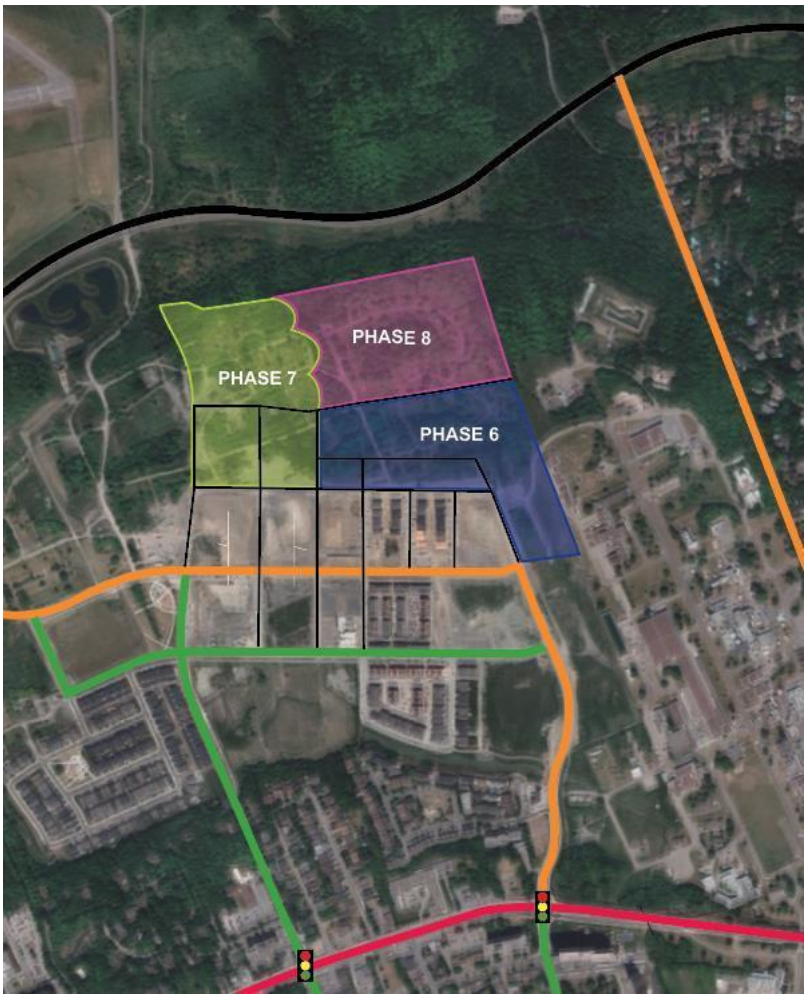
Canada Lands Company
Société immobilière du Canada

Transportation Impact Assessment – Step 5: Final Report

Wateridge Village – Phases 6, 7 & 8



ARCADIS Prepared for Canada Lands Company (CLC) Ltd.
by Arcadis
June 27, 2025

TIA Plan Reports - Certification

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

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

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

CERTIFICATION

1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;

2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;

3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and

4. I am either a licensed[1] or registered[1] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering ☑ or transportation planning □.

[1] **License or 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.**

Dated at Ottawa this 27th day of June, 2025.
(City)

Name: Ben Pascolo-Neveu, P.Eng.

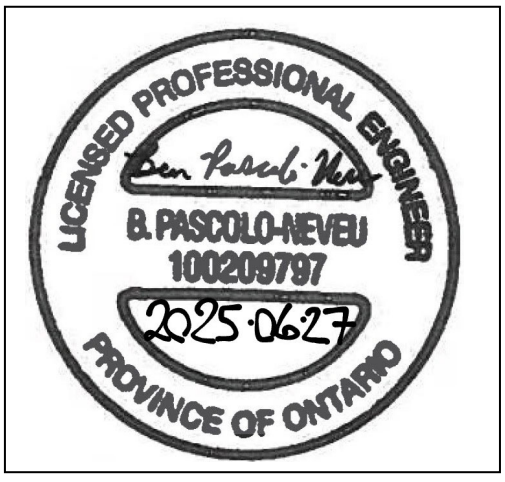
Professional Title: Transportation Engineer

Ben Pascolo-Neveu

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

Office Contact Information (Please Print)
Address: 500-333 Preston Street
City / Postal Code: K1S 5N4
Telephone / Extension: 613-225-1311 ext. 64074
E-Mail Address: ben.pascoloneveu@arcadis.com

Stamp



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REVIEWER:	David Hook/Ben Pascolo-Neveu
AUTHORIZATION:	David Hook
CIRCULATION LIST:	Wally Dubyk – City of Ottawa Transportation Project Manager Mary Jarvis – Canada Lands Company (CLC)
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Executive Summary

Arcadis IBI Group (Arcadis) was retained by Canada Lands Company CLC Limited (CLC) to undertake a Transportation Impact Assessment (TIA) in support of Plan of Subdivision applications for Phases 6 and 7, as well as a Zoning By-law Amendment (ZBLA) application for Phase 8 of Wateridge Village, Ottawa.

Based on discussions with CLC, it is expected that the proposed development will achieve full build-out of all 3 phases by 2030. Logical interim build-out timelines for Phase 6 (2025) and Phase 7 (2028) were therefore assumed for the purposes of undertaking transportation analysis of individual development phases in this study.

The proposed development of Wateridge Village Phases 6, 7 & 8 is expected to generate a maximum of 144, 1,036 and 1,342 person trips during the weekday peak hours for Phase 6, Phases 6 & 7 and Phases 6, 7 & 8, respectively. Segregating person-trips for each phase by the mode share targets established through this study and supported by a host of Transportation Demand Management (TDM) measures, resulted in a maximum of 48, 378 and 488 two-way vehicular trips during the weekday peak hours for the three phases cumulatively. The vehicular impacts were further dispersed through their assignment at the three main external access intersections planned to serve Wateridge Village by the time build-out of the subject lands is underway. To this end, it was assumed that the Hemlock Road western extension and connection Aviation Parkway will be re-established as part of Phases 3 & 5 in order to lessen the vehicular impacts on Montreal Road associated with the entirety of Wateridge Village.

An intersection capacity analysis exercise conducted as part of this TIA did not identify any study area intersections that were operating beyond acceptable thresholds (i.e. LOS ‘D’). Select movements may approach or exceed their theoretical capacities by the study horizon year, however these constraints were identified as part of previously-conducted transportation studies and can therefore be attributed to background traffic growth.

Based on the analysis conducted for this TIA, a dual westbound left-turn auxiliary lane configuration is required at the Montreal Road & Aviation Parkway intersection to support Existing and Future Background growth projections within the 2035 study horizon year. This mitigation strategy aligns with the Recommended Plan developed as part of recently-completed Montreal-Blair Transit Priority Corridor EA Study and is expected to resolve existing queuing and capacity issues associated with the westbound left-turn movement during the critical weekday afternoon peak hour period, however it is acknowledged that there is no specific timeline available for its implementation. The Montreal & Codd’s intersection may approach its theoretical capacity by 2030 on the northbound approach, however it is expected that the Montreal Road corridor will undergo regular signal optimization to mitigate the occurrence of any minor capacity issues, including those identified under Future (2035) Total Traffic conditions at its intersection with the Aviation Parkway or Codd’s Road.

A multi-modal analysis of each study area intersection adapted from previous TIAs conducted for Wateridge Village identified deficiencies in the existing road network and potential remediation measures have been suggested which the City could consider in order to meet the prescribed targets. These remediation measures would improve mobility and comfort for all transportation modes but are not required to safely accommodate the proposed development.

As no physical road modifications are required off-site exclusively to accommodate site-generated travel demand estimates, an RMA will not be required for this TIA. In order to satisfy Draft Conditions #42 and #52, a Monitoring Plan has been developed to supplement the Wateridge Phase 2A/2B Monitoring Program (Dillon, 2019) and review the observed site-generated travel demands on the adjacent road network against the estimates developed as part of this TIA.

Based on the findings of this study, it is the overall opinion of Arcadis that the proposed development will integrate well with and can be safely accommodated by the adjacent transportation network, with the appropriate modifications in place.

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1 Introduction

Arcadis IBI Group (Arcadis) was retained by Canada Lands Company CLC Limited (CLC) to undertake a Transportation Impact Assessment (TIA) in support of Plan of Subdivision applications for Phases 6 and 7, as well as a Zoning By-law Amendment (ZBLA) application for Phase 8 of Wateridge Village, Ottawa.

In accordance with the City of Ottawa's Transportation Impact Assessment Guidelines, published in June 2017, the following report is divided into four major components:

- **Screening** – Prior to the commencement of a TIA, an initial assessment of the proposed development is undertaken to establish the need for a comprehensive review of the site based on three triggers: Trip Generation, Location and Safety.
- **Scoping** – This component of the TIA report describes both the existing and planned conditions in the vicinity of the development and defines study parameters such as the study area, analysis periods and analysis years of the development. It also provides an opportunity to identify any scope exemptions that would eliminate elements of scope described in the TIA Guidelines that are not relevant to the development proposal, based on consultation with City staff.
- **Forecasting** – The Forecasting component of the TIA is intended to review both the development-generated travel demand and the background network travel demand, and provides an opportunity to rationalize this demand to ensure projections are within the capacity constraints of the transportation network.
- **Analysis** – This component documents the results of any analyses undertaken to ensure that the transportation related features of the proposed development are in conformance with prescribed technical standards and that its impacts on the transportation network are both sustainable and effectively managed. It also identifies a development strategy to ensure that what is being proposed is aligned with the City of Ottawa's city-building objectives, targets and policies.

Throughout the development of a TIA report, each of the four study components above are submitted in draft form to the City of Ottawa and undergo a review by a designated Transportation Project Manager (TPM). Any comments received are addressed to the satisfaction of the City's Transportation Project Manager before proceeding with subsequent components of the study.

The need for a Post-Development Monitoring Plan or Roadway Modification Application (RMA) materials to support any off-site road modifications triggered by site-generated travel demand will be determined through the transportation analysis conducted for this TIA.

2 TIA Screening

An initial screening was completed to confirm the need for a Transportation Impact Assessment (TIA) by reviewing the following three triggers:

- **Trip Generation**: Based on the proposed number of apartment dwelling units, the minimum development size threshold has been exceeded and therefore the Trip Generation trigger is satisfied.
- **Location**: The proposed development is not located within a Design Priority Area (DPA) or within a Transit-Oriented Development (TOD) zone. Furthermore, the subject development does not propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Spine Bicycle Network. The Location trigger is therefore not satisfied.
- **Safety**: Boundary street conditions were reviewed to determine if there is an elevated potential for safety concerns adjacent to the site. Based on this review, the Safety Trigger is not satisfied.

As the proposed development meets the Trip Generation trigger, the need to undertake a Transportation Impact Assessment is confirmed.

The TIA Screening Form is provided in **Appendix A**.

3 Project Scoping

3.1 Description of Proposed Development

3.1.1 Site Location

The subject development is approximately 25 hectares in size and is located within the northernmost portion of Wateridge Village, an evolving mixed-use community which was previously occupied by the Canadian Forces Base (CFB) Rockcliffe. The proposed development lands are generally bound by Tawadina Road to the south, Sir George-Étienne Cartier Parkway to the north, National Research Council (NRC) Headquarters to the east and Codd's Road to the west.

The site location and its surrounding context are illustrated in **Exhibit 1** below.

3.1.2 Land Use Details

The subject property parcels presently exist as undeveloped greenfield lands, and according to GeoOttawa, is governed by the following zoning permissions: General Mixed-Use (GM), Residential Fifth Density (R5) and Development Reserve (DR).

Table 1 below provides a breakdown of the proposed land uses associated with each phase included in this development.

Table 1 - Land Use Statistics

PHASE	LAND USES
Phase 6	70 townhomes ~ 3,940 m^2 (~42,409 ft^2) employment
Phase 7	76 townhomes 1,027 apartment units ~11,820 m^2 (~127,228 ft^2) employment ~2,785 m^2 (~29,977 ft^2) commercial
Phase 8	22 townhomes 296 apartment units ~7,880 m^2 (~84,819 ft^2) employment
Total	**168 townhome units** **1,323 apartment units** **~23,640 m^2 (~254,456 ft^2) employment** **~2,785 m^2 (~29,977 ft^2) commercial**

All-movement vehicular connections with the adjacent lands in Wateridge Village will be provided by extension of the following five roads through the subject site: Codd's Road, Bareille- Snow Street, Michael Stoqua Street, Moses Tennisco Street and Wanaki Road.The configuration of the proposed development is illustrated in **Exhibit 2** below.

3.1.3 Development Phasing & Date of Occupancy

Based on discussions with CLC, it is expected that the proposed development will achieve full build-out of all 3 phases by 2032. Logical interim build-out timelines for Phase 6 (2027) and Phase 7 (2030) were therefore assumed for the purposes of undertaking transportation analysis of individual development phases in this study.



ARCADIS

IBI GROUP

Wateridge Village Phases 6,7 & 8
Transportation Impact Assessment

Exhibit 1:
Site Location

PROJECT No. 139653

SCALE: 0m 250m 500m

NORTH

Phase 8

Phase 7

Phase 6

Phase 8

Phase 7

Tawadina Road

PRIVATE ROAD

TANAKIWIN PARK

BLOCK 33

BLOCK 35

BLOCK 44

BLOCK 9

BLOCK 29

BLOCK 30

BLOCK 31

BLOCK 10

BLOCK 3

BLOCK 11

LOT 1

LOT 2

LOT 3

FENCE AT PERIMETER OF SITE

NATURALIZED AREA W/ PERMEABLE ROAD SURFACE

3m MULTI-USE PATHWAY

chemin Codd's Road

KISHKABIKA PARK

ARCADIS

IBI GROUP

Wateridge Village Phase 6, 7 & 8
Transportation Impact Assessment

Exhibit 2: Proposed Development

PROJECT No. 139653

SCALE: 0m 15m

3.1.4 Existing Road Network

3.1.4.1 Roadways

The proposed development is bound by the following road(s):

- **Codd's Road** is primarily a collector road under the jurisdiction of the City of Ottawa which presently extends north-south from Montreal Road to Tawadina Road and is downgraded to a local road further north of Hemlock. This two-lane urban road presently has a posted speed limit of 40km/h and a 26-metre right-of-way south of Hemlock which narrows to 20 metres further north to coincide with its lower road classification.
- **Tawadina Road** is a local road under the jurisdiction of the City of Ottawa that extends east-west from Wanaki Road in the east to Codd's Road in the west. This road is planned to have a two-lane urban cross-section and a posted speed limit of less than 50 km/h within its 20-metre right-of-way.
- **Wanaki Road** primarily operates as a major collector road under the jurisdiction of the City of Ottawa that extends from Tawadina in the north and was recently connected to Montreal Road as part of the 'protected intersection' redesign of Montreal & Burma. This two-lane urban road presently has a posted speed limit of 50km/h and a 26-metre right-of-way south of Hemlock which narrows to 20 metres further north to coincide with its local road classification.

Other existing or planned roads within the vicinity of the proposed development are as follows:

- **Montreal Road** is classified as an Mainstreet Corridor through the context area and extends east-west from North River Road to Highway 417. East of Highway 417, Montreal Road becomes St. Joseph Boulevard. The road generally consists of a four-lane, divided cross-section with a 37.5-metre right-of-way and a posted speed limit of 60 km/h.
- **St. Laurent Boulevard** is an urban arterial road under the jurisdiction of the City of Ottawa that extends north-south from Hemlock to Russell Road. Further north and south of these limits, it becomes a collector road. St. Laurent Boulevard generally consists of a two lane, undivided cross-section north of Montreal Road and a four lane, divided cross-section further south. According to the Official Plan, St. Laurent Boulevard generally consists of a 26m right-of-way north of Montreal Road, with a 44.5m right-of-way protection to the south of Montreal Road and has a posted speed limit of 50 km/h.
- **Hemlock Road** is a major collector road under the jurisdiction of the City of Ottawa that extends east-west through Wateridge Village from Wanaki Road in the east, and presently terminates at Vedette Way in the west. Hemlock Road will ultimately continue further west to the Aviation Parkway and reconnect with its western segment, which is classified as an arterial road. In the vicinity of the proposed development, Hemlock Road exists with a two-lane urban cross-section, a 24-metre right-of-way and a posted speed limit which is assumed to be less than 50km/h.

3.1.4.2 Nearby Driveways

The road network within the proposed development is yet to be built out and there are currently no driveways along the existing portion of Tawadina Road or Hemlock Road.

3.1.4.3 Intersections

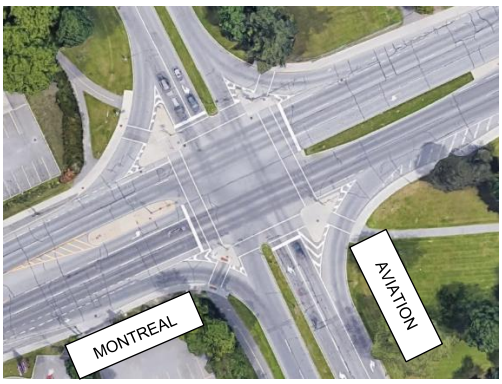
The following intersections have the greatest potential to be impacted by the proposed development:



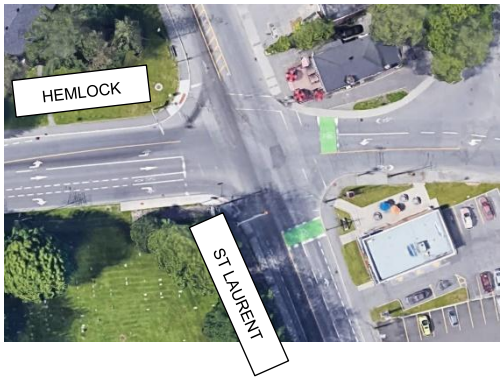
- **Montreal Road & Codd's Road/Carson's Road** is a four-legged, signalized intersection with two through lanes in each direction on Montreal Road, single through-lanes on the sidestreets and auxiliary left-turn lanes on each approach. The intersection is located approximately 915 metres south of the site.



- **Montreal Road & Wanaki Road/Bathgate Drive** was recently constructed as a 'protected intersection' to replace the Montreal & Burma/ Bathgate configuration. The intersection maintains two through lanes in each direction on Montreal Road, single through lanes on the sidestreets and auxiliary left-turn lanes on each approach. There are also cross-rides for cyclists on all legs of the intersection. This junction is located approximately 835 metres south of the site.



- **Montreal Road & Aviation Parkway** is a four-legged signalized intersection with two channelized right-turns and auxiliary left-turn lanes on each approach. The east/west approaches each exist with two through lanes, while the north/south approaches consist of a single through lane per direction. On-road cycling facilities exist in both directions on Montreal Road, extending east and west of the intersection.



- **St. Laurent Boulevard & Hemlock Road** is a four-legged signalized intersection with auxiliary left-turn lanes on all approaches except for the southbound approach which consists of a single, shared lane. Both the westbound and northbound approaches have shared through-right lanes, while the eastbound approach consists of a dedicated right-turn lane. In terms of cycling infrastructure, bicycle boxes exist on the south and west approaches, while a bike pocket lane exists on the eastbound approach which transitions to 'sharrows' on the on the departure.

