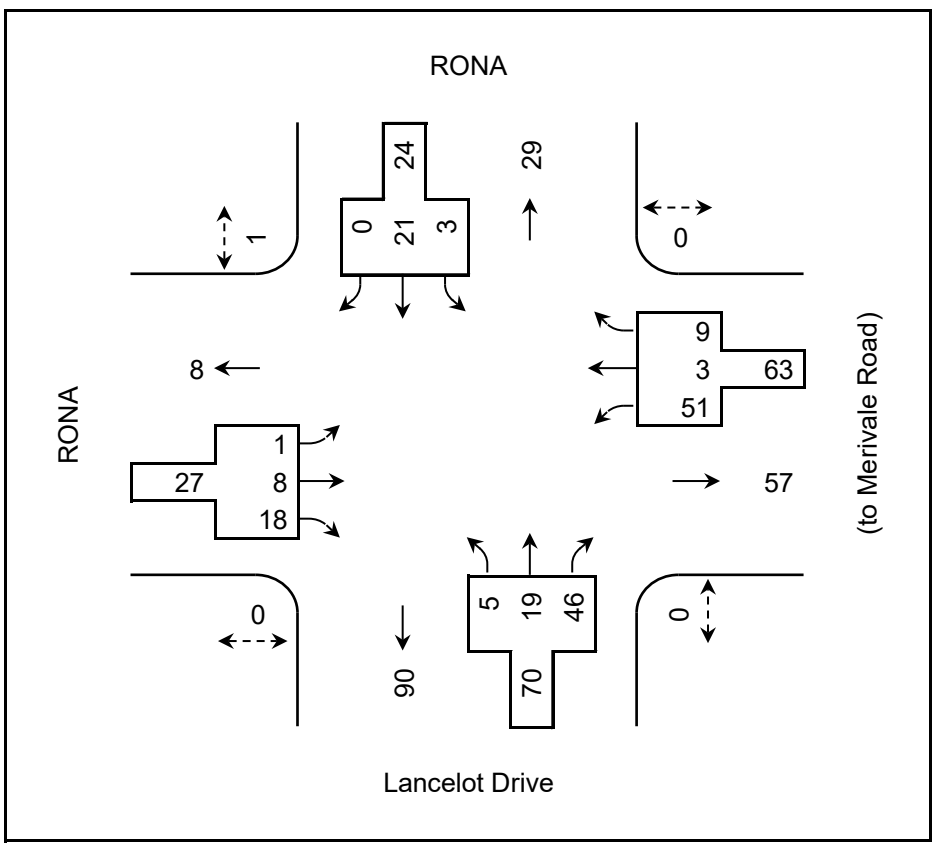
Midday Peak



Morning Peak (7:45–8:45)



Afternoon Peak (15:30–16:30)



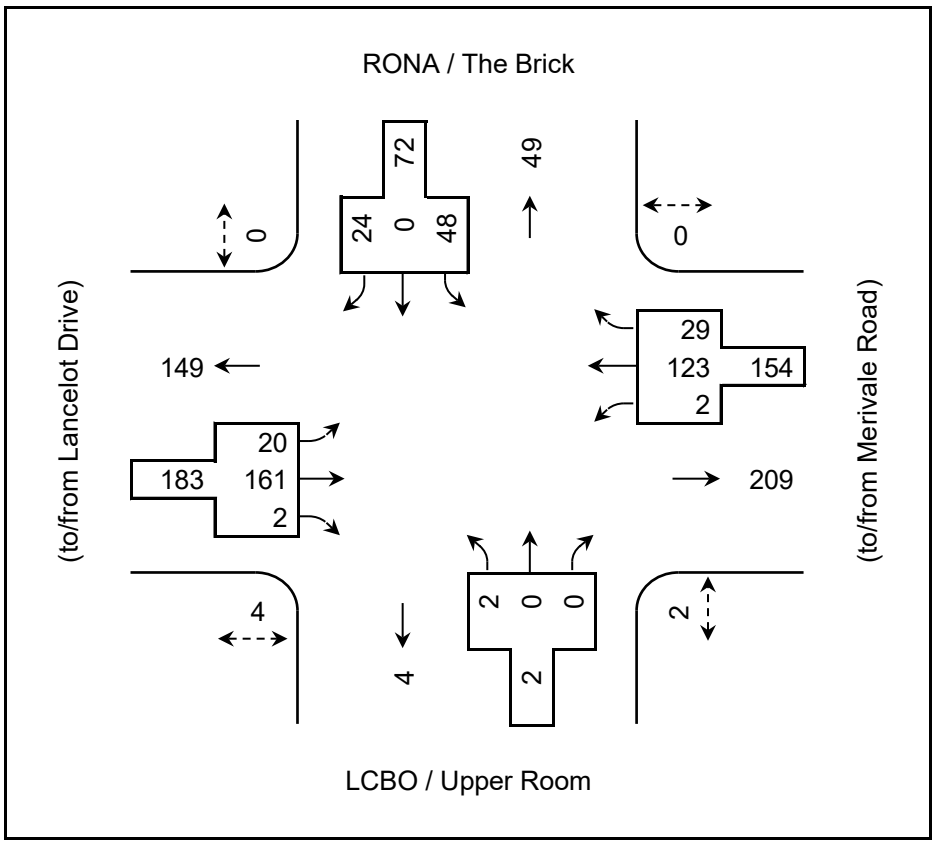
Note:
Volumes above include cars, heavy vehicles and vehicular cyclists.
Cars include motorcycles, passenger cars, pick-up trucks (including "heavy-duty"), full-size vans (i.e. Econoline), and any of these with a trailer.

Vehicular Turning Movements – All Vehicles and Pedestrians

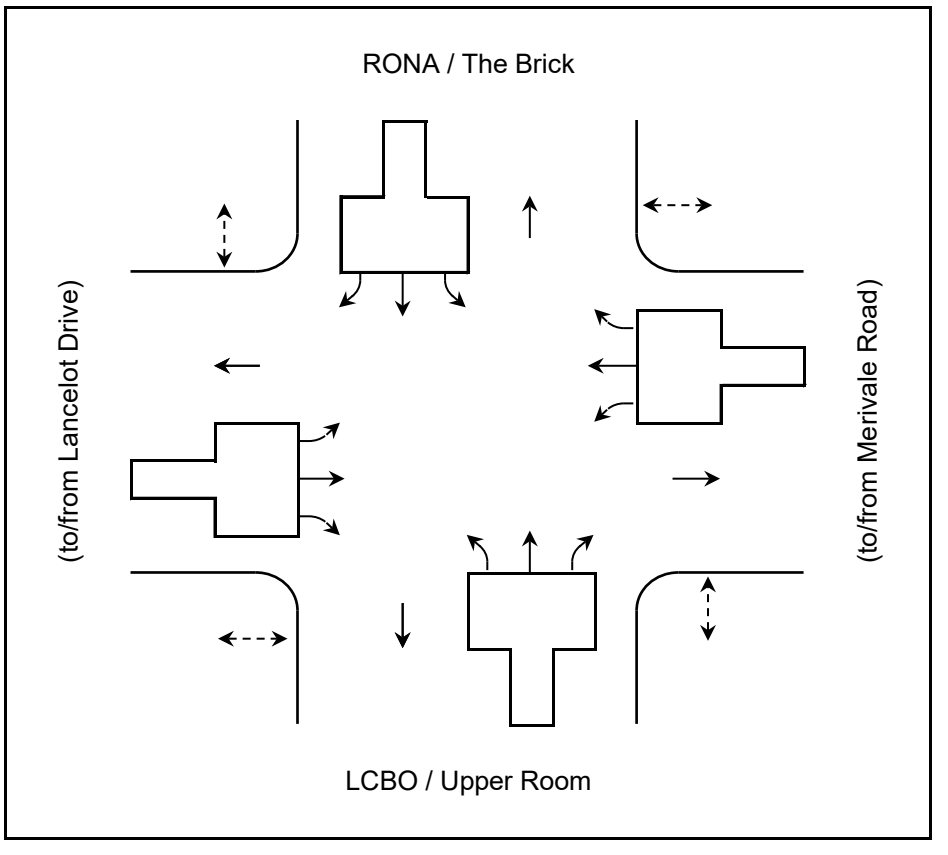
Nepean Crosstown Centre – Intersection 2 (between RONA and The Brick)

Survey Date: Wednesday, 16 April 2025
Performed By: BTE

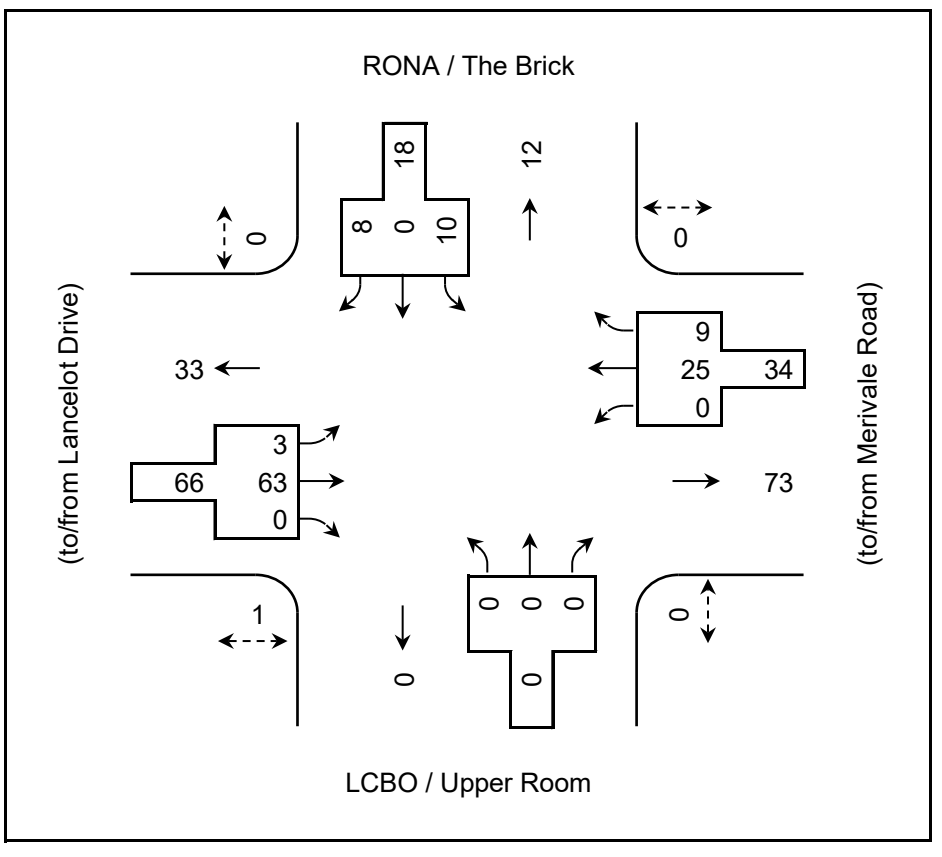
Full Period (4 hours)



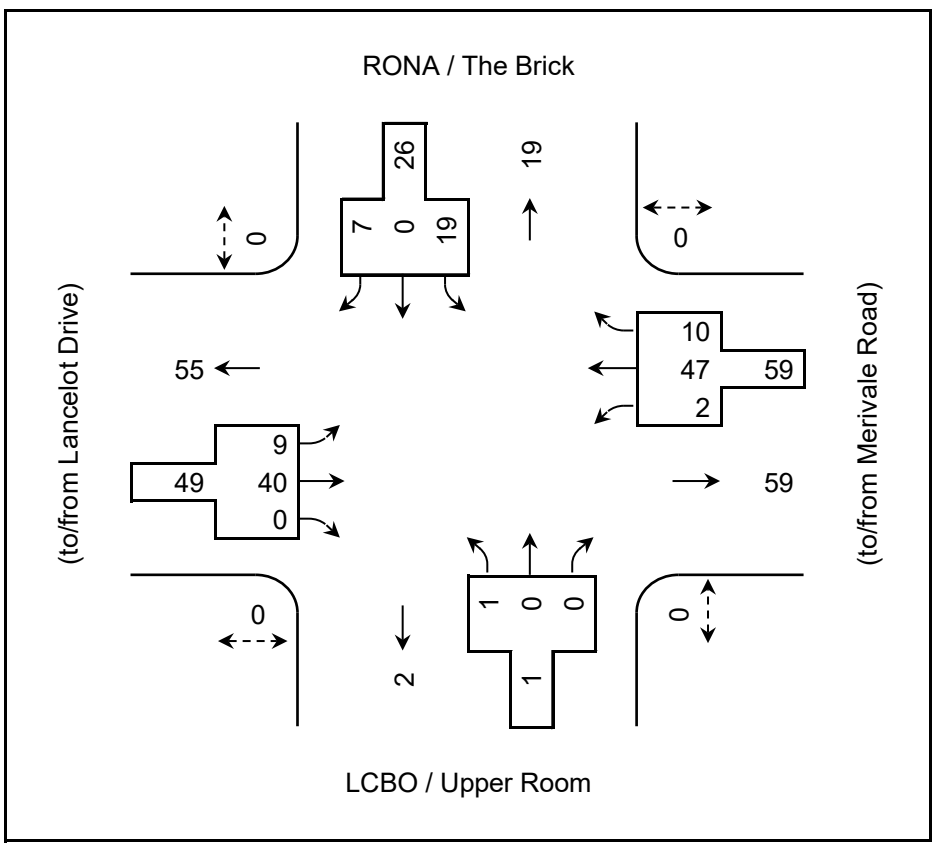
Midday Peak



Morning Peak (8:00–9:00)



Afternoon Peak (15:45–16:45)



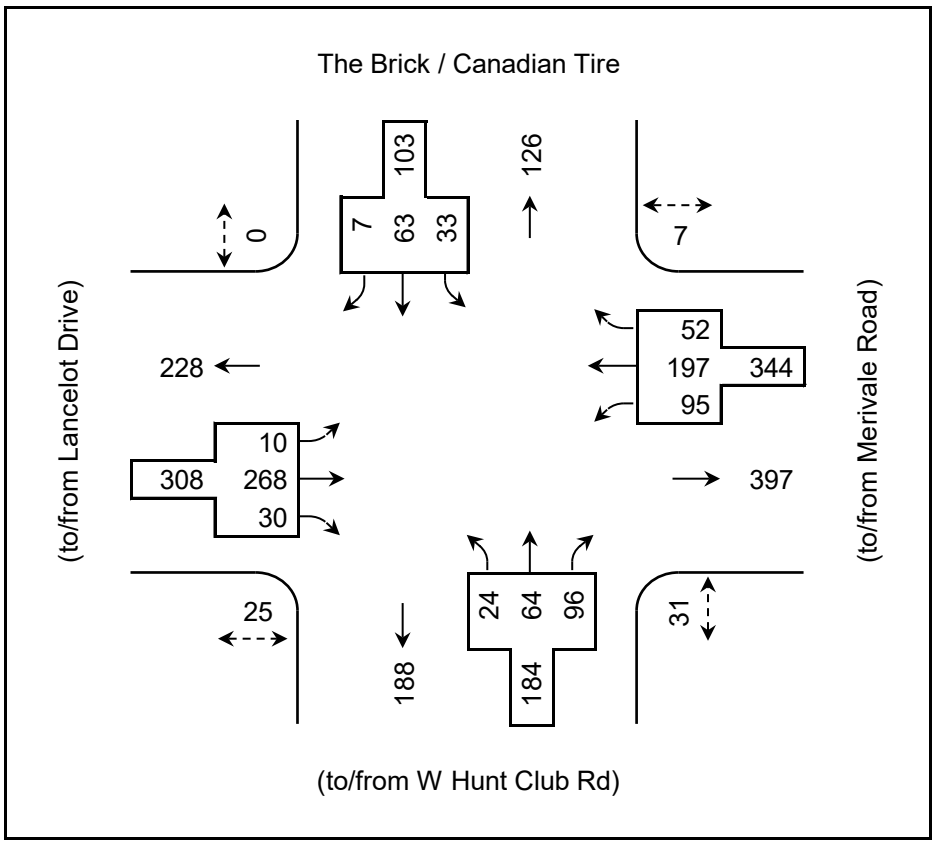
Note:
Volumes above include cars, heavy vehicles and vehicular cyclists.
Cars include motorcycles, passenger cars, pick-up trucks (including "heavy-duty"), full-size vans (i.e. Econoline), and any of these with a trailer.

Vehicular Turning Movements – All Vehicles and Pedestrians

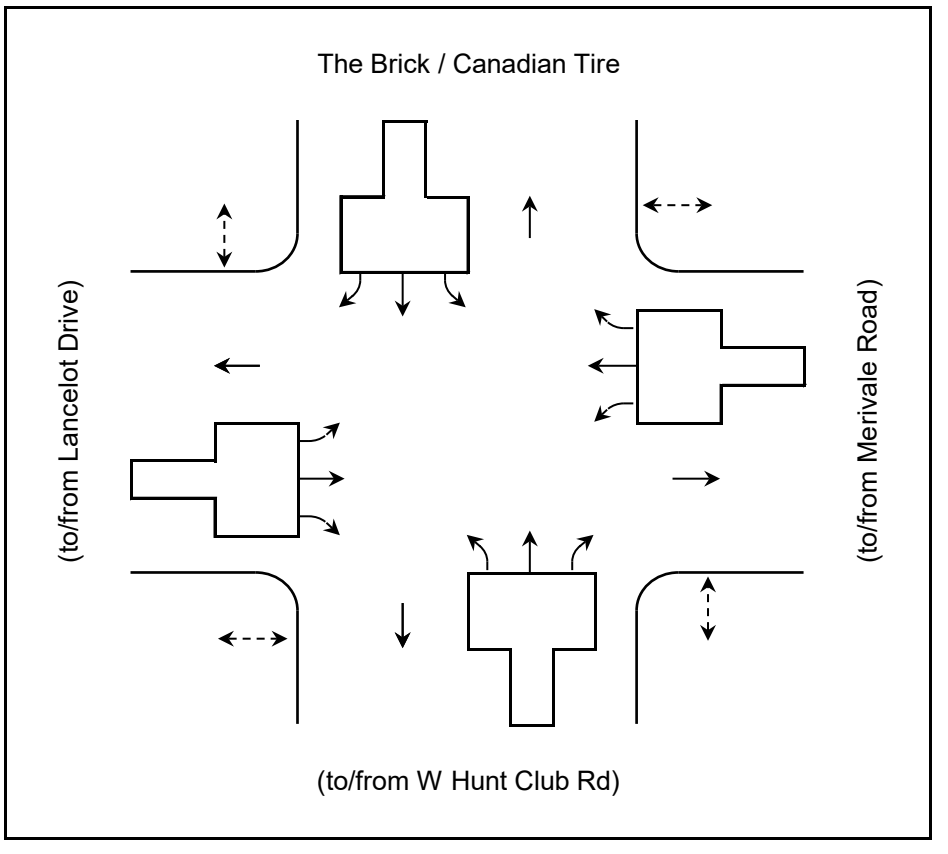
Nepean Crosstown Centre – Intersection 3 (between The Brick and Canadian Tire)

Survey Date: Wednesday, 23 April 2025
Performed By: BTE

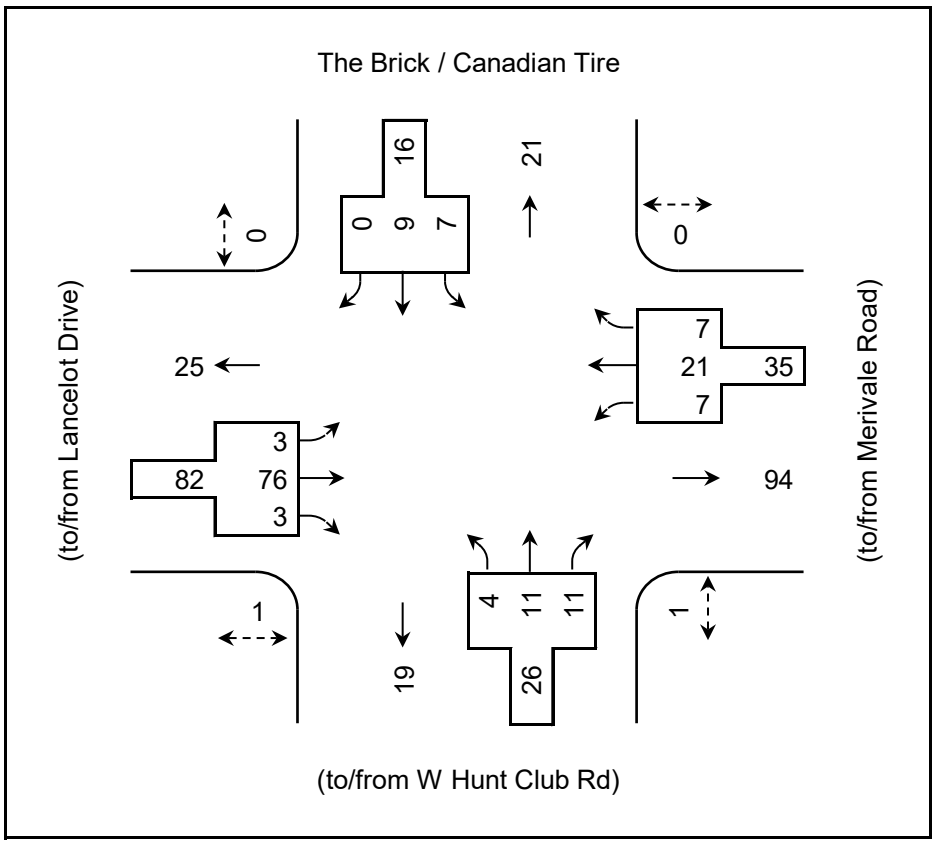
Full Period (4 hours)



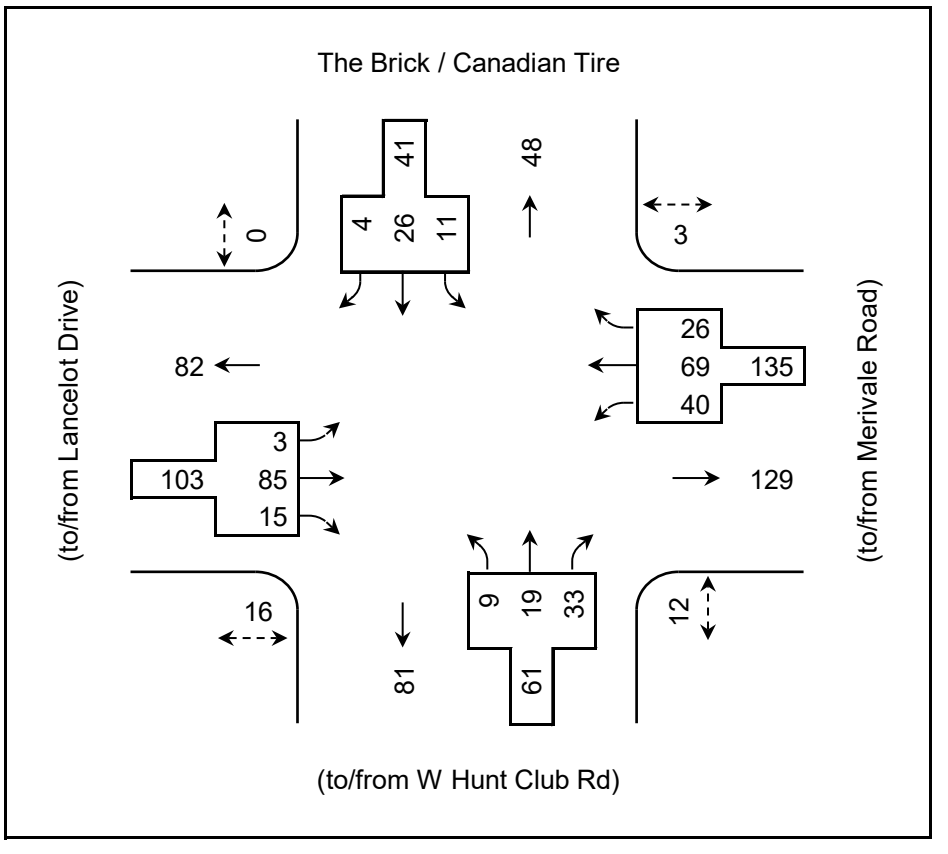
Midday Peak



Morning Peak (7:45–8:45)



Afternoon Peak (15:30–16:30)



Note:
Volumes above include cars, heavy vehicles and vehicular cyclists.
Cars include motorcycles, passenger cars, pick-up trucks (including "heavy-duty"), full-size vans (i.e. Econoline), and any of these with a trailer.