3.1.4.4 Traffic Management Measures

Traffic calming measures within close proximity to the subject lands are listed below:

- Flexible centreline stakes exist on Codd's Road as a seasonal traffic calming measure for vehicles entering Wateridge Village.
- Curb bulb-out and framed parking exist on Hemlock Road, Codd's Road and Wanaki road within Wateridge Village.
- Heavy vehicles are prohibited on Hemlock Road west of St Laurent Boulevard
- A 'red-light' camera exists at the Montreal & Aviation Parkway intersection.

3.1.5 Existing Bicycle and Pedestrian Facilities

Pedestrian facilities are currently provided in the form of concrete sidewalks on both sides of Montreal Road within the vicinity of the context area, along with exclusive bike lanes. It should be noted as well that multi-use paths (MUPs) presently exist on the west side of the Aviation Parkway and on the north side of the Sir George-Étienne Cartier Parkway.

The internal road network within Wateridge Village is currently undergoing development, therefore some roads lack formal pedestrian and cycling facilities. Concrete sidewalks and MUPs are present on Codd's Road and Mikinak Road throughout the context area.

As development progresses, it is expected that active transportation facilities will be integrated within road rights-of-way to maintain consistency with the Former Rockcliffe Community Design Plan (August 2015).

3.1.6 Existing Transit Facilities and Service

The following transit routes, operated by OC Transpo, exist within the vicinity of the site:

- **Route #12** provides regular, all-day service between Parliament Station and Blair Station, generally operating on 12- to 15-minute headways during weekday peak periods. On weekends, service is reduced to between 15- and 30-minute intervals.
- **Route #25** provides regular, all-day service between Millenium Station and Blair Station/ Collège La Cité, generally operating on 10- to 15-minute headways during weekday peak periods. On weekends, service is reduced to between 12- and 30-minute intervals.
- **Route #27** provides weekday peak period service to date between Wateridge Village and St. Laurent Station with approximately 30-minute headways. Service is provided towards

St. Laurent during the weekday morning peak period, and towards Wateridge Village during the weekday afternoon peak period. Limited service is initially proposed by OC Transpo until ridership supports additional trips. Temporary routing of Route #27 follows a counter-clockwise route from Wanaki to Codd's via Mikinak. It is anticipated that this transit service will be shifted to Hemlock Road as development progresses further north.

Bus stops serving Route 27 are generally within a 400-metre walk of Phases 6 and 7, while Phase 8 will achieve this transit walkability target once transit service is rerouted to Hemlock Road.

The three transit routes that serve the context area are illustrated in **Figure 1** below. Transit maps for the above noted routes are provided in **Appendix B**.

Figure 1 - Existing Transit Routes



Source: OC Transpo System Map, April 2023

3.1.7 Collision History

A review of historical collision data has been conducted for the road network surrounding the proposed development. The TIA Guidelines require a safety review if at least six collisions for any one movement or of a discernible pattern, over a five-year period have occurred. **Table 2** summarizes all reported collisions between January 1, 2016 and December 31, 2020. The internal roadways of Wateridge Village are new, therefore there are no collision records available for the roads immediately adjacent to the proposed development for the past 5 years.

Table 2 – Reported Collisions within Vicinity of Proposed Development

LOCATION	# OF REPORTED COLLISIONS
INTERSECTIONS	
Montreal & Codd's/Carson's	18
Montreal & Bathgate/Wanaki	29
Hemlock & St. Laurent	28
Montreal & Aviation Parkway	87
Montreal & Den Haag/Lang's	18
Montreal & Montfort Hospital	15
Hemlock & Aviation Parkway NB Onramp	1
Hemlock & Aviation Parkway SB Offramp	1
Hemlock & London	1
Montreal & Brunel	2
Montreal & Hochelaga	2
Montreal & Foxview	5
SEGMENTS	
Montreal – Aviation Parkway to Den Haag Drive	10
Montreal – Brunel Street to Codd's Road	1
Montreal – Burma Road to Hochelaga Street	6
Montreal – Codd's Road to Den Haag Drive	9
Montreal – Foxview Place to Hochelaga Street	1
Hemlock – London Terrace to St. Laurent Boulevard	1

Based on the collision history noted above, five intersections and three segments may require further review.

Another method of evaluating the relative magnitude of collision frequency at one intersection compared to another is to quantify the average historical number of collisions against the daily volume of traffic entering the intersection. This is commonly expressed in terms of average collisions per year per Million Vehicles Entering (MVE) and a rate of greater than 1.0 is considered significant. All three intersections have experienced the following collision rates:

- Montreal & Codd's: 0.47
- Montreal & Wanaki/Bathgate: 0.82

- Hemlock & St. Laurent: 0.84
- Montreal & Aviation Parkway: 1.15
- Montreal & Den Haag: 0.31

As indicated above, only one of the context area intersections has experienced more than 1.0 collisions per MVE and therefore the Aviation Parkway & Montreal Road intersection should be analysed further with regards to collision data to determine if there are any patterns occurring that result in an increase in collisions.

Detailed collision records are included in **Appendix C** and further collision analysis can be found in Section 5.3 of this report.

3.2 Planned Conditions

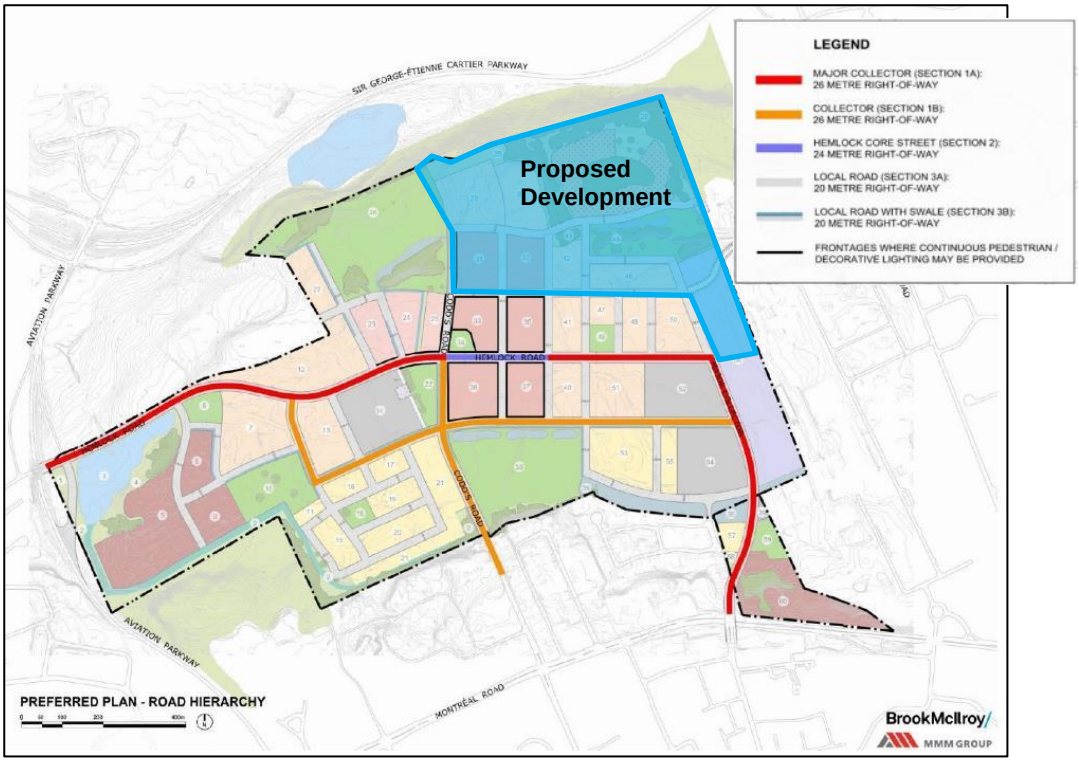
3.2.1 Transportation Network

3.2.1.1 Future Road Network Projects

The 2013 Transportation Master Plan (TMP) outlines future road network modifications required in the 2031 'Affordable Network'. A review of the TMP Affordable Plan indicates that there were no planned changes to the arterial road network within the broader area surrounding the proposed development.

The road network from the CFB Rockcliffe CDP is shown in **Figure 2** below. Along the site's frontage, all roads are classified as local roads, most of which will have concrete sidewalks on both sides.

Figure 2 – Road Classifications



Source: CFP Rockcliffe CDP (2015) – Fig. 5.8

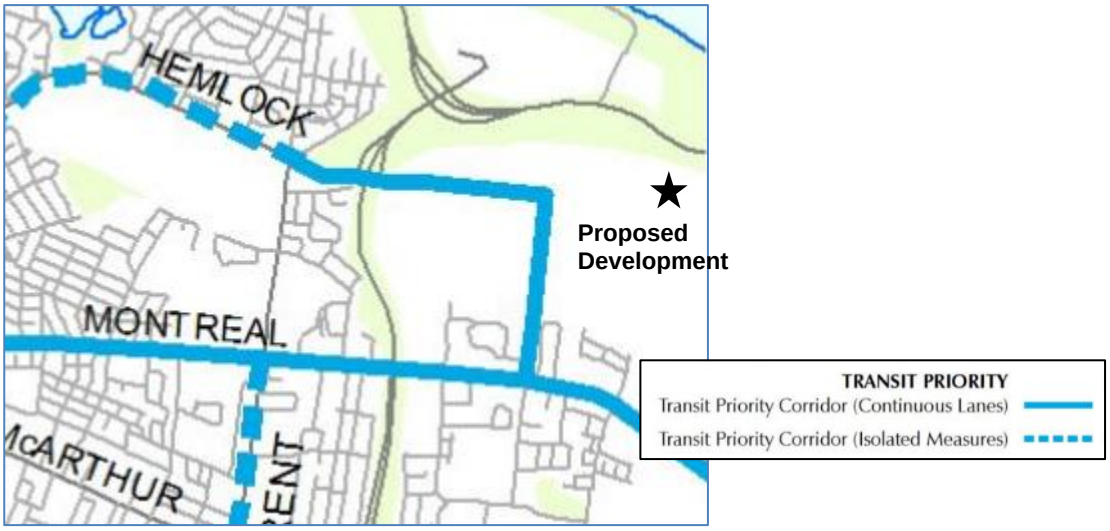
3.2.1.2 Future Transit Facilities and Services

The 2013 TMP outlines the future rapid transit and transit priority (RTTP) network. The following projects were noted in the 'Affordable RTTP Network' that may have a significant impact on future travel demand in the vicinity of the proposed development:

- **Montreal Road:** According to the TMP, this project would involve the development of new exclusive bus lanes east of St. Laurent Boulevard. Since the development of the TMP, the recently-completed Montreal-Blair Transit Priority Environmental Assessment (EA) Study recommended the implementation of 'fully-protected' intersections on Montreal Road within the vicinity of Wateridge Village, upgrades to the existing on-road cycling facilities to grade-separated cycle tracks, the introduction of curbside transit lanes along this key arterial corridor, among other upgrades.
- **Hemlock Road/Codd's Road:** The TMP indicates a future plan to include exclusive bus lanes on Hemlock Road and Codd's Road between St. Laurent Boulevard and Montreal Road. Since the development of the TMP, however, the Former CFB Rockcliffe CDP (2015) was undertaken, which envisioned the road network within Wateridge Village as supporting local transit only. Despite the CDP's deviation from the TMP, City staff have recently indicated that the feasibility of isolated transit priority measures at major intersections along Hemlock Road and Codd's Road should still be considered as a potential option to reduce transit delays, as required.

Figure 3 below illustrates the transit infrastructure projects in the vicinity of the proposed development that are part of the TMP's 2031 Affordable Network.

Figure 3 - Future 'Affordable RTTP Network Projects'



Source: 2013 Transportation Master Plan – Map 5 '2031 Affordable Network'

3.2.1.3 Future Cycling and Pedestrian Facilities

The 2013 Ottawa Cycling Plan (OCP) designates Beechwood Avenue and Hemlock Road west of Codd's Road as 'Cross-Town Bikeways', with the objective of providing continuous connectivity over long distances for cyclists crossing the city. Codd's Road is designated as a 'Local Route in the OCP, which provides connections to higher-order cycling networks, including 'Neighbourhood Bikeways', 'Cross-Town Bikeways' and Major Pathways.

The conceptual alignment for a Major Pathway is also indicated along the northern boundary of the Wateridge Village community.

The 2023 TMP Update Part 1 builds on the Crosstown Bikeway network established in the 2013 TMP, with the addition of the following road/pathway segments to help further strengthen this network for active users within the vicinity of the subject site, including Hemlock Road through the remainder of Wateridge Village, Wanaki Road from Hemlock Road to Montreal Road, Montreal Road along its entire length and the existing multi-use path on the west side of the Aviation Parkway south of Hemlock Road.

The expansion of the Crosstown Bikeway Network identified through the recently-approved 2023 TMP Update Part 1 is illustrated in **Figure 4** below.

Figure 4 – Crosstown Bikeway Network



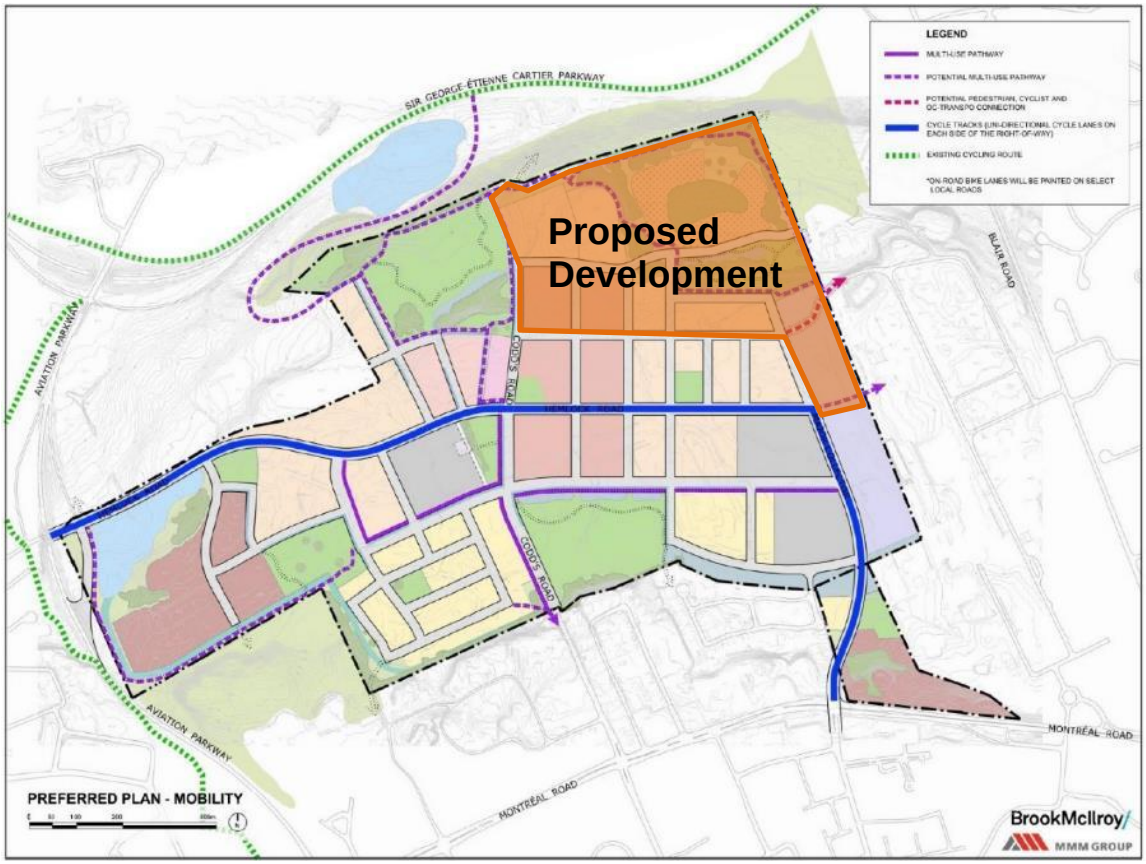
Source: 2023 TMP Update Part 1 – Crosstown Bikeway Network

The future pedestrian and cycling network was further refined as part of the Former CFB Rockcliffe CDP (August, 2015). As shown on **Figure 5** below, an overall preferred Mobility Plan was developed for Wateridge Village during the CDP process.

Key features outlined in the CDP's preferred mobility plan relevant to this study include:

- Uni-directional cycle tracks on Hemlock Road and Wanaki Road; and
- A multi-use path (MUP) on the south side of Mikinak Road and the west side of Codd's Road south of Hemlock Road.
- Potential MUPs throughout the proposed development.
- A future potential transit, pedestrian and cycling connection which would form the east leg of the Tawadina & Wanaki intersection and provide a link to the National Research Council (NRC) campus to the east.

Figure 5 – Wateridge Mobility Plan



Source: CFP Rockcliffe CDP – Figure 5.6

3.2.1.4 Future Adjacent Developments

The City of Ottawa Transportation Impact Assessment (TIA) Guidelines specify that all significant developments proposed within the surrounding area which are likely to occur within the study's horizon year must be identified and taken into consideration in the development of future background traffic projections.

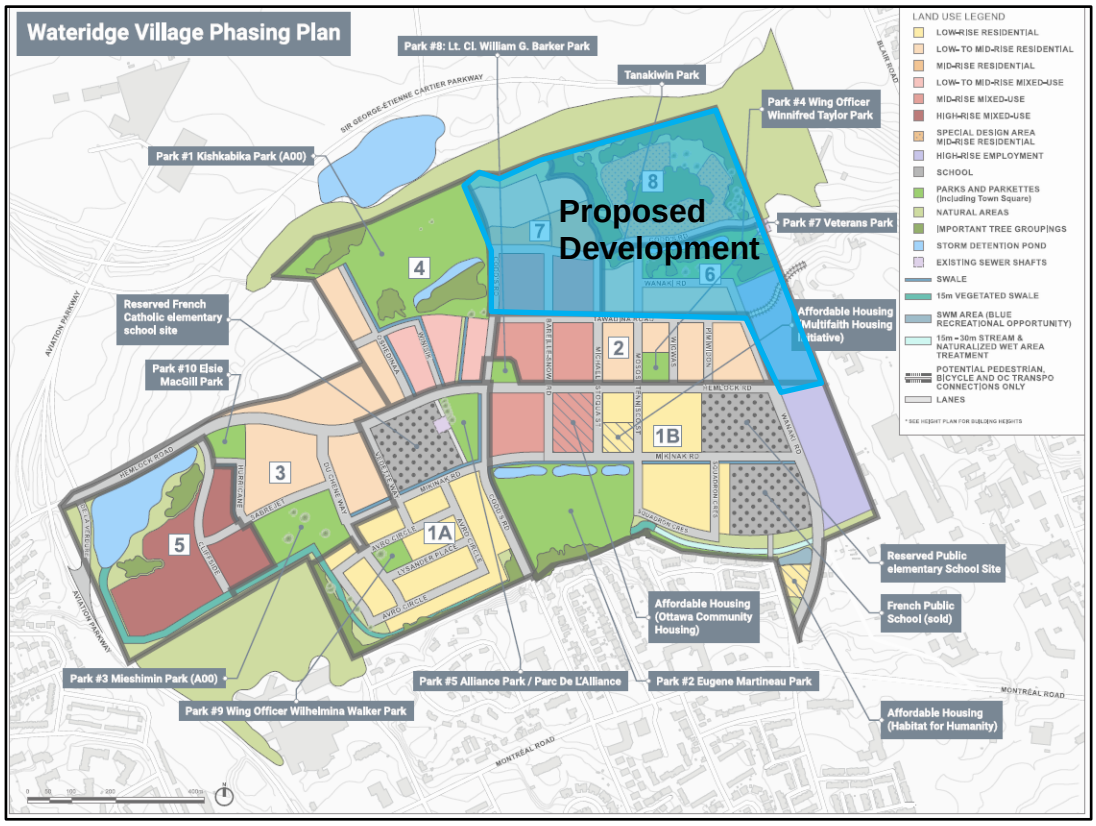
The following adjacent developments were considered within the vicinity of the subject lands:

- **Phase 1A** consists of 214 residential dwelling units and an elementary school block. This phase of Wateridge Village is nearing completion, with all residential land uses built out/ occupied and only the school block to be developed.
- **Phase 1B** consists of approximately 720 dwelling units and 32,450 m^2 of commercial space. Construction is currently underway for this portion of the proposed development. The majority of residential dwelling units associated with Phase 1B have been built out.
- **Phases 2A/2B** includes approximately 271,601 m^2 of commercial space and 990 residential dwelling units. Google Earth aerial imagery captured in March 2022 indicates that Phase 2B east of Michael Stoqua Street has been mostly built out, while construction has not yet started on Phase 2A. A Monitoring Plan was prepared in April 2019 for this Draft Plan of Subdivision.

- **Phases 3/5** consists of 745 low to mid-rise dwelling units, 1,081 high-rise dwelling units, mixed-use commercial/retail for 580 employees and approximately 2.5 hectares of public park space. Phases 3 & 5 are expected to be built out in 2023 and 2025, respectively.
- **715 Mikinak Road** consists of 271 dwelling units and approximately 265 m^2 of ground floor commercial space. Construction has not yet begun on this development. This development is included as part of Phase 1B in Wateridge Village.
- **455 Wanaki Road** consists of fewer than 13 dwelling units in a 3-storey apartment building serving Habitat for Humanity.
- **Manor Park Gardens & Heights** is a mixed-use residential development consisting of a combined total of 4,061 residential dwelling units and approximately 11,377 ft^2 of commercial space within the Manor Park neighbourhood. At the time of this study, construction had not started on any of the phases and the anticipated full build-out is expected to be 2045.
- **800 Montreal Road** is a proposed mid-rise, mixed-use building with 172 residential dwelling units and approximately 75 square metres of ground floor commercial space. At this time, construction has not yet started on this development.
- **971 Montreal Road** consists of 78 dwelling units within a 9-storey apartment building that will replace an existing restaurant on the site. A TIA Screening Form was submitted, indicating that the Trip Generation Trigger is not met for this development. The anticipated occupancy date is 2025.

The Wateridge Village Phasing Map is shown in **Figure 6** below.

Figure 6 – Wateridge Phasing Map



Source: CLC - Wateridge Phasing Map (March 2021)

3.2.2 Network Concept Screenline

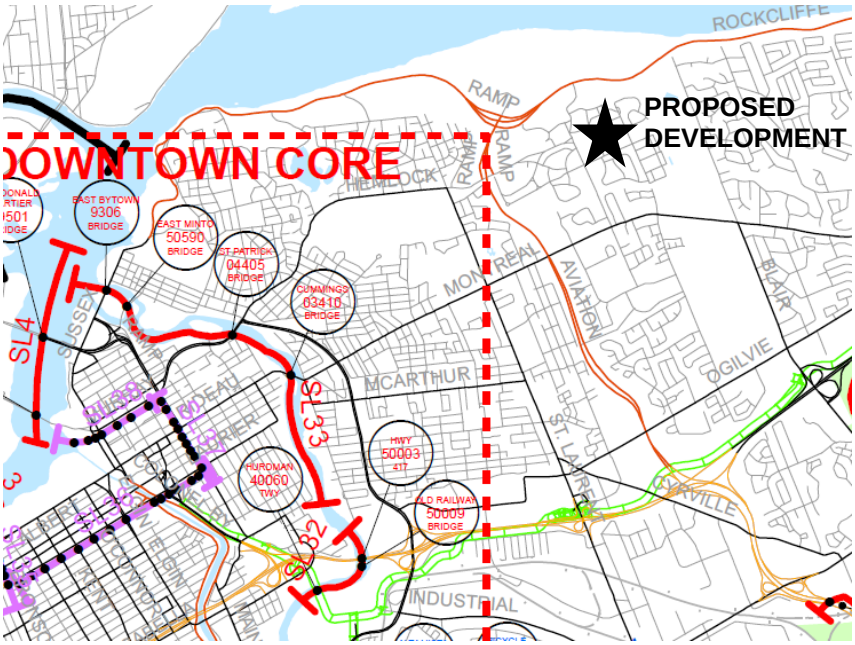
A screenline is an artificial boundary between areas of major traffic generation that captures all significant points of entry from one area to another to compare crossing demand with the available roadway capacity. Screenlines are typically located along geographical barriers such as rivers, rail lines or within the greenbelt. To capture existing flow and model future demand, count stations are established by the City of Ottawa at each crossing point along the screenline.

The nearest strategic planning screenlines adjacent to the development have been identified:

- **SL32 – Rideau River Central/Queensway** – This is the nearest north/south screenline with respect to the subject site that crosses Highway 417, and it follows the Rideau River from just north of Highway 417 to just south of Hurdman Bridge. This screenline has three crossing points: Highway 417, Old Railway Bridge and Hurdman Bridge.
- **SL33 – Rideau River North** – This is the nearest north/south screenline to the proposed development, and it follows the Rideau River from the Ottawa River to approximately 650 metres north of Highway 417. This screenline has four crossing points: East Bytown Bridge, East Minto Bridge, St Patrick Bridge and Cummings Bridge.

SL32 and SL33 are shown in **Figure 7**, as determined from the City of Ottawa's Road Network Development Report (2013), a supporting document to the 2013 Transportation Master Plan (TMP).

Figure 7 - Screenlines



Source: TRANS Screenline System (2010)

3.3 Study Area

With consideration of the information presented thus far, the following intersections have been identified as being the most impacted by the proposed development and will be assessed for vehicular capacity as part of this study:

- Montreal & Codd's/Carson's
- Montreal & Wanaki/Bathgate

- Hemlock & Aviation Parkway SB Off-Ramp
- Hemlock & Aviation Parkway NB On-Ramp
- Montreal & Aviation Parkway
- Hemlock & St Laurent

Given that the road network within Wateridge Village is being constructed to accommodate full build-out of the community and has been established in a such a way that it is inclusive of all travel modes, it is reasonable to assume that the internal road network of the subdivision will support site-generated traffic volumes associated with Phases 6, 7 & 8. The analysis in this TIA will therefore focus on the three (3) regional site access intersections for Wateridge Village, as well as the additional study area intersections listed above.

An Intersection-based Multi-Modal Level of Service (MMLOS) analysis will be performed for each signalized study area intersection. Segment-based MMLOS will be conducted for the site's boundary streets, including portions of Tawadina Road and Wanaki Road, while additional multi-modal analyses beyond the limits of Wateridge Village will be referenced and adapted from the recently-conducted Phase 3/5 TIA for segments of Montreal Road, the Aviation Parkway and St Laurent Boulevard, as required.

3.4 Time Periods

The proposed development primarily consists of residential land uses, therefore, traffic generated during the weekday morning and afternoon peak hours is expected to result in the most significant impact to traffic operations on the adjacent road network in terms of combined development-generated and background traffic. These two time periods will therefore be considered for any analysis required as part of this study.

3.5 Existing Lane Configurations and Traffic Volumes

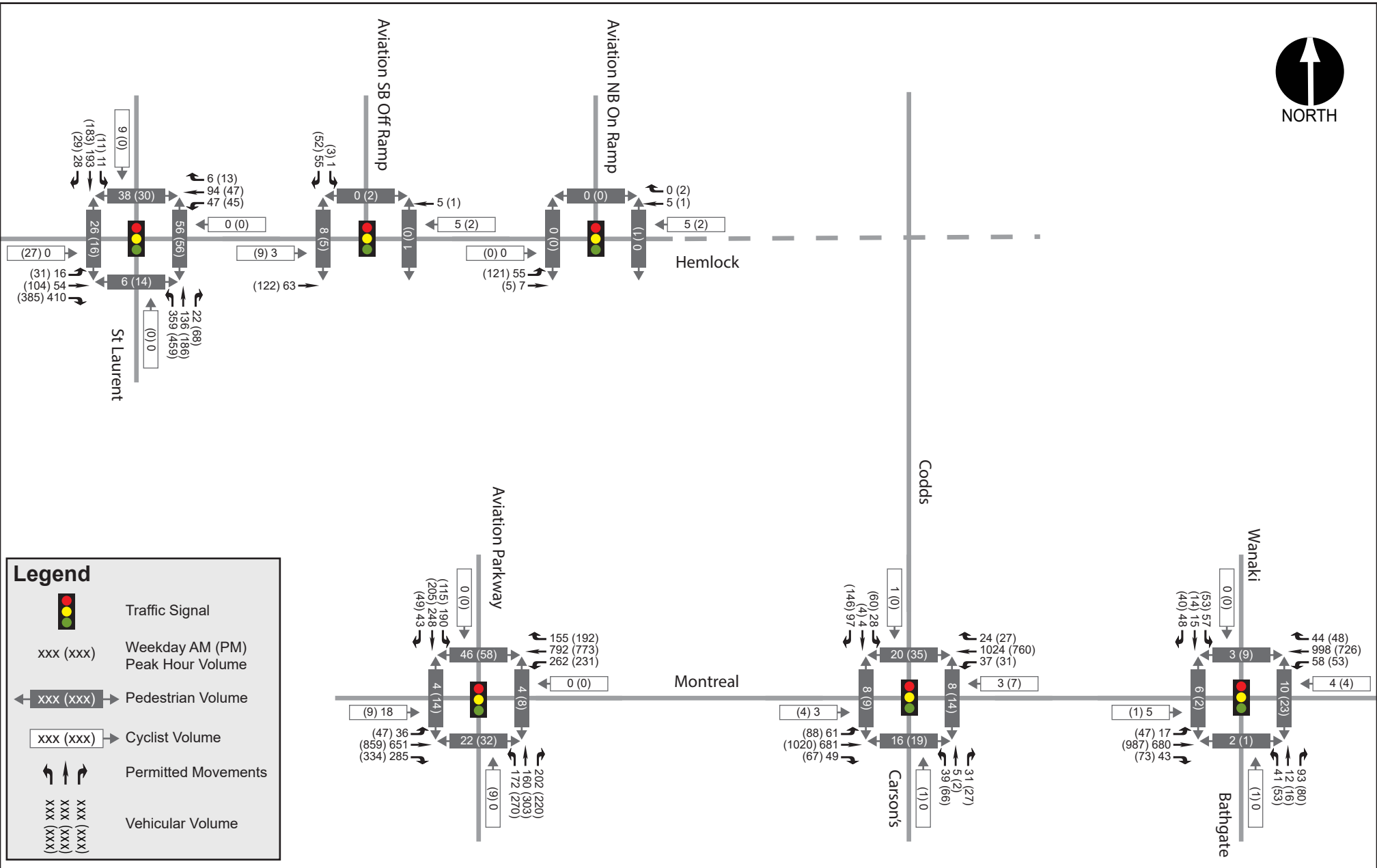
3.5.1.1 Existing Traffic Volumes

The following weekday morning and weekday afternoon peak hour turning movement counts were collected on behalf of Arcadis:

- Montreal & Codd's/Carson's (June 2022)
- Montreal & Wanaki/Bathgate (June 2022)
- Hemlock & Aviation Parkway SB (June 2022)
- Hemlock & Aviation Parkway NB (June 2022)
- Montreal & Aviation Parkway (January 2023)
- Hemlock & St Laurent (January 2023)

Weekday peak hour traffic volumes representative of typical conditions are shown in **Exhibit 3**. The traffic count data is provided in **Appendix D**. The lane configurations and intersection controls for the study area intersections are illustrated in **Exhibit 4**.

It should be noted that east-west through volumes at the intersections of Montreal Road with Codd's/Carson's and Wanaki/Bathgate were adjusted to account for the construction activities on Montreal Road west of St Laurent Boulevard. Pedestrian and cyclist volumes collected in the winter months at the Montreal & Aviation and Hemlock & St. Laurent intersections were seasonally adjusted to better reflect active user volumes which would be anticipated during the warmer months, based on historical traffic data available for these locations.



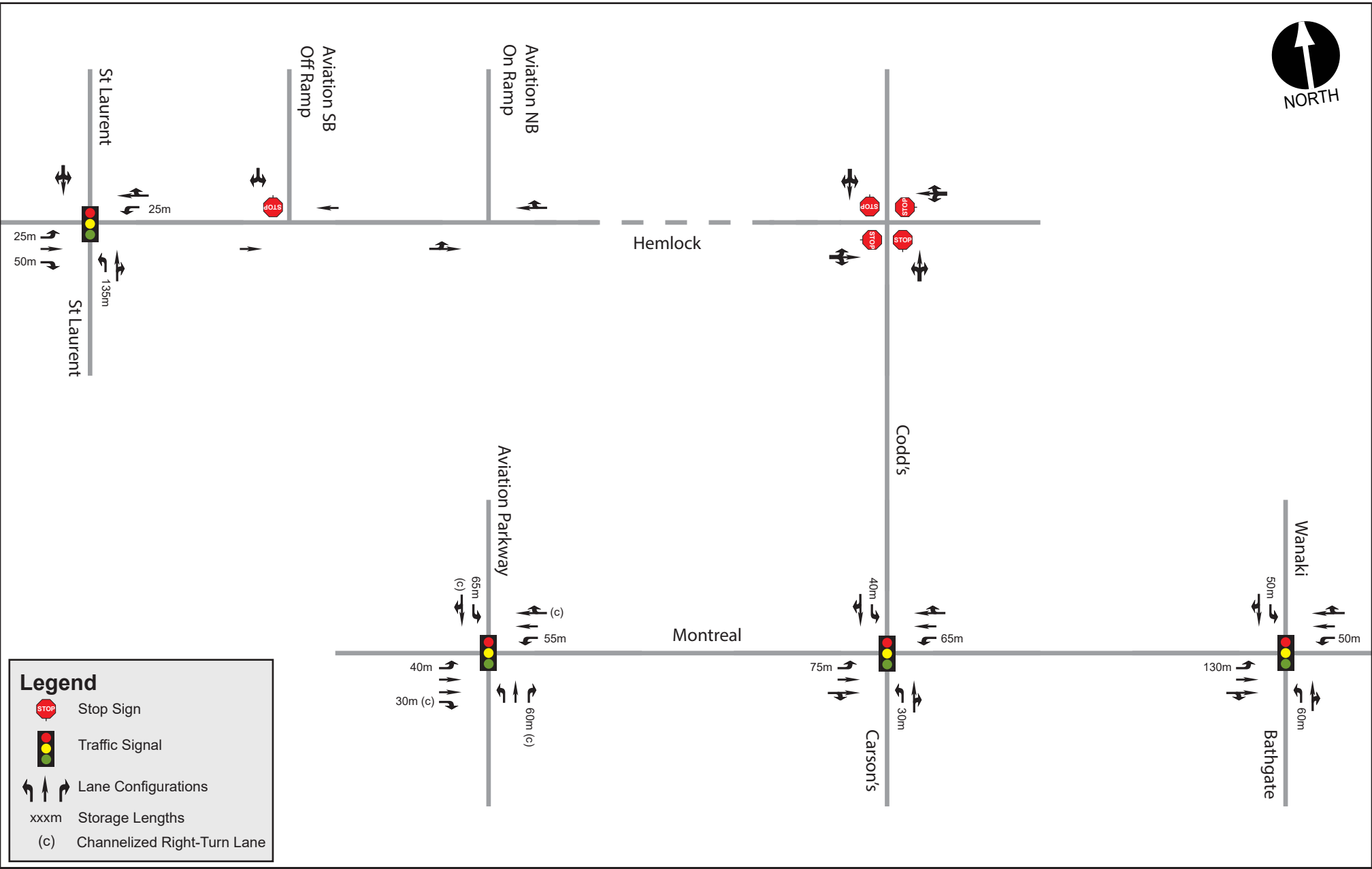
ARCADIS
IBI GROUP

Wateridge Village Phase 6, 7 & 8
Transportation Impact Assessment

Exhibit 3:
Existing Traffic

PROJECT No. 139653

SCALE: N.T.S.



ARCADIS
IBI GROUP

Wateridge Village Phase 6, 7 & 8
Transportation Impact Assessment

Exhibit 4:
Existing Lane Configurations & Intersection Control

PROJECT No. 139653

SCALE: N.T.S.

3.6 Analysis Years

Based on the anticipated build-out year of the proposed development, the following analysis years will be considered in this TIA:

- Year 2027 – Full Build-out of Phase 6
- Year 2030 – Full Build-out of Phase 7
- Year 2032 – Full Build-out of Phase 8
- Year 2037 – 5 Years Beyond Full Build-out/Occupancy

3.7 Exemptions Review

The TIA Guidelines provide exemption considerations for elements of the Design Review and Network Impact components. **Table 3** summarizes the TIA modules that are not applicable to this study.

Table 3 - Exemptions Review

TIA MODULE	ELEMENT	EXEMPTION CONISDERATIONS	REQUIRED
DESIGN REVIEW COMPONENT			
4.1 Development Design	4.1.2 Circulation and Access	• Only required for site plans	✗
	4.1.3 New Street Networks	• Only required for plans of subdivision	✓
4.2 Parking	4.2.1 Parking Supply	• Only required for site plans	✗
	4.2.2 Spillover Parking	• Only required for site plans where parking supply is 15% below unconstrained demand	✗
NETWORK IMPACT COMPONENT			
4.5 Transportation Demand Management	All Elements	• Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time	✓
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	• Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	✓
4.8 Network Concept	n/a	• Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by established zoning	✓

4 Forecasting

4.1 Demand Rationalization

The purpose of this section is to rationalize future travel demands within the study area to account for potential capacity limitations in the transportation network and its ability to effectively accommodate the additional demand generated by a new development. The results of the demand rationalization exercise will be used to inform the existing capacity constraints of the adjacent road network and define the site-generated trip characteristics for the proposed development.

4.1.1 Description of Capacity Issues

Table 4 below summarizes the existing traffic operational performance at the study area intersections based on Existing Traffic volumes. The intersection capacity analysis is based on locally-specific parameters as described in the TIA Guidelines and incorporates existing signal timing plans obtained from the City of Ottawa. As prescribed in the TIA Guidelines, a peak hour factor (PHF) of 0.90 has been considered in the analysis of existing conditions. The Synchro output files have been provided in **Appendix E**.