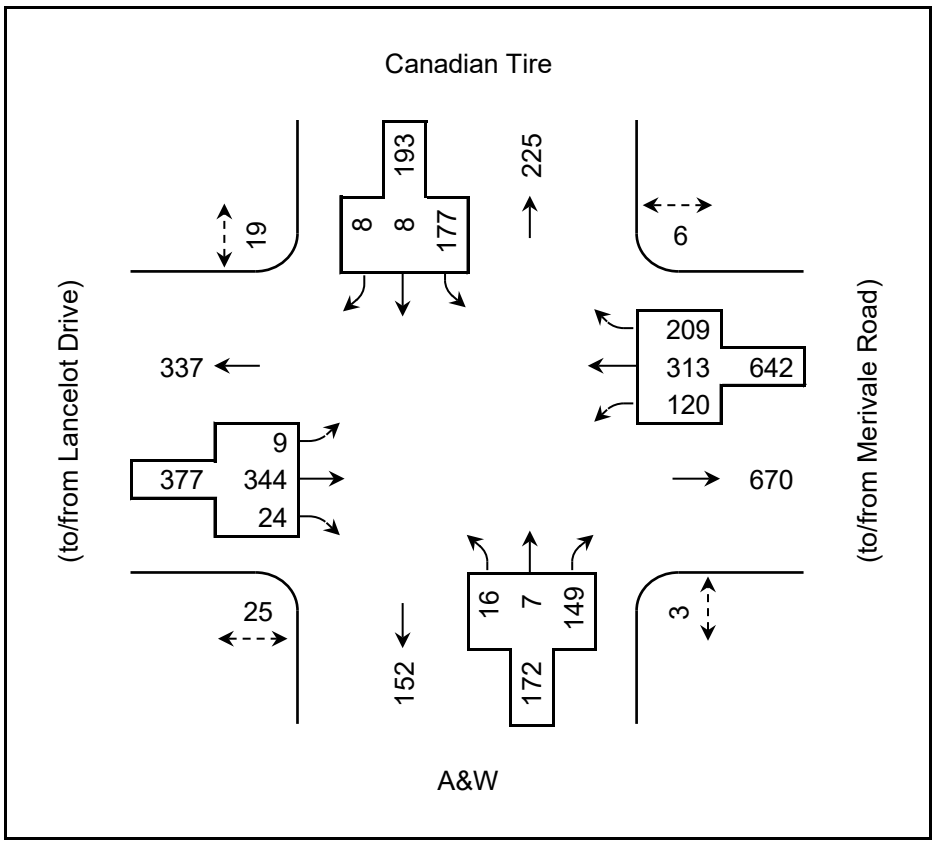
BT ENGINEERING

Vehicular Turning Movements – All Vehicles and Pedestrians

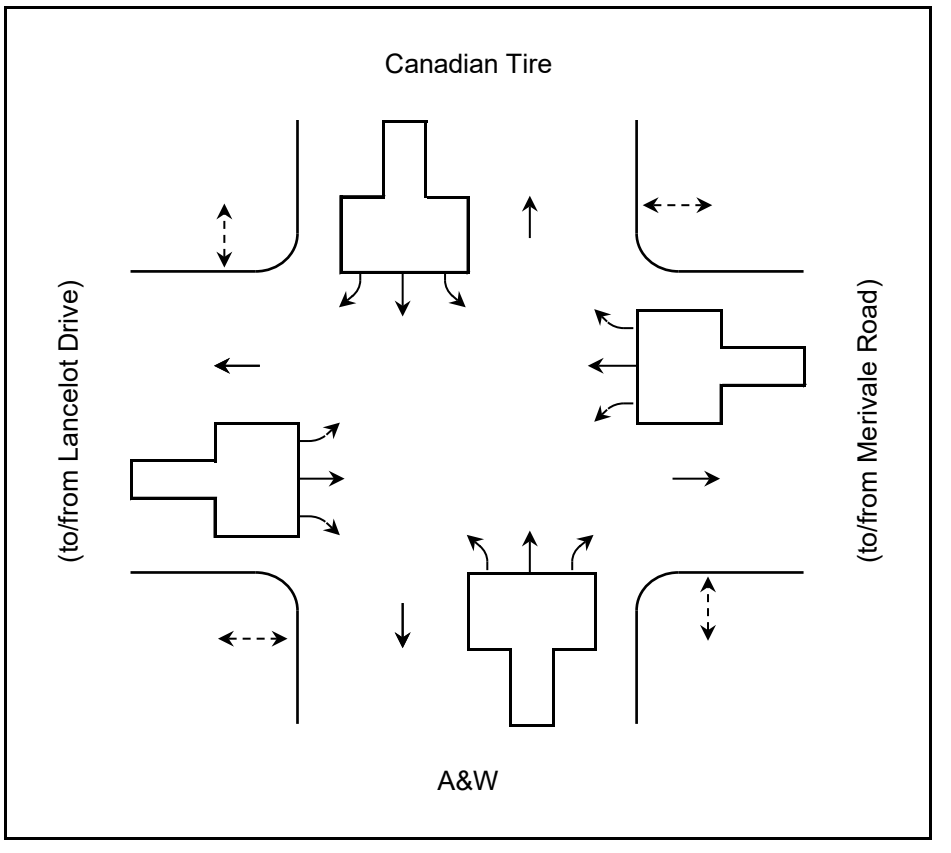
Nepean Crosstown Centre – Intersection 4 (near Canadian Tire and A&W)

Survey Date: Thursday, 24 April 2025
Performed By: BTE

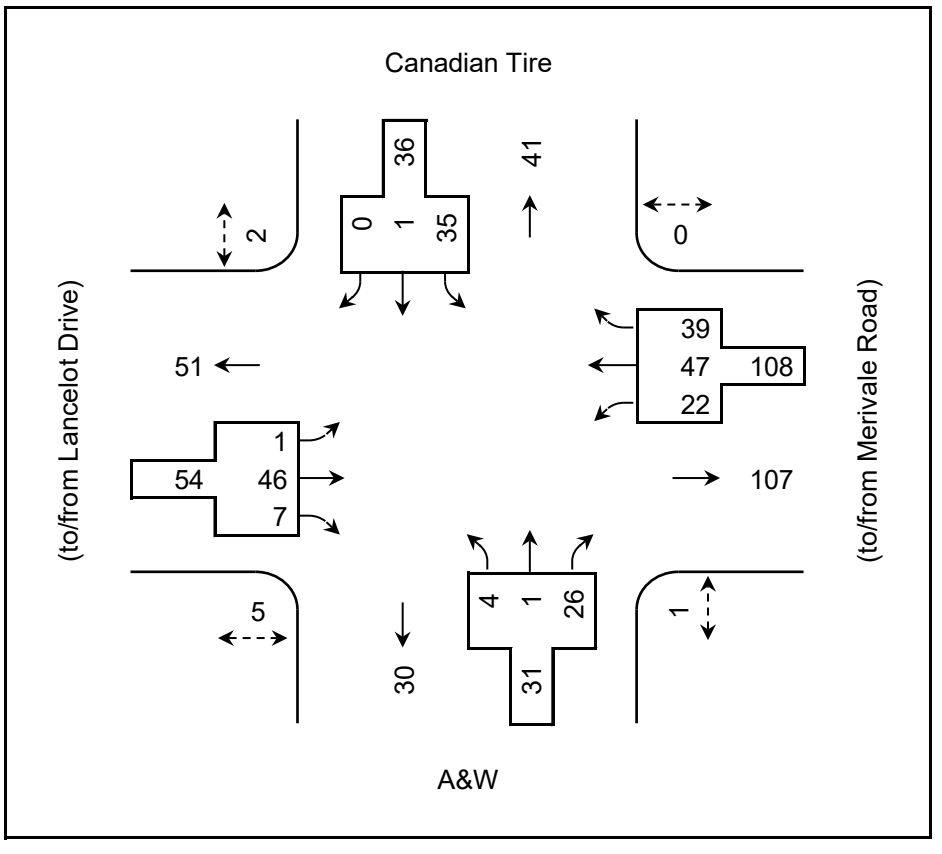
Full Period (4 hours)



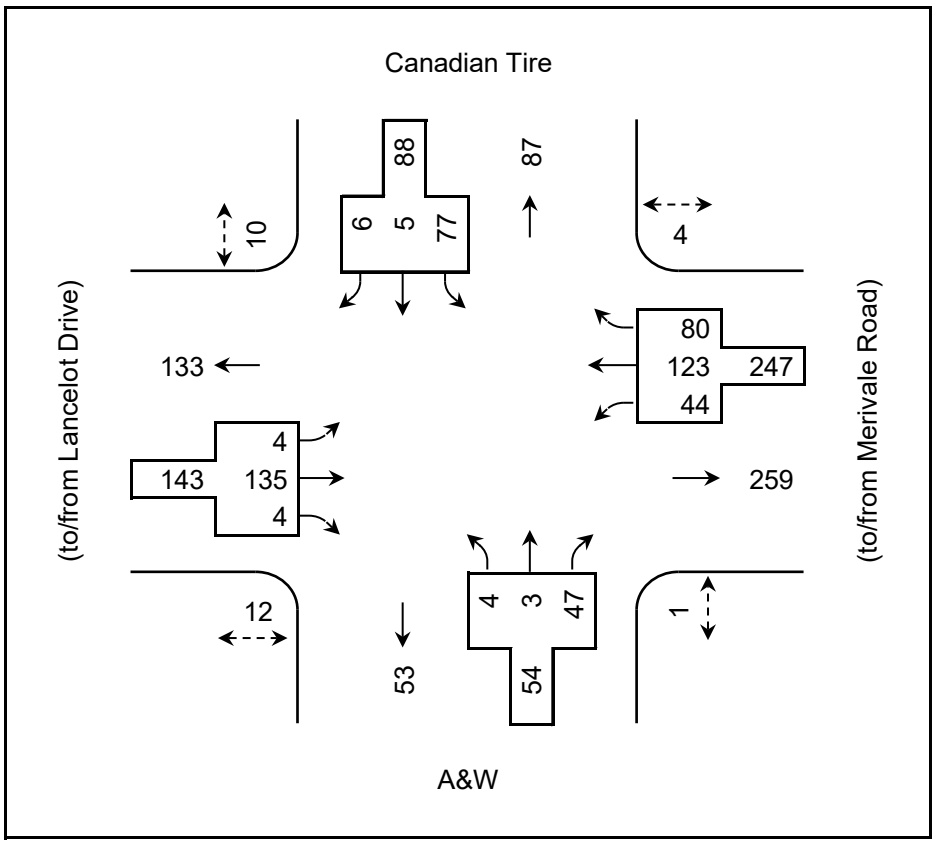
Midday Peak



Morning Peak (8:00–9:00)



Afternoon Peak (15:45–16:45)



Note:
Volumes above include cars, heavy vehicles and vehicular cyclists.
Cars include motorcycles, passenger cars, pick-up trucks (including "heavy-duty"), full-size vans (i.e. Econoline), and any of these with a trailer.

Appendix D

Collision Details Report

Date	Time	Location	Location Type	Classification	Initial Impact Type	Road Surface Condition	Environment Condition	Light	Traffic Control	N of Veh	N of Ped	N of Bikes	N of Motos	Max Injury
2021-09-24	14:35	LANCELOT DR btwn WEST HUNT CLUB RD & END	Midblock	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	10 - No control	2	0			
2022-11-17	6:00	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	4	2			
2022-02-25	15:10	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	04 - Slush	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-01-31	17:13	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	05 - Dusk	01 - Traffic signal	2	0			
2017-03-23	11:29	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-03-15	5:44	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	02 - Non-fatal injury	02 - Angle	03 - Loose snow	03 - Snow	03 - Dawn	01 - Traffic signal	2	0			01 - Minimal
2017-04-09	11:51	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-05-05	12:45	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			
2017-05-23	11:18	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	02 - Non-fatal injury	02 - Angle	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	3	0		1	03 - Major
2017-06-25	16:20	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-06-16	17:07	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-07-07	18:28	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			01 - Minimal
2017-08-25	15:34	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-09-20	10:13	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-10-29	16:57	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	02 - Non-fatal injury	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			01 - Minimal
2017-10-16	9:54	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-10-19	12:35	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	02 - Non-fatal injury	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	3	0			02 - Minor
2018-04-20	12:35	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-05-30	17:04	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			02 - Minor
2018-05-29	9:47	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-07-13	10:15	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	07 - SMV other	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	1	0			
2018-08-10	18:53	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-08-07	11:36	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			
2018-07-24	16:59	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			
2018-07-23	15:01	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-11-16	10:42	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	07 - SMV other	03 - Loose snow	03 - Snow	01 - Daylight	01 - Traffic signal	1	0			
2019-01-29	12:56	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	04 - Sideswipe	03 - Loose snow	03 - Snow	01 - Daylight	01 - Traffic signal	2	0			
2019-01-30	9:29	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	07 - SMV other	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	1	0			
2019-03-06	10:18	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	3	0			02 - Minor
2019-04-15	7:40	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	3	0			
2019-07-25	17:50	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-01-10	17:35	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	01 - Clear	05 - Dusk	01 - Traffic signal	4	0			
2020-02-27	7:30	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	03 - Loose snow	03 - Snow	01 - Daylight	01 - Traffic signal	2	0			
2020-03-04	14:20	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-07-30	11:03	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-07-06	12:22	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-08-04	17:45	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	04 - Sideswipe	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			
2021-01-21	6:45	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	03 - Loose snow	03 - Snow	07 - Dark	01 - Traffic signal	2	0			
2021-05-15	8:35	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2021-07-30	18:12	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	02 - Non-fatal injury	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			02 - Minor
2021-08-30	16:53	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2021-11-15	17:00	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	07 - Dark	01 - Traffic signal	2	0			
2022-08-10	12:36	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			01 - Minimal
2022-07-28	10:57	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-11-15	9:35	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2021-12-11	12:10	WEST HUNT CLUB RD @ CLEOPATRA DR/LANCELOT DR	Intersection	03 - P.D. only	04 - Sideswipe	04 - Slush	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-12-17	6:44	WEST HUNT CLUB RD EB btwn CLEOPATRA DR & 210 W OF MERIVALE RD	Midblock	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	07 - Dark	10 - No control	2	0			
2019-03-22	13:25	WEST HUNT CLUB RD EB btwn CLEOPATRA DR & 210 W OF MERIVALE RD	Midblock	03 - P.D. only	04 - Sideswipe	02 - Wet	02 - Rain	01 - Daylight	10 - No control	2	0			
2020-02-29	8:41	WEST HUNT CLUB RD EB btwn CLEOPATRA DR & 210 W OF MERIVALE RD	Midblock	03 - P.D. only	03 - Rear end	02 - Wet	01 - Clear	01 - Daylight	10 - No control	2	0			
2020-09-05	14:16	WEST HUNT CLUB RD EB btwn CLEOPATRA DR & 210 W OF MERIVALE RD	Midblock	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	10 - No control	2	0			01 - Minimal
2017-08-17	18:24	WEST HUNT CLUB RD WB btwn CLEOPATRA DR & 210 W OF MERIVALE RD	Midblock	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	10 - No control	2	0			
2022-08-19	14:29	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-01-31	8:09	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			01 - Minimal
2017-03-24	10:45	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	03 - Loose snow	03 - Snow	01 - Daylight	01 - Traffic signal	2	0			
2017-04-04	12:30	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			
2017-08-22	18:10	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	02 - Wet	01 - Clear	01 - Daylight	01 - Traffic signal	3	0			01 - Minimal
2017-10-19	12:20	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			

Date	Time	Location	Location Type	Classification	Initial Impact Type	Road Surface Condition	Environment Condition	Light	Traffic Control	N of Veh	N of Ped	N of Bikes	N of Motos	Max Injury
2017-12-15	16:19	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	05 - Turning movement	03 - Loose snow	03 - Snow	05 - Dusk	01 - Traffic signal	2	0			02 - Minor
2018-10-20	14:12	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-03-27	15:00	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-05-11	14:33	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-06-13	12:43	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-06-24	6:40	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	01 - Fatal injury	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0	1		04 - Fatal
2019-08-22	17:37	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			01 - Minimal
2019-10-07	6:58	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	03 - Dawn	01 - Traffic signal	3	0	1		02 - Minor
2019-10-24	17:25	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0		1	
2021-02-25	17:11	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2021-10-15	19:38	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	05 - Turning movement	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			02 - Minor
2022-11-01	21:48	210 W OF MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2018-02-09	20:47	WEST HUNT CLUB RD EB btwn 210 W OF MERIVALE RD & MERIVALE RD	Midblock	03 - P.D. only	04 - Sideswipe	03 - Loose snow	03 - Snow	07 - Dark	10 - No control	2	0			
2018-06-27	18:00	WEST HUNT CLUB RD EB btwn 210 W OF MERIVALE RD & MERIVALE RD	Midblock	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	10 - No control	2	0			
2017-11-03	8:00	WEST HUNT CLUB RD EB btwn 210 W OF MERIVALE RD & MERIVALE RD	Midblock	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	10 - No control	2	0			
2018-05-23	7:15	WEST HUNT CLUB RD EB btwn 210 W OF MERIVALE RD & MERIVALE RD	Midblock	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	10 - No control	2	0			
2021-06-15	17:05	WEST HUNT CLUB RD WB btwn 210 W OF MERIVALE RD & MERIVALE RD	Midblock	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	10 - No control	2	0			02 - Minor
2022-07-29	11:40	WEST HUNT CLUB RD WB btwn 210 W OF MERIVALE RD & MERIVALE RD	Midblock	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	10 - No control	2	0			
2021-11-04	18:11	WEST HUNT CLUB RD WB btwn 210 W OF MERIVALE RD & MERIVALE RD	Midblock	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	07 - Dark	10 - No control	2	0			01 - Minimal
2021-02-22	13:12	WEST HUNT CLUB RD WB btwn 210 W OF MERIVALE RD & MERIVALE RD	Midblock	03 - P.D. only	99 - Other	04 - Slush	03 - Snow	01 - Daylight	10 - No control	2	0			
2018-01-08	15:15	WEST HUNT CLUB RD WB btwn 210 W OF MERIVALE RD & MERIVALE RD	Midblock	03 - P.D. only	03 - Rear end	03 - Loose snow	03 - Snow	01 - Daylight	10 - No control	3	0			
2018-03-08	20:07	WEST HUNT CLUB RD WB btwn 210 W OF MERIVALE RD & MERIVALE RD	Midblock	03 - P.D. only	03 - Rear end	03 - Loose snow	03 - Snow	07 - Dark	10 - No control	2	0			
2021-12-22	15:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	02 - Wet	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-10-27	18:24	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2022-11-26	23:32	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2022-01-19	17:56	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	04 - Slush	03 - Snow	07 - Dark	01 - Traffic signal	2	0			
2022-02-27	17:20	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	01 - Clear	05 - Dusk	01 - Traffic signal	2	0			
2022-04-03	21:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	02 - Wet	02 - Rain	07 - Dark	01 - Traffic signal	2	0			
2021-08-19	20:26	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	05 - Dusk	01 - Traffic signal	2	0			01 - Minimal
2021-10-29	19:32	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	02 - Wet	02 - Rain	07 - Dark	01 - Traffic signal	2	0			
2022-03-01	9:01	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	03 - Loose snow	03 - Snow	01 - Daylight	01 - Traffic signal	2	0			
2022-08-25	20:50	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2022-01-10	15:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-02-28	15:45	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-08-26	10:40	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-01-07	7:48	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	04 - Slush	03 - Snow	03 - Dawn	01 - Traffic signal	2	0			
2022-02-03	12:27	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	03 - Loose snow	03 - Snow	01 - Daylight	01 - Traffic signal	2	0			
2017-01-10	17:30	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	03 - Loose snow	03 - Snow	05 - Dusk	01 - Traffic signal	2	0			
2017-02-15	17:58	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	03 - Loose snow	03 - Snow	07 - Dark	01 - Traffic signal	2	0			
2017-02-17	13:42	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-03-10	12:01	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-03-08	7:48	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-03-17	10:36	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-03-26	13:03	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-04-21	8:24	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			03 - Major
2017-04-21	11:49	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	02 - Wet	01 - Clear	01 - Daylight	01 - Traffic signal	3	0			02 - Minor
2017-04-19	10:21	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			
2017-04-28	16:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-06-07	17:38	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-06-22	13:51	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-07-17	9:05	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			01 - Minimal
2017-07-03	1:06	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	07 - Dark	01 - Traffic signal	2	0			
2017-06-30	11:30	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			01 - Minimal
2017-08-24	11:30	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-11-03	18:03	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	4	0			
2017-10-14	10:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			
2017-10-14	12:27	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			