Table 4 - Intersection Capacity Analyses: Existing Traffic Conditions

INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Montreal & Codd's/Carson's	Signalized	AM	A (0.53)	WBTR (0.53)
		PM	A (0.48)	NBL (0.82)
Montreal & Wanaki/Bathgate	Signalized	AM	A (0.51)	WBTR (0.51)
		PM	A (0.41)	SBL (0.55)
Hemlock & Aviation SB Off-Ramp	Unsignalized	AM	A (8.6s)	SBRL (8.6s)
		PM	A (8.6s)	SBRL (8.6s)
Montreal & Aviation	Signalized	AM	C (0.74)	WBL (0.85)
		PM	D (0.85)	**WBL (0.98)**
Hemlock & St. Laurent	Signalized	AM	A (0.48)	EBR (0.71)
		PM	A (0.48)	EBR (0.64)

As indicated above, the study area intersections are operating at overall acceptable Levels of Service (i.e. LOS 'D' or better) under Existing conditions. The constraint identified for the westbound left-turn movement at the Montreal & Aviation intersection has been well documented through various transportation studies including this segment of the Montreal Road corridor. A dual westbound left-turn lane is proposed as part of the recently-completed Montreal-Blair Road Transit Priority EA and therefore it is assumed that this configuration will be implemented within the timeframe of this study.

The TIAs prepared in support of the Wateridge Phase 2A/2B and Wateridge Village Phase 3/5 developments were also reviewed and did identify potential capacity issues at the Montreal Road & Aviation Parkway intersection which suggests that that this intersection is likely to be congested in the future. It is important to note, however, that both adjacent development TIAs were completed when the traffic impacts of the COVID-19 pandemic were significant, and it was not possible to collect current and representative data.

A review of data collected for this TIA suggests that weekday peak hour traffic volumes have experienced a decline in comparison with January 2018 traffic data which was used as a basis for the Wateridge Phase 2A/2B and 3/5 studies. As such, pandemic traffic data (June 2022) collected for this TIA was balanced east-west using volumes at Montreal Road & Aviation Parkway (January 2023) to reflect post-pandemic travel patterns and substantial completion of the Montreal Road Renewal Project west of St Laurent Boulevard, while sidestreet volumes were increased by adjustment factors of 1.09 (weekday AM) and 1.03 (weekday PM), based on COVID-19 traffic volume monitoring at key intersections City-wide.

Details pertaining to the derivation of sidestreet factors based on the City-wide pandemic traffic volume monitoring are provided in **Appendix F**.

4.1.2 Adjustment to Development-Generated Demands

Based on constraints identified through previous TIAs at the Montreal & Aviation Parkway intersection, it is assumed that site-generated traffic will disperse amongst the various regional road network connections to leverage movements with additional spare capacity, as identified from the recently-conducted Wateridge Phase 3/5 TIA. For example, at the Montreal & Aviation Parkway intersection, it is assumed that site-generated traffic will disperse amongst the east- and westbound through movements in order to avoid long-standing capacity issues on the westbound left-turn movement.

The above noted capacity constraints were used to develop a realistic distribution of site-generated trips, which is discussed further in Section 4.2 below.

4.1.3 Adjustment to Background Network Demands

As prescribed in the TIA Guidelines and consistent with other TIAs conducted within Wateridge Village, the effects of peak-hour spreading have been considered in future analysis years of this study. It is anticipated that as traffic volumes continue to gradually increase, traffic will have a natural tendency to be more evenly distributed across the peak hour (PHF = 1.0) and eventually increase demands in the shoulders of the peak as well. The impacts of peak spreading are typically accounted for in the analysis of future conditions in recognition of this.

It should be noted traffic volumes for previous TIAs, including Wateridge Phases 2A/2B, were developed using the previous 2009 TRANS Trip Generation Methodology and have not been adjusted. As such, these studies provide a conservative estimate of site-generated trips for those developments.

The subject site is well connected to the regional road network and reinstating the Hemlock Road connection to the Aviation Parkway will allow for the dispersion of traffic from the Wateridge Village subdivision and help to alleviate any traffic operational issues that may potentially occur at the intersections of Montreal Road with Codd's or Wanaki.

4.2 Development Generated Traffic

4.2.1 Trip Generation Methodology

Separate trip generation methodologies were used to estimate the trip generation associated with the residential and commercial components of the proposed development.

For the residential land uses, peak hour person-trips were estimated using the 2020 TRANS Trip Generation Summary Report. The TRANS trip generation rates are based on blended rates derived from the 49 trip generation studies undertaken between 2008 and 2012, the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition) and the 2011 TRANS O-D Travel Survey. Separate peak period person-trip generation rates were developed for single-detached housing, low-rise multifamily housing (i.e. two storeys or less) and high-rise multifamily

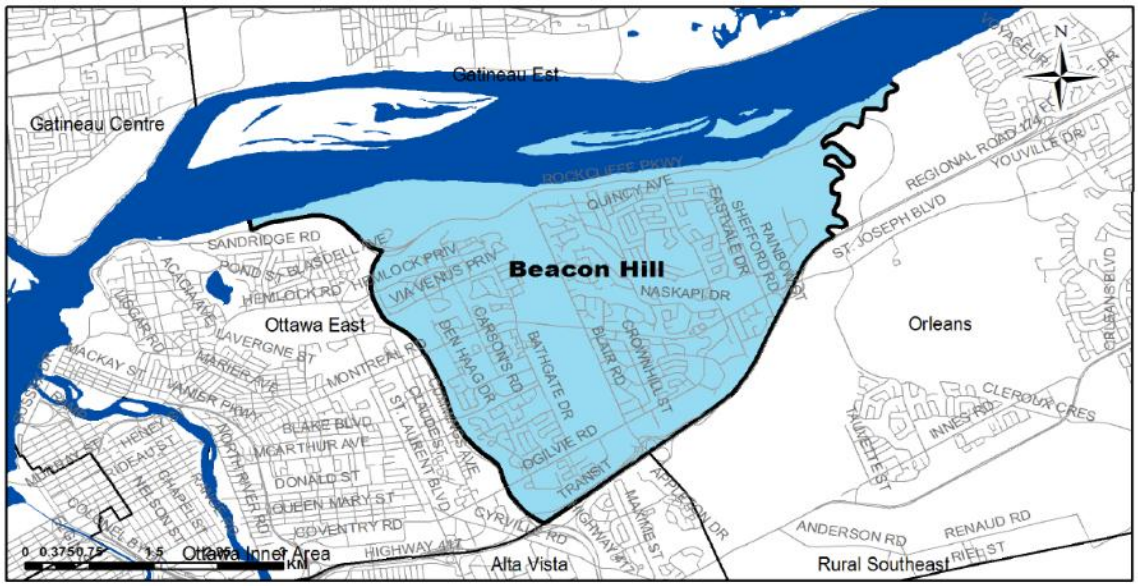
housing (i.e. three storeys or more). Site-generated peak period person-trips were estimated using these rates. Internalization reduction factors were subsequently applied to account for person-trips that are anticipated to occur between the residential and commercial land uses within the proposed development. Afterwards, these peak period person-trips were subdivided based on representative mode share percentages applicable to the study area and mode-specific adjustment factors were then applied to these peak period person-trips to determine the number of peak hour vehicle, passenger, transit, cycling and pedestrian trips.

For the commercial and office land uses proposed on-site, peak hour site-generated traffic volumes were developed using the Institute of Transportation Engineers' (ITE) Trip Generation Manual (11th Edition). The TIA Guidelines indicate that vehicle-trip generation rates from the ITE Trip Generation Manual should be converted to person-trips through the application of a 1.28 vehicle-to-person-trip conversion factor. Internalization reduction factors were subsequently applied to account for person-trips that are anticipated to occur between the commercial and residential land uses within the proposed development. Auto driver trips were further subdivided into pass-by and non pass-by vehicle-trips.

Mode share targets were developed based on the local mode share distributions from the Beacon Hill Traffic Assessment Zone (TAZ) in the 2020 TRANS Trip Generation Summary Report for residential, commercial and employment land uses. These mode share targets were adjusted to account for the planned improvements in transit, pedestrian and cycling infrastructure in the vicinity of the proposed development.

The extents of the Beacon Hill TAZ are illustrated in **Figure 8** below.

Figure 8 - Ottawa Beacon Hill TAZ



Source: 2011 TRANS O-D Survey

4.2.2 Residential Trip Generation Results

4.2.2.1 Peak Period Person-Trip Generation

It should be noted that all townhomes within the proposed development are anticipated to be 3 storeys in height and therefore, these fall under the category of 'high-rise multi-family' housing, as defined in the 2020 TRANS Trip Generation Summary Report.

The resulting number of site-generated peak period person-trips is summarized in **Table 5** below.

Table 5 – Residential Peak Period Person-Trip Generation

PHASE	LAND USE	SIZE	PERIOD	PERSON TRIPS (PPP)		
				IN	OUT	TOTAL
6	Multi-Family Residential (High-Rise)	70 units	AM	17	39	56
			PM	37	26	63
6 & 7	Multi-Family Residential (High-Rise)	1,173 units	AM	291	647	938
			PM	612	443	1,055
6, 7 & 8	Multi-Family Residential (High-Rise)	1,491 units	AM	370	823	1,193
			PM	778	564	1,342

Notes: ppp = persons per period

4.2.2.2 Residential Mode Share Distributions

The 2020 TRANS Trip Generation Summary Report provides approximations of the existing modal share within the Beacon Hill Traffic Assessment Zone (TAZ) for residential land uses.

It should be noted, however, that previously-approved TIAs applied mode share target deviations from the 2011 O-D Survey and 2020 TRANS Trip Generation Summary Report to reflect the human-scale lens with which Wateridge Village is being developed. As such, it is recommended that these previously-approved mode share targets be carried forward for use in this study as well to reflect the unique travel characteristics of Wateridge Village which are not adequately captured in the overall Beacon Hill TAZ mode share values. The more specific targets for Wateridge Village do reflect higher usage among sustainable modes in comparison with the overall TAZ which is reasonable, especially considering that the proposed development represents the final three phases of this new subdivision that is being constructed in accordance with the overarching Official Plan policy objective of achieving 15-minute neighbourhoods. It is anticipated that the effectiveness of infrastructure to support high-quality transit service and active transportation will be significantly improved through the build-out timeframe of Phases 6, 7 & 8, as transportation facilities within Wateridge Village are constructed to their ultimate form.

Consistent with the Wateridge Phase 2A/2B TIA, the residential mode share targets were determined based on the targets defined in that study. The ratio of cycling and walking trips, which was not specifically defined in either the Phase 2A/2B or Phase 1B TIAs, was derived based on the existing mode share distributions for each respective land use in the 2020 TRANS Trip Generation Summary Report.

These mode share assumptions will be further supported by Transportation Demand Management (TDM) measures, as discussed in the Analysis component of this study and lessen the overall site-generated traffic impacts on the adjacent road network.

The existing mode share distributions and proposed residential mode share targets are presented below in **Table 6** below.

Relevant extracts from the 2020 TRANS Trip Generation Summary Report with respect to mode share targets are provided in **Appendix F** and the Wateridge Phase 1B and 2A/2B TIAs.

Table 6 – Existing Residential Mode Share Distributions & Mode Share Targets

MODE	HIGH-RISE MULTI-FAMILY HOUSING (ITE CODE 221/222)[1]		BLENDED RATE (WEIGHTED AVERAGE)	WATERIDGE PHASE 2A/2B TIA	PROPOSED RESIDENTIAL MODE SHARE TARGETS
	AM	PM	AM & PM	AM & PM	AM & PM
Auto Driver	48%	52%	50%	35%	35%
Auto Passenger	9%	16%	13%	13%	13%
Transit	30%	28%	29%	35%	35%
Cycling	3%	0%	1%	17%	3%
Walking	10%	4%	7%		14%
Total Person Trips	**100%**	**100%**	**100%**	**100%**	**100%**

Notes –

- *[1] Defined as multi-family residential buildings with 3 or more storeys in the 2020 TRANS Trip Generation Summary Report.*

4.2.2.3 Trips by Mode (Peak Period)

The residential site-generated trips at each of the analysis years were segregated by the proposed mode share targets discussed in the preceding section. The resulting peak period person-trips by mode are summarized in **Table 7** below.

Table 7 – Peak Period Residential Site-Generated Trips by Mode

PHASE	MODE	AM			PM		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Phase 6 (2027)	Auto Trips	6	14	20	12	9	21
	Auto Passenger	2	5	7	4	3	7
	Transit	6	14	20	12	9	21
	Cycling	1	1	2	1	1	2
	Walking	3	6	9	5	4	9
	Person Trips	**9**	**21**	**30**	**18**	**11**	**30**
Phases 6 & 7 (2030)	Auto Trips	100	221	321	186	139	325
	Auto Passenger	37	82	119	69	52	121
	Transit	101	223	324	188	141	329
	Cycling	9	19	28	16	12	28
	Walking	40	88	128	74	56	130
	Person Trips	**153**	**339**	**492**	**283**	**205**	**488**
Phases 6, 7 & 8 (2032)	Auto Trips	127	280	407	242	180	422
	Auto Passenger	47	104	151	90	67	157
	Transit	128	283	411	245	182	427
	Cycling	11	24	35	21	15	36
	Walking	51	112	163	97	72	169
	Person Trips	**194**	**431**	**625**	**359**	**260**	**619**

4.2.2.4 Trips by Mode (Peak Hour)

The residential site-generated trips at each of the analysis years were multiplied by applicable peak period to peak-hour mode adjustment factors specified in the 2020 TRANS Trip Generation Summary Report. The resulting peak hour person-trips by mode are summarized in **Table 8** below.

Internal trips are also shown for the residential uses with respect to the mix of commercial and employment components within the proposed development, the details of which are provided in **Appendix F**.

Table 8 – Peak Hour Residential Site-Generated Trips by Mode

PHASE	MODE	AM			PM		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Phase 6 (2027)	Auto Trips	3	7	10	6	4	10
	Auto Passenger	1	2	3	2	1	3
	Transit	4	8	12	6	4	10
	Cycling	0	1	1	1	0	1
	Walking	1	3	4	2	2	4
	Internal[1]	0	0	0	1	0	1
	Person Trips	**9**	**21**	**30**	**18**	**11**	**30**
Phases 6 & 7 (2030)	Auto Trips	48	106	154	82	61	143
	Auto Passenger	18	39	57	30	23	53
	Transit	56	123	179	88	66	154
	Cycling	5	11	16	8	6	14
	Walking	23	51	74	39	29	68
	Internal[1]	3	9	12	36	20	56
	Person Trips	**153**	**339**	**492**	**283**	**205**	**488**
Phases 6, 7 & 8 (2032)	Auto Trips	61	134	195	106	79	185
	Auto Passenger	23	50	73	40	29	69
	Transit	71	156	227	115	86	201
	Cycling	6	14	20	10	7	17
	Walking	29	65	94	50	37	87
	Internal[1]	4	12	16	38	22	60
	Person Trips	**194**	**431**	**625**	**359**	**260**	**619**

Notes: [1] Refer to Section 4.2.3.4 for details on the calculation of internal person trips.

4.2.3 Non-Residential Trip Generation Results

4.2.3.1 Base Trip Generation

Peak hour vehicular traffic volumes associated with the proposed development commercial and employment land uses were determined using appropriate peak hour trip generation rates from the ITE Trip Generation Manual (11th Edition).

The resulting baseline vehicular trip generation results for the office and commercial land uses within the proposed development have been summarized in **Table 9** below.

Table 9 - Baseline Vehicular Trip Generation Results (Non-Residential)

PHASE	LAND USE	SIZE	PERIOD	GENERATED TRIPS (VPH)		
				IN	OUT	TOTAL
6	General Office Building (ITE 710)	~3,940 m^2	AM	57	8	65
			PM	10	51	61
	TOTAL (PHASE 6)		**AM**	**57**	**8**	**65**
			PM	**10**	**51**	**61**
7	General Office Building (ITE 710)	~11,820 m^2	AM	170	23	193
			PM	31	152	183
	Strip Retail Plaza (<40k ft^2 GFA) ITE 822	~2,785 m^2	AM	42	28	70
			PM	99	99	198
	TOTAL (PHASES 6 & 7)		**AM**	**269**	**59**	**328**
			PM	**140**	**302**	**442**
8	General Office Building (ITE 710)	~7,880 m^2	AM	113	15	128
			PM	21	101	122
	TOTAL (PHASES 6, 7 & 8)		**AM**	**382**	**74**	**456**
			PM	**161**	**403**	**564**

Notes: vph is an abbreviation for 'vehicles per hour'; GFA is an abbreviation for 'Gross Leasable Area'.

4.2.3.2 Person Trip Generation

For weekday peak hour conditions, person-trip generation for non-residential uses were determined by applying a 1.28 vehicle-to-person-trip conversion rate, as prescribed in the TIA Guidelines.

The resulting number of site-generated person-trips is summarized in **Table 10** below.

Table 10 – Person-Trip Generation

PHASE	LAND USE	SIZE	PERIOD	GENERATED TRIPS (PPH)		
				IN	OUT	TOTAL
6	General Office Building (ITE 710)	~3,940 m^2	AM	73	10	83
			PM	13	65	78
	TOTAL (PHASE 6)		**AM**	**73**	**10**	**83**
			PM	**13**	**65**	**78**
7	General Office Building (ITE 710)	~11,820 m^2	AM	218	29	247
			PM	40	195	235
	Strip Retail Plaza (<40k ft^2 GFA) ITE 822	~2,785 m^2	AM	54	36	90
			PM	127	127	254
	TOTAL (PHASES 6 & 7)		**AM**	**345**	**75**	**420**
			PM	**180**	**387**	**567**
8	General Office Building (ITE 710)	~7,880 m^2	AM	145	19	164
			PM	27	129	156
	TOTAL (PHASES 6, 7 & 8)		**AM**	**490**	**94**	**584**
			PM	**207**	**516**	**723**

Notes: pph = persons per hour

4.2.3.3 Mode Share Distributions

Consistent with the Wateridge Phase 2A/2B TIA, the commercial and employment uses mode share targets were defined based on the Phase 1B TIA. The ratio of cycling and walking trips, which was not specifically defined in either the Phase 2A/2B or Phase 1B TIAs, was derived based on the existing mode share distributions for each respective land use in the 2020 TRANS Trip Generation Summary Report. The existing mode share distributions and proposed mode share targets for the commercial and employment land uses are shown in **Table 11** and **Table 12** below.

Table 11 – Existing Commercial Mode Share Distributions & Mode Share Targets

MODE	EXISTING COMMERCIAL MODE SHARE DISTRIBUTIONS [1]		BLENDED COMMERCIAL MODE SHARE	WATERIDGE PHASE 1B TIA	PROPOSED COMMERCIAL MODE SHARE TARGETS
	AM	PM			
Auto Driver	67%	59%	62%	50%	50%
Auto Passenger	12%	18%	15%	10%	10%
Transit	8%	7%	8%	20%	20%
Cycling	0%	1%	1%	20%	2%
Walking	14%	13%	14%		18%
Total Person Trips	**101%[2]**	**98%[2]**	**100%**	**100%**	**100%**

Notes –

[1] Referenced from the 2020 TRANS Trip Generation Summary Report for the Beacon Hill TAZ.

[2] Mode share distributions were extracted directly from the 2020 TRANS Trip Generation Summary Report and do not add to 100% due to rounding errors.

Table 12 – Existing Employment Mode Share Distribution & Mode Share Targets

MODE	EXISTING EMPLOYMENT MODE SHARE DISTRIBUTION [1]	WATERIDGE PHASE 1B TIA	PROPOSED EMPLOYMENT MODE SHARE TARGETS
Auto Driver	73%	45%	45%
Auto Passenger	6%	10%	10%
Transit	16%	35%	35%
Cycling	2%	10%	3%
Walking	3%		7%
Total Person Trips	**100%**	**100%**	**100%**

Notes –

[1] Referenced from the 2020 TRANS Trip Generation Summary Report for the Beacon Hill TAZ.