Date	Time	Location	Location Type	Classification	Initial Impact Type	Road Surface Condition	Environment Condition	Light	Traffic Control	N of Veh	N of Ped	N of Bikes	N of Motos	Max Injury
2017-11-11	15:18	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	3	0			
2017-11-24	17:07	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	3	0			
2017-11-08	16:38	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	05 - Dusk	01 - Traffic signal	2	0			
2017-11-29	14:20	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-12-05	18:08	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2017-12-07	12:40	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-12-12	8:12	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	02 - Angle	03 - Loose snow	03 - Snow	01 - Daylight	01 - Traffic signal	2	0			02 - Minor
2017-12-20	16:53	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2017-12-29	6:49	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	03 - Loose snow	03 - Snow	07 - Dark	01 - Traffic signal	2	0			
2017-12-27	17:07	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	07 - SMV other	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	1	0			02 - Minor
2017-12-22	17:30	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	07 - SMV other	04 - Slush	03 - Snow	07 - Dark	01 - Traffic signal	1	0			
2018-02-05	7:30	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	04 - Slush	03 - Snow	03 - Dawn	01 - Traffic signal	2	0			
2018-01-18	7:40	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	05 - Packed snow	01 - Clear	03 - Dawn	01 - Traffic signal	2	0			
2018-02-05	19:43	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2018-02-13	6:33	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	03 - Dawn	01 - Traffic signal	2	0			
2018-03-05	8:23	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-03-05	14:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	3	0			
2018-03-08	18:40	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	04 - Slush	03 - Snow	07 - Dark	01 - Traffic signal	2	0			
2018-05-11	5:58	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0		1	
2018-05-12	15:30	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	3	0			
2018-05-03	14:41	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			
2018-04-16	17:34	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	02 - Angle	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			02 - Minor
2018-05-08	20:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-05-25	17:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			
2018-05-22	13:15	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	3	0			
2018-06-23	18:18	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	3	0			02 - Minor
2018-07-11	14:18	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-07-07	12:16	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-08-01	13:08	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-07-20	20:08	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-07-22	12:39	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			
2018-08-29	23:33	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2018-08-24	20:43	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2018-09-23	10:12	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-09-21	11:02	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			
2018-10-17	17:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-11-01	12:04	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	3	0			
2018-10-19	22:23	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	07 - Dark	01 - Traffic signal	2	0			
2018-11-28	9:46	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	03 - Loose snow	03 - Snow	01 - Daylight	01 - Traffic signal	2	0			
2018-11-16	10:21	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	03 - Loose snow	03 - Snow	01 - Daylight	01 - Traffic signal	2	0			
2018-11-15	14:29	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-12-31	13:10	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-01-02	8:26	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-01-17	22:17	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2019-01-25	19:30	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2019-01-23	11:09	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	03 - Loose snow	03 - Snow	01 - Daylight	01 - Traffic signal	2	0			
2019-03-03	11:42	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-03-12	7:51	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	02 - Wet	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-05-27	8:20	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-06-13	12:22	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-06-05	16:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-07-23	15:31	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			02 - Minor
2019-07-02	9:18	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-08-14	10:20	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-08-11	11:37	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-09-19	16:39	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-10-01	14:30	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			

Date	Time	Location	Location Type	Classification	Initial Impact Type	Road Surface Condition	Environment Condition	Light	Traffic Control	N of Veh	N of Ped	N of Bikes	N of Motos	Max Injury
2019-10-04	11:50	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-10-10	8:24	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-11-01	9:45	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	02 - Wet	03 - Snow	01 - Daylight	01 - Traffic signal	2	0			
2019-10-19	19:10	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	05 - Dusk	01 - Traffic signal	2	0			
2019-11-01	12:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-11-28	16:57	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2019-11-21	22:05	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			01 - Minimal
2019-11-17	14:58	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	05 - Packed snow	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-11-18	10:49	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			01 - Minimal
2019-12-20	17:48	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	3	0			
2019-12-08	12:02	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-12-24	10:45	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-12-28	15:45	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	99 - Other	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-01-05	14:20	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	04 - Slush	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-01-18	15:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-02-19	17:09	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-03-23	21:02	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2020-02-29	9:35	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-05-27	9:30	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-05-27	13:06	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	99 - Other	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0		1	
2020-06-12	13:28	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-06-15	10:36	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-04-30	12:33	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			
2020-05-28	9:09	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-05-30	19:59	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	05 - Dusk	01 - Traffic signal	2	0			
2020-08-09	20:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	02 - Wet	01 - Clear	05 - Dusk	01 - Traffic signal	2	0			
2020-09-06	15:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	3	0			
2020-09-10	21:11	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2020-09-16	19:10	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	05 - Dusk	01 - Traffic signal	2	0			
2020-10-31	15:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-11-04	13:05	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-10-14	13:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-10-13	17:11	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	01 - Clear	05 - Dusk	01 - Traffic signal	2	0			
2020-11-28	14:16	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2021-02-04	18:03	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2021-02-22	14:04	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	04 - Slush	03 - Snow	01 - Daylight	01 - Traffic signal	2	0			
2021-04-07	17:06	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	3	0			
2021-05-09	17:26	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2021-06-04	18:26	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2021-06-17	14:43	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0	1		01 - Minimal
2021-06-28	12:24	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2021-07-08	21:23	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	02 - Wet	02 - Rain	07 - Dark	01 - Traffic signal	2	0			
2021-09-23	22:03	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	02 - Wet	02 - Rain	07 - Dark	01 - Traffic signal	3	0			02 - Minor
2021-10-01	21:20	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2021-12-29	20:14	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	02 - Wet	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2022-02-09	8:03	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	02 - Wet	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-02-18	13:35	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	03 - Loose snow	03 - Snow	01 - Daylight	01 - Traffic signal	2	0			
2022-02-03	10:43	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	05 - Turning movement	02 - Wet	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			02 - Minor
2022-02-19	11:53	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	07 - SMV other	04 - Slush	05 - Drifting Snow	01 - Daylight	01 - Traffic signal	1	0			
2022-06-13	21:20	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2022-10-09	17:23	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-02-04	15:35	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	02 - Wet	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2021-09-27	14:25	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			02 - Minor
2022-10-29	9:27	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-04-30	15:25	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-05-30	15:17	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	3	0			02 - Minor
2022-08-10	18:52	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			

Date	Time	Location	Location Type	Classification	Initial Impact Type	Road Surface Condition	Environment Condition	Light	Traffic Control	N of Veh	N of Ped	N of Bikes	N of Motos	Max Injury
2022-10-11	17:41	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-11-24	12:00	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-06-23	11:30	MERIVALE RD @ WEST HUNT CLUB RD	Intersection	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-04-03	16:59	MERIVALE RD btwn 170 N OF WEST HUNT CLUB RD & WEST HUNT CLUB RD	Midblock	03 - P.D. only	04 - Sideswipe	01 - Dry	01 - Clear	01 - Daylight	10 - No control	2	0			
2017-03-03	8:45	MERIVALE RD btwn 170 N OF WEST HUNT CLUB RD & WEST HUNT CLUB RD	Midblock	03 - P.D. only	04 - Sideswipe	03 - Loose snow	03 - Snow	01 - Daylight	10 - No control	2	0			
2020-08-26	20:00	MERIVALE RD btwn 170 N OF WEST HUNT CLUB RD & WEST HUNT CLUB RD	Midblock	03 - P.D. only	05 - Turning movement	01 - Dry	01 - Clear	05 - Dusk	10 - No control	2	0			
2021-01-16	19:25	MERIVALE RD btwn 170 N OF WEST HUNT CLUB RD & WEST HUNT CLUB RD	Midblock	03 - P.D. only	04 - Sideswipe	04 - Slush	03 - Snow	07 - Dark	10 - No control	2	0			
2017-03-17	12:26	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	07 - SMV other	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	1	1			02 - Minor
2017-02-23	18:30	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	02 - Angle	02 - Wet	01 - Clear	07 - Dark	01 - Traffic signal	2	0			01 - Minimal
2017-11-06	10:31	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2017-11-09	12:51	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	07 - SMV other	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	1	1			01 - Minimal
2017-12-26	9:41	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	04 - Slush	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2018-02-13	12:07	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	07 - SMV other	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	1	1			02 - Minor
2018-09-27	12:00	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2019-07-10	13:41	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	02 - Angle	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			02 - Minor
2019-09-10	13:54	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	07 - SMV other	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	1	1			01 - Minimal
2019-11-12	13:48	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	04 - Slush	05 - Drifting Snow	01 - Daylight	01 - Traffic signal	2	0			
2020-01-24	20:20	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	02 - Wet	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2020-02-21	14:27	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	4	0			
2020-05-26	16:38	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-06-01	16:23	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	02 - Angle	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			01 - Minimal
2020-07-12	16:22	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2020-10-07	11:00	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	05 - Turning movement	02 - Wet	02 - Rain	01 - Daylight	01 - Traffic signal	2	0			
2020-12-16	11:20	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			01 - Minimal
2021-07-13	13:17	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-07-04	9:45	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-08-04	16:15	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-02-21	18:45	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	03 - Rear end	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			
2022-05-26	11:52	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	05 - Turning movement	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	3	0			02 - Minor
2022-05-30	17:36	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	03 - P.D. only	02 - Angle	01 - Dry	01 - Clear	01 - Daylight	01 - Traffic signal	2	0			
2022-09-14	20:17	MERIVALE RD @ 170 N OF WEST HUNT CLUB RD	Intersection	02 - Non-fatal injury	02 - Angle	01 - Dry	01 - Clear	07 - Dark	01 - Traffic signal	2	0			02 - Minor

Appendix E

TRANS Regional Model

TRANS Regional Model

Version 1.01 - Assigned December, 2024

AM Peak Hour Total Traffic Volume

West Hunt Club Road and Merivale Road

2022 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: April, 2025
EMME Scenario: 22002

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

50 100 150 200 250

The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and all risks arising from any incorrect, incomplete, or misleading information.

Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena and has been calibrated at a regional level.

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

TRANS Regional Model

Version 1.01 - Assigned December, 2024

AM Peak Hour Total Traffic Volume

West Hunt Club Road and Merivale Road

2046 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: April, 2025
EMME Scenario: 46001

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

50 100 150 200 250

The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and all risks arising from any incorrect, incomplete, or misleading information.

Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena and has been calibrated at a regional level.

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

Appendix F

TDM-Supportive Design and Infrastructure Checklist

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

Legend

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

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☐
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☐
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☐
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☐ No pedestrian demand expected.
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☐ No pedestrian demand expected.

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

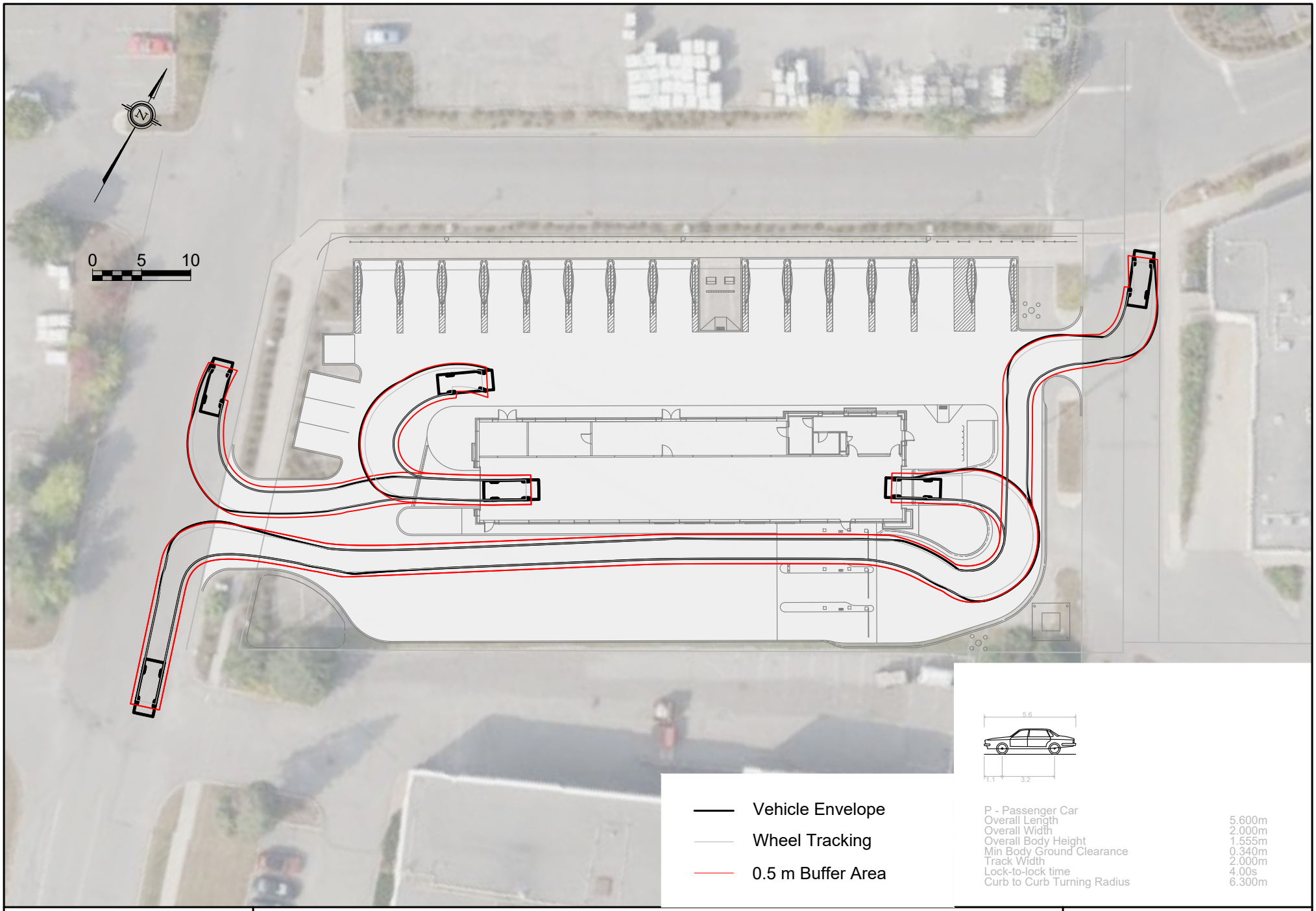
		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted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

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

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

Appendix G

Site Circulation Analysis

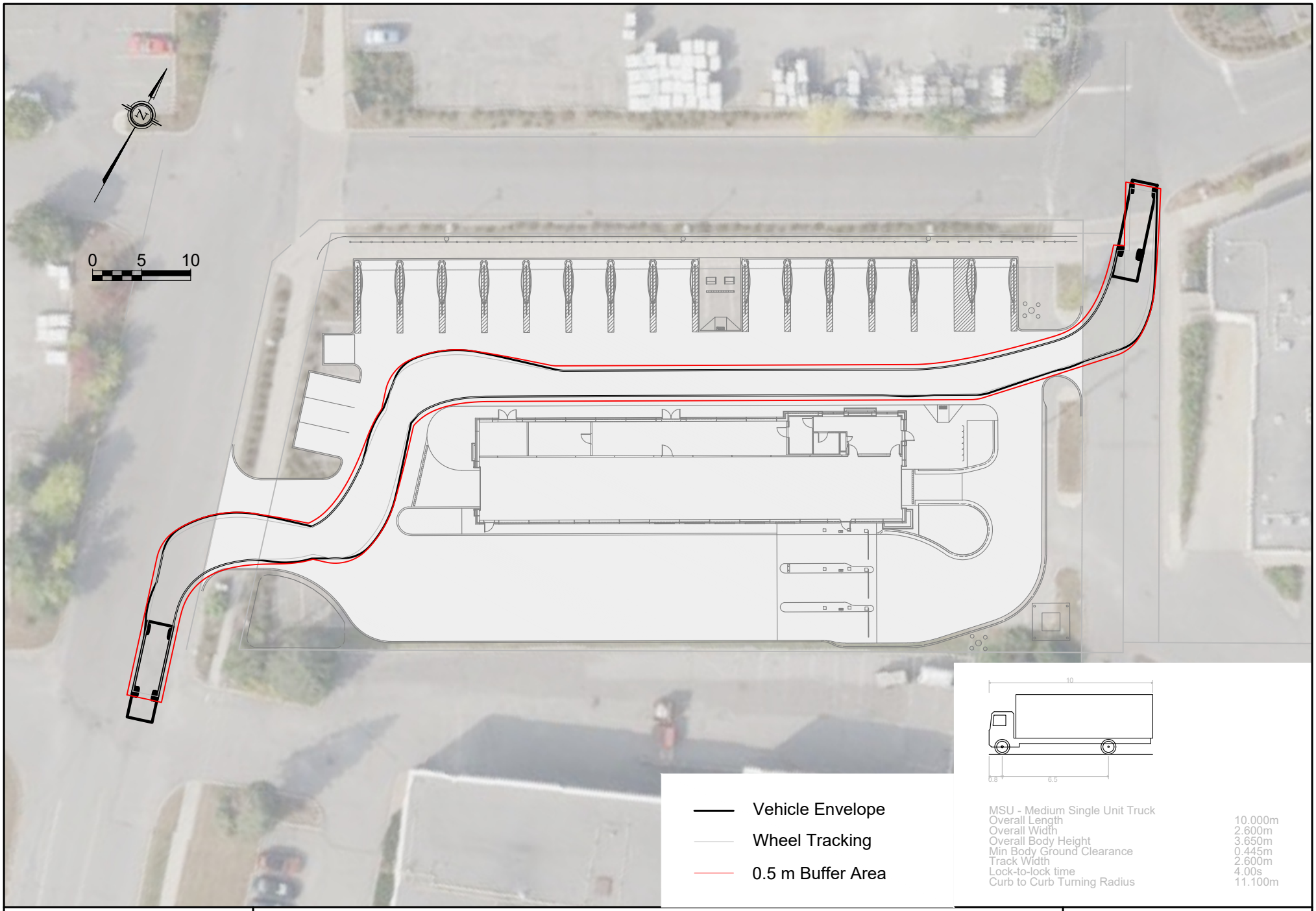


BTE 24-033
2025-12-05
8½ x 11 Scale 1:500

Halo Car Wash West Hunt Club Road

Site Circulation – Car

BT ENGINEERING
BTE



BTE 24-033
2025-12-05
8½ x 11 Scale 1:500

Halo Car Wash West Hunt Club Road

Site Circulation – Delivery Vehicle

BT ENGINEERING
BTE

Appendix H

Multimodal Level of Service Analysis

Multi-Modal Level of Service - Segments Form

Project: 24-033 Halo Car Wash
Consultant: BT Engineering
Date: Dec 12, 2025
Scenario: 2031 Horizon, Built-out

	Segment Name	**Lancelot Drive, from West Hunt Club Road to east-west connection**			
	OP Transect / Policy Area	**Outer Urban or Suburban**			
	Segment Component	**Majority (>50%)**		**Critical**	
	Side of Street	**W or N**	**E or S**	**W or N**	**E or S**
Pedestrian	**PLOS Inputs**				
	Posted Speed (km/h)	50 km/h		50 km/h	
	Two-Way ADT	1,640		1,640	
	Pedestrian Facility	None	Sidewalk	None	Sidewalk
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?	Yes	Yes	Yes	Yes
	Facility Width (m)	-	2.00m	-	1.30m
	Offset from Motor Vehicle Travel Lanes (m)	-	1.5-2.99m	-	-
	Presence of Adjacent Parking?	-	-	-	-
	General Purpose Curb Lane ADT	-	≤ 3000	-	-
	Max. Distance between Controlled Crossings (m)	-	≤ 200m	-	≤ 200m
	Score	-	**5.00**	-	**0.00**
	PLOS	**-**	**A**	**-**	**F**
	Target PLOS	**C**			
Bicycle	**BLOS Inputs**				
	Cycling Route Classification	**Elsewhere**			
	Cycling Facility	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	-	-	-	-
	Facility Operation	-	-	-	-
	Pedestrian/Cyclist Volume	-	-	-	-
	Facility Width	-	-	-	-
	Boulevard/Buffer Width (excluding curb)	-	-	-	-
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	None	None	None	None
	Number of Travel Lanes at Crossing	-	-	-	-
	Crossing includes Median Refuge (≥ 2.7m)	-	-	-	-
	Cross-street Posted Speed (km/h)	-	-	-	-
	Cycling Path Blockages (e.g. bus stops and/or loading zones)	Rare	Rare	Rare	Rare
	Score	**1.60**	**1.60**	**1.60**	**1.60**
	BLOS	**D**	**D**	**D**	**D**
	Target BLOS	**C**			
Transit	**TLOS Inputs**				
	Transit Facility	**Mixed Traffic**			
	Facility Type				
	Expected Transit Running Time				
	Transit Travel Speed (if available)				
	TLOS	**-**	**-**		
	Target TLOS	**E (D for frequent transit routes)**			
Public Realm	**PRLOS Inputs**				
	Context	Other Streets	Other Streets		
	Inner Boulevard Width	≤ 0.6m	2.0-3.99m		
	Middle Boulevard Width	≤ 0.5m	≤ 0.5m		
	Outer Boulevard (Frontage) Width	≥ 3.0m	0.5-1.49m		
	Transit Route on Segment?	No	No		
	Bus Stop Elements	-	-		
	Number of Midblock Traffic Lanes (both travel directions)	≤ 2			
	Score	**14.10**	**23.70**		
	PRLOS	**D**	**B**		
		C			

Multi-Modal Level of Service - Segments Form

Project: 24-033 Halo Car Wash
Consultant: BT Engineering
Date: Dec 12, 2025
Scenario: 2031 Horizon, Built-out

	Segment Name	**Nepean Crossroads Centre east-west connection, from Lancelot to Merivale**			
	OP Transect / Policy Area	**Outer Urban or Suburban**			
	Segment Component	**Majority (>50%)**		**Critical**	
	Side of Street	**W or N**	**E or S**	**W or N**	**E or S**
Pedestrian	**PLOS Inputs**				
	Posted Speed (km/h)	50 km/h		50 km/h	
	Two-Way ADT	2,000		3,700	
	Pedestrian Facility	None	Sidewalk	None	Sidewalk
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?	Yes	Yes	Yes	Yes
	Facility Width (m)	-	2.00m	-	1.60m
	Offset from Motor Vehicle Travel Lanes (m)	-	1.5-2.99m	-	-
	Presence of Adjacent Parking?	-	-	-	-
	General Purpose Curb Lane ADT	-	≤ 3000	-	≤ 3000
	Max. Distance between Controlled Crossings (m)	-	≤ 200m	-	≤ 200m
	Score	-	**5.00**	-	**1.25**
	PLOS	**-**	**A**	**-**	**E**
	Target PLOS	**C**			
Bicycle	**BLOS Inputs**				
	Cycling Route Classification	**Elsewhere**			
	Cycling Facility	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	-	-	-	-
	Facility Operation	-	-	-	-
	Pedestrian/Cyclist Volume	-	-	-	-
	Facility Width	-	-	-	-
	Boulevard/Buffer Width (excluding curb)	-	-	-	-
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	None	None	None	None
	Number of Travel Lanes at Crossing	-	-	-	-
	Crossing includes Median Refuge (≥ 2.7m)	-	-	-	-
	Cross-street Posted Speed (km/h)	-	-	-	-
	Cycling Path Blockages (e.g. bus stops and/or loading zones)	Rare	Rare	Rare	Rare
	Score	**1.60**	**1.60**	**1.60**	**1.60**
	BLOS	**D**	**D**	**D**	**D**
	Target BLOS	**C**			
Transit	**TLOS Inputs**				
	Transit Facility	**Mixed Traffic**			
	Facility Type				
	Expected Transit Running Time				
	Transit Travel Speed (if available)				
	TLOS	**-**	**-**		
	Target TLOS	**E (D for frequent transit routes)**			
Public Realm	**PRLOS Inputs**				
	Context	Other Streets	Other Streets		
	Inner Boulevard Width	≤ 0.6m	2.0-3.99m		
	Middle Boulevard Width	≤ 0.5m	≤ 0.5m		
	Outer Boulevard (Frontage) Width	≥ 3.0m	≤ 0.5m		
	Transit Route on Segment?	No	No		
	Bus Stop Elements	-	-		
	Number of Midblock Traffic Lanes (both travel directions)	≤ 2			
	Score	**14.10**	**23.70**		
	PRLOS	**D**	**B**		
		C			