4.2.3.4 Trip Reduction Factors

Deduction of Existing Development Trips

The subject property is currently undeveloped and therefore does not generate any trips.

Pass-by Traffic

Pass-by trips are site-generated vehicle-trips that are diverted from traffic already travelling along the adjacent roadways. As such, these trips do not represent new traffic within the network but rather a diversion of existing traffic.

The ITE Trip Generation Manual (11th Edition) indicates that pass-by trips represent approximately 40% of trips to/from commercial uses during the weekday afternoon peak hour, while a negligible number of pass-by trips are expected to occur during the weekday morning peak hour. The 2021 Pass-By Table for the ITE Land use Code '821 Shopping Plaza (40-150k)' is shown in **Appendix F**.

Synergy/Internalization

Synergy/internalization occurs when developments contain two or more compatible land uses. These compatible land uses attract trips from each other and therefore some of the person-trip generation of the site is fulfilled internally, thereby reducing the overall number of new trips generated.

The NCHRP[1] 8-51 Internal Trip Capture Estimation Tool has been used to estimate the number of internal trips that will occur between the residential, commercial an employment land uses within the proposed development. The internalization calculation sheets have been provided in **Appendix F**.

4.2.3.5 Trips by Mode

Table 13 below summarizes the non-residential site-generated trips segregated by the proposed commercial and employment mode share targets for each study analysis year provided in Section 4.2.3.3.

Internal trips are also presented for the commercial and employment uses with respect to the mix of residential within the proposed development, the details of which are provided in **Appendix F**.

[1] National Cooperative Highway Research Program (NCHRP)

Table 13 - Non-Residential Site-Generated Trips by Mode

PHASE	MODE	AM			PM		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Phase 6 (2027)	Auto Trips	33	5	38	5	29	34
	Pass-By (Auto)	*0*	*0*	*0*	*0*	*0*	*0*
	New Auto Trips	*33*	*5*	*38*	*5*	*29*	*34*
	Auto Passenger	7	7	14	1	6	7
	Transit	26	15	41	4	22	26
	Cycling	2	1	3	0	2	2
	Walking	5	13	18	1	4	5
	Internal	0	0	0	1	1	2
	Person Trips	**73**	**41**	**114**	**12**	**64**	**76**
Phases 6 & 7 (2030)	Auto Trips	144	25	169	75	160	235
	Pass-By (Auto)	*0*	*0*	*0*	*20*	*20*	*40*
	New Auto Trips	*144*	*25*	*169*	*55*	*140*	*195*
	Auto Passenger	32	5	37	16	35	51
	Transit	104	15	119	37	107	144
	Cycling	9	1	10	4	9	13
	Walking	26	6	32	3	34	37
	Internal	30	24	54	26	42	68
	Person Trips	**345**	**76**	**421**	**161**	**387**	**548**
Phases 6, 7 & 8 (2032)	Auto Trips	204	30	234	86	217	303
	Pass-By (Auto)	*0*	*0*	*0*	*20*	*20*	*40*
	New Auto Trips	*204*	*30*	*234*	*66*	*197*	*263*
	Auto Passenger	45	6	51	18	47	65
	Transit	153	19	172	46	152	198
	Cycling	13	2	15	4	13	17
	Walking	35	7	42	25	43	68
	Internal	39	31	70	28	44	72
	Person Trips	**489**	**95**	**584**	**207**	**516**	**723**

4.2.4 Total Trip Generation by Mode

The person trips from **Table 8** and **Table 13** above were combined to determine the total number of trips per travel mode generated by the proposed development and are shown in **Table 14**, **Table 15** and **Table 16** below.

Table 14 – Site-Generated Trips by Mode (Phase 6)

MODE	AM			PM		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Overall Auto Trips	36	12	48	11	33	44
Auto Passenger	8	9	17	3	8	11
Transit	30	23	53	11	27	38
Cycling	2	2	4	1	2	3
Walking	6	16	22	4	7	11
Internal	0	0	0	1	1	2
Total Person-Trips	**82**	**62**	**144**	**31**	**78**	**109**

Table 15 – Site-Generated Trips by Mode (Phases 6 & 7)

MODE	AM			PM		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Overall Auto Trips	192	131	323	157	221	378
Pass-By (Auto) [1]	*0*	*0*	*0*	*20*	*20*	*40*
New Auto Trips	*192*	*131*	*323*	*137*	*201*	*338*
Auto Passenger	50	44	94	46	58	104
Transit	160	138	298	125	173	298
Cycling	14	12	26	12	15	27
Walking	49	57	106	42	63	105
Internal	33	33	66	62	62	124
Total Person-Trips	**498**	**415**	**913**	**444**	**592**	**1,036**

Notes: [1] Site-generated traffic volumes on the adjacent road network have been reduced in accordance with pass-by trips at rates of 40% for weekday PM peak hours, as described previously in Section 4.2.2.4 for the commercial uses.

Table 16 – Site-Generated Trips by Mode (Phases 6, 7 & 8)

MODE	AM			PM		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Overall Auto Trips	266	164	430	192	296	488
Pass-By (Auto) [1]	*0*	*0*	*0*	*20*	*20*	*40*
New Auto Trips	*266*	*164*	*430*	*172*	*276*	*448*
Auto Passenger	68	56	124	58	76	134
Transit	224	175	399	161	238	399
Cycling	19	16	35	14	20	34
Walking	64	72	136	75	80	155
Internal	43	43	86	66	66	132
Total Person-Trips	**684**	**526**	**1,210**	**566**	**776**	**1,342**

Notes: [1] Site-generated traffic volumes on the adjacent road network have been reduced in accordance with pass-by trips at rates of 40% for weekday PM peak hours, as described previously in Section 4.2.2.4 for the commercial uses.

4.2.5 Trip Distribution and Assignment

Route selection and weighting for the proposed development distribution was derived based on a review of travel patterns from Ottawa Beacon Hill Traffic Assessment Zone (TAZ), the configuration of the road network within the vicinity of the site, as well as the concentration of commercial and employment nodes within adjacent TAZs. Consideration was given to Google Maps travel times during peak hour conditions, as well as intersection-level turning movement counts at each study area intersection as well.

The global distribution of site-generated traffic defined below is also generally consistent with the global distributions assumed for other TIAs conducted within Wateridge Village:

- 10% to/from the East
    - 100% via Montreal Road
- 45% to/from the South
    - 35% via Aviation Parkway
    - 35% via St. Laurent Boulevard
    - 20% via Blair Road
    - 5% via Carson's Road
    - 5% via Bathgate Drive
- 45% to/from the West
    - 35% via Montreal Road
    - 35% via George-Étienne Cartier Parkway

- 30% via Hemlock Road/Beechwood Avenue

Utilizing the estimated number of new auto trips and applying the above distribution, future site-generated traffic volumes are illustrated for each of the study area intersections in **Exhibit 5**, **Exhibit 6** and **Exhibit 7** below.

It should be noted that the site-generated traffic volumes presented in the above noted exhibits include pass-by trips associated with the commercial uses proposed on-site.

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Exhibit 5:
Site-Generated
Traffic (Phase 6)

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SCALE: N.T.S.

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Wateridge Village Phase 6, 7 & 8
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Exhibit 6:
Site-Generated
Traffic (Phase 6 & 7)

PROJECT No. 139653

SCALE: N.T.S.

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Transportation Impact Assessment

Exhibit 7:
Site-Generated
Traffic (Phase 6, 7 & 8)

PROJECT No. 139653

SCALE: N.T.S.

4.3 Background Network Traffic

4.3.1 Changes to the Background Transportation Network

To properly assess future traffic conditions, planned modifications to the transportation network that may impact travel patterns or demand within the study area must be considered. Based on the future changes to the transportation network described in the Scoping section of this report, planned improvements to active transportation infrastructure support the targeted mode share values, while the extension of Hemlock Road (assumed to be fully implemented prior to build-out of Phase 6) will provide an additional route to/from the subject sites and reduce travel demand at the existing access points on Montreal Road.

The recently-completed Montreal-Blair Transit Priority Environmental Assessment (EA) Study proposes the implementation of a dual westbound left-turn auxiliary lane at the Montreal & Aviation Parkway intersection to address long-standing capacity issues on this approach, as well as improvements to active transportation connectivity along this arterial through the introduction of grade-separated cycle tracks and curbside bus lanes. Once implemented, these longer-term improvements to transit and active transportation will further support travel by non-auto modes within the study area, while also adding vehicular capacity at select locations to support incremental long-term growth and intensification within the surrounding communities.

It should be noted as well that a Monitoring Program was developed as part of the Wateridge Phase 2A/2B TIA to assess vehicular operations at critical intersections within the study area, including the westbound approach of the Montreal & Aviation Parkway intersection and other broader transportation network impacts on Montreal Road. In order to satisfy Draft Conditions #42 & #52, it is proposed that the Phase 2A/2B Monitoring Program be supplemented by a Monitoring Plan Memorandum to specifically observe site-generated travel demands at key locations along its property limits and following substantial build-out/occupancy. These observed travel demands would then be compared against the trip generation estimates developed as part of this TIA.

The Phases 6, 7 & 8 Monitoring Plan Memorandum as a supplement to the Phase 2A/2B Monitoring Program is provided in **Appendix G**.

4.3.2 General Background Growth Rates

The background growth rate is intended to represent any regional traffic growth from outside the study area that will utilize the adjacent road network. Consistent with recently-conducted adjacent development TIAs, a 0% growth rate was applied to estimate future background volumes on the arterial and regional road network. It should be noted, however, that any adjacent developments of significance were accounted for explicitly in the assembly of background traffic, as outlined in the following section.

4.3.3 Other Area Development

Future adjacent developments in the vicinity of the proposed development were identified previously in the Scoping section of this report. **Table 17** below summarizes the land use details and expected build-out year of these future adjacent developments.

It should be noted that 455 Wanaki Road and 971 Montreal Road did not meet the City’s thresholds to trigger a TIA. As such, neither of these developments was included in the assembly of background traffic for this study.

Table 17 - Future Adjacent Developments

DEVELOPMENT	LAND USE	EXPECTED BUILD-OUT YEAR FROM TIA
Wateridge Phase 1A	• 214 residential dwelling units • Elementary School Block	2021[1]
Wateridge Phase 1B	• 720 residential dwelling units • 32,450 m^2 of commercial space	2022[2]
Wateridge Phase 2A/2B	• 990 residential dwelling units • 271,601 m^2 of commercial space	2022[2]
Wateridge Phases 3 & 5	• 1826 residential dwelling units • Commercial space for 580 employees • 2.5 ha public park space	2025[3]
715 Mikinak	• 271 residential dwelling units • 265 m^2 of commercial space	2025[4]
800 Montreal Road	• 172 residential dwelling units • 75 m^2 of commercial space	2025[4]
Manor Park Gardens & Heights	• 4,061 residential dwelling units • 1,057 m^2 of commercial space	2045[5]

Notes:
[1] All residential units fully built out/occupied. Only the school block remains to be constructed.
[2] Construction is underway. Build-out/occupancy assumed to occur by 2027 study analysis year.
[3] Phases 3 & 5 are expected to be built out by the 2027 analysis year.
[4] Construction has not yet begun. Build-out assumed by 2027 study analysis year.
[5] Construction is assumed to occur linearly between 2025 and 2045 to align with the analysis years of this study.

4.4 Traffic Volume Summary

4.4.1 Future Background Traffic Volumes

Future background traffic volumes were derived by superimposing future adjacent development volumes directly onto existing traffic. As discussed previously, all background growth through the study area was assumed to originate from these adjacent developments and thus no growth rate was considered in the calculation of future background traffic volumes.

Exhibit 8, **Exhibit 9, Exhibit 10** and **Exhibit 11** below present the future background traffic volumes anticipated for the 2027, 2030, 2032 and 2037 analysis years, respectively.

4.4.2 Future Total Traffic Volumes

Future total traffic volumes have been established by combining the site-generated traffic volumes with the future background traffic volumes.

Exhibit 12, **Exhibit 13**, **Exhibit 14** and **Exhibit 15** below present the future total traffic volumes anticipated for the 2025, 2030, 2032 and 2037 analysis years, respectively.

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Exhibit 8:
Future (2027)
Background Traffic

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SCALE: N.T.S.

LEGEND

Permitted Movements

xxx (xxx)
xxx (xxx)
xxx (xxx)

Weekday AM (PM) Peak Hour Vehicular Volume

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Exhibit 9:
Future (2030)
Background Traffic

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SCALE: N.T.S.

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Wateridge Village Phase 6, 7 & 8
Transportation Impact Assessment

Exhibit 10:
Future (2032)
Background Traffic

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SCALE: N.T.S.

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Wateridge Village Phase 6, 7 & 8
Transportation Impact Assessment

Exhibit 11:
Future (2037)
Background Traffic

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SCALE: N.T.S.

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Transportation Impact Assessment

Exhibit 12:
Future (2027)
Total Traffic

PROJECT No. 139653

SCALE: N.T.S.

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Wateridge Village Phase 6, 7 & 8
Transportation Impact Assessment

Exhibit 13:
Future (2030)
Total Traffic

PROJECT No. 139653

SCALE: N.T.S.

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Wateridge Village Phase 6, 7 & 8
Transportation Impact Assessment

Exhibit 14:
Future (2032)
Total Traffic

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SCALE: N.T.S.

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Wateridge Village Phase 6, 7 & 8
Transportation Impact Assessment

Exhibit 15:
Future (2037)
Total Traffic

PROJECT No. 139653

SCALE: N.T.S.

5 Analysis

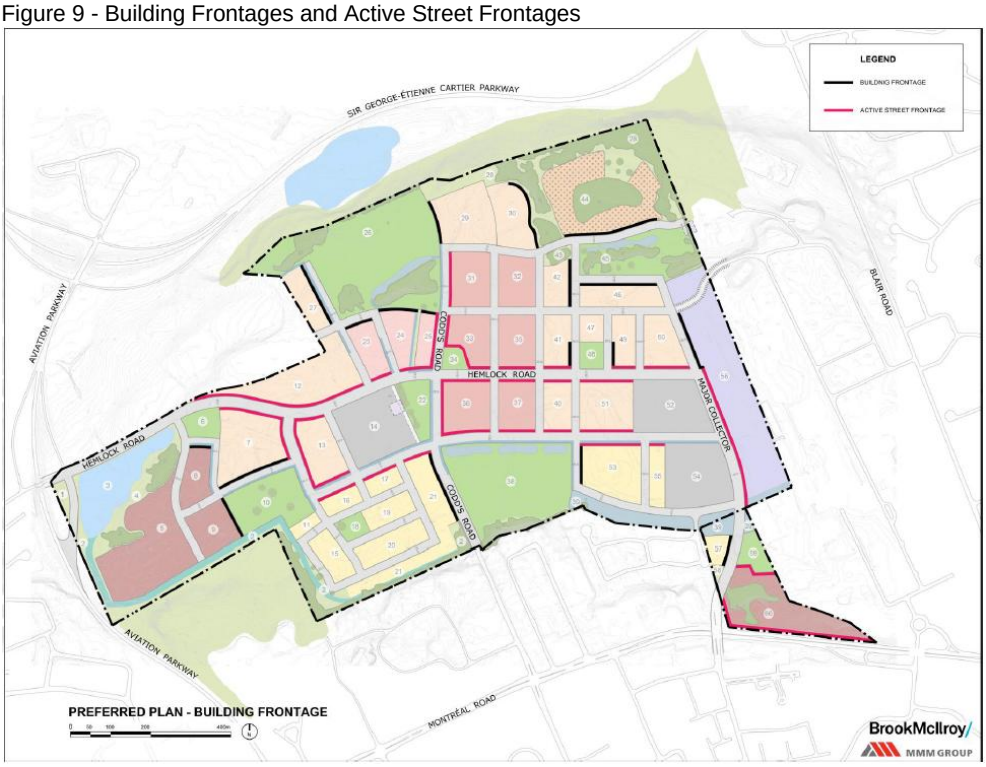
5.1 Development Design

5.1.1 Design for Sustainable Modes

For consistency with the City of Ottawa's Urban Design Guidelines and transportation policies, new developments shall provide safe and efficient access for all users, while creating an environment that encourages walking, cycling and transit use.

The Rockcliffe CDP identifies active street and building frontages at several key locations, as shown in **Figure 9** below. In alignment with this policy, the proposed development is being configured to foster street-oriented development consistently across all three phases and to facilitate direct access for active modes to facilities that support sustainable modes of transportation within the public ROW.

Figure 9 - Building Frontages and Active Street Frontages



Source: Rockcliffe CDP Figure 5.5

The study area is presently served by three transit routes, as indicated previously in **Figure 1**. All three phases will generally be within a 400m walking distance to future bus stops on Hemlock Road and Codd's Road, as well as existing stops located south of the development. Route #27 currently performs a counter-clockwise route along Mikinak from Wanaki to Codd's and will be shifted to Hemlock Road as development progresses further north.

The TDM-Supportive Development Design and Infrastructure Checklist was completed and is provided in **Appendix H**. This checklist identifies specific measures that are being considered in association with the proposed development to offset the vehicular impact on the adjacent road network, including providing bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible and ensuring safe, direct and attractive walking routes from building entrances to nearby transit stops throughout the development.

5.1.2 Circulation and Access

Not Applicable: The Circulation and Access element is exempt from this TIA, as defined in the study scope. This element is not required for applications involving plans of subdivisions.

5.1.3 New Street Networks

The road network within the proposed development is organized in a modified grid pattern with relatively short road segments to create a more porous, walkable community in accordance with the Building Better and Smarter Suburbs policy framework. The overall road network design will promote driver behaviour that is consistent with the roadway classifications.

In accordance with the City of Ottawa's Local Residential Streets 30km/h Design Toolbox (September 2021), specific design elements such as bulb-outs, speed humps, chicanes and reduced curb radii will be considered within the site's internal road network following Draft Approval and prior to Registration of the subdivision lands.

A Geometric Roadway Design Drawing (GRDD) was developed for Phases 6 and 7 to identify specific traffic calming measures within the proposed public road network of these phases and in accordance with the 30km/h Design Toolbox. An Active Transportation (AT) Plan was also developed which illustrates the interconnected pathway network between Phases 6, 7 & 8, as well as linkages with NCC lands to the north. Both the GRDD and AT Plan are provided in **Appendix I**.

5.2 Parking

Not Applicable: The Parking Supply and Spillover Parking elements are exempt from this TIA, as previously defined in the Scoping section. These elements are not required for a Draft Plan of Subdivision application.

5.3 Boundary Streets

There are six existing boundary streets adjacent to the proposed development: Tawadina Road, Michael Stoqua Street, Bareille-Snow Street, Moses Tennisco Street, Codd's Road and Wanaki Road.

5.3.1 Mobility

Segment-based Multi-Modal Level of Service (MMLOS) was previously conducted as part of the TIA for Wateridge Phases 3 & 5, the results of which have been adapted and are summarized in **Table 18** below. These results are reflective of the ultimate build-out conditions planned for each roadway.