Multi-Modal Level of Service - Segments Form

Project: 24-033 Halo Car Wash
Consultant: BT Engineering
Date: Dec 12, 2025
Scenario: 2031 Horizon, Built-out

	Segment Name	**West Hunt Club Road from Lancelot Drive to Merivale Road**			
	OP Transect / Policy Area	**Outer Urban or Suburban**			
	Segment Component	**Majority (>50%)**		**Critical**	
	Side of Street	**W or N**	**E or S**	**W or N**	**E or S**
Pedestrian	**PLOS Inputs**				
	Posted Speed (km/h)	80 km/h		80 km/h	
	Two-Way ADT	24,000		24,000	
	Pedestrian Facility	Sidewalk	Sidewalk	Sidewalk	None
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?	Yes	Yes	Yes	No
	Facility Width (m)	2.00m	2.00m	2.00m	-
	Offset from Motor Vehicle Travel Lanes (m)	1.5-2.99m	1.5-2.99m	1.5-2.99m	-
	Presence of Adjacent Parking?	-	-	-	-
	General Purpose Curb Lane ADT	> 3000	> 3000	> 3000	-
	Max. Distance between Controlled Crossings (m)	≤ 200m	≤ 200m	≤ 200m	-
	Score	**3.50**	**3.50**	**3.50**	**0.00**
	PLOS	**B**	**B**	**B**	**F**
	Target PLOS	**C**			
Bicycle	**BLOS Inputs**				
	Cycling Route Classification	**Elsewhere**			
	Cycling Facility	Painted or Physically Separated Bike Lanes	Painted or Physically Separated Bike Lanes	Painted or Physically Separated Bike Lanes	Painted or Physically Separated Bike Lanes
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	-	-	-	-
	Facility Operation	Unidirectional	Unidirectional	Unidirectional	Unidirectional
	Pedestrian/Cyclist Volume	-	-	-	-
	Facility Width	1.5-1.79m or 1.8m contraflow bike lane	1.5-1.79m or 1.8m contraflow bike lane	1.5-1.79m or 1.8m contraflow bike lane	1.5-1.79m or 1.8m contraflow bike lane
	Boulevard/Buffer Width (excluding curb)	-	-	-	-
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	None	None	None	None
	Number of Travel Lanes at Crossing	-	-	-	-
	Crossing includes Median Refuge (≥ 2.7m)	-	-	-	-
	Cross-street Posted Speed (km/h)	-	-	-	-
	Cycling Path Blockages (e.g. bus stops and/or loading zones)	Rare	Rare	Rare	Rare
	Score	**2.03**	**2.03**	**2.03**	**2.03**
	BLOS	**D**	**D**	**D**	**D**
	Target BLOS	**C**			
Transit	**TLOS Inputs**				
	Transit Facility	**Mixed Traffic**			
	Facility Type	Mixed Traffic	Mixed Traffic		
	Expected Transit Running Time	Moderately Impeded	Moderately Impeded		
	Transit Travel Speed (if available)	Enter Speed (if available)	Enter Speed (if available)		
	TLOS	**D**	**D**		
	Target TLOS	**E (D for frequent transit routes)**			
Public Realm	**PRLOS Inputs**				
	Context	Other Streets	Other Streets		
	Inner Boulevard Width	≤ 0.6m	≤ 0.6m		
	Middle Boulevard Width	≤ 0.5m	≤ 0.5m		
	Outer Boulevard (Frontage) Width	≥ 3.0m	≥ 3.0m		
	Transit Route on Segment?	Yes	Yes		
	Bus Stop Elements	Curbside landing zone with no shelter	Curbside landing zone with no shelter		
	Number of Midblock Traffic Lanes (both travel directions)	5			
	Score	**19.80**	**19.80**		
	PRLOS	**C**	**C**		
		C			

Multi-Modal Level of Service - Intersections Form

Project: 24-033 Halo Car Wash
Consultant: BT Engineering
Date: Dec 12, 2025
Scenario: 2031 Horizon, Built-out

	Intersection Name	**West Hunt Club Road / Lancelot Drive, AM & PM Peak**			
	OP Transect / Policy Area	**Outer Urban or Suburban**			
Pedestrian	**PLOS Inputs**				
	Pedestrians Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Number of Travel Lanes Crossed	1-3	1-3	7	7
	Median Refuge (≥2.7m)	No	No	No	No
	Crosswalk Treatment	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings
	Signal Cycle Length (sec)	130.0			
	Effective Walk Time (sec)	45.0	45.0	7.0	7.0
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	**WBR**	**EBR**	**NBR**	**SBR**
	Right-Turn Geometry	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel
	Right-Turn Signal Phasing	Permissive	Permissive	Permissive	Permissive
	Right-Turn Volume	> 150 to 300 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h
	Right-Turn Effective Corner Radius	> 8m	> 8m	> 8m	> 8m
	Cross-street Posted Speed (km/h)	50 km/h		80 km/h	
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	**EBL**	**WBL**	**SBL**	**NBL**
	Left-Turn Signal Phasing	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm
	Left-Turn Volume	> 50 to 100 veh/h	> 50 to 100 veh/h	≤ 50 veh/h	> 50 to 100 veh/h
	Left-Turn Opposing Lanes	≥ 2	≥ 2	-	≤ 1
	Score	**3.80**	**4.25**	**1.60**	**1.60**
	PLOS	**B**	**B**	**D**	**D**
		C			
	Target PLOS	**C**			
Bicycle	**BLOS Inputs**				
	Cycling Route Classification	**Elsewhere**			
	Cyclists Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Type of Cycling Facility Across Leg	Bike Lane Through Intersection	Bike Lane Through Intersection	Mixed Traffic	Mixed Traffic
	Two-Way ADT (in Cyclist Travel Direction)	24,000		1,500	
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	Yes	No	No
	Crossride Operation	-	-	-	-
	Target Crossride Setback Met?	-	-	-	-
	Right-Turn Vehicle Volume from Adjacent Roadway > 100 veh/h?	-	-	-	-
	Cyclist Left-Turn Operation	**WBL**	**EBL**	**NBL**	**SBL**
	Cyclist Left-Turn Treatment Type	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane
	Vehicle Lanes Crossed by Cyclists	Two or More Lanes Crossed	Two or More Lanes Crossed	One Lane Crossed	One Lane Crossed
	Score	**-5**	**-15**	**40**	**40**
	BLOS	**F**	**F**	**D**	**D**
		E			
	Target BLOS	**C**			
Transit	**TLOS Inputs**				
	Transit Facility	**Mixed Traffic**			
	Vehicles Travelling	**Southbound**	**Northbound**	**Westbound**	**Eastbound**
	Average Transit Delay (if available)			Unavailable	Unavailable
	Example Transit Priority Treatment			No transit priority measures and long cycle length	No transit priority measures and long cycle length
	TLOS	**-**	**-**	**E**	**E**
		E			
	Target TLOS	**E (D for frequent transit routes)**			
Auto	**AutoLOS Inputs**				
	Overall Intersection Volume to Capacity Ratio	0.71 to 0.80			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table			
	AutoLOS	**C**			
	Target AutoLOS	**E**			

Multi-Modal Level of Service - Intersections Form

Project: 24-033 Halo Car Wash
Consultant: BT Engineering
Date: Dec 12, 2025
Scenario: 2031 Horizon, Built-out

	Intersection Name	**West Hunt Club Road at 200 m west of Merivale Road, AM & PM Peak**			
	OP Transect / Policy Area	**Outer Urban or Suburban**			
Pedestrian	**PLOS Inputs**				
	Pedestrians Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Number of Travel Lanes Crossed	1-3	1-3	6	6
	Median Refuge (≥2.7m)	No	No	No	No
	Crosswalk Treatment	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings
	Signal Cycle Length (sec)	130.0			
	Effective Walk Time (sec)	65.0	65.0	7.0	7.0
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	**WBR**	**EBR**	**NBR**	**SBR**
	Right-Turn Geometry	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel
	Right-Turn Signal Phasing	Permissive	Permissive	Permissive	Permissive
	Right-Turn Volume	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h
	Right-Turn Effective Corner Radius	> 8m	> 8m	> 8m	> 8m
	Cross-street Posted Speed (km/h)	50 km/h		80 km/h	
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	**EBL**	**WBL**	**SBL**	**NBL**
	Left-Turn Signal Phasing	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm
	Left-Turn Volume	≤ 50 veh/h	≤ 50 veh/h	≤ 50 veh/h	≤ 50 veh/h
	Left-Turn Opposing Lanes	-	-	-	-
	Score	**4.60**	**4.60**	**2.20**	**2.20**
	PLOS	**A**	**A**	**D**	**D**
		C			
	Target PLOS	**C**			
Bicycle	**BLOS Inputs**				
	Cycling Route Classification	**Elsewhere**			
	Cyclists Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Type of Cycling Facility Across Leg	Bike Lane Through Intersection	Bike Lane Through Intersection	Mixed Traffic	Mixed Traffic
	Two-Way ADT (in Cyclist Travel Direction)	24,000		1,500	
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No	No	No
	Crossride Operation	-	-	-	-
	Target Crossride Setback Met?	-	-	-	-
	Right-Turn Vehicle Volume from Adjacent Roadway > 100 veh/h?	-	-	-	-
	Cyclist Left-Turn Operation	**WBL**	**EBL**	**NBL**	**SBL**
	Cyclist Left-Turn Treatment Type	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane
	Vehicle Lanes Crossed by Cyclists	Two or More Lanes Crossed	Two or More Lanes Crossed	No Lane Crossed	One Lane Crossed
	Score	**65**	**65**	**50**	**40**
	BLOS	**C**	**C**	**D**	**D**
		D			
	Target BLOS	**C**			
Transit	**TLOS Inputs**				
	Transit Facility	**Mixed Traffic**			
	Vehicles Travelling	**Southbound**	**Northbound**	**Westbound**	**Eastbound**
	Average Transit Delay (if available)			Unavailable	Unavailable
	Example Transit Priority Treatment			No transit priority measures and long cycle length	No transit priority measures and long cycle length
	TLOS	**-**	**-**	**E**	**E**
		E			
	Target TLOS	**E (D for frequent transit routes)**			
Auto	**AutoLOS Inputs**				
	Overall Intersection Volume to Capacity Ratio	0.61 to 0.70			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table			
	AutoLOS	**B**			
	Target AutoLOS	**E**			

Multi-Modal Level of Service - Intersections Form

Project: 24-033 Halo Car Wash
Consultant: BT Engineering
Date: Dec 12, 2025
Scenario: 2031 Horizon, Built-out

	Intersection Name	**West Hunt Club Road / Merivale Road, AM & PM Peak**			
	OP Transect / Policy Area	**Mainstreet Corridor (outside a Hub)**			
Pedestrian	**PLOS Inputs**				
	Pedestrians Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Number of Travel Lanes Crossed	8	7	8	≥ 9
	Median Refuge (≥2.7m)	No	No	No	No
	Crosswalk Treatment	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings
	Signal Cycle Length (sec)	130.0			
	Effective Walk Time (sec)	13.0	16.0	12.0	15.0
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	**WBR**	**EBR**	**NBR**	**SBR**
	Right-Turn Geometry	Conventional Right-Turn Channel	Conventional Right-Turn Channel	Conventional Right-Turn Channel	Conventional Right-Turn Channel
	Right-Turn Signal Phasing	-	-	-	-
	Right-Turn Volume	> 150 to 300 veh/h	≤ 150 veh/h	≤ 150 veh/h	> 150 to 300 veh/h
	Right-Turn Effective Corner Radius	-	-	-	-
	Cross-street Posted Speed (km/h)	60 km/h		80 km/h	
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	**EBL**	**WBL**	**SBL**	**NBL**
	Left-Turn Signal Phasing	Fully Protected	Fully Protected	Fully Protected	Fully Protected
	Left-Turn Volume	-	-	-	-
	Left-Turn Opposing Lanes	-	-	-	-
	Score	**0.70**	**1.30**	**0.70**	**0.70**
	PLOS	**E**	**E**	**E**	**E**
		E			
	Target PLOS	**B**			
Bicycle	**BLOS Inputs**				
	Cycling Route Classification	**Elsewhere**			
	Cyclists Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Type of Cycling Facility Across Leg	Bike Lane Through Intersection	Bike Lane Through Intersection	Mixed Traffic	Mixed Traffic
	Two-Way ADT (in Cyclist Travel Direction)	24,000		21,000	
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No	No	No
	Crossride Operation	-	-	-	-
	Target Crossride Setback Met?	-	-	-	-
	Right-Turn Vehicle Volume from Adjacent Roadway > 100 veh/h?	-	-	-	-
	Cyclist Left-Turn Operation	**WBL**	**EBL**	**NBL**	**SBL**
	Cyclist Left-Turn Treatment Type	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Dual Left-Turn Lanes	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Dual Left-Turn Lanes
	Vehicle Lanes Crossed by Cyclists	Two or More Lanes Crossed	-	Two or More Lanes Crossed	-
	Score	**35**	**35**	**10**	**10**
	BLOS	**D**	**D**	**F**	**F**
		E			
	Target BLOS	**C**			
Transit	**TLOS Inputs**				
	Transit Facility	**Mixed Traffic**			
	Vehicles Travelling	**Southbound**	**Northbound**	**Westbound**	**Eastbound**
	Average Transit Delay (if available)	Unavailable	Unavailable	Unavailable	Unavailable
	Example Transit Priority Treatment	No transit priority measures and long cycle length	No transit priority measures and long cycle length	No transit priority measures and long cycle length	No transit priority measures and long cycle length
	TLOS	**E**	**E**	**E**	**E**
		E			
	Target TLOS	**E (D for frequent transit routes)**			
Auto	**AutoLOS Inputs**				
	Overall Intersection Volume to Capacity Ratio	0.91 to 1.00			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table			
	AutoLOS	**E**			
	Target AutoLOS	**E**			

Multi-Modal Level of Service - Intersections Form

Project: 24-033 Halo Car Wash
Consultant: BT Engineering
Date: Dec 12, 2025
Scenario: 2031 Horizon, Built-out

	Intersection Name	**Merivale Road at 170 m north of West Hunt Club Road, AM & PM Peak**			
	OP Transect / Policy Area	**Mainstreet Corridor (outside a Hub)**			
Pedestrian	**PLOS Inputs**				
	Pedestrians Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Number of Travel Lanes Crossed	7	8	1-3	4
	Median Refuge (≥2.7m)	No	No	No	No
	Crosswalk Treatment	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Zebra Stripe Hi-Vis Markings	Std Transverse Markings
	Signal Cycle Length (sec)	130.0			
	Effective Walk Time (sec)	7.1	7.1	43.9	43.9
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	**WBR**	**EBR**	**NBR**	**SBR**
	Right-Turn Geometry	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel
	Right-Turn Signal Phasing	Permissive	Permissive	Permissive	Permissive
	Right-Turn Volume	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	> 150 to 300 veh/h
	Right-Turn Effective Corner Radius	> 8m	> 8m	> 8m	> 8m
	Cross-street Posted Speed (km/h)	50 km/h		60 km/h	
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	**EBL**	**WBL**	**SBL**	**NBL**
	Left-Turn Signal Phasing	Perm or Prot+Perm	Perm or Prot+Perm	Fully Protected	Fully Protected
	Left-Turn Volume	≤ 50 veh/h	≤ 50 veh/h	-	-
	Left-Turn Opposing Lanes	-	-	-	-
	Score	**1.80**	**1.20**	**4.35**	**3.40**
	PLOS	**D**	**E**	**B**	**C**
		C			
	Target PLOS	**B**			
Bicycle	**BLOS Inputs**				
	Cycling Route Classification	**Elsewhere**			
	Cyclists Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Type of Cycling Facility Across Leg	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic
	Two-Way ADT (in Cyclist Travel Direction)	3,700		23,400	
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No	No	No
	Crossride Operation	-	-	-	-
	Target Crossride Setback Met?	-	-	-	-
	Right-Turn Vehicle Volume from Adjacent Roadway > 100 veh/h?	-	-	-	-
	Cyclist Left-Turn Operation	**WBL**	**EBL**	**NBL**	**SBL**
	Cyclist Left-Turn Treatment Type	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Dual Left-Turn Lanes	General Purpose Through-Left or Single Left-Turn Lane
	Vehicle Lanes Crossed by Cyclists	One Lane Crossed	One Lane Crossed	-	Two or More Lanes Crossed
	Score	**50**	**50**	**30**	**10**
	BLOS	**D**	**D**	**E**	**F**
		D			
	Target BLOS	**C**			
Transit	**TLOS Inputs**				
	Transit Facility	**Mixed Traffic**			
	Vehicles Travelling	**Southbound**	**Northbound**	**Westbound**	**Eastbound**
	Average Transit Delay (if available)	Unavailable	Unavailable		
	Example Transit Priority Treatment	No transit priority measures and long cycle length	No transit priority measures and long cycle length		
	TLOS	**E**	**E**	**-**	**-**
		E			
	Target TLOS	**E (D for frequent transit routes)**			
Auto	**AutoLOS Inputs**				
	Overall Intersection Volume to Capacity Ratio	0.81 to 0.90			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table			
	AutoLOS	**D**			
	Target AutoLOS	**E**			

Appendix I

Synchro Reports

Timings
1: Cleopatra Drive/Lancelot Drive & West Hunt Club Road

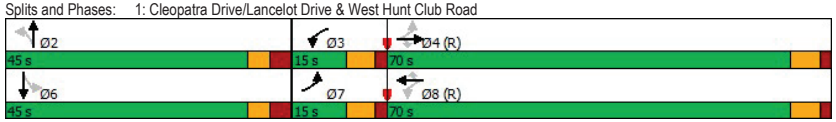
Background AM Peak Hour
12/12/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	83	1535	204	95	827	13	36	6	6	5
Future Volume (vph)	83	1535	204	95	827	13	36	6	6	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	70.0	70.0	12.5	34.5	34.5	44.8	44.8	44.8	44.8
Total Split (s)	15.0	70.0	70.0	15.0	70.0	70.0	45.0	45.0	45.0	45.0
Total Split (%)	11.5%	53.8%	53.8%	11.5%	53.8%	53.8%	34.6%	34.6%	34.6%	34.6%
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.3	3.3	3.3	3.3
All-Red Time (s)	1.9	1.9	1.9	1.9	1.9	1.9	3.5	3.5	3.5	3.5
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.8	6.8	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	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)	96.5	89.6	89.6	99.3	91.0	91.0	14.7	14.7	14.7	14.7
Actuated g/C Ratio	0.74	0.69	0.69	0.76	0.70	0.70	0.11	0.11	0.11	0.11
v/c Ratio	0.20	0.73	0.22	0.47	0.41	0.02	0.32	0.21	0.06	0.11
Control Delay	6.6	18.5	5.3	30.8	5.6	0.0	54.9	18.5	44.2	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	18.5	5.3	30.8	5.6	0.0	54.9	18.5	44.2	23.5
LOS	A	B	A	C	A	A	D	B	D	C
Approach Delay		16.5			8.1			35.8		29.1
Approach LOS		B			A			D		C

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 14.4 — Intersection LOS: B
Intersection Capacity Utilization 77.8% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Cleopatra Drive/Lancelot Drive & West Hunt Club Road



Queues
1: Cleopatra Drive/Lancelot Drive & West Hunt Club Road

Background AM Peak Hour
12/12/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	90	1668	222	103	899	14	39	43	7	19
v/c Ratio	0.20	0.73	0.22	0.47	0.41	0.02	0.32	0.21	0.06	0.11
Control Delay	6.6	18.5	5.3	30.8	5.6	0.0	54.9	18.5	44.2	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	18.5	5.3	30.8	5.6	0.0	54.9	18.5	44.2	23.5
Queue Length 50th (m)	3.5	122.7	6.1	7.2	15.8	0.0	9.8	1.7	1.7	1.2
Queue Length 95th (m)	16.4	#282.9	26.6	27.8	22.8	0.0	16.5	10.2	5.1	6.9
Internal Link Dist (m)		189.2			203.9			104.3		56.5
Turn Bay Length (m)	85.0		70.0	60.0			50.0			
Base Capacity (vph)	466	2285	1031	231	2191	905	319	462	285	422
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	0.19	0.73	0.22	0.45	0.41	0.02	0.12	0.09	0.02	0.05

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	1535	204	95	827	13	36	6	33	6	5	13
Future Volume (vph)	83	1535	204	95	827	13	36	6	33	6	5	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.8	6.8		6.8	6.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.97		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1674	3316	1437	1691	3131	1258	1386	1472		1268	1391	
Flt Permitted	0.29	1.00	1.00	0.09	1.00	1.00	0.75	1.00		0.73	1.00	
Satd. Flow (perm)	517	3316	1437	160	3131	1258	1087	1472		973	1391	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	1668	222	103	899	14	39	7	36	7	5	14
RTOR Reduction (vph)	0	0	45	0	0	4	0	32	0	0	13	0
Lane Group Flow (vph)	90	1668	177	103	899	10	39	11	0	7	6	0
Confl. Peds. (#/hr)	1					1			3	3		
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	1%	2%	1%	0%	8%	15%	22%	0%	3%	33%	0%	15%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	95.2	88.3	88.3	98.0	89.7	89.7	13.6	13.6		13.6	13.6	
Effective Green, g (s)	95.2	88.3	88.3	98.0	89.7	89.7	13.6	13.6		13.6	13.6	
Actuated g/C Ratio	0.73	0.68	0.68	0.75	0.69	0.69	0.10	0.10		0.10	0.10	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.8	6.8		6.8	6.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	440	2252	976	218	2160	868	113	153		101	145	
v/s Ratio Prot	0.01	c0.50		c0.03	0.29			0.01			0.00	
v/s Ratio Perm	0.14		0.12	0.33		0.01	c0.04			0.01		
v/c Ratio	0.20	0.74	0.18	0.47	0.42	0.01	0.35	0.07		0.07	0.04	
Uniform Delay, d1	5.1	13.5	7.6	11.8	8.8	6.3	54.1	52.5		52.5	52.4	
Progression Factor	1.00	1.00	1.00	2.91	0.46	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.2	0.4	1.6	0.6	0.0	1.8	0.2		0.3	0.1	
Delay (s)	5.3	15.7	8.0	35.9	4.6	6.3	55.9	52.7		52.8	52.5	
Level of Service	A	B	A	D	A	A	E	D		D	D	
Approach Delay (s)		14.4			7.8			54.2			52.6	
Approach LOS		B			A			D			D	

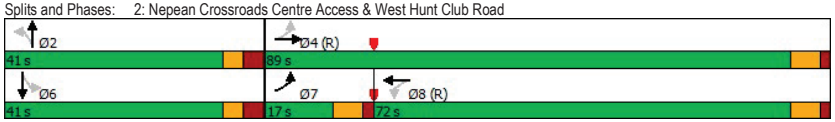
Intersection Summary				
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.8	
Intersection Capacity Utilization	77.8%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	43	1523	4	864	5	1	13	6
Future Volume (vph)	43	1523	4	864	5	1	13	6
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	7	4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.5	40.4	40.4	40.4	40.7	40.7	40.7	40.7
Total Split (s)	17.0	89.0	72.0	72.0	41.0	41.0	41.0	41.0
Total Split (%)	13.1%	68.5%	55.4%	55.4%	31.5%	31.5%	31.5%	31.5%
Yellow Time (s)	4.6	4.6	4.6	4.6	3.3	3.3	3.3	3.3
All-Red Time (s)	1.8	1.8	1.8	1.8	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4		6.7	6.7	6.7
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	107.2	108.5	98.1	98.1		12.1	12.1	12.1
Actuated g/C Ratio	0.82	0.83	0.75	0.75		0.09	0.09	0.09
v/c Ratio	0.11	0.62	0.03	0.29		0.07	0.13	0.28
Control Delay	3.4	6.2	5.0	3.3		38.8	50.5	20.0
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	3.4	6.2	5.0	3.3		38.8	50.5	20.0
LOS	A	A	A	A		D	D	B
Approach Delay		6.1		3.3		38.8		26.8
Approach LOS		A		A		D		C

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 97 (75%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 5.7		Intersection LOS: A	
Intersection Capacity Utilization 62.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Nepean Crossroads Centre Access & West Hunt Club Road



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	47	1679	4	998	9	14	49
v/c Ratio	0.11	0.62	0.03	0.29	0.07	0.13	0.28
Control Delay	3.4	6.2	5.0	3.3	38.8	50.5	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.4	6.2	5.0	3.3	38.8	50.5	20.0
Queue Length 50th (m)	0.9	16.5	0.2	13.9	1.5	3.5	1.8
Queue Length 95th (m)	m2.6	64.2	m0.3	21.3	5.6	8.1	11.3
Internal Link Dist (m)		203.9		181.8	84.9		144.3
Turn Bay Length (m)	65.0		50.0			25.0	
Base Capacity (vph)	459	2709	147	3430	334	306	416
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.62	0.03	0.29	0.03	0.05	0.12

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	1523	22	4	864	54	5	1	3	13	6	39
Future Volume (vph)	43	1523	22	4	864	54	5	1	3	13	6	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.4	6.4		6.4	6.4			6.7		6.7	6.7	
Lane Util. Factor	1.00	0.95		1.00	0.91			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99			0.95		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	1.00	
Satd. Flow (prot)	1658	3246		1353	4542			1471		1469	1439	
Flt Permitted	0.25	1.00		0.14	1.00			0.83		0.75	1.00	
Satd. Flow (perm)	436	3246		194	4542			1251		1162	1439	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	1655	24	4	939	59	5	1	3	14	7	42
RTOR Reduction (vph)	0	0	0	0	3	0	0	3	0	0	38	0
Lane Group Flow (vph)	47	1679	0	4	995	0	0	6	0	14	11	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	2%	4%	0%	25%	6%	4%	0%	0%	33%	15%	0%	5%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	105.9	105.9		94.2	94.2			11.0		11.0	11.0	
Effective Green, g (s)	105.9	105.9		94.2	94.2			11.0		11.0	11.0	
Actuated g/C Ratio	0.81	0.81		0.72	0.72			0.08		0.08	0.08	
Clearance Time (s)	6.4	6.4		6.4	6.4			6.7		6.7	6.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	404	2644		140	3291			105		98	121	
v/s Ratio Prot	0.00	c0.52			0.22						0.01	
v/s Ratio Perm	0.09			0.02				0.00		c0.01		
v/c Ratio	0.12	0.63		0.03	0.30			0.06		0.14	0.09	
Uniform Delay, d1	2.7	4.6		5.0	6.3			54.7		55.1	54.9	
Progression Factor	0.66	0.79		0.45	0.39			1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.8		0.3	0.2			0.2		0.7	0.3	
Delay (s)	1.9	4.4		2.5	2.7			55.0		55.8	55.2	
Level of Service	A	A		A	A			D		E	E	
Approach Delay (s)		4.4			2.7			55.0			55.3	
Approach LOS		A			A			D			E	

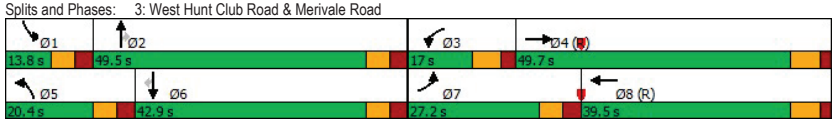
Intersection Summary				
HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	62.1%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	294	870	94	600	93	966	84	180	428	238
Future Volume (vph)	294	870	94	600	93	966	84	180	428	238
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	34.5	12.5	34.5	11.6	38.6	38.6	11.6	38.6	38.6
Total Split (s)	27.2	49.7	17.0	39.5	20.4	49.5	49.5	13.8	42.9	42.9
Total Split (%)	20.9%	38.2%	13.1%	30.4%	15.7%	38.1%	38.1%	10.6%	33.0%	33.0%
Yellow Time (s)	3.7	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.9	2.0	2.4	2.0	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	-2.0	0.0	0.0	0.0	0.0	0.0	-2.0	0.0	0.0
Total Lost Time (s)	6.6	4.6	7.0	6.6	6.6	6.6	6.6	4.6	6.6	6.6
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	17.9	45.1	10.0	35.6	12.4	42.9	42.9	9.2	37.7	37.7
Actuated g/C Ratio	0.14	0.35	0.08	0.27	0.10	0.33	0.33	0.07	0.29	0.29
v/c Ratio	0.74	0.96	0.87	0.65	0.73	0.97	0.16	0.88	0.51	0.44
Control Delay	79.7	50.6	113.4	42.5	85.3	64.0	0.6	106.6	36.0	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	17.7	0.0	0.0	0.0	0.0
Total Delay	79.7	50.6	113.4	42.5	85.3	81.6	0.6	106.6	36.0	7.3
LOS	E	D	F	D	F	F	A	F	D	A
Approach Delay		57.4		50.4		76.0			43.0	
Approach LOS		E		D		E			D	

Intersection Summary		
Cycle Length: 130		
Actuated Cycle Length: 130		
Offset: 102 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green		
Natural Cycle: 120		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.97		
Intersection Signal Delay: 58.1	Intersection LOS: E	
Intersection Capacity Utilization 87.1%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 3: West Hunt Club Road & Merivale Road



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	320	1058	102	819	101	1050	91	196	465	259
v/c Ratio	0.74	0.96	0.87	0.65	0.73	0.97	0.16	0.88	0.51	0.44
Control Delay	79.7	50.6	113.4	42.5	85.3	64.0	0.6	106.6	36.0	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	17.7	0.0	0.0	0.0	0.0
Total Delay	79.7	50.6	113.4	42.5	85.3	81.6	0.6	106.6	36.0	7.3
Queue Length 50th (m)	42.2	125.8	26.3	64.7	25.3	139.1	0.0	27.6	53.6	2.3
Queue Length 95th (m)	55.5	#179.3	#59.3	81.5	#48.8	#183.8	0.0	#49.0	43.7	21.3
Internal Link Dist (m)		181.8		186.0		166.5			136.9	
Turn Bay Length (m)	95.0				55.0		130.0	60.0		
Base Capacity (vph)	495	1102	117	1259	154	1083	565	223	915	586
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	73	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.96	0.87	0.65	0.66	1.04	0.16	0.88	0.51	0.44

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	294	870	103	94	600	154	93	966	84	180	428	238
Future Volume (vph)	294	870	103	94	600	154	93	966	84	180	428	238
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.6	4.6		7.0	6.6		6.6	6.6	6.6	4.6	6.6	6.6
Lane Util. Factor	0.97	0.95		1.00	0.91		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3124	3158		1523	4482		1458	3283	1307	3154	3161	1388
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3124	3158		1523	4482		1458	3283	1307	3154	3161	1388
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	320	946	112	102	652	167	101	1050	91	196	465	259
RTOR Reduction (vph)	0	7	0	0	34	0	0	0	61	0	0	184
Lane Group Flow (vph)	320	1051	0	102	785	0	101	1050	30	196	465	75
Confl. Peds. (#/hr)	3		1	1		3	1		6	6		1
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	5%	4%	15%	11%	5%	3%	16%	3%	11%	4%	7%	5%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	4	0	0	4
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	17.9	43.1		10.0	35.6		12.4	42.9	42.9	7.2	37.7	37.7
Effective Green, g (s)	17.9	45.1		10.0	35.6		12.4	42.9	42.9	9.2	37.7	37.7
Actuated g/C Ratio	0.14	0.35		0.08	0.27		0.10	0.33	0.33	0.07	0.29	0.29
Clearance Time (s)	6.6	6.6		7.0	6.6		6.6	6.6	6.6	6.6	6.6	6.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	430	1095		117	1227		139	1083	431	223	916	402
v/s Ratio Prot	c0.10	c0.33		0.07	0.18		c0.07	c0.32		0.06	0.15	
v/s Ratio Perm									0.02			0.05
v/c Ratio	0.74	0.96		0.87	0.64		0.73	0.97	0.07	0.88	0.51	0.19
Uniform Delay, d1	53.9	41.6		59.4	41.6		57.2	42.9	29.9	59.8	38.4	34.6
Progression Factor	1.32	0.82		1.00	1.00		1.00	1.00	1.00	1.23	0.87	1.16
Incremental Delay, d2	5.5	16.3		46.1	2.6		17.2	20.9	0.3	28.8	1.9	1.0
Delay (s)	76.7	50.4		105.4	44.1		74.3	63.8	30.2	102.4	35.4	41.2
Level of Service	E	D		F	D		E	E	C	F	D	D
Approach Delay (s)		56.5			50.9			62.2			51.3	
Approach LOS		E			D			E			D	

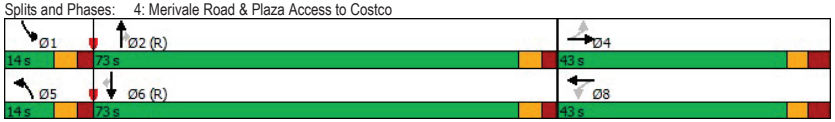
Intersection Summary				
HCM 2000 Control Delay	55.9	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.00			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	26.4	
Intersection Capacity Utilization	87.1%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	95	22	9	3	20	1373	82	45	785	72
Future Volume (vph)	95	22	9	3	20	1373	82	45	785	72
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4		8	5	2		1	6	
Permitted Phases	4		8				2			6
Detector Phase	4	4	8	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	42.9	42.9	42.9	42.9	11.6	34.1	34.1	11.6	34.1	34.1
Total Split (s)	43.0	43.0	43.0	43.0	14.0	73.0	73.0	14.0	73.0	73.0
Total Split (%)	33.1%	33.1%	33.1%	33.1%	10.8%	56.2%	56.2%	10.8%	56.2%	56.2%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.6	3.6	3.6	3.6	2.5	2.4	2.4	2.5	2.4	2.4
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)	6.9	6.9		6.9	6.2	6.1	6.1	6.2	6.1	6.1
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	18.6	18.6		18.6	6.4	86.3	86.3	8.2	90.5	90.5
Actuated g/C Ratio	0.14	0.14		0.14	0.05	0.66	0.66	0.06	0.70	0.70
v/c Ratio	0.58	0.20		0.06	0.14	0.68	0.09	0.47	0.38	0.08
Control Delay	62.2	25.5		27.7	74.2	6.9	0.1	73.3	11.3	2.6
Queue Delay	0.0	0.0		0.0	0.0	0.4	0.0	0.0	0.0	0.0
Total Delay	62.2	25.5		27.7	74.2	7.3	0.1	73.3	11.3	2.6
LOS	E	C		C	E	A	A	E	B	A
Approach Delay		49.9		27.7		7.9			13.7	
Approach LOS		D		C		A			B	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 37 (28%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 12.5		Intersection LOS: B	
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Merivale Road & Plaza Access to Costco



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	103	52	24	22	1492	89	49	853	78
v/c Ratio	0.58	0.20	0.06	0.14	0.68	0.09	0.47	0.38	0.08
Control Delay	62.2	25.5	27.7	74.2	6.9	0.1	73.3	11.3	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
Total Delay	62.2	25.5	27.7	74.2	7.3	0.1	73.3	11.3	2.6
Queue Length 50th (m)	25.6	5.6	1.5	3.0	24.6	0.0	12.2	45.9	0.0
Queue Length 95th (m)	37.1	14.6	4.7	m3.9	m181.0	m0.0	25.8	91.2	6.7
Internal Link Dist (m)		60.1	118.8		136.9			188.9	
Turn Bay Length (m)				35.0			65.0		65.0
Base Capacity (vph)	348	467	747	187	2179	946	110	2221	1008
Starvation Cap Reductn	0	0	0	0	259	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.11	0.03	0.12	0.78	0.09	0.45	0.38	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	22	26	9	3	10	20	1373	82	45	785	72
Future Volume (vph)	95	22	26	9	3	10	20	1373	82	45	785	72
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.9	6.9			6.9		6.2	6.1	6.1	6.2	6.1	6.1
Lane Util. Factor	1.00	1.00			0.95		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98			0.99		1.00	1.00	0.96	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.92			0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1607	1606			3034		3124	3283	1385	1658	3191	1414
Flt Permitted	0.74	1.00			0.86		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1253	1606			2654		3124	3283	1385	1658	3191	1414
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	24	28	10	3	11	22	1492	89	49	853	78
RTOR Reduction (vph)	0	24	0	0	9	0	0	0	29	0	0	25
Lane Group Flow (vph)	103	28	0	0	15	0	22	1492	60	49	853	53
Confl. Peds. (#/hr)	2		7	7		2	5		7	7		5
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	5%	0%	0%	0%	0%	0%	5%	3%	3%	2%	6%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	4	0	0	4
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	18.6	18.6			18.6		4.2	85.1	85.1	7.1	88.0	88.0
Effective Green, g (s)	18.6	18.6			18.6		4.2	85.1	85.1	7.1	88.0	88.0
Actuated g/C Ratio	0.14	0.14			0.14		0.03	0.65	0.65	0.05	0.68	0.68
Clearance Time (s)	6.9	6.9			6.9		6.2	6.1	6.1	6.2	6.1	6.1
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	179	229			379		100	2149	906	90	2160	957
v/s Ratio Prot		0.02					0.01	c0.45		c0.03	c0.27	
v/s Ratio Perm	c0.08				0.01				0.04			0.04
v/c Ratio	0.58	0.12			0.04		0.22	0.69	0.07	0.54	0.39	0.06
Uniform Delay, d1	52.0	48.6			48.0		61.3	14.2	8.1	59.9	9.3	7.0
Progression Factor	1.00	1.00			1.00		1.24	0.34	0.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	0.2			0.0		0.6	1.0	0.1	6.6	0.5	0.1
Delay (s)	56.4	48.8			48.0		76.8	5.8	0.1	66.5	9.8	7.2
Level of Service	E	D			D		E	A	A	E	A	A
Approach Delay (s)		53.9			48.0			6.4			12.4	
Approach LOS		D			D			A			B	

Intersection Summary				
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.2	
Intersection Capacity Utilization	66.8%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	6	7	23	5	6	9	11	47	3	6	7
Future Volume (vph)	7	6	7	23	5	6	9	11	47	3	6	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	7	8	25	5	7	10	12	51	3	7	8

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	23	37	73	18
Volume Left (vph)	8	25	10	3
Volume Right (vph)	8	7	51	8
Hadj (s)	-0.11	0.06	-0.36	-0.20
Departure Headway (s)	4.0	4.2	3.7	3.9
Degree Utilization, x	0.03	0.04	0.07	0.02
Capacity (veh/h)	871	843	948	902
Control Delay (s)	7.1	7.3	7.0	7.0
Approach Delay (s)	7.1	7.3	7.0	7.0
Approach LOS	A	A	A	A

Intersection Summary					
Delay			7.1		
Level of Service			A		
Intersection Capacity Utilization			18.6%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	63	0	0	25	9	0	0	0	10	0	8
Future Volume (vph)	3	63	0	0	25	9	0	0	0	10	0	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	68	0	0	27	10	0	0	0	11	0	9

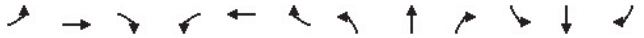
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	71	37	0	20
Volume Left (vph)	3	0	0	11
Volume Right (vph)	0	10	0	9
Hadj (s)	0.04	-0.13	0.00	-0.13
Departure Headway (s)	4.0	3.9	4.1	4.0
Degree Utilization, x	0.08	0.04	0.00	0.02
Capacity (veh/h)	884	915	848	872
Control Delay (s)	7.4	7.0	7.1	7.1
Approach Delay (s)	7.4	7.0	0.0	7.1
Approach LOS	A	A	A	A

Intersection Summary					
Delay			7.2		
Level of Service			A		
Intersection Capacity Utilization			18.7%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	76	3	7	21	7	4	11	11	7	9	0
Future Volume (vph)	3	76	3	7	21	7	4	11	11	7	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	83	3	8	23	8	4	12	12	8	10	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	89	39	28	18
Volume Left (vph)	3	8	4	8
Volume Right (vph)	3	8	12	0
Hadj (s)	0.02	-0.05	-0.19	0.12
Departure Headway (s)	4.1	4.0	4.0	4.3
Degree Utilization, x	0.10	0.04	0.03	0.02
Capacity (veh/h)	871	874	862	804
Control Delay (s)	7.5	7.2	7.1	7.4
Approach Delay (s)	7.5	7.2	7.1	7.4
Approach LOS	A	A	A	A

Intersection Summary					
Delay	7.4				
Level of Service	A				
Intersection Capacity Utilization	17.9%	ICU Level of Service	A		
Analysis Period (min)	15				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	46	7	22	47	39	4	1	26	35	1	0
Future Volume (vph)	1	46	7	22	47	39	4	1	26	35	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	50	8	24	51	42	4	1	28	38	1	0

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	59	75	42	33	39
Volume Left (vph)	1	24	0	4	38
Volume Right (vph)	8	0	42	28	0
Hadj (s)	-0.04	0.19	-0.67	-0.45	0.23
Departure Headway (s)	4.2	4.9	4.0	3.9	4.6
Degree Utilization, x	0.07	0.10	0.05	0.04	0.05
Capacity (veh/h)	828	712	865	877	758
Control Delay (s)	7.6	7.3	6.0	7.0	7.8
Approach Delay (s)	7.6	6.8		7.0	7.8
Approach LOS	A	A		A	A

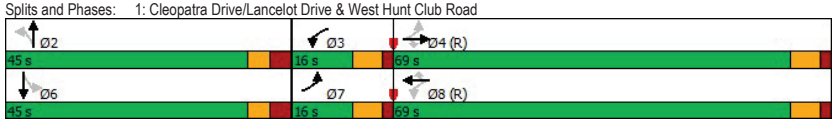
Intersection Summary					
Delay	7.2				
Level of Service	A				
Intersection Capacity Utilization	27.1%	ICU Level of Service	A		
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	46	887	35	23	1389	21	118	7	28	6
Future Volume (vph)	46	887	35	23	1389	21	118	7	28	6
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	31.5	31.5	12.5	34.5	34.5	44.8	44.8	44.8	44.8
Total Split (s)	16.0	69.0	69.0	16.0	69.0	69.0	45.0	45.0	45.0	45.0
Total Split (%)	12.3%	53.1%	53.1%	12.3%	53.1%	53.1%	34.6%	34.6%	34.6%	34.6%
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.3	3.3	3.3	3.3
All-Red Time (s)	1.9	1.9	1.9	1.9	1.9	1.9	3.5	3.5	3.5	3.5
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.8	6.8	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	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)	92.1	87.7	87.7	89.9	84.7	84.7	21.1	21.1	21.1	21.1
Actuated g/C Ratio	0.71	0.67	0.67	0.69	0.65	0.65	0.16	0.16	0.16	0.16
v/c Ratio	0.24	0.43	0.04	0.07	0.70	0.02	0.64	0.34	0.15	0.22
Control Delay	9.8	13.1	0.1	4.0	10.0	0.0	63.3	11.5	43.9	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	13.1	0.1	4.0	10.0	0.0	63.3	11.5	43.9	13.1
LOS	A	B	A	A	B	A	E	B	D	B
Approach Delay		12.4			9.8			39.4		22.7
Approach LOS		B			A			D		C

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 127 (98%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 13.6 — Intersection LOS: B
Intersection Capacity Utilization 66.3% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Cleopatra Drive/Lancelot Drive & West Hunt Club Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	50	964	38	25	1510	23	128	110	30	66
v/c Ratio	0.24	0.43	0.04	0.07	0.70	0.02	0.64	0.34	0.15	0.22
Control Delay	9.8	13.1	0.1	4.0	10.0	0.0	63.3	11.5	43.9	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	13.1	0.1	4.0	10.0	0.0	63.3	11.5	43.9	13.1
Queue Length 50th (m)	2.9	58.5	0.0	0.8	30.7	0.0	31.7	1.8	6.8	1.6
Queue Length 95th (m)	10.2	109.9	0.0	2.5	#75.9	0.0	44.1	15.2	13.3	11.9
Internal Link Dist (m)		189.2			203.9			104.3		56.5
Turn Bay Length (m)	85.0		70.0	60.0			50.0			
Base Capacity (vph)	241	2236	899	380	2161	973	362	509	353	486
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	0.21	0.43	0.04	0.07	0.70	0.02	0.35	0.22	0.08	0.14

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	887	35	23	1389	21	118	7	94	28	6	54
Future Volume (vph)	46	887	35	23	1389	21	118	7	94	28	6	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.8	6.8		6.8	6.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.97		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1658	3316	1295	1523	3316	1450	1642	1479		1688	1506	
Flt Permitted	0.11	1.00	1.00	0.26	1.00	1.00	0.71	1.00		0.68	1.00	
Satd. Flow (perm)	187	3316	1295	422	3316	1450	1234	1479		1202	1506	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	964	38	25	1510	23	128	8	102	30	7	59
RTOR Reduction (vph)	0	0	13	0	0	8	0	85	0	0	49	0
Lane Group Flow (vph)	50	964	25	25	1510	15	128	25	0	30	17	0
Confl. Peds. (#/hr)									2	2		
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	2%	2%	12%	11%	2%	0%	3%	0%	1%	0%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	90.7	85.1	85.1	87.5	83.5	83.5	21.1	21.1		21.1	21.1	
Effective Green, g (s)	90.7	85.1	85.1	87.5	83.5	83.5	21.1	21.1		21.1	21.1	
Actuated g/C Ratio	0.70	0.65	0.65	0.67	0.64	0.64	0.16	0.16		0.16	0.16	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.8	6.8		6.8	6.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	193	2170	847	317	2129	931	200	240		195	244	
v/s Ratio Prot	c0.01	0.29		0.00	c0.46			0.02			0.01	
v/s Ratio Perm	0.17		0.02	0.05		0.01	c0.10			0.02		
v/c Ratio	0.26	0.44	0.03	0.08	0.71	0.02	0.64	0.10		0.15	0.07	
Uniform Delay, d1	10.8	10.9	7.9	7.4	15.3	8.4	50.9	46.4		46.8	46.1	
Progression Factor	1.00	1.00	1.00	0.48	0.42	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.7	0.1	0.1	2.0	0.0	6.8	0.2		0.4	0.1	
Delay (s)	11.5	11.6	8.0	3.7	8.4	8.4	57.7	46.6		47.1	46.2	
Level of Service	B	B	A	A	A	A	E	D		D	D	
Approach Delay (s)		11.5			8.3			52.6			46.5	
Approach LOS		B			A			D			D	