Table 18 – Segment-Based Multi-Modal Level of Service (MMLOS)

LOCATION	LEVEL OF SERVICE BY MODE			
	PEDESTRIAN (PLOS)	BICYCLE (BLOS)	TRANSIT (TLOS)	TRUCK (TkLOS)
SEGMENT(S)				
Hemlock Road *Core Street*	B (Target: C)	A (Target: B)	E (Target: D)	C (Target: N/A [3])
Hemlock Road *Major Collector*	B (Target: C)	A (Target: B)	E (Target: D)	C (Target: N/A [3])
Aviation Parkway	D (Target: C)	A (Target: D)	D (Target: N/A)	B (Target: N/A [3])
Montreal Road	C (Target: C)	A (Target: C)	B (Target: D)	C (Target: D)
Codd's Road *Collector*	B (Target: C)	A (Target: D)	E (Target: D)	C (Target: N/A [3])
Codd's Road *Local*	B (Target: C)	A (Target: D)	-[2] (Target: N/A [1])	B (Target: N/A [3])
Mikinak Road	B (Target: C)	A (Target: D)	E (Target: N/A [1])	C (Target: N/A [3])
Tawadina Road	B (Target: C)	A (Target: D)	E (Target: N/A [1])	B (Target: N/A [3])
Wanaki Road *Major Collector*	B (Target: C)	A (Target: D)	E (Target: N/A[1])	C (Target: N/A [3])
Wanaki Road *Local*	B (Target: C)	A (Target: D)	-[2] (Target: N/A [1])	B (Target: N/A [3])

Source: Adapted from Wateridge Phases 3 & 5 (J.L. Richards & Associates Limited, 2021)

Notes:
1. Only road segments designated as transit priority or bus rapid transit corridors are designated are assigned TLOS targets.
2. Local roads are not expected to support transit service.
3. These road segments are not designated by the City of Ottawa as truck routes, arterial roads or key delivery access routes. As such, there are no TkLOS targets are assigned to these segments.

The PLOS target along the Aviation Parkway segment is not met due to high traffic volumes and high operating speeds, however it should be noted that the multi-use path present along this federally-owned road is physically separated from the vehicle travel-way by a grassed boulevard, therefore these factors do not impact the functioning pedestrian facilities.

All segments meet their respective BLOS and TkLOS targets.

The TLOS targets are not met on any roadways with the exception of Montreal Road and Aviation Parkway. This is due to the lack of dedicated transit facilities within the internal road network of Wateridge Village which were not envisioned in the CDP or feasible due to ROW constraints.

Detailed extracts of the Segment-based Multi-Modal Level of Service (MMLOS) analyses from the Wateridge Phases 3 & 5 TIA are provided in **Appendix J**.

5.3.2 Road Safety

As discussed previously in the study scope, the only study area intersection that requires further analysis is the Montreal & Aviation Parkway intersection. The remaining study area intersections and road segments identified in Section 3.1.7 will not be analysed in detail due to the low Million Vehicles Entering (MVE) values calculated within their vicinity, based on the collision records reviewed in this study.

Montreal Road & Aviation Parkway

There was a total of 87 collisions within the Montreal & Aviation intersection between January 2016 and December 2020. Of those 87 collisions, 19 included non-fatal injuries and the remaining 68 were classified as ‘property damage only’. Nineteen collisions occurred within the morning peak period and 30 collisions occurred within the afternoon peak period, therefore suggesting that the majority of the collisions at this intersection occurred during congested conditions. Seventy percent of the reported collisions occurred when the environmental conditions were clear, and the road surface conditions were dry, providing an indication that weather-related elements are not a significant contributor to the number of collisions occurring at this intersection.

Forty-five percent and 35% of the reported collisions were rear-end and turning movement collisions, respectively, totalling 80% of the reported collisions. Of the rear-end and turning movement collisions, 31 included a vehicle that was making a left-turn movement and a vehicle that was travelling straight. This could suggest that there is insufficient time for protected left-turn movements at this intersection to allow all left-turning vehicles to pass through the intersection without attempting to navigate the intersection unsafely. Optimizing the signal timing plan could potentially improve this problem and lower collision rates.

5.4 Access Intersections

5.4.1 Location and Design of Access

The proposed development will provide direct access to the adjacent road network through the extensions of Codd’s Road, Bareille Snow Street, Michael Stoqua Street and Wanaki Road north of Hemlock Road and Tawadina Road. These intersections will all be unsignalized, two-way stop-controlled.

5.4.2 Access Intersection Control

It is anticipated that any site access driveways constructed will be unsignalized.

5.4.3 Access Intersection Design (MMLOS)

Not Applicable – The site access driveways will be unsignalized, therefore intersection-based MMLOS analysis is not required for these locations.

5.5 Transportation Demand Management (TDM)

The City of Ottawa is committed to implementing Transportation Demand Management (TDM) measures on a City-wide basis in an effort to reduce automobile dependence, particularly during the weekday peak travel periods. TDM initiatives are aimed at encouraging individuals to use non-auto modes of travel during the peak periods.

5.5.1 Context for TDM

As discussed previously, the proposed development is located adjacent to Tawadina Road within the Core Area of Wateridge Village, which will include enhanced facilities to further support the use of active and sustainable modes of transportation such as active frontages. On Hemlock Road, approximately 150m south of Tawadina Road, cycle tracks and concrete sidewalks on both sides of the road are planned to promote active transportation as well. The local roads within the development will all include a concrete sidewalk on at least one side allowing for easy connection to the facilities on Hemlock Road, as specified in the Former CFB Rockcliffe CDP.

5.5.2 Need and Opportunity

With the development of Wateridge Village, there is an opportunity to increase the overall proportion of sustainable transportation trips within the surrounding community.

Mode share targets applied in this TIA were consistent with Wateridge Village Phase 2 and although the sustainable mode share targets aim to achieve a higher active transportation target in comparison with a typical blended rate, given the development's context and the suite of TDM measures outlined below, it is expected that these targets will be achievable.

5.5.3 TDM Program

The proposed development conforms to the City's TDM principles by providing convenient and direct connections to adjacent pedestrian and cycling facilities.

The City of Ottawa's TDM Measures Checklist was completed for the proposed development and is provided in **Appendix H**. This checklist indicates measures that are being contemplated as part of this development, including the following:

- Display local area maps with walking/cycling access routes and key destinations at major entrances;
- Display relevant transit schedules and route maps at entrances;
- Contract with provider to install on-site bikeshare station for use by commuters and visitors;
- Contract with provider to install on-site carshare vehicles and promote their use by residents;
- Unbundle parking costs from purchase price and lease rates at multi-tenant sites; and
- Provide a multi-modal travel option information package to new residents and employees.
- Transit fare incentives such as offering preloaded PRESTO cards to encourage commuters to use transit or subsidize/reimburse monthly transit pass purchases by employees.

5.6 Neighbourhood Traffic Management

It is acknowledged that the proposed development will contribute to a fairly significant increase in vehicular volumes on select local and collector road segments or intersections within Wateridge

Village relative to existing conditions. These downstream impacts, however, are in line with the high-level projections developed for the 2014 Community Transportation Study (CTS) and are to be expected, given that Wateridge Village is in the earlier stages of development. Despite their relative significance in comparison with existing volumes, the additional site-generated traffic contributions will not result in a shift in the role or function of the internal street network within Wateridge Village beyond the road hierarchy established in the CDP. Infiltration of site-generated traffic beyond the limits of Wateridge Village is anticipated to be minimal, as indicated previously in **Exhibit 7**, given that the subdivision is well connected to the regional road network.

Further, any potential cut-through traffic impacts in adjacent neighbourhoods south of Montreal Road will be reviewed at each phase of the subject development, as outlined in the Monitoring Plan (see **Appendix G**).

5.7 Transit

5.7.1 Route Capacity

The estimated future site-generated transit demand at full build-out was provided in the Forecasting component of this study and the results are summarized in **Table 19** below.

Table 19 – Development Generated Transit Demand

PERIOD	PEAK PERIOD DEMAND		
	IN	OUT	TOTAL
AM	224	175	399
PM	161	238	399

As indicated in **Table 19** above, site-generated two-way transit ridership volumes of up to 399 passengers are expected during the weekday morning and afternoon peak hours, respectively. With consideration that the study area is currently served by three transit routes during the weekday peak hours with average headways of approximately 20 minutes and that a typical OC Transpo bus has an approximate 100-passenger capacity, the increase in transit ridership associated with site-generated trips is considered to be significant.

It is important to recognize, however, that the overall increase transit trips associated with the build-out of Wateridge Village was planned for in the development of the City's overall transit network. Once transit service within Wateridge Village is realigned to Hemlock Road and the curbside transit lanes proposed as part of the Montreal-Blair EA Study are implemented, the combination of these changes is expected to strengthen transit connections and result in increased capacity, reliability and coverage to serve a variety of different trip types in order to accommodate increased site-generated transit trips as Wateridge Village is built out in its entirety.

5.7.2 Transit Priority Measures

Hemlock Core Street in the Rockcliffe CDP supports the use of a two-lane cross-section through the study area and all internal intersections within Wateridge Village are expected to be stop-controlled, therefore signal priority measures will not be a consideration along this corridor. The strategic realignment of transit service from Mikinak Road to Hemlock Road is anticipated to benefit Wateridge Village as a 'whole' by providing a transit on a key mixed-use corridor which bisects the subdivision lands and therefore has a higher potential to attract ridership.

The Montreal-Blair EA investigated options for improving transit service efficiency along this corridor in the longer-term which will further reduce reliance on private automobiles. This EA study resulted in a recommended plan which includes curbside bus lanes, along with improved multi-modal connectivity for surrounding communities to access Blair and Montreal Stations.

Based on the above, the proposed development will not be solely responsible for triggering the need for any transit improvements, either within Wateridge Village or on Montreal Road through the study area.

5.8 Intersection Design

The following sections summarizes results of the multi-modal intersection capacity analysis conducted within the study area, as referenced from other previous studies.

5.8.1 Intersection Control

The following section evaluates the need to conduct traffic signal warrant analyses and roundabout analyses at any applicable study area intersections.

5.8.1.1 Traffic Signal Warrants

Not Applicable – All intersections within the study area are presently signalized with the exception of the southbound off-ramp at Hemlock Road & the Aviation Parkway, which is configured as a stop-controlled intersection. The capacity analysis presented in subsequent sections of this report indicates that this intersection is expected to operate at an acceptable level of service (i.e. LOS 'D' or better) beyond the horizon year of this study. As such, no traffic signal warrant analysis is necessary for this study.

5.8.1.2 Roundabout Analysis

Not Applicable – As per the City's Roundabout Implementation Policy, intersections that satisfy any of the following criteria should be screened utilizing the Roundabout Initial Feasibility Screening Tool:

- At any new City intersection;
- Where traffic signals are warranted; or
- At intersections where capacity or safety problems are being experienced.

None of the study area intersections meet any of the above criteria, therefore no roundabout analysis is required for this study.

Further, the Montreal Road EA functional design did not identify roundabouts as a preferred form of traffic control through the study area.

5.8.2 Intersection Capacity Analyses

5.8.2.1 Intersection Analysis Criteria (Automobile)

In qualitative terms, Level of Service (LOS) describes a user's perception of the operational conditions of a transportation facility. For vehicular LOS, these conditions are generally defined in terms of delay, speed and travel time, freedom to manoeuvre, traffic interruptions, safety, comfort and convenience. The two key metrics used to evaluate vehicular LOS are as follows:

- **Volume to Capacity (v/c) Ratio:** The ratio of traffic volume (either measured or forecast) to the capacity of the intersection or roadway.
- **Average Delay:** The average elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line, including the time required for a vehicle to travel from the last-in-queue position to the first-in-queue position.

LOS is given a letter designation from 'A' to 'F'. LOS 'A' represents the best operating conditions and LOS 'E' represents the level at which the intersection, or an approach to the intersection, is carrying the maximum traffic volume that can, practicably, be accommodated. LOS 'F' indicates that the facility is operating beyond its theoretical capacity.

For signalized intersections, the City of Ottawa has developed criteria for signalized intersections as part of the TIA Guidelines which directly relate the v/c ratio to a LOS designation. In contrast, the LOS for unsignalized intersections is based on average delay using the criteria outlined in the Highway Capacity Manual (HCM) 2010. These criteria are presented in **Table 20** below.

Table 20 - Level of Service Thresholds

LEVEL OF SERVICE	SIGNALIZED	UNSIGNALIZED
	V/C Ratio	Delay (Seconds per Vehicle)
A	0 to 0.60	<10
B	0.61 to 0.70	>10 and <15
C	0.71 to 0.80	>15 and <25
D	0.81 to 0.90	>25 and <35
E	0.91 to 1.00	>35 and <50
F	> 1.00	>50

5.8.2.2 Intersection Capacity Analysis Results

The Level of Service calculation is based on locally-specific parameters as described in the TIA Guidelines and incorporates existing signal timing plans obtained from the City of Ottawa. The analysis of existing conditions utilized a Peak Hour Factor (PHF) of 0.90, while future conditions considers optimized signal timing plans and the use of a Peak Hour Factor (PHF) of 1.0 to recognize peak spreading beyond a 15-minute period in congested conditions.

Following the established intersection capacity analysis criteria described above, future traffic conditions are analysed using the weekday and Saturday peak hour traffic volumes derived in this study.

The subsequent sections present the results of the intersection capacity analysis. All tables summarize study area intersection LOS results during the weekday morning and afternoon peak hour periods.

The intersection capacity analysis reports have been provided in **Appendix E**.

5.8.2.2.1 Future (2027) Background Traffic

An intersection capacity analysis has been undertaken using the Future (2027) Background Traffic volumes presented previously in **Exhibit 8**. The results of the intersection capacity analysis are summarized below.

Table 21 – Intersection Capacity Analysis: Future (2027) Background Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Montreal & Codd's/ Carson's	Signalized	A (0.60)	SBTR (0.67)	A (0.49)	SBL (0.75)
	Signalized [2]	A (0.56)	SBL (0.69)	A (0.50)	SBL (0.75)
Montreal & Wanaki/ Bathgate	Signalized	A (0.51)	SBL (0.55)	A (0.52)	SBL (0.58)
	Signalized [2]	A (0.50)	SBL (0.62)	A (0.52)	SBL (0.58)
Hemlock & Aviation Parkway SB Off-Ramp	Unsignalized	B (10.2s)	SBRL (10.2s)	B (10.5s)	SBRL (10.5s)
Montreal & Aviation Parkway	Signalized	B (0.67)	WBL (0.88)	B (0.70)	**WBL (0.98)**
	Signalized [1,2]	B (0.68)	SBTR (0.81)	C (0.79)	NBL (0.86)
Hemlock & St. Laurent	Signalized	A (0.48)	EBR (0.70)	A (0.48)	EBR (0.64)

Notes: [1]*Implement dual westbound left-turn auxiliary lanes.*
[2]*Corridor Optimization along Montreal Road.*

Based on the above results from the intersection capacity analysis presented in **Table 21** above, all study area intersection are operating at overall acceptable Levels of Service (i.e. LOS 'D' or better) under Future (2027) Background Traffic conditions. With its existing configuration, the westbound left-turn movement at the Montreal & Aviation Parkway intersection is operating at LOS 'E' during the critical weekday afternoon peak hour. Queuing issues are also anticipated due to the high traffic volumes within this movement. With the introduction of a second westbound left-turn auxiliary lane, the intersection continues to operate with an acceptable LOS and the westbound left-turn movement is no longer approaching its theoretical capacity. All remaining future scenarios will therefore be analysed with a dual westbound left-turn auxiliary lane at the Montreal & Aviation Parkway intersection which is consistent with the recommendations of the Montreal-Blair EA Study, however it is recognized that there is currently no implementation timeline for preferred design at this time.

5.8.2.2.2 Future (2030) Background Traffic

An intersection capacity analysis has been undertaken using the Future (2030) Background Traffic volumes presented previously in **Exhibit 9**. The results of the intersection capacity analysis are summarized below.

Table 22 - Intersection Capacity Analysis: Future (2030) Background Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Montreal & Codd's/ Carson's	Signalized	A (0.59)	SBTR (0.66)	A (0.49)	SBL (0.75)
	Signalized [2]	A (0.56)	SBL (0.69)	A (0.51)	SBL (0.75)
Montreal & Wanaki/ Bathgate	Signalized	A (0.50)	SBL (0.53)	A (0.52)	SBL (0.57)
	Signalized [2]	A (0.50)	SBL (0.62)	A (0.52)	SBL (0.58)
Hemlock & Aviation Parkway SB Off-Ramp	Unsignalized	B (10.2s)	SBRL (10.2s)	B (10.5s)	SBRL (10.5s)
Montreal & Aviation Parkway	Signalized	C (0.75)	WBL (0.89)	D (0.85)	**WBL (0.99)**
	Signalized [1,2]	B (0.68)	SBTR (0.81)	C (0.80)	NBL (0.88)
Hemlock & St. Laurent	Signalized	A (0.50)	EBR (0.70)	A (0.48)	EBR (0.64)

Notes: [1]*Implement dual westbound left-turn auxiliary lanes.*
[2]*Corridor Optimization along Montreal Road.*

All study area intersections are shown to operate at acceptable levels of service (i.e. LOS 'D' or better), under Future (2030) Background conditions. Carrying forward the mitigation strategy outlined in the preceding analysis year will help to alleviate queuing constraints on the westbound left-turn at the Montreal & Aviation Parkway intersection through the introduction of a dual lane configuration.

5.8.2.2.3 Future (2032) Background Traffic

An intersection capacity analysis has been undertaken using the Future (2032) Background Traffic volumes presented previously in **Exhibit 10**. The results of the intersection capacity analysis are summarized below.

Table 23 - Intersection Capacity Analysis: Future (2032) Background Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Montreal & Codd's/ Carson's	Signalized	A (0.59)	SBTR (0.66)	A (0.50)	SBL (0.75)
	Signalized [2]	A (0.56)	SBL (0.69)	A (0.51)	SBL (0.75)
Montreal & Wanaki/ Bathgate	Signalized	A (0.50)	SBL (0.53)	A (0.52)	SBL (0.57)
	Signalized [2]	A (0.50)	SBL (0.62)	A (0.52)	SBL (0.58)
Hemlock & Aviation Parkway SB Off-Ramp	Unsignalized	B (10.2s)	SBRL (10.2s)	B (10.5s)	SBRL (10.5s)
Montreal & Aviation Parkway	Signalized	C (0.76)	WBL (0.89)	D (0.85)	**WBL (0.99)**
	Signalized [1,2]	B (0.69)	SBTR (0.81)	C (0.74)	NBL (0.88)
Hemlock & St. Laurent	Signalized	A (0.51)	EBR (0.70)	A (0.49)	EBR (0.63)

Notes: [1]*Implement dual westbound left-turn auxiliary lanes.*
[2]*Corridor Optimization along Montreal Road.*

All study area intersections are operating at acceptable levels of service (i.e. LOS 'D' or better) under Future (2032) Background conditions.

5.8.2.2.4 Future (2037) Background Traffic

An intersection capacity analysis has been undertaken using the Future (2037) Background Traffic volumes presented previously in **Exhibit 11**. The results of the intersection capacity analysis are summarized below.