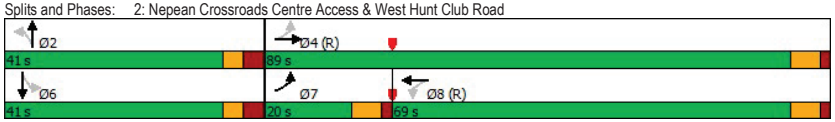
Intersection Summary				
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.8	
Intersection Capacity Utilization	66.3%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	43	745	13	1175	10	1	34	6
Future Volume (vph)	43	745	13	1175	10	1	34	6
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	7	4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.5	40.4	40.4	40.4	40.7	40.7	40.7	40.7
Total Split (s)	20.0	89.0	69.0	69.0	41.0	41.0	41.0	41.0
Total Split (%)	15.4%	68.5%	53.1%	53.1%	31.5%	31.5%	31.5%	31.5%
Yellow Time (s)	4.6	4.6	4.6	4.6	3.3	3.3	3.3	3.3
All-Red Time (s)	1.8	1.8	1.8	1.8	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4		6.7	6.7	6.7
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	105.9	107.1	96.7	96.7		13.5	13.5	13.5
Actuated g/C Ratio	0.81	0.82	0.74	0.74		0.10	0.10	0.10
v/c Ratio	0.16	0.31	0.03	0.38		0.17	0.29	0.33
Control Delay	2.7	1.5	4.1	4.3		29.3	55.0	16.8
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	2.7	1.5	4.1	4.3		29.3	55.0	16.8
LOS	A	A	A	A		C	E	B
Approach Delay		1.6		4.3		29.3		30.1
Approach LOS		A		A		C		C

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 9 (7%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 4.7		Intersection LOS: A	
Intersection Capacity Utilization 58.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Nepean Crossroads Centre Access & West Hunt Club Road



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	47	821	14	1337	27	37	69
v/c Ratio	0.16	0.31	0.03	0.38	0.17	0.29	0.33
Control Delay	2.7	1.5	4.1	4.3	29.3	55.0	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.7	1.5	4.1	4.3	29.3	55.0	16.8
Queue Length 50th (m)	0.6	5.2	0.3	10.9	2.9	9.2	1.7
Queue Length 95th (m)	2.3	11.8	m1.0	m93.6	9.9	16.5	12.9
Internal Link Dist (m)		203.9		181.8	84.9		144.3
Turn Bay Length (m)	65.0		50.0			25.0	
Base Capacity (vph)	378	2646	452	3478	374	325	444
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.31	0.03	0.38	0.07	0.11	0.16

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	745	10	13	1175	55	10	1	14	34	6	57
Future Volume (vph)	43	745	10	13	1175	55	10	1	14	34	6	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.4	6.4		6.4	6.4			6.7		6.7	6.7	
Lane Util. Factor	1.00	0.95		1.00	0.91			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.99			0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1658	3211		1690	4676			1576		1585	1490	
Flt Permitted	0.17	1.00		0.34	1.00			0.85		0.74	1.00	
Satd. Flow (perm)	289	3211		609	4676			1365		1234	1490	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	810	11	14	1277	60	11	1	15	37	7	62
RTOR Reduction (vph)	0	0	0	0	2	0	0	14	0	0	56	0
Lane Group Flow (vph)	47	821	0	14	1335	0	0	13	0	37	13	0
Confl. Peds. (#/hr)	6		1	1		6	1		6	6		1
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	2%	5%	10%	0%	3%	4%	0%	0%	0%	6%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	104.5	104.5		92.8	92.8			12.4		12.4	12.4	
Effective Green, g (s)	104.5	104.5		92.8	92.8			12.4		12.4	12.4	
Actuated g/C Ratio	0.80	0.80		0.71	0.71			0.10		0.10	0.10	
Clearance Time (s)	6.4	6.4		6.4	6.4			6.7		6.7	6.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	288	2581		434	3337			130		117	142	
v/s Ratio Prot	0.01	c0.26			c0.29						0.01	
v/s Ratio Perm	0.12			0.02				0.01		c0.03		
v/c Ratio	0.16	0.32		0.03	0.40			0.10		0.32	0.09	
Uniform Delay, d1	3.4	3.4		5.4	7.5			53.7		54.8	53.7	
Progression Factor	0.34	0.26		0.40	0.45			1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.3		0.1	0.2			0.4		1.6	0.3	
Delay (s)	1.4	1.2		2.2	3.5			54.1		56.4	53.9	
Level of Service	A	A		A	A			D		E	D	
Approach Delay (s)		1.2			3.5			54.1			54.8	
Approach LOS		A			A			D			D	

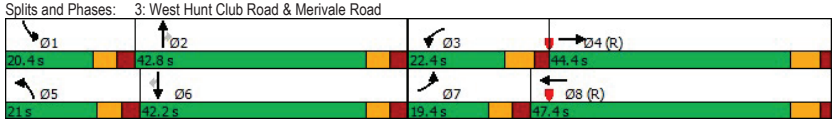
Intersection Summary					
HCM 2000 Control Delay	5.6	HCM 2000 Level of Service		A	
HCM 2000 Volume to Capacity ratio	0.40				
Actuated Cycle Length (s)	130.0	Sum of lost time (s)		19.5	
Intersection Capacity Utilization	58.4%	ICU Level of Service		B	
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	257	583	155	1042	141	535	106	182	797	296
Future Volume (vph)	257	583	155	1042	141	535	106	182	797	296
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	34.5	12.5	34.5	11.6	38.6	38.6	11.6	38.6	38.6
Total Split (s)	19.4	44.4	22.4	47.4	21.0	42.8	42.8	20.4	42.2	42.2
Total Split (%)	14.9%	34.2%	17.2%	36.5%	16.2%	32.9%	32.9%	15.7%	32.5%	32.5%
Yellow Time (s)	3.7	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.9	2.0	2.4	2.0	2.9	2.9	2.9	2.9	2.9	2.9
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)	6.6	6.6	7.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	12.8	37.8	15.4	40.8	14.2	37.5	37.5	12.5	35.8	35.8
Actuated g/C Ratio	0.10	0.29	0.12	0.31	0.11	0.29	0.29	0.10	0.28	0.28
v/c Ratio	0.90	0.83	0.92	0.96	0.89	0.61	0.23	0.65	0.96	0.56
Control Delay	95.4	49.2	105.8	57.9	101.7	43.6	4.2	80.4	58.9	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.4	49.2	105.8	57.9	101.7	43.6	4.2	80.4	58.9	11.1
LOS	F	D	F	E	F	D	A	F	E	B
Approach Delay		61.5		62.9		48.7			50.9	
Approach LOS		E		E		D			D	

Intersection Summary		
Cycle Length: 130		
Actuated Cycle Length: 130		
Offset: 116 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Green		
Natural Cycle: 120		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.96		
Intersection Signal Delay: 56.7	Intersection LOS: E	
Intersection Capacity Utilization 92.2%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 3: West Hunt Club Road & Merivale Road



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	279	763	168	1421	153	582	115	198	866	322
v/c Ratio	0.90	0.83	0.92	0.96	0.89	0.61	0.23	0.65	0.96	0.56
Control Delay	95.4	49.2	105.8	57.9	101.7	43.6	4.2	80.4	58.9	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.4	49.2	105.8	57.9	101.7	43.6	4.2	80.4	58.9	11.1
Queue Length 50th (m)	37.5	77.8	43.3	127.2	39.2	68.7	0.0	27.8	116.3	3.0
Queue Length 95th (m)	#64.1	107.4	#85.7	#158.9	#78.0	88.7	8.8	40.6	#153.3	33.5
Internal Link Dist (m)		181.8		186.0		166.5			136.9	
Turn Bay Length (m)	95.0				55.0		130.0	60.0		
Base Capacity (vph)	310	922	182	1481	175	947	493	338	905	579
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	0.90	0.83	0.92	0.96	0.87	0.61	0.23	0.59	0.96	0.56

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	257	583	119	155	1042	265	141	535	106	182	797	296
Future Volume (vph)	257	583	119	155	1042	265	141	535	106	182	797	296
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.6	6.6		7.0	6.6		6.6	6.6	6.6	6.6	6.6	6.6
Lane Util. Factor	0.97	0.95		1.00	0.91		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3154	3128		1537	4609		1580	3283	1364	3185	3283	1422
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3154	3128		1537	4609		1580	3283	1364	3185	3283	1422
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	634	129	168	1133	288	153	582	115	198	866	322
RTOR Reduction (vph)	0	13	0	0	34	0	0	0	82	0	0	188
Lane Group Flow (vph)	279	750	0	168	1387	0	153	582	33	198	866	134
Confl. Peds. (#/hr)	1		1	1		1	5		8	8		5
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	4%	4%	10%	10%	2%	1%	7%	3%	6%	3%	3%	2%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	4	0	0	4
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	12.8	37.8		15.4	40.8		14.2	37.5	37.5	12.5	35.8	35.8
Effective Green, g (s)	12.8	37.8		15.4	40.8		14.2	37.5	37.5	12.5	35.8	35.8
Actuated g/C Ratio	0.10	0.29		0.12	0.31		0.11	0.29	0.29	0.10	0.28	0.28
Clearance Time (s)	6.6	6.6		7.0	6.6		6.6	6.6	6.6	6.6	6.6	6.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	310	909		182	1446		172	947	393	306	904	391
v/s Ratio Prot	0.09	0.24		c0.11	c0.30		c0.10	0.18		0.06	c0.26	
v/s Ratio Perm									0.02			0.09
v/c Ratio	0.90	0.83		0.92	0.96		0.89	0.61	0.08	0.65	0.96	0.34
Uniform Delay, d1	58.0	43.0		56.7	43.8		57.1	40.0	33.7	56.6	46.4	37.7
Progression Factor	1.13	0.96		1.00	1.00		1.00	1.00	1.00	1.27	0.85	0.88
Incremental Delay, d2	27.0	8.3		45.0	15.7		38.4	3.0	0.4	3.9	19.0	2.0
Delay (s)	92.3	49.7		101.7	59.5		95.5	43.0	34.2	75.8	58.6	35.1
Level of Service	F	D		F	E		F	D	C	E	E	D
Approach Delay (s)		61.1			64.0			51.2			55.6	
Approach LOS		E			E			D			E	

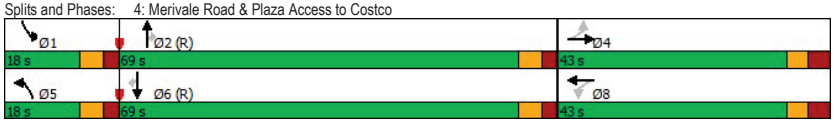
Intersection Summary				
HCM 2000 Control Delay	58.8	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.97			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	26.8	
Intersection Capacity Utilization	92.2%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	146	24	110	25	29	989	124	46	1148	151
Future Volume (vph)	146	24	110	25	29	989	124	46	1148	151
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4		8	5	2		1	6	
Permitted Phases	4		8				2			6
Detector Phase	4	4	8	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	42.9	42.9	42.9	42.9	11.6	34.1	34.1	11.6	34.1	34.1
Total Split (s)	43.0	43.0	43.0	43.0	18.0	69.0	69.0	18.0	69.0	69.0
Total Split (%)	33.1%	33.1%	33.1%	33.1%	13.8%	53.1%	53.1%	13.8%	53.1%	53.1%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.6	3.6	3.6	3.6	2.5	2.4	2.4	2.5	2.4	2.4
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)	6.9	6.9		6.9	6.2	6.1	6.1	6.2	6.1	6.1
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	25.1	25.1		25.1	6.8	79.0	79.0	9.0	83.7	83.7
Actuated g/C Ratio	0.19	0.19		0.19	0.05	0.61	0.61	0.07	0.64	0.64
v/c Ratio	0.82	0.28		0.46	0.19	0.54	0.15	0.43	0.60	0.17
Control Delay	79.5	15.1		28.3	62.9	10.2	0.7	68.4	17.6	4.5
Queue Delay	0.0	0.0		0.0	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	79.5	15.1		28.3	62.9	10.4	0.7	68.4	17.6	4.5
LOS	E	B		C	E	B	A	E	B	A
Approach Delay		54.3		28.3		10.7			17.9	
Approach LOS		D		C		B			B	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 52 (40%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 18.9		Intersection LOS: B	
Intersection Capacity Utilization 69.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Merivale Road & Plaza Access to Costco



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	159	102	247	32	1075	135	50	1248	164
v/c Ratio	0.82	0.28	0.46	0.19	0.54	0.15	0.43	0.60	0.17
Control Delay	79.5	15.1	28.3	62.9	10.2	0.7	68.4	17.6	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	79.5	15.1	28.3	62.9	10.4	0.7	68.4	17.6	4.5
Queue Length 50th (m)	39.4	5.5	17.2	4.1	40.6	0.0	12.5	101.3	3.5
Queue Length 95th (m)	58.9	18.6	27.2	m6.1	m50.1	m0.8	25.2	156.6	15.9
Internal Link Dist (m)		60.1	118.8		136.9			188.9	
Turn Bay Length (m)				35.0			65.0		65.0
Base Capacity (vph)	279	484	734	297	1994	901	153	2094	981
Starvation Cap Reductn	0	0	0	0	254	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.21	0.34	0.11	0.62	0.15	0.33	0.60	0.17

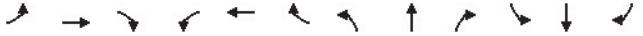
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	24	70	110	25	92	29	989	124	46	1148	151
Future Volume (vph)	146	24	70	110	25	92	29	989	124	46	1148	151
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.9	6.9			6.9		6.2	6.1	6.1	6.2	6.1	6.1
Lane Util. Factor	1.00	1.00			0.95		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98			0.99		1.00	1.00	0.94	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89			0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1682	1544			3008		3281	3283	1399	1691	3252	1456
Flt Permitted	0.57	1.00			0.77		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1006	1544			2380		3281	3283	1399	1691	3252	1456
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	26	76	120	27	100	32	1075	135	50	1248	164
RTOR Reduction (vph)	0	61	0	0	81	0	0	0	54	0	0	48
Lane Group Flow (vph)	159	41	0	0	166	0	32	1075	81	50	1248	116
Confl. Peds. (#/hr)	7		8	8		7	5		15	15		5
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	0%	3%	0%	0%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	4	0	0	4
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	25.1	25.1			25.1		4.4	77.8	77.8	7.9	81.3	81.3
Effective Green, g (s)	25.1	25.1			25.1		4.4	77.8	77.8	7.9	81.3	81.3
Actuated g/C Ratio	0.19	0.19			0.19		0.03	0.60	0.60	0.06	0.63	0.63
Clearance Time (s)	6.9	6.9			6.9		6.2	6.1	6.1	6.2	6.1	6.1
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	194	298			459		111	1964	837	102	2033	910
v/s Ratio Prot		0.03					0.01	0.33		c0.03	c0.38	
v/s Ratio Perm	c0.16				0.07				0.06			0.08
v/c Ratio	0.82	0.14			0.36		0.29	0.55	0.10	0.49	0.61	0.13
Uniform Delay, d1	50.3	43.5			45.5		61.3	15.6	11.1	59.1	14.8	9.9
Progression Factor	1.00	1.00			1.00		1.04	0.54	0.16	1.00	1.00	1.00
Incremental Delay, d2	22.9	0.2			0.5		1.0	0.8	0.2	3.7	1.4	0.3
Delay (s)	73.2	43.7			46.0		64.9	9.1	1.9	62.8	16.2	10.2
Level of Service	E	D			D		E	A	A	E	B	B
Approach Delay (s)		61.6			46.0			9.8			17.1	
Approach LOS		E			D			A			B	

Intersection Summary				
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.2	
Intersection Capacity Utilization	69.9%	ICU Level of Service	C	
Analysis Period (min)	15			

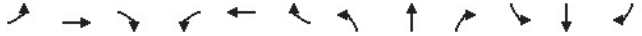
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	8	18	51	3	9	5	19	46	3	21	0
Future Volume (vph)	1	8	18	51	3	9	5	19	46	3	21	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	9	20	55	3	10	5	21	50	3	23	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	30	68	76	26
Volume Left (vph)	1	55	5	3
Volume Right (vph)	20	10	50	0
Hadj (s)	-0.36	0.11	-0.35	0.06
Departure Headway (s)	3.8	4.2	3.8	4.2
Degree Utilization, x	0.03	0.08	0.08	0.03
Capacity (veh/h)	909	824	915	823
Control Delay (s)	6.9	7.6	7.1	7.4
Approach Delay (s)	6.9	7.6	7.1	7.4
Approach LOS	A	A	A	A

Intersection Summary					
Delay			7.3		
Level of Service			A		
Intersection Capacity Utilization			24.2%	ICU Level of Service	A
Analysis Period (min)			15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	9	40	0	2	47	10	1	0	0	19	0	7
Future Volume (vph)	9	40	0	2	47	10	1	0	0	19	0	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	43	0	2	51	11	1	0	0	21	0	8

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	53	64	1	29
Volume Left (vph)	10	2	1	21
Volume Right (vph)	0	11	0	8
Hadj (s)	0.07	-0.06	0.23	0.01
Departure Headway (s)	4.1	4.0	4.4	4.2
Degree Utilization, x	0.06	0.07	0.00	0.03
Capacity (veh/h)	864	897	784	838
Control Delay (s)	7.4	7.3	7.4	7.3
Approach Delay (s)	7.4	7.3	7.4	7.3
Approach LOS	A	A	A	A

Intersection Summary					
Delay			7.3		
Level of Service			A		
Intersection Capacity Utilization			19.2%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	85	15	40	69	26	9	19	33	11	26	4
Future Volume (vph)	3	85	15	40	69	26	9	19	33	11	26	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	92	16	43	75	28	10	21	36	12	28	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	111	146	67	44
Volume Left (vph)	3	43	10	12
Volume Right (vph)	16	28	36	4
Hadj (s)	-0.05	-0.02	-0.26	0.03
Departure Headway (s)	4.3	4.3	4.3	4.6
Degree Utilization, x	0.13	0.17	0.08	0.06
Capacity (veh/h)	814	811	789	729
Control Delay (s)	7.9	8.1	7.6	7.9
Approach Delay (s)	7.9	8.1	7.6	7.9
Approach LOS	A	A	A	A

Intersection Summary					
Delay			7.9		
Level of Service			A		
Intersection Capacity Utilization			27.2%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	4	135	4	44	123	80	4	3	47	77	5	6
Future Volume (vph)	4	135	4	44	123	80	4	3	47	77	5	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	147	4	48	134	87	4	3	51	84	5	7

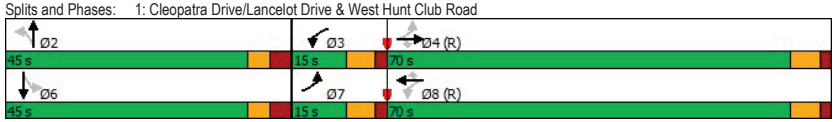
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	155	182	87	58	96
Volume Left (vph)	4	48	0	4	84
Volume Right (vph)	4	0	87	51	7
Hadj (s)	0.02	0.17	-0.67	-0.48	0.17
Departure Headway (s)	4.7	5.2	4.4	4.5	5.1
Degree Utilization, x	0.20	0.26	0.11	0.07	0.14
Capacity (veh/h)	731	666	790	718	647
Control Delay (s)	8.9	8.9	6.7	7.9	8.9
Approach Delay (s)	8.9	8.2		7.9	8.9
Approach LOS	A	A		A	A

Intersection Summary					
Delay			8.5		
Level of Service			A		
Intersection Capacity Utilization			40.9%	ICU Level of Service	A
Analysis Period (min)			15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	89	1535	204	95	827	22	36	6	14	5
Future Volume (vph)	89	1535	204	95	827	22	36	6	14	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	70.0	70.0	12.5	34.5	34.5	44.8	44.8	44.8	44.8
Total Split (s)	15.0	70.0	70.0	15.0	70.0	70.0	45.0	45.0	45.0	45.0
Total Split (%)	11.5%	53.8%	53.8%	11.5%	53.8%	53.8%	34.6%	34.6%	34.6%	34.6%
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.3	3.3	3.3	3.3
All-Red Time (s)	1.9	1.9	1.9	1.9	1.9	1.9	3.5	3.5	3.5	3.5
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.8	6.8	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	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)	96.6	89.6	89.6	99.2	90.9	90.9	14.7	14.7	14.7	14.7
Actuated g/C Ratio	0.74	0.69	0.69	0.76	0.70	0.70	0.11	0.11	0.11	0.11
v/c Ratio	0.22	0.73	0.22	0.47	0.41	0.03	0.32	0.21	0.14	0.13
Control Delay	6.6	18.6	5.3	30.8	5.7	0.0	54.9	18.5	47.9	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	18.6	5.3	30.8	5.7	0.0	54.9	18.5	47.9	21.7
LOS	A	B	A	C	A	A	D	B	D	C
Approach Delay		16.5			8.1			35.8		32.0
Approach LOS		B			A			D		C

Intersection Summary		
Cycle Length: 130		
Actuated Cycle Length: 130		
Offset: 97 (75%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 130		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.73		
Intersection Signal Delay: 14.4	Intersection LOS: B	
Intersection Capacity Utilization 77.8%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 1: Cleopatra Drive/Lancelot Drive & West Hunt Club Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	97	1668	222	103	899	24	39	43	15	23
v/c Ratio	0.22	0.73	0.22	0.47	0.41	0.03	0.32	0.21	0.14	0.13
Control Delay	6.6	18.6	5.3	30.8	5.7	0.0	54.9	18.5	47.9	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	18.6	5.3	30.8	5.7	0.0	54.9	18.5	47.9	21.7
Queue Length 50th (m)	3.8	123.1	6.1	7.2	16.5	0.0	9.7	1.7	3.7	1.2
Queue Length 95th (m)	17.4	#282.9	26.6	27.9	23.4	0.0	16.5	10.2	8.4	7.7
Internal Link Dist (m)		189.2			203.9			104.3		56.5
Turn Bay Length (m)	85.0		70.0	60.0			50.0			
Base Capacity (vph)	465	2285	1031	231	2189	904	318	462	285	419
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	0.21	0.73	0.22	0.45	0.41	0.03	0.12	0.09	0.05	0.05

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	1535	204	95	827	22	36	6	33	14	5	17
Future Volume (vph)	89	1535	204	95	827	22	36	6	33	14	5	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.8	6.8		6.8	6.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1674	3316	1437	1691	3131	1258	1386	1472		1268	1369	
Flt Permitted	0.29	1.00	1.00	0.09	1.00	1.00	0.74	1.00		0.73	1.00	
Satd. Flow (perm)	516	3316	1437	160	3131	1258	1083	1472		973	1369	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	1668	222	103	899	24	39	7	36	15	5	18
RTOR Reduction (vph)	0	0	45	0	0	7	0	32	0	0	16	0
Lane Group Flow (vph)	97	1668	177	103	899	17	39	11	0	15	7	0
Confl. Peds. (#/hr)	1					1			3	3		
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	1%	2%	1%	0%	8%	15%	22%	0%	3%	33%	0%	15%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	95.3	88.3	88.3	97.9	89.6	89.6	13.6	13.6		13.6	13.6	
Effective Green, g (s)	95.3	88.3	88.3	97.9	89.6	89.6	13.6	13.6		13.6	13.6	
Actuated g/C Ratio	0.73	0.68	0.68	0.75	0.69	0.69	0.10	0.10		0.10	0.10	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.8	6.8		6.8	6.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	440	2252	976	218	2157	867	113	153		101	143	
v/s Ratio Prot	0.01	c0.50		c0.03	0.29			0.01			0.01	
v/s Ratio Perm	0.15		0.12	0.33		0.01	c0.04			0.02		
v/c Ratio	0.22	0.74	0.18	0.47	0.42	0.02	0.35	0.07		0.15	0.05	
Uniform Delay, d1	5.1	13.5	7.6	11.8	8.8	6.4	54.1	52.5		52.9	52.4	
Progression Factor	1.00	1.00	1.00	2.90	0.46	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	2.2	0.4	1.6	0.6	0.0	1.8	0.2		0.7	0.1	
Delay (s)	5.4	15.7	8.0	35.8	4.7	6.4	55.9	52.7		53.6	52.5	
Level of Service	A	B	A	D	A	A	E	D		D	D	
Approach Delay (s)		14.3			7.8			54.2			52.9	
Approach LOS		B			A			D			D	

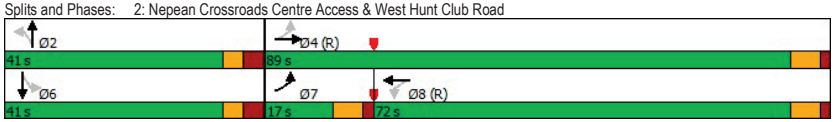
Intersection Summary				
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.8	
Intersection Capacity Utilization	77.8%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	43	1531	4	874	5	1	13	6
Future Volume (vph)	43	1531	4	874	5	1	13	6
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	7	4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.5	40.4	40.4	40.4	40.7	40.7	40.7	40.7
Total Split (s)	17.0	89.0	72.0	72.0	41.0	41.0	41.0	41.0
Total Split (%)	13.1%	68.5%	55.4%	55.4%	31.5%	31.5%	31.5%	31.5%
Yellow Time (s)	4.6	4.6	4.6	4.6	3.3	3.3	3.3	3.3
All-Red Time (s)	1.8	1.8	1.8	1.8	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4		6.7	6.7	6.7
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	107.2	108.5	98.1	98.1		12.1	12.1	12.1
Actuated g/C Ratio	0.82	0.83	0.75	0.75		0.09	0.09	0.09
v/c Ratio	0.11	0.62	0.03	0.29		0.07	0.13	0.28
Control Delay	3.4	6.3	4.8	3.2		38.8	50.5	20.0
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	3.4	6.3	4.8	3.2		38.8	50.5	20.0
LOS	A	A	A	A		D	D	B
Approach Delay		6.2		3.3		38.8		26.8
Approach LOS		A		A		D		C

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 97 (75%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 5.7		Intersection LOS: A	
Intersection Capacity Utilization 62.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Nepean Crossroads Centre Access & West Hunt Club Road



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	47	1688	4	1009	9	14	49
v/c Ratio	0.11	0.62	0.03	0.29	0.07	0.13	0.28
Control Delay	3.4	6.3	4.8	3.2	38.8	50.5	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.4	6.3	4.8	3.2	38.8	50.5	20.0
Queue Length 50th (m)	0.9	16.6	0.1	13.9	1.5	3.5	1.8
Queue Length 95th (m)	m2.6	65.5	m0.3	21.5	5.6	8.1	11.3
Internal Link Dist (m)		203.9		181.8	84.9		144.3
Turn Bay Length (m)	65.0		50.0			25.0	
Base Capacity (vph)	455	2709	144	3430	334	306	416
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.62	0.03	0.29	0.03	0.05	0.12

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	1531	22	4	874	54	5	1	3	13	6	39
Future Volume (vph)	43	1531	22	4	874	54	5	1	3	13	6	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.4	6.4		6.4	6.4			6.7		6.7	6.7	
Lane Util. Factor	1.00	0.95		1.00	0.91			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99			0.95		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	1.00	
Satd. Flow (prot)	1658	3246		1353	4542			1471		1469	1439	
Flt Permitted	0.25	1.00		0.13	1.00			0.83		0.75	1.00	
Satd. Flow (perm)	431	3246		192	4542			1251		1162	1439	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	1664	24	4	950	59	5	1	3	14	7	42
RTOR Reduction (vph)	0	0	0	0	3	0	0	3	0	0	38	0
Lane Group Flow (vph)	47	1688	0	4	1006	0	0	6	0	14	11	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	2%	4%	0%	25%	6%	4%	0%	0%	33%	15%	0%	5%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	105.9	105.9		94.2	94.2			11.0		11.0	11.0	
Effective Green, g (s)	105.9	105.9		94.2	94.2			11.0		11.0	11.0	
Actuated g/C Ratio	0.81	0.81		0.72	0.72			0.08		0.08	0.08	
Clearance Time (s)	6.4	6.4		6.4	6.4			6.7		6.7	6.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	401	2644		139	3291			105		98	121	
v/s Ratio Prot	0.00	c0.52			0.22						0.01	
v/s Ratio Perm	0.09			0.02				0.00		c0.01		
v/c Ratio	0.12	0.64		0.03	0.31			0.06		0.14	0.09	
Uniform Delay, d1	2.7	4.7		5.0	6.3			54.7		55.1	54.9	
Progression Factor	0.67	0.79		0.40	0.39			1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.8		0.3	0.2			0.2		0.7	0.3	
Delay (s)	1.9	4.5		2.3	2.6			55.0		55.8	55.2	
Level of Service	A	A		A	A			D		E	E	
Approach Delay (s)		4.4			2.6			55.0			55.3	
Approach LOS		A			A			D			E	

Intersection Summary				
HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	62.3%	ICU Level of Service	B	
Analysis Period (min)	15			

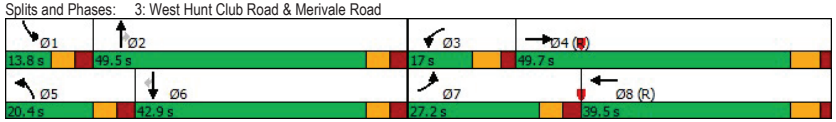
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	294	875	94	604	98	966	84	180	428	238
Future Volume (vph)	294	875	94	604	98	966	84	180	428	238
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	34.5	12.5	34.5	11.6	38.6	38.6	11.6	38.6	38.6
Total Split (s)	27.2	49.7	17.0	39.5	20.4	49.5	49.5	13.8	42.9	42.9
Total Split (%)	20.9%	38.2%	13.1%	30.4%	15.7%	38.1%	38.1%	10.6%	33.0%	33.0%
Yellow Time (s)	3.7	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.9	2.0	2.4	2.0	2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	-2.0	0.0	0.0	0.0	0.0	0.0	-2.0	0.0	0.0
Total Lost Time (s)	6.6	4.6	7.0	6.6	6.6	6.6	6.6	4.6	6.6	6.6
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	17.9	45.1	10.0	35.6	12.7	42.9	42.9	9.2	37.4	37.4
Actuated g/C Ratio	0.14	0.35	0.08	0.27	0.10	0.33	0.33	0.07	0.29	0.29
v/c Ratio	0.74	0.97	0.87	0.65	0.75	0.97	0.16	0.88	0.51	0.44
Control Delay	79.7	51.9	113.4	42.7	87.9	64.0	0.6	106.3	36.0	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	17.7	0.0	0.0	0.0	0.0
Total Delay	79.7	51.9	113.4	42.7	87.9	81.6	0.6	106.3	36.0	7.3
LOS	E	D	F	D	F	F	A	F	D	A
Approach Delay		58.3		50.5		76.2			42.9	
Approach LOS		E		D		E			D	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 102 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 58.5 — Intersection LOS: E
Intersection Capacity Utilization 87.7% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 3: West Hunt Club Road & Merivale Road



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	320	1066	102	824	107	1050	91	196	465	259
v/c Ratio	0.74	0.97	0.87	0.65	0.75	0.97	0.16	0.88	0.51	0.44
Control Delay	79.7	51.9	113.4	42.7	87.9	64.0	0.6	106.3	36.0	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	17.7	0.0	0.0	0.0	0.0
Total Delay	79.7	51.9	113.4	42.7	87.9	81.6	0.6	106.3	36.0	7.3
Queue Length 50th (m)	42.2	127.5	26.3	65.3	26.9	139.1	0.0	27.6	52.9	0.0
Queue Length 95th (m)	55.5	#181.5	#59.3	82.2	#53.0	#183.8	0.0	#49.0	43.7	21.3
Internal Link Dist (m)		181.8		186.0		166.5			136.9	
Turn Bay Length (m)	95.0				55.0		130.0	60.0		
Base Capacity (vph)	495	1102	117	1260	154	1083	565	223	909	584
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	73	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.97	0.87	0.65	0.69	1.04	0.16	0.88	0.51	0.44

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	294	875	106	94	604	154	98	966	84	180	428	238
Future Volume (vph)	294	875	106	94	604	154	98	966	84	180	428	238
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.6	4.6		7.0	6.6		6.6	6.6	6.6	4.6	6.6	6.6
Lane Util. Factor	0.97	0.95		1.00	0.91		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3124	3156		1523	4483		1458	3283	1307	3154	3161	1388
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3124	3156		1523	4483		1458	3283	1307	3154	3161	1388
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	320	951	115	102	657	167	107	1050	91	196	465	259
RTOR Reduction (vph)	0	7	0	0	33	0	0	0	61	0	0	184
Lane Group Flow (vph)	320	1059	0	102	791	0	107	1050	30	196	465	75
Confl. Peds. (#/hr)	3		1	1		3	1		6	6		1
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	5%	4%	15%	11%	5%	3%	16%	3%	11%	4%	7%	5%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	4	0	0	4
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	17.9	43.1		10.0	35.6		12.7	42.9	42.9	7.2	37.4	37.4
Effective Green, g (s)	17.9	45.1		10.0	35.6		12.7	42.9	42.9	9.2	37.4	37.4
Actuated g/C Ratio	0.14	0.35		0.08	0.27		0.10	0.33	0.33	0.07	0.29	0.29
Clearance Time (s)	6.6	6.6		7.0	6.6		6.6	6.6	6.6	6.6	6.6	6.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	430	1094		117	1227		142	1083	431	223	909	399
v/s Ratio Prot	c0.10	c0.34		0.07	0.18		c0.07	c0.32		0.06	0.15	
v/s Ratio Perm									0.02			0.05
v/c Ratio	0.74	0.97		0.87	0.64		0.75	0.97	0.07	0.88	0.51	0.19
Uniform Delay, d1	53.9	41.7		59.4	41.6		57.1	42.9	29.9	59.8	38.7	34.9
Progression Factor	1.32	0.82		1.00	1.00		1.00	1.00	1.00	1.23	0.87	1.15
Incremental Delay, d2	5.5	17.6		46.1	2.6		20.0	20.9	0.3	28.8	2.0	1.0
Delay (s)	76.7	51.8		105.4	44.2		77.1	63.8	30.2	102.1	35.5	41.0
Level of Service	E	D		F	D		E	E	C	F	D	D
Approach Delay (s)		57.6			51.0			62.5			51.2	
Approach LOS		E			D			E			D	

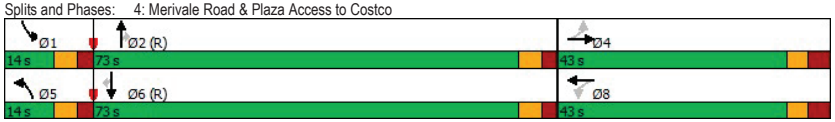
Intersection Summary				
HCM 2000 Control Delay	56.3	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.01			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	26.4	
Intersection Capacity Utilization	87.7%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	102	22	9	3	20	1373	82	45	785	76
Future Volume (vph)	102	22	9	3	20	1373	82	45	785	76
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4		8	5	2		1	6	
Permitted Phases	4		8				2			6
Detector Phase	4	4	8	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	42.9	42.9	42.9	42.9	11.6	34.1	34.1	11.6	34.1	34.1
Total Split (s)	43.0	43.0	43.0	43.0	14.0	73.0	73.0	14.0	73.0	73.0
Total Split (%)	33.1%	33.1%	33.1%	33.1%	10.8%	56.2%	56.2%	10.8%	56.2%	56.2%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.6	3.6	3.6	3.6	2.5	2.4	2.4	2.5	2.4	2.4
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)	6.9	6.9		6.9	6.2	6.1	6.1	6.2	6.1	6.1
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	19.2	19.2		19.2	6.4	85.7	85.7	8.2	89.9	89.9
Actuated g/C Ratio	0.15	0.15		0.15	0.05	0.66	0.66	0.06	0.69	0.69
v/c Ratio	0.60	0.20		0.06	0.14	0.69	0.09	0.47	0.39	0.08
Control Delay	62.9	25.2		27.5	75.2	7.0	0.1	73.3	11.5	2.9
Queue Delay	0.0	0.0		0.0	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	62.9	25.2		27.5	75.2	7.5	0.1	73.3	11.5	2.9
LOS	E	C		C	E	A	A	E	B	A
Approach Delay		50.9		27.5		8.0			13.9	
Approach LOS		D		C		A			B	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 37 (28%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Merivale Road & Plaza Access to Costco



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	111	52	24	22	1492	89	49	853	83
v/c Ratio	0.60	0.20	0.06	0.14	0.69	0.09	0.47	0.39	0.08
Control Delay	62.9	25.2	27.5	75.2	7.0	0.1	73.3	11.5	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	62.9	25.2	27.5	75.2	7.5	0.1	73.3	11.5	2.9
Queue Length 50th (m)	27.5	5.5	1.5	3.0	24.7	0.0	12.2	47.0	0.0
Queue Length 95th (m)	39.6	14.6	4.7	m3.9	m181.0	m0.0	25.8	91.2	7.7
Internal Link Dist (m)		60.1	118.8		136.9			188.9	
Turn Bay Length (m)				35.0			65.0		65.0
Base Capacity (vph)	348	467	748	187	2164	940	110	2206	1002
Starvation Cap Reductn	0	0	0	0	259	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.11	0.03	0.12	0.78	0.09	0.45	0.39	0.08

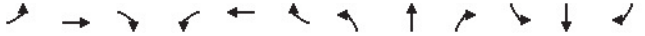
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	22	26	9	3	10	20	1373	82	45	785	76
Future Volume (vph)	102	22	26	9	3	10	20	1373	82	45	785	76
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.9	6.9			6.9		6.2	6.1	6.1	6.2	6.1	6.1
Lane Util. Factor	1.00	1.00			0.95		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98			0.99		1.00	1.00	0.96	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.92			0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1607	1606			3035		3124	3283	1385	1658	3191	1413
Flt Permitted	0.74	1.00			0.86		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1253	1606			2659		3124	3283	1385	1658	3191	1413
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	24	28	10	3	11	22	1492	89	49	853	83
RTOR Reduction (vph)	0	24	0	0	9	0	0	0	30	0	0	27
Lane Group Flow (vph)	111	28	0	0	15	0	22	1492	59	49	853	56
Confl. Peds. (#/hr)	2		7	7		2	5		7	7		5
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	5%	0%	0%	0%	0%	0%	5%	3%	3%	2%	6%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	4	0	0	4
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	19.2	19.2			19.2		4.2	84.5	84.5	7.1	87.4	87.4
Effective Green, g (s)	19.2	19.2			19.2		4.2	84.5	84.5	7.1	87.4	87.4
Actuated g/C Ratio	0.15	0.15			0.15		0.03	0.65	0.65	0.05	0.67	0.67
Clearance Time (s)	6.9	6.9			6.9		6.2	6.1	6.1	6.2	6.1	6.1
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	185	237			392		100	2133	900	90	2145	949
v/s Ratio Prot		0.02					0.01	c0.45		c0.03	c0.27	
v/s Ratio Perm	c0.09				0.01				0.04			0.04
v/c Ratio	0.60	0.12			0.04		0.22	0.70	0.07	0.54	0.40	0.06
Uniform Delay, d1	51.8	48.1			47.5		61.3	14.6	8.3	59.9	9.5	7.3
Progression Factor	1.00	1.00			1.00		1.26	0.33	0.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	0.2			0.0		0.6	1.0	0.1	6.6	0.6	0.1
Delay (s)	57.0	48.3			47.5		77.9	5.9	0.1	66.5	10.1	7.4
Level of Service	E	D			D		E	A	A	E	B	A
Approach Delay (s)		54.2			47.5			6.6			12.7	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.2
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

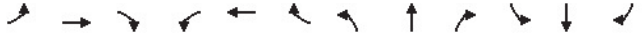
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	6	7	26	5	6	9	11	53	3	6	7
Future Volume (vph)	7	6	7	26	5	6	9	11	53	3	6	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	7	8	28	5	7	10	12	58	3	7	8

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	23	40	80	18
Volume Left (vph)	8	28	10	3
Volume Right (vph)	8	7	58	8
Hadj (s)	-0.11	0.07	-0.38	-0.20
Departure Headway (s)	4.0	4.2	3.7	3.9
Degree Utilization, x	0.03	0.05	0.08	0.02
Capacity (veh/h)	866	836	951	898
Control Delay (s)	7.1	7.4	7.0	7.0
Approach Delay (s)	7.1	7.4	7.0	7.0
Approach LOS	A	A	A	A

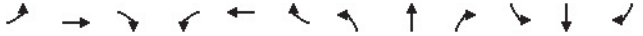
Intersection Summary					
Delay			7.1		
Level of Service			A		
Intersection Capacity Utilization			19.3%	ICU Level of Service	A
Analysis Period (min)			15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	69	0	0	28	9	0	0	0	10	0	8
Future Volume (vph)	3	69	0	0	28	9	0	0	0	10	0	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	75	0	0	30	10	0	0	0	11	0	9

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	78	40	0	20
Volume Left (vph)	3	0	0	11
Volume Right (vph)	0	10	0	9
Hadj (s)	0.04	-0.12	0.00	-0.13
Departure Headway (s)	4.0	3.9	4.2	4.0
Degree Utilization, x	0.09	0.04	0.00	0.02
Capacity (veh/h)	883	910	842	866
Control Delay (s)	7.4	7.1	7.2	7.1
Approach Delay (s)	7.4	7.1	0.0	7.1
Approach LOS	A	A	A	A

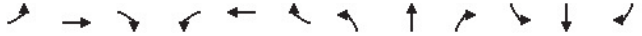
Intersection Summary					
Delay			7.3		
Level of Service			A		
Intersection Capacity Utilization			19.0%	ICU Level of Service	A
Analysis Period (min)			15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	82	3	7	24	7	4	11	11	7	9	0
Future Volume (vph)	3	82	3	7	24	7	4	11	11	7	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	89	3	8	26	8	4	12	12	8	10	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	95	42	28	18
Volume Left (vph)	3	8	4	8
Volume Right (vph)	3	8	12	0
Hadj (s)	0.02	-0.04	-0.19	0.12
Departure Headway (s)	4.1	4.0	4.0	4.3
Degree Utilization, x	0.11	0.05	0.03	0.02
Capacity (veh/h)	870	871	857	799
Control Delay (s)	7.5	7.2	7.1	7.4
Approach Delay (s)	7.5	7.2	7.1	7.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.4			
Level of Service	A			
Intersection Capacity Utilization	18.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			↑	↱		✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	52	7	22	50	39	4	1	26	35	1	0
Future Volume (vph)	1	52	7	22	50	39	4	1	26	35	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	57	8	24	54	42	4	1	28	38	1	0

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	66	78	42	33	39
Volume Left (vph)	1	24	0	4	38
Volume Right (vph)	8	0	42	28	0
Hadj (s)	-0.04	0.19	-0.67	-0.45	0.23
Departure Headway (s)	4.3	4.9	4.0	3.9	4.6
Degree Utilization, x	0.08	0.11	0.05	0.04	0.05
Capacity (veh/h)	825	712	863	870	753
Control Delay (s)	7.6	7.3	6.0	7.1	7.8
Approach Delay (s)	7.6	6.8		7.1	7.8
Approach LOS	A	A		A	A

Intersection Summary				
Delay	7.2			
Level of Service	A			
Intersection Capacity Utilization	27.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	6	67	15	3	36
Future Volume (Veh/h)	12	6	67	15	3	36
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	7	73	16	3	39
Pedestrians	5		5			5
Lane Width (m)	3.5		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			
pX, platoon unblocked						
vC, conflicting volume	136	91			94	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	136	91			94	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			100	
cM capacity (veh/h)	848	958			1494	

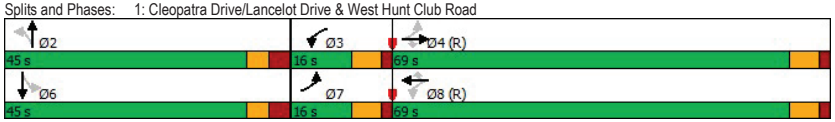
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	20	89	42
Volume Left	13	0	3
Volume Right	7	16	0
cSH	884	1700	1494
Volume to Capacity	0.02	0.05	0.00
Queue Length 95th (m)	0.5	0.0	0.0
Control Delay (s)	9.2	0.0	0.5
Lane LOS	A		A
Approach Delay (s)	9.2	0.0	0.5
Approach LOS	A		

Intersection Summary			
Average Delay		1.4	
Intersection Capacity Utilization		17.6%	ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	54	887	35	23	1389	40	118	7	45	6
Future Volume (vph)	54	887	35	23	1389	40	118	7	45	6
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	7	4		3	8			2		6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	3	8	8	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	31.5	31.5	12.5	34.5	34.5	44.8	44.8	44.8	44.8
Total Split (s)	16.0	69.0	69.0	16.0	69.0	69.0	45.0	45.0	45.0	45.0
Total Split (%)	12.3%	53.1%	53.1%	12.3%	53.1%	53.1%	34.6%	34.6%	34.6%	34.6%
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	3.3	3.3	3.3	3.3
All-Red Time (s)	1.9	1.9	1.9	1.9	1.9	1.9	3.5	3.5	3.5	3.5
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.8	6.8	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	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)	92.3	87.6	87.6	89.5	84.4	84.4	21.2	21.2	21.2	21.2
Actuated g/C Ratio	0.71	0.67	0.67	0.69	0.65	0.65	0.16	0.16	0.16	0.16
v/c Ratio	0.28	0.43	0.04	0.07	0.70	0.04	0.65	0.34	0.25	0.26
Control Delay	10.2	13.1	0.1	4.0	10.0	0.1	63.7	11.5	46.6	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	13.1	0.1	4.0	10.0	0.1	63.7	11.5	46.6	12.3
LOS	B	B	A	A	B	A	E	B	D	B
Approach Delay		12.5			9.6			39.6		25.3
Approach LOS		B			A			D		C