Table 24 - Intersection Capacity Analysis: Future (2037) Background Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Montreal & Codd's/ Carson's	Signalized	A (0.60)	SBTR (0.66)	A (0.50)	SBL (0.75)
	Signalized [2]	A (0.56)	SBL (0.69)	A (0.51)	SBL (0.75)
Montreal & Wanaki/ Bathgate	Signalized	A (0.50)	SBL (0.53)	A (0.52)	SBL (0.57)
	Signalized [2]	A (0.50)	SBL (0.62)	A (0.52)	SBL (0.58)
Hemlock & Aviation Parkway SB Off-Ramp	Unsignalized	B (10.2s)	SBRL (10.2s)	B (10.5s)	SBRL (10.5s)
Montreal & Aviation Parkway	Signalized	C (0.72)	**WBL (1.00)**	D (0.83)	**WBL (1.07)**
	Signalized [1,2]	B (0.69)	SBTR (0.81)	C (0.74)	NBL (0.88)
Hemlock & St. Laurent	Signalized	A (0.54)	EBR (0.70)	A (0.53)	NBL (0.64)

Notes: [1]*Implement dual westbound left-turn auxiliary lanes.*
[2]*Corridor Optimization along Montreal Road.*

All study area intersections are operating with overall acceptable levels of service (i.e. LOS 'D' or better) under Future (2037) Background condition. Without the introduction of a dual westbound left-turn lane at Montreal & Aviation Parkway, this critical movement would experience capacity and queuing constraints, particularly during the weekday morning peak hour.

5.8.2.2.5 Future (2027) Total Traffic

An intersection capacity analysis has been undertaken using the Future (2027) Total Traffic volumes presented previously in **Exhibit 12**. The results of the intersection capacity analysis are summarized below.

Table 25 - Intersection Capacity Analysis: Future (2027) Total Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Montreal & Codd's/ Carson's	Signalized	A (0.60)	SBTR (0.68)	A (0.49)	NBL (0.76)
	Signalized [2]	A (0.56)	SBL (0.69)	A (0.50)	NBL (0.76)
Montreal & Wanaki/ Bathgate	Signalized	A (0.51)	SBL (0.56)	A (0.53)	SBL (0.60)
	Signalized [2]	A (0.51)	SBL (0.62)	A (0.52)	SBL (0.60)
Hemlock & Aviation Parkway SB Off-Ramp	Unsignalized	B (10.3s)	SBRL (10.3s)	B (10.6s)	SBRL (10.6s)
Montreal & Aviation Parkway	Signalized	C (0.75)	WBL (0.89)	D (0.85)	**WBL (1.00)**
	Signalized [1,2]	B (0.69)	SBTR (0.81)	C (0.79)	NBL (0.89)
Hemlock & St. Laurent	Signalized	A (0.48)	EBR (0.70)	A (0.48)	EBR (0.64)

Notes: *[1]Implement dual westbound left-turn auxiliary lanes.*
[2]Corridor Optimization along Montreal Road.

Consistent with Existing and Future (2027) Background Traffic conditions, the westbound left-turn movement at the Montreal & Aviation Parkway intersection is expected to approach or meet its theoretical capacity (i.e. LOS 'E') during the critical weekday afternoon peak hour with the added contributions of site-generated traffic. Introducing a dual westbound left-turn lane configuration would improve the overall intersection performance, as well as the operation of the westbound left-turn movement.

5.8.2.2.6 Future (2030) Total Traffic

An intersection capacity analysis has been undertaken using the Future (2030) Total Traffic volumes presented previously in **Exhibit 13**. The results of the intersection capacity analysis are summarized below.

Table 26 - Intersection Capacity Analysis: Future (2030) Total Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERAL L LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Montreal & Codd's/ Carson's	Signalized	B (0.65)	SBTR (0.74)	A (0.56)	NBL (0.86)
	Signalized [2]	B (0.61)	SBL (0.71)	A (0.58)	NBL (0.85)
Montreal & Wanaki/ Bathgate	Signalized	B (0.61)	WBTR (0.61)	A (0.56)	SBL (0.67)
	Signalized [2]	A (0.58)	SBL (0.67)	A (0.55)	SBL (0.67)
Hemlock & Aviation Parkway SB Off-Ramp	Unsignalized	B (11.1s)	SBRL (11.1s)	B (11.5s)	SBRL (11.5s)
Montreal & Aviation Parkway	Signalized	C (0.75)	**WBL (1.09)**	D (0.85)	**WBL (1.21)**
	Signalized [1,2]	C (0.71)	SBTR (0.81)	D (0.83)	NBL (0.88)
Hemlock & St. Laurent	Signalized	A (0.51)	EBR (0.71)	A (0.49)	EBR (0.64)

Notes: *[1]Implement dual westbound left-turn auxiliary lanes.*
[2]Corridor Optimization along Montreal Road.

Based on the results presented in **Table 26**, all study area intersections are expected to continue operating at LOS 'C' or above under Future (2030) Total Traffic conditions and well within acceptable standards (i.e. LOS 'D' or better).

By 2030, the critical westbound left-turn movement at the Montreal & Aviation Parkway intersection is expected to be exceed its theoretical capacity during the weekday morning and afternoon peak hours. The introduction of a dual westbound left-turn at the Montreal & Aviation Parkway intersection would help to alleviate capacity and queuing constraints on this critical movement with and without site-generated traffic contributions.

5.8.2.2.7 Future (2032) Total Traffic

An intersection capacity analysis has been undertaken using the Future (2032) Total Traffic volumes presented previously in **Exhibit 14**. The results of the intersection capacity analysis are summarized below.

Table 27 - Intersection Capacity Analysis: Future (2032) Total Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Montreal & Codd's/ Carson's	Signalized	B (0.67)	SBTR (0.76)	A (0.58)	**NBL (0.94)**
	Signalized[2]	B (0.62)	SBL (0.71)	A (0.59)	**NBL (0.96)**
Montreal & Wanaki/ Bathgate	Signalized	C (0.73)	WBTR (0.74)	A (0.57)	SBL (0.69)
	Signalized[2]	B (0.61)	SBL (0.68)	A (0.56)	SBL (0.70)
Hemlock & Aviation Parkway SB Off-Ramp	Unsignalized	B (11.5s)	SBRL (11.5s)	B (11.8s)	SBRL (11.8s)
Montreal & Aviation Parkway	Signalized	D (0.81)	**WBL (1.02)**	D (0.90)	**WBL (1.20)**
	Signalized [1,2]	C (0.72)	SBTR (0.81)	C (0.79)	NBL (0.88)
Hemlock & St. Laurent	Signalized	A (0.52)	EBR (0.71)	A (0.49)	EBR (0.64)

Notes: [1] *Implement dual westbound left-turn auxiliary lanes.*
[2] *Corridor Optimization along Montreal Road.*

As shown in **Table 27** above, the northbound left-turn movement at the Montreal & Codd's/Carson's intersection is expected to approach its theoretical capacity during the weekday afternoon peak hour period, however site-generated traffic will not contribute volumes of any significance to this movement. These results are consistent with the Wateridge Phase 3/5 TIA which recommended signal optimization as a potential mitigation strategy to alleviate future potential constraints. Further, all study area intersections are anticipated to operate within overall acceptable Levels of Service (i.e. LOS 'D' or better) under Future (2032) Total Traffic conditions. The mitigation measures carried forward from the preceding scenarios will help to alleviate queuing and capacity constraints on the critical westbound left-turning movement at the Montreal & Aviation Parkway intersection which existing with and without site-generated traffic.

5.8.2.2.8 Future (2037) Total Traffic

An intersection capacity analysis has been undertaken using the Future (2037) Total Traffic volumes presented previously in **Exhibit 15**. The results of the intersection capacity analysis are summarized below.

Table 28 - Intersection Capacity Analysis: Future (2037) Total Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Montreal & Codd's/ Carson's	Signalized	B (0.67)	SBTR (0.76)	A (0.59)	**NBL (0.94)**
	Signalized[2]	B (0.62)	SBL (0.71)	A (0.60)	**NBL (0.92)**
Montreal & Wanaki/ Bathgate	Signalized	C (0.73)	WBTR (0.74)	A (0.57)	SBL (0.69)
	Signalized[2]	A (0.59)	SBL (0.71)	A (0.56)	SBL (0.70)
Hemlock & Aviation Parkway SB Off-Ramp	Unsignalized	B (11.5s)	SBRL (11.5s)	B (11.8s)	SBRL (11.8s)
Montreal & Aviation Parkway	Signalized	D (0.86)	**WBL (1.40)**	D (0.90)	**WBL (1.22)**
	Signalized [1,2]	C (0.73)	SBTR (0.81)	C (0.80)	NBL (0.90)
Hemlock & St. Laurent	Signalized	A (0.55)	EBR (0.71)	A (0.53)	NBL (0.65)
Hemlock & Codd's	Unsignalized	C (17.3s)	EBTRL (17.3s)	C (16.0s)	EBTRL (16.0s)
Hemlock & Wanaki	Unsignalized	A (8.5s)	NBTL (8.5s)	A (7.8s)	NBTL (7.8s)

Notes: [1]*Dual westbound left-turn auxiliary lanes*
[2]*Corridor Optimization along Montreal Road*

Similar to Future (2032) Total Traffic conditions, all study area intersections are expected to operate at overall acceptable Levels of Service (i.e. LOS 'D' or better), assuming that the dual westbound left-turn configuration proposed through the Montreal-Blair Transit Priority EA Study is implemented at the Montreal & Aviation Parkway intersection by this time.

An additional intersection capacity analysis of Hemlock Road with Codd's Road and Wanaki Road was also undertaken, indicating that both these internal junctions within the Wateridge Village subdivision are anticipated to operate acceptably (i.e. LOS 'D' or better) under Future (2037) Total Traffic conditions as stop-controlled intersections.

5.8.3 Intersection Design (MMLOS)

5.8.3.1 Intersection-Based MMLOS Results

As discussed in the study scope, Intersection-based Multi-Modal Level of Service (MMLOS) analysis was recently conducted as part of the Wateridge Phases 3 & 5 TIA. This analysis was based on the methodology prescribed in the 2015 City of Ottawa Multi-Modal Level of Service (MMLOS) Guidelines. A 2017 addendum to the original MMLOS Guidelines was subsequently released along with a standardized spread to calculate level of service for each mode. The parameters from the Wateridge Phases 3 & 5 were extracted and refined as necessary.

Detailed MMLOS analysis conducted using the City of Ottawa's standardized spreadsheet, as well as extracts from the Wateridge Phases 3 & 5 TIA, are provided **Appendix J**.

The refined intersection-based MMLOS results are summarized in **Table 29** below.

Table 29 – Intersection-Based MMLOS

INTERSECTION	LEVEL OF SERVICE BY MODE			
	PEDESTRIAN (PLOS)	BICYCLE (BLOS)	TRANSIT (TLOS)	TRUCK (TkLOS)
Montreal & Codd's/ Carson's	F (Target: C)	F (Target: B)	F (Target: C)	E (Target: D)
Montreal & Wanaki/ Bathgate	E (Target: C)	C [1] (Target: B)	F (Target: C)	E (Target: D)
Montreal & Airport Parkway	F (Target: C)	F (Target: B)	F (Target: C)	E (Target: D)
Hemlock & St. Laurent	F (Target: C)	E (Target: B)	E (Target: C)	F (Target: D)

Source: Adapted from Wateridge Phases 3 & 5 TIA (J.L. Richards, 2021)

Note: [1]BLOS revised in recognition of two-stage left-turn facilitated by recent 'protected intersection' upgrade.

5.8.3.2 Summary of Potential Improvements

Based on the MMLOS results outlined in **Table 29** above, the following measures have been identified that could improve conditions for each travel mode:

Pedestrians

- The analysis indicates that none of the study area intersections are currently meeting the City's PLOS target of 'C', based on the result of the PETSI score. According to the Wateridge Phases 3 & 5 TIA, improving the PLOS would require reducing crossing distances and restricting turning movements on Montreal Road. It should be noted that although Montreal & Wanaki/Bathgate intersection does not achieve the target PLOS, its upgrade to a 'protected intersection' is expected to help significantly improve overall pedestrian comfort and safety.

Cyclists

- Based on the analysis, none of the study area intersections are presently achieving the BLOS target of 'B'. The upgrade of Montreal & Wanaki/Bathgate to a 'protected intersection' configuration substantially improved the BLOS from 'F' to 'C' by facilitating two-stage left-turns for cyclists on all approaches, however due to the assumed operating speed on Montreal Road (70km/h), the overall BLOS would still operate slightly below the target of BLOS 'B'. A substantial reduction in operating speeds to 50km/h, as well as the introduction of 'protected intersection' configurations at the remaining intersections would be required to achieve the BLOS target at these locations.

Transit

- The results of the analysis indicate that all study area intersections are exceeding the TLOS target of 'C' and are operating at a TLOS of 'E' or 'F'. The Montreal Road EA functional design includes curbside transit lanes which would be expected to significantly reduce transit delays and improve the TLOS along this corridor in the longer-term.

Truck

- The results of the analysis indicate that all intersections are operating below the TkLOS target of 'D'. Failure to meet the TkLOS target can be attributed to the single receiving lane on the sidestreets, as well as the relatively tight turning radii. It should be noted, however, that truck turning movements at these intersections are expected to be

infrequent, as none of the sidestreets are designated as truck routes in the Official Plan or are classified as arterial roads.

The recommended measures listed above are intended only as suggestions to the City on how the MMLOS within the study area could be improved and do not identify measures to be implemented as a direct consequence of this development. The MMLOS analysis identifies existing deficiencies in the study area which are not expected to be exacerbated by the proposed development.

5.9 Geometric Review

5.9.1 Sight Distance and Corner Clearances

Phases 6, 7 & 8 of Wateridge Village will be accessed via the extension of the following five roads: Codd's Road, Bareille-Snow Street, Michael Stoqua Street, Moses Tennisco Street and Wanaki Road. There are no horizontal or vertical sightline issues of significance at the proposed access intersections serving these 3 phases and given that all of these facilities are classified as local roads that are simply being extended further north in accordance with the CDP-established modified grid road pattern, the 15-metre corner clearance requirements specified by the Transportation Association of Canada (TAC) are easily met.

5.9.2 Auxiliary Lane Analysis

The internal site intersections within Wateridge Village all provide vehicular connections to local streets which can be assumed to have low vehicle volumes and operating speeds, therefore a review of auxiliary left- or right-turn lanes is not required at any of these locations.

A review of the left- and right-turn auxiliary turning lane requirements for the signalized study area intersections is provided below:

5.9.2.1 Signalized Auxiliary Left-Turn Requirements

The results of the 95th percentile queue length analysis conducted as part of this study which are expected to be most impacted by the proposed development are presented in **Table 30** below.

Table 30 - Auxiliary Left-Turn Storage Analysis at Signalized Intersections

INTERSECTION	APPROACH	95TH %ILE QUEUE LENGTH (m)		PARALLEL LANE LENGTH (m)	STORAGE DEFICIENCY (m)
		AM PEAK HR	PM PEAK HR		
Montreal & Codd's/ Carson's	EB	20	20	75	-
	SB	49	58	40	20
Montreal & Wanaki/Bathgate	EB	37	30	130	-
	SB	38	42	50	-
Montreal & Aviation Parkway	WB[1]	187	161	55	130
	WB[2]	65	78	110	-
Hemlock & St. Laurent	WB	23	23	25	-

Note: *[1] Analysis completed using the existing single WBL turn lane configuration.*
[2] Analysis completed using the proposed dual WBL turn-lane configuration.

As shown in **Table 30**, the results of the queuing analysis conducted as part of this study indicate that the majority of site-generated left-turning movements are not anticipated to experience storage deficiencies. The only exceptions are the westbound left-turn at the Montreal & Aviation Parkway intersection and the southbound left-turn at Montreal & Codd's/Carson's. It should be noted that the queues will exceed available storage as a result of traffic volume projections for the Wateridge Village development as a whole, however site-generated traffic will contribute just 7 metres of additional queuing (i.e. one vehicle length) to this movement during the critical weekday afternoon peak hour conditions at full build-out. Furthermore, the approximate 80-metre section of Codd's Road between Blackthorne Avenue and Montreal Road provides a consistent width of approximately 6.5 metres in the southbound direction to support dual lanes and allow southbound through-right vehicles to bypass queued left-turning vehicles. It can therefore be assumed that the width provides effective left-turn storage. As such, additional site-generated travel demand will not significantly exacerbate any future potential queuing issues experienced under Future Background Traffic conditions.

The storage deficiency at the Montreal & Aviation Parkway intersection could be alleviated through the implementation of a dual westbound left-turn auxiliary lane configuration, based on future traffic volume projections developed for this study.

5.9.2.2 Signalized Auxiliary Right-Turn Lane Requirements

Section 9.14 of TAC suggests that auxiliary right-turn lanes shall be considered when more than 10% of vehicles on an approach are turning right and when the peak hour demand exceeds 60 vehicles. The purpose of this guideline is to mitigate operational impacts to through-traffic, particularly on high-speed arterial roadways, and may not be applicable in all circumstances.

There are currently auxiliary right-turn lanes on the north- and eastbound approaches of the Montreal & Aviation intersection along with the eastbound approach of the Hemlock & St. Laurent intersection. The proposed development is not anticipated to contribute any traffic to the eastbound right-turn movements at either intersection. The northbound right-turn movement at Montreal & Aviation is expected to operate with manageable 95th percentile queue lengths of no more than 5 car lengths under the critical weekday afternoon peak hour and well within the 60m of available storage. The remaining approaches at both the Montreal & Aviation Parkway or Hemlock & St. Laurent intersections are anticipated to experience negligible site-generated traffic contributions on right-turning movements and therefore these approaches were excluded from this auxiliary lane review.

Other locations that have the potential for auxiliary right-turn lanes and movements that will be impacted by the proposed development are the southbound and westbound approaches at the Montreal & Codd's/Carson's, the southbound approach at the Montreal & Wanaki/Bathgate intersections and the northbound approach at the Hemlock & St Laurent intersection.

Based on low 95th percentile queues and nominal through traffic on the southbound approaches of both the Montreal & Codd's and the Montreal & Wanaki intersections, auxiliary right-turn lanes are not required on those approaches. Low historical collisions per MVE and a lack of traffic operational issues identified through capacity analysis conducted for this study at Montreal & Codd's provide further indication that a westbound right-turn auxiliary lane is not required to safely accommodate site-generated traffic at either location. It should be noted that the Montreal-Blair EA does include a long-term plan to implement a westbound right-turn auxiliary lane at Montreal & Codd's which is warranted based on Existing and Future Background Traffic growth and is not triggered or exacerbated by site-generated traffic contributions.

On the northbound approach of the Hemlock & St. Laurent intersection, right-turning volumes are expected to account for approximately 14% of the overall approach volumes, slightly exceeding the 10% threshold. It is important to note, however, that there is a low collision per MVE recorded

on this approach and the resulting 95th percentile queues under Future (2037) Total Traffic conditions with the existing shared thru-right turn lane configuration are anticipated to be manageable at less than five car lengths. The above noted characteristics in combination with reduced operating speeds of 40km/h zone that begin immediately north of the intersection indicate that a northbound auxiliary right-turn lane is not required from a traffic operations perspective at the Hemlock & St Laurent intersection.

5.9.2.3 Unsignalized Auxiliary Left-Turn Requirements

The Hemlock & Aviation Parkway on-ramp was the only unsignalized intersection which required consideration of dedicated auxiliary left-turn storage facilities. All other stop-controlled intersections are local streets which can be assumed to have low vehicle volumes and operating speeds, therefore a review of auxiliary left- or right-turn lanes is not required at any of these locations.