Intersection Summary		
Cycle Length: 130		
Actuated Cycle Length: 130		
Offset: 127 (98%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 115		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.70		
Intersection Signal Delay: 13.7	Intersection LOS: B	
Intersection Capacity Utilization 73.2%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 1: Cleopatra Drive/Lancelot Drive & West Hunt Club Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	59	964	38	25	1510	43	128	110	49	80
v/c Ratio	0.28	0.43	0.04	0.07	0.70	0.04	0.65	0.34	0.25	0.26
Control Delay	10.2	13.1	0.1	4.0	10.0	0.1	63.7	11.5	46.6	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	13.1	0.1	4.0	10.0	0.1	63.7	11.5	46.6	12.3
Queue Length 50th (m)	3.4	58.8	0.0	0.7	30.7	0.0	31.7	1.8	11.3	1.6
Queue Length 95th (m)	11.6	109.9	0.0	2.4	#79.2	0.1	44.3	15.2	19.6	12.9
Internal Link Dist (m)		189.2			203.9			104.3		56.5
Turn Bay Length (m)	85.0		70.0	60.0			50.0			
Base Capacity (vph)	240	2234	898	379	2151	969	357	509	353	494
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	0.25	0.43	0.04	0.07	0.70	0.04	0.36	0.22	0.14	0.16

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	887	35	23	1389	40	118	7	94	45	6	67
Future Volume (vph)	54	887	35	23	1389	40	118	7	94	45	6	67
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.8	6.8		6.8	6.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.97		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1658	3316	1295	1523	3316	1450	1642	1479		1688	1500	
Flt Permitted	0.11	1.00	1.00	0.26	1.00	1.00	0.70	1.00		0.68	1.00	
Satd. Flow (perm)	185	3316	1295	423	3316	1450	1218	1479		1203	1500	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	964	38	25	1510	43	128	8	102	49	7	73
RTOR Reduction (vph)	0	0	13	0	0	16	0	85	0	0	61	0
Lane Group Flow (vph)	59	964	25	25	1510	27	128	25	0	49	19	0
Confl. Peds. (#/hr)									2	2		
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	2%	2%	12%	11%	2%	0%	3%	0%	1%	0%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	90.9	85.0	85.0	87.1	83.1	83.1	21.2	21.2		21.2	21.2	
Effective Green, g (s)	90.9	85.0	85.0	87.1	83.1	83.1	21.2	21.2		21.2	21.2	
Actuated g/C Ratio	0.70	0.65	0.65	0.67	0.64	0.64	0.16	0.16		0.16	0.16	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.8	6.8		6.8	6.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	196	2168	846	317	2119	926	198	241		196	244	
v/s Ratio Prot	c0.01	0.29		0.00	c0.46			0.02			0.01	
v/s Ratio Perm	0.20		0.02	0.05		0.02	c0.11			0.04		
v/c Ratio	0.30	0.44	0.03	0.08	0.71	0.03	0.65	0.10		0.25	0.08	
Uniform Delay, d1	11.1	11.0	7.9	7.5	15.5	8.6	50.9	46.3		47.5	46.1	
Progression Factor	1.00	1.00	1.00	0.48	0.40	0.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.7	0.1	0.1	2.0	0.1	7.1	0.2		0.7	0.1	
Delay (s)	12.0	11.6	8.0	3.8	8.3	0.1	58.0	46.5		48.1	46.2	
Level of Service	B	B	A	A	A	A	E	D		D	D	
Approach Delay (s)		11.5			8.0			52.7			47.0	
Approach LOS		B			A			D			D	

Intersection Summary					
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.68				
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.8		
Intersection Capacity Utilization	73.2%	ICU Level of Service	D		
Analysis Period (min)	15				

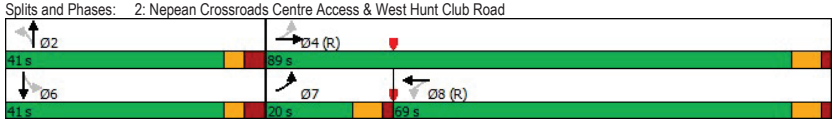
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	43	762	13	1194	10	1	34	6
Future Volume (vph)	43	762	13	1194	10	1	34	6
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	7	4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.5	40.4	40.4	40.4	40.7	40.7	40.7	40.7
Total Split (s)	20.0	89.0	69.0	69.0	41.0	41.0	41.0	41.0
Total Split (%)	15.4%	68.5%	53.1%	53.1%	31.5%	31.5%	31.5%	31.5%
Yellow Time (s)	4.6	4.6	4.6	4.6	3.3	3.3	3.3	3.3
All-Red Time (s)	1.8	1.8	1.8	1.8	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4		6.7	6.7	6.7
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	105.9	107.1	96.7	96.7		13.5	13.5	13.5
Actuated g/C Ratio	0.81	0.82	0.74	0.74		0.10	0.10	0.10
v/c Ratio	0.16	0.32	0.03	0.39		0.17	0.29	0.33
Control Delay	3.0	1.8	4.1	4.3		29.3	55.0	16.8
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	3.0	1.8	4.1	4.3		29.3	55.0	16.8
LOS	A	A	A	A		C	E	B
Approach Delay		1.9		4.3		29.3		30.1
Approach LOS		A		A		C		C

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 9 (7%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.39
Intersection Signal Delay: 4.8 — Intersection LOS: A
Intersection Capacity Utilization 58.4% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 2: Nepean Crossroads Centre Access & West Hunt Club Road



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	47	839	14	1358	27	37	69
v/c Ratio	0.16	0.32	0.03	0.39	0.17	0.29	0.33
Control Delay	3.0	1.8	4.1	4.3	29.3	55.0	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.0	1.8	4.1	4.3	29.3	55.0	16.8
Queue Length 50th (m)	0.8	7.3	0.3	11.5	2.9	9.2	1.7
Queue Length 95th (m)	2.6	14.3	m1.0	m93.1	9.9	16.5	12.9
Internal Link Dist (m)		203.9		181.8	84.9		144.3
Turn Bay Length (m)	65.0		50.0			25.0	
Base Capacity (vph)	372	2646	445	3479	374	325	444
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.32	0.03	0.39	0.07	0.11	0.16

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	762	10	13	1194	55	10	1	14	34	6	57
Future Volume (vph)	43	762	10	13	1194	55	10	1	14	34	6	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.4	6.4		6.4	6.4			6.7		6.7	6.7	
Lane Util. Factor	1.00	0.95		1.00	0.91			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.99			0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1658	3211		1690	4677			1576		1585	1490	
Flt Permitted	0.16	1.00		0.34	1.00			0.85		0.74	1.00	
Satd. Flow (perm)	282	3211		598	4677			1365		1234	1490	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	828	11	14	1298	60	11	1	15	37	7	62
RTOR Reduction (vph)	0	0	0	0	2	0	0	14	0	0	56	0
Lane Group Flow (vph)	47	839	0	14	1356	0	0	13	0	37	13	0
Confl. Peds. (#/hr)	6		1	1		6	1		6	6		1
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	2%	5%	10%	0%	3%	4%	0%	0%	0%	6%	0%	0%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	104.5	104.5		92.8	92.8			12.4		12.4	12.4	
Effective Green, g (s)	104.5	104.5		92.8	92.8			12.4		12.4	12.4	
Actuated g/C Ratio	0.80	0.80		0.71	0.71			0.10		0.10	0.10	
Clearance Time (s)	6.4	6.4		6.4	6.4			6.7		6.7	6.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	282	2581		426	3338			130		117	142	
v/s Ratio Prot	0.01	c0.26			c0.29						0.01	
v/s Ratio Perm	0.13			0.02				0.01		c0.03		
v/c Ratio	0.17	0.32		0.03	0.41			0.10		0.32	0.09	
Uniform Delay, d1	3.5	3.4		5.5	7.5			53.7		54.8	53.7	
Progression Factor	0.41	0.32		0.39	0.45			1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.3		0.1	0.2			0.4		1.6	0.3	
Delay (s)	1.7	1.4		2.2	3.5			54.1		56.4	53.9	
Level of Service	A	A		A	A			D		E	D	
Approach Delay (s)		1.4			3.5			54.1			54.8	
Approach LOS		A			A			D			D	

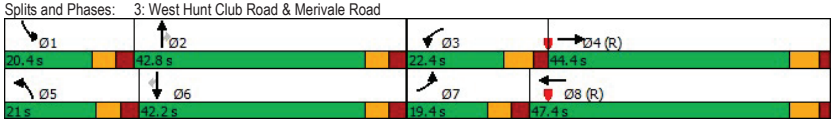
Intersection Summary				
HCM 2000 Control Delay	5.6	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.40			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	58.4%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	257	590	155	1055	148	535	106	182	797	296
Future Volume (vph)	257	590	155	1055	148	535	106	182	797	296
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	34.5	12.5	34.5	11.6	38.6	38.6	11.6	38.6	38.6
Total Split (s)	19.4	44.4	22.4	47.4	21.0	42.8	42.8	20.4	42.2	42.2
Total Split (%)	14.9%	34.2%	17.2%	36.5%	16.2%	32.9%	32.9%	15.7%	32.5%	32.5%
Yellow Time (s)	3.7	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.9	2.0	2.4	2.0	2.9	2.9	2.9	2.9	2.9	2.9
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)	6.6	6.6	7.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	12.8	37.8	15.4	40.8	14.4	37.5	37.5	12.5	35.6	35.6
Actuated g/C Ratio	0.10	0.29	0.12	0.31	0.11	0.29	0.29	0.10	0.27	0.27
v/c Ratio	0.90	0.85	0.92	0.97	0.92	0.61	0.23	0.65	0.96	0.56
Control Delay	95.1	50.2	105.8	59.7	106.9	43.6	4.2	80.4	60.3	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.1	50.2	105.8	59.7	106.9	43.6	4.2	80.4	60.3	11.7
LOS	F	D	F	E	F	D	A	F	E	B
Approach Delay		62.0		64.6		50.2			51.9	
Approach LOS		E		E		D			D	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 116 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 57.9		Intersection LOS: E	
Intersection Capacity Utilization 92.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: West Hunt Club Road & Merivale Road



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	279	781	168	1435	161	582	115	198	866	322
v/c Ratio	0.90	0.85	0.92	0.97	0.92	0.61	0.23	0.65	0.96	0.56
Control Delay	95.1	50.2	105.8	59.7	106.9	43.6	4.2	80.4	60.3	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.1	50.2	105.8	59.7	106.9	43.6	4.2	80.4	60.3	11.7
Queue Length 50th (m)	36.9	82.8	43.3	129.1	41.5	68.7	0.0	27.8	110.0	3.3
Queue Length 95th (m)	#63.5	109.8	#85.7	#162.0	#83.3	88.7	8.8	40.6	#153.3	34.1
Internal Link Dist (m)		181.8		186.0		166.5			136.9	
Turn Bay Length (m)	95.0				55.0		130.0	60.0		
Base Capacity (vph)	310	921	182	1480	175	947	493	338	899	574
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	0.90	0.85	0.92	0.97	0.92	0.61	0.23	0.59	0.96	0.56

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	257	590	129	155	1055	265	148	535	106	182	797	296
Future Volume (vph)	257	590	129	155	1055	265	148	535	106	182	797	296
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.6	6.6		7.0	6.6		6.6	6.6	6.6	6.6	6.6	6.6
Lane Util. Factor	0.97	0.95		1.00	0.91		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3154	3120		1537	4611		1580	3283	1364	3185	3283	1422
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3154	3120		1537	4611		1580	3283	1364	3185	3283	1422
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	641	140	168	1147	288	161	582	115	198	866	322
RTOR Reduction (vph)	0	14	0	0	34	0	0	0	82	0	0	185
Lane Group Flow (vph)	279	767	0	168	1401	0	161	582	33	198	866	137
Confl. Peds. (#/hr)	1		1	1		1	5		8	8		5
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	4%	4%	10%	10%	2%	1%	7%	3%	6%	3%	3%	2%
Bus Blockages (#/hr)	0	0	4	0	0	4	0	0	4	0	0	4
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	12.8	37.8		15.4	40.8		14.4	37.5	37.5	12.5	35.6	35.6
Effective Green, g (s)	12.8	37.8		15.4	40.8		14.4	37.5	37.5	12.5	35.6	35.6
Actuated g/C Ratio	0.10	0.29		0.12	0.31		0.11	0.29	0.29	0.10	0.27	0.27
Clearance Time (s)	6.6	6.6		7.0	6.6		6.6	6.6	6.6	6.6	6.6	6.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	310	907		182	1447		175	947	393	306	899	389
v/s Ratio Prot	0.09	0.25		c0.11	c0.30		c0.10	0.18		0.06	c0.26	
v/s Ratio Perm									0.02			0.10
v/c Ratio	0.90	0.85		0.92	0.97		0.92	0.61	0.08	0.65	0.96	0.35
Uniform Delay, d1	58.0	43.4		56.7	44.0		57.2	40.0	33.7	56.6	46.6	37.9
Progression Factor	1.12	0.96		1.00	1.00		1.00	1.00	1.00	1.27	0.86	0.89
Incremental Delay, d2	26.9	9.4		45.0	17.2		45.5	3.0	0.4	3.9	19.9	2.1
Delay (s)	92.0	50.8		101.7	61.2		102.8	43.0	34.2	75.8	59.9	36.0
Level of Service	F	D		F	E		F	D	C	E	E	D
Approach Delay (s)		61.6			65.5			53.0			56.6	
Approach LOS		E			E			D			E	

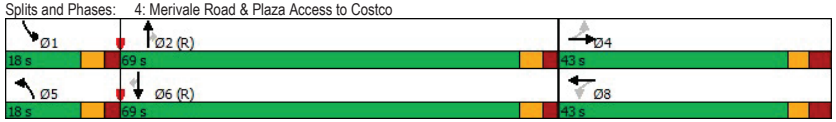
Intersection Summary			
HCM 2000 Control Delay	60.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	155	24	110	25	29	989	124	46	1148	162
Future Volume (vph)	155	24	110	25	29	989	124	46	1148	162
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4		8	5	2		1	6	
Permitted Phases	4		8				2			6
Detector Phase	4	4	8	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	42.9	42.9	42.9	42.9	11.6	34.1	34.1	11.6	34.1	34.1
Total Split (s)	43.0	43.0	43.0	43.0	18.0	69.0	69.0	18.0	69.0	69.0
Total Split (%)	33.1%	33.1%	33.1%	33.1%	13.8%	53.1%	53.1%	13.8%	53.1%	53.1%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.6	3.6	3.6	3.6	2.5	2.4	2.4	2.5	2.4	2.4
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)	6.9	6.9		6.9	6.2	6.1	6.1	6.2	6.1	6.1
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	26.0	26.0		26.0	6.8	78.2	78.2	9.0	82.8	82.8
Actuated g/C Ratio	0.20	0.20		0.20	0.05	0.60	0.60	0.07	0.64	0.64
v/c Ratio	0.83	0.28		0.44	0.19	0.54	0.15	0.43	0.60	0.18
Control Delay	80.2	14.9		27.7	63.3	10.5	0.7	68.5	18.1	4.5
Queue Delay	0.0	0.0		0.0	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	80.2	14.9		27.7	63.3	10.7	0.7	68.5	18.1	4.5
LOS	F	B		C	E	B	A	E	B	A
Approach Delay		55.5		27.7		10.9			18.2	
Approach LOS		E		C		B			B	

Intersection Summary		
Cycle Length: 130		
Actuated Cycle Length: 130		
Offset: 52 (40%), Referenced to phase 2:NBT and 6:SBT, Start of Green		
Natural Cycle: 90		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.83		
Intersection Signal Delay: 19.3	Intersection LOS: B	
Intersection Capacity Utilization 70.3%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 4: Merivale Road & Plaza Access to Costco



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	168	102	247	32	1075	135	50	1248	176
v/c Ratio	0.83	0.28	0.44	0.19	0.54	0.15	0.43	0.60	0.18
Control Delay	80.2	14.9	27.7	63.3	10.5	0.7	68.5	18.1	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	80.2	14.9	27.7	63.3	10.7	0.7	68.5	18.1	4.5
Queue Length 50th (m)	41.6	5.5	17.0	4.1	41.1	0.0	12.5	103.7	3.9
Queue Length 95th (m)	62.3	18.6	27.2	m6.1	m50.3	m0.7	25.2	156.9	16.6
Internal Link Dist (m)		60.1	118.8		136.9			188.9	
Turn Bay Length (m)				35.0			65.0		65.0
Base Capacity (vph)	280	484	733	297	1973	893	153	2072	976
Starvation Cap Reductn	0	0	0	0	252	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.21	0.34	0.11	0.62	0.15	0.33	0.60	0.18

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
4: Merivale Road & Plaza Access to Costco

Total PM Peak Hour
12/12/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	24	70	110	25	92	29	989	124	46	1148	162
Future Volume (vph)	155	24	70	110	25	92	29	989	124	46	1148	162
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.9	6.9			6.9		6.2	6.1	6.1	6.2	6.1	6.1
Lane Util. Factor	1.00	1.00			0.95		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98			0.99		1.00	1.00	0.94	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89			0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1682	1544			3008		3281	3283	1399	1691	3252	1455
Flt Permitted	0.57	1.00			0.77		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1011	1544			2379		3281	3283	1399	1691	3252	1455
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	26	76	120	27	100	32	1075	135	50	1248	176
RTOR Reduction (vph)	0	61	0	0	80	0	0	0	55	0	0	52
Lane Group Flow (vph)	168	41	0	0	167	0	32	1075	80	50	1248	124
Confl. Peds. (#/hr)	7		8	8		7	5		15	15		5
Confl. Bikes (#/hr)			10			10			10			10
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	0%	3%	0%	0%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	4	0	0	4
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	26.0	26.0			26.0		4.4	76.9	76.9	7.9	80.4	80.4
Effective Green, g (s)	26.0	26.0			26.0		4.4	76.9	76.9	7.9	80.4	80.4
Actuated g/C Ratio	0.20	0.20			0.20		0.03	0.59	0.59	0.06	0.62	0.62
Clearance Time (s)	6.9	6.9			6.9		6.2	6.1	6.1	6.2	6.1	6.1
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	202	308			475		111	1942	827	102	2011	899
v/s Ratio Prot		0.03					0.01	0.33		c0.03	c0.38	
v/s Ratio Perm	c0.17				0.07				0.06			0.09
v/c Ratio	0.83	0.13			0.35		0.29	0.55	0.10	0.49	0.62	0.14
Uniform Delay, d1	49.9	42.7			44.7		61.3	16.1	11.5	59.1	15.4	10.3
Progression Factor	1.00	1.00			1.00		1.05	0.54	0.16	1.00	1.00	1.00
Incremental Delay, d2	24.3	0.2			0.5		1.0	0.8	0.2	3.7	1.5	0.3
Delay (s)	74.2	42.9			45.2		65.4	9.5	2.0	62.8	16.8	10.7
Level of Service	E	D			D		E	A	A	E	B	B
Approach Delay (s)		62.4			45.2			10.1			17.6	
Approach LOS		E			D			B			B	

Intersection Summary				
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.2	
Intersection Capacity Utilization	70.3%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
5: Lancelot Drive/Nepean Crossroads Centre Intersection 1

Total PM Peak Hour
12/12/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	8	18	62	3	9	5	19	55	3	21	0
Future Volume (vph)	1	8	18	62	3	9	5	19	55	3	21	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	9	20	67	3	10	5	21	60	3	23	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	30	80	86	26
Volume Left (vph)	1	67	5	3
Volume Right (vph)	20	10	60	0
Hadj (s)	-0.36	0.13	-0.37	0.06
Departure Headway (s)	3.9	4.3	3.8	4.3
Degree Utilization, x	0.03	0.10	0.09	0.03
Capacity (veh/h)	899	815	912	813
Control Delay (s)	7.0	7.7	7.2	7.4
Approach Delay (s)	7.0	7.7	7.2	7.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.4		
Level of Service	A		
Intersection Capacity Utilization	25.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	9	49	0	2	58	10	1	0	0	19	0	7
Future Volume (vph)	9	49	0	2	58	10	1	0	0	19	0	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	53	0	2	63	11	1	0	0	21	0	8

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	63	76	1	29
Volume Left (vph)	10	2	1	21
Volume Right (vph)	0	11	0	8
Hadj (s)	0.07	-0.05	0.23	0.01
Departure Headway (s)	4.1	4.0	4.5	4.2
Degree Utilization, x	0.07	0.08	0.00	0.03
Capacity (veh/h)	862	891	772	825
Control Delay (s)	7.4	7.3	7.5	7.4
Approach Delay (s)	7.4	7.3	7.5	7.4
Approach LOS	A	A	A	A

Intersection Summary					
Delay			7.4		
Level of Service			A		
Intersection Capacity Utilization			19.8%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	94	15	40	80	26	9	19	33	11	26	4
Future Volume (vph)	3	94	15	40	80	26	9	19	33	11	26	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	102	16	43	87	28	10	21	36	12	28	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	121	158	67	44
Volume Left (vph)	3	43	10	12
Volume Right (vph)	16	28	36	4
Hadj (s)	-0.04	-0.02	-0.26	0.03
Departure Headway (s)	4.3	4.3	4.3	4.6
Degree Utilization, x	0.14	0.19	0.08	0.06
Capacity (veh/h)	810	808	776	718
Control Delay (s)	8.0	8.3	7.7	7.9
Approach Delay (s)	8.0	8.3	7.7	7.9
Approach LOS	A	A	A	A

Intersection Summary					
Delay			8.0		
Level of Service			A		
Intersection Capacity Utilization			27.8%	ICU Level of Service	A
Analysis Period (min)			15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	4	144	4	44	134	80	4	3	47	77	5	6
Future Volume (vph)	4	144	4	44	134	80	4	3	47	77	5	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	157	4	48	146	87	4	3	51	84	5	7

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	165	194	87	58	96
Volume Left (vph)	4	48	0	4	84
Volume Right (vph)	4	0	87	51	7
Hadj (s)	0.02	0.16	-0.67	-0.48	0.17
Departure Headway (s)	4.8	5.2	4.4	4.6	5.2
Degree Utilization, x	0.22	0.28	0.11	0.07	0.14
Capacity (veh/h)	728	665	788	707	637
Control Delay (s)	9.1	9.0	6.7	8.0	9.0
Approach Delay (s)	9.1	8.3		8.0	9.0
Approach LOS	A	A		A	A

Intersection Summary				
Delay	8.6			
Level of Service	A			
Intersection Capacity Utilization	41.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	29	9	70	27	11	90
Future Volume (Veh/h)	29	9	70	27	11	90
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	10	76	29	12	98
Pedestrians	5		5			5
Lane Width (m)	3.5		3.5			3.5
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			80			
pX, platoon unblocked						
vC, conflicting volume	222	100			110	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	222	100			110	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			99	
cM capacity (veh/h)	753	947			1474	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	42	105	110
Volume Left	32	0	12
Volume Right	10	29	0
cSH	791	1700	1474
Volume to Capacity	0.05	0.06	0.01
Queue Length 95th (m)	1.3	0.0	0.2
Control Delay (s)	9.8	0.0	0.9
Lane LOS	A		A
Approach Delay (s)	9.8	0.0	0.9
Approach LOS	A		

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	23.8%	ICU Level of Service	A	
Analysis Period (min)	15			