Given the lack of potential conflicts at the Hemlock & Aviation Parkway on-ramp in comparison with a more traditional intersection, the MTO left-turn warrant methodology is perhaps too conservative a methodology to determine whether a left-turn auxiliary lane is required on the eastbound approach of this junction.

Queue lengths under Future (2037) Total Traffic conditions were instead estimated using SimTraffic. This analysis indicated that the 95th percentile queue lengths were shown to be 15.8 metres during the critical weekday afternoon peak hour when modelled with a shared eastbound approach or equivalent to just over 2 vehicle lengths. As such, this analysis indicates that queue lengths will seldom exceed this length on the eastbound approach of the Hemlock & Aviation Parkway on-ramp which is considered manageable with the current configuration. Regardless, the Monitoring Plan will include data collection and re-evaluation to correspond with each phase of development once the Hemlock Road external access intersection for Wateridge Village is open to general traffic to determine if volumes are sufficient to warrant an auxiliary left-turn lane at that time.

Supplemental SimTraffic analysis results are provided in **Appendix E**.

5.10 Summary of Recommended Modifications

All study area intersections were shown to operate at an acceptable level of service (i.e. LOS ‘D’ or better) during the weekday peak hours and beyond the 2037 horizon year, based on the analysis completed as part of this study.

Based on the intersection capacity analysis and queuing analysis, a second westbound left-turn lane is recommended at the Montreal Road & Airport Parkway intersection based on projected background growth.

Based on the queuing analyses referenced in the preceding section, the Montreal & Codd’s/Carson’s intersection may experience minor spillback on the southbound left-turn auxiliary lane during weekday peak periods. Site-generated traffic volumes are expected to contribute a negligible impact on the projected queue lengths, therefore it is not anticipated that any potential queuing issues will be exacerbated by the proposed development.

The MMLOS results indicated existing identified deficiencies documented in other TIAs conducted within Wateridge Village. These deficiencies primarily pertain to user comfort and highlight potential issues that could be considered for improvement by the City but are not required to safely accommodate the proposed development.

6 Conclusion

The proposed development of Wateridge Village Phases 6, 7 & 8 is expected to generate a maximum of 144, 1,036 and 1,342 person trips during the weekday peak hours for Phase 6, Phases 6 & 7 and Phases 6, 7 & 8, respectively. Segregating person-trips for each phase by the mode share targets established through this study, resulted in a maximum of 48, 378 and 488 two-way vehicular trips during the weekday peak hours for the three phases cumulatively. The vehicular impacts were further dispersed through their assignment at the three main external access intersections planned to serve Wateridge Village. To this end, it was assumed that the Hemlock Road western extension and connection to the Aviation Parkway will be re-established as part of Phases 3 & 5 in order to lessen the vehicular impacts on Montreal Road associated with Wateridge Village as a whole.

An intersection capacity analysis exercise conducted as part of this TIA did not identify any study area intersections that were operating beyond acceptable thresholds (i.e. LOS 'D'). Select movements may approach or exceed their theoretical capacities by the study horizon year, however these constraints were identified as part of previously-conducted transportation studies and can therefore be attributed to background traffic growth.

Based on the analysis conducted for this TIA, a dual westbound left-turn auxiliary lane configuration is required at the Montreal Road & Aviation Parkway intersection to support Existing and Future Background growth projections within the 2037 study horizon year. This mitigation strategy aligns with the Recommended Plan developed as part of recently-completed Montreal-Blair Transit Priority Corridor EA Study and is expected to resolve existing queuing and capacity issues associated with the westbound left-turn movement during the critical weekday afternoon peak hour period. The Montreal & Codd's intersection may approach its theoretical capacity by 2037 on the northbound approach, however it is expected that the Montreal Road corridor will undergo regular signal optimization to mitigate the occurrence of any minor capacity issues, including those identified under Future (2037) Total Traffic conditions at its intersection with the Aviation Parkway or Codd's Road.

A multi-modal analysis of each study area intersection adapted from previous TIAs conducted for Wateridge Village identified deficiencies in the existing road network and potential remediation measures have been suggested which the City could consider in order to meet the prescribed targets. These remediation measures would improve mobility and comfort for all transportation modes but are not required to safely accommodate the proposed development.

As no physical road modifications are required off-site exclusively to accommodate site-generated travel demand estimates, an RMA will not be required for this TIA. In order to satisfy Draft Conditions #42 and #52, a Monitoring Plan Memorandum has been developed to supplement the Wateridge Phase 2A/2B Monitoring Program (Dillon, 2019) and review the observed site-generated travel demands on the adjacent road network against the estimates developed as part of this TIA.

Based on the findings of this study, it is the overall opinion of Arcadis that the proposed development will integrate well with and can be safely accommodated by the adjacent transportation network, with the appropriate modifications in place.

Appendix A – TIA Screening Form

City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	Phases 6, 7 and 8, Wateridge Village, Ottawa, ON
Description of Location	The three phases are located within Wateridge Village, and are generally bordered by Tawadina Road to the south and Codd's Road to the west. 
Land Use Classification	Residential, Commercial, Employment
Development Size (units)	Phase 6 - 70 townhome units Phase 7 - 76 townhomes; 1,027 apartment units Phase 8 - 22 townhomes, 296 apartment units **Overall Unit Count - 1,491 units**
Development Size (m^2)	Residential, Commercial (~30,000 ft2), Employment (~254,500 ft2)
Number of Accesses and Locations	All-movement access intersections with the adjacent lands in Wateridge Village will be provided through the extensions of the following five roads through the subject lands: Codd's Rd, Bareille-Snow St, Michael Stoqua St, Moses Tennisco St and Wanaki Rd
Phase of Development	Three Phases
Buildout Year	2030 (all 3 phases)

If available, please attach a sketch of the development or site plan to this form.

SKETCH TO ILLUSTRATE
TOWNHOUSE BLOCK LAYOUT ON

BLOCK 4
REGISTERED PLAN 4M-XXXX
CITY OF OTTAWA

Prepared by Annis, O'Sullivan, Vollebekk Ltd.
September 20, 2022

Scale 1 : 500

20 15 10 5 0 10 20 Metres

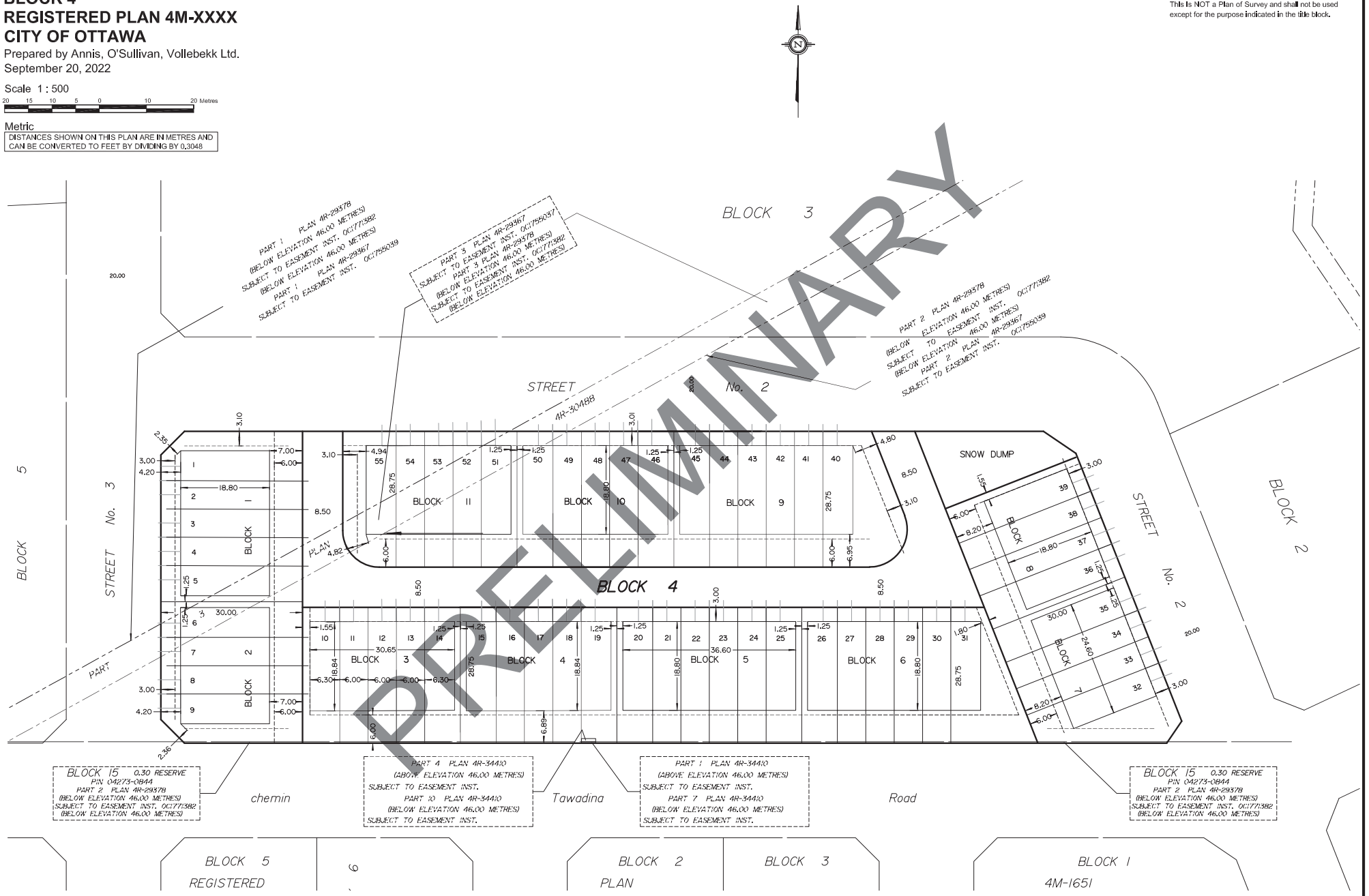
Metric

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

Notes & Legend

Caution

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14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com
Ontario Land Surveyors

Job No. 21181-20 CLC Blk 4 4M-XXXX SK D2 N

SKETCH TO ILLUSTRATE
TOWNHOUSE BLOCK LAYOUT ON

BLOCK 5
REGISTERED PLAN 4M-XXXX
CITY OF OTTAWA

Prepared by Annis, O'Sullivan, Vollebekk Ltd.
September 15, 2022

Scale 1 : 500

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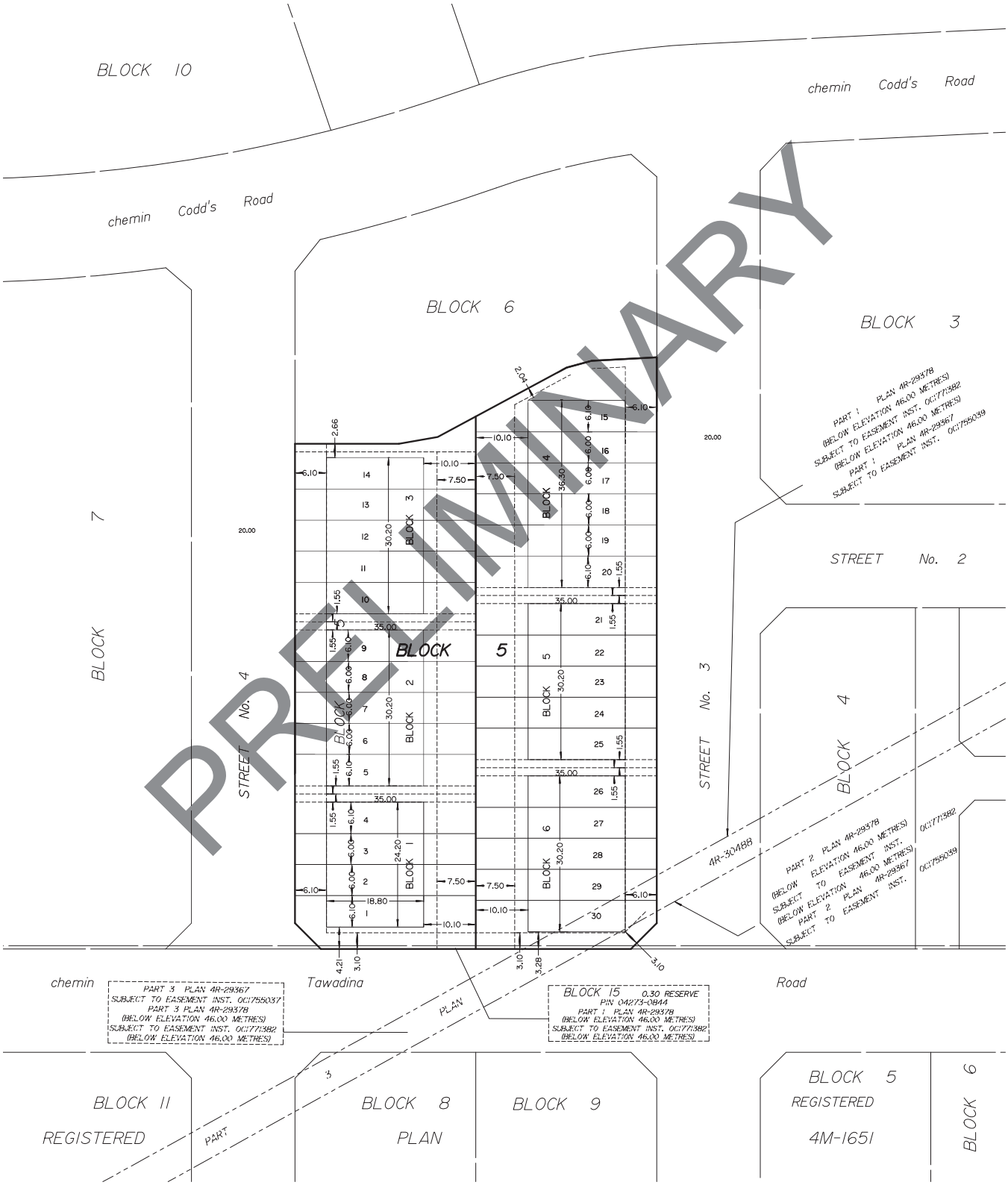
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Notes & Legend

Caution

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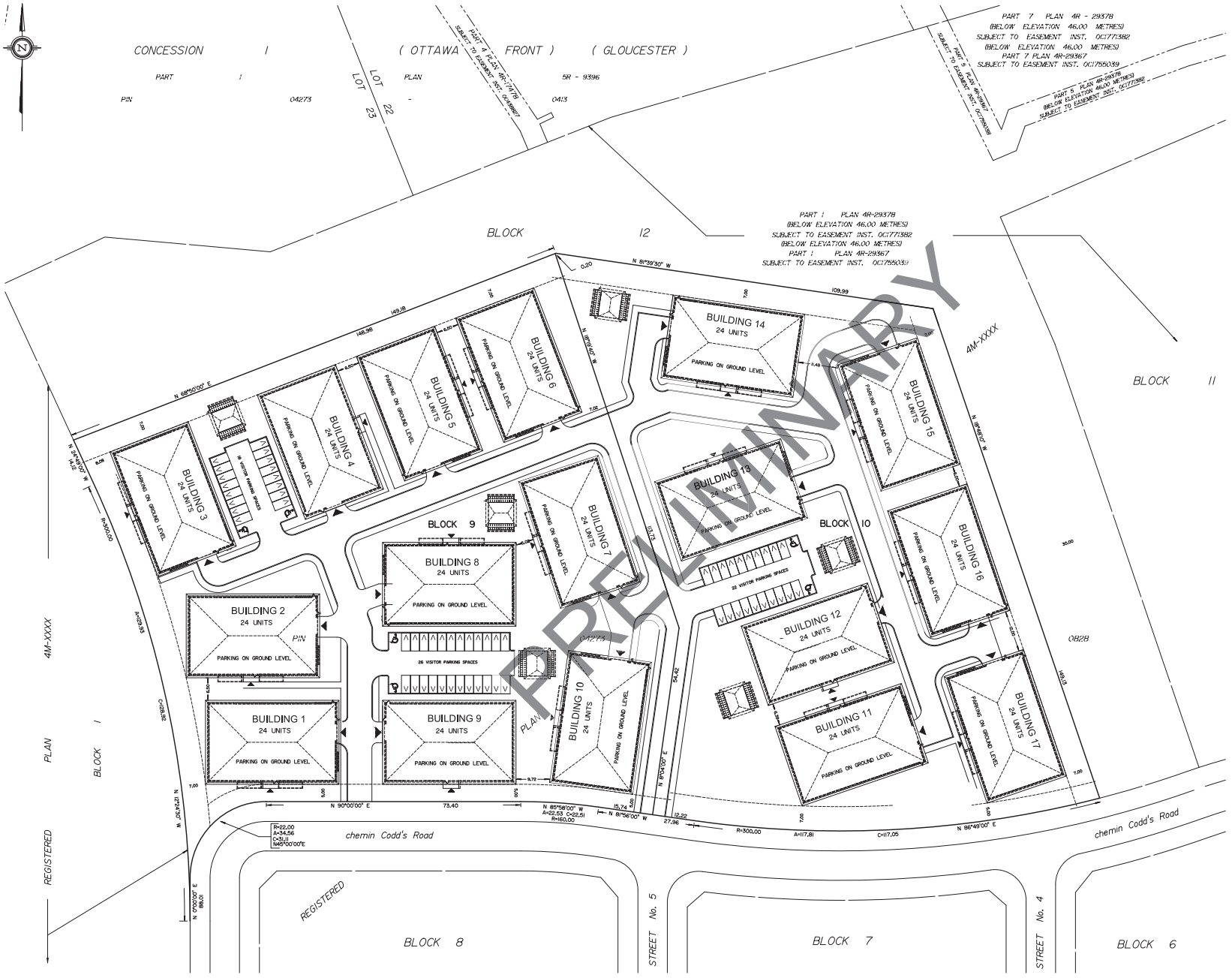


PRELIMINARY

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14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com
Ontario Land Surveyors

Job No. 21IBI-20 CLC Blk 5 4M-XXXX SK D1 N



KEY MAP
NOT TO SCALE

BLOCKS 9 and 10
REGISTERED PLAN 4M-XXXX
CITY OF OTTAWA

Prepared by Annis , O'Sullivan , Vollebekk Ltd.

Scale 1 : 500

20 15 10 5 0 10 20 Metres

Metric
DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

BLOCK 9 TOTAL UNITS = 240
BLOCK 10 TOTAL UNITS = 168
SITE AREA = 1.995 Ha (4.93 Ac)
SITE AREA = 1.704 Ha (4.21 Ac)

NO.	REVISION	DATE	
5			
4			
3			
2			
1	DISCUSSION	MAR. 22. 2021	N

SITE PLAN

CANADA LANDS
WATERIDGE DEVELOPMENT
CITY OF OTTAWA

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@annisllt.com
Ontario Land Surveyors

Job No. 21181-20 CLC Blks 9 10 4M-XXXX Ph 6-8 Sk 01 N

SKETCH TO ILLUSTRATE

BLOCKS 7 and 8
REGISTERED PLAN 4M-XXXX
CITY OF OTTAWA

Prepared by Annis, O'Sullivan, Vollebekk Ltd.
September 20, 2022

Scale 1 : 500

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Metric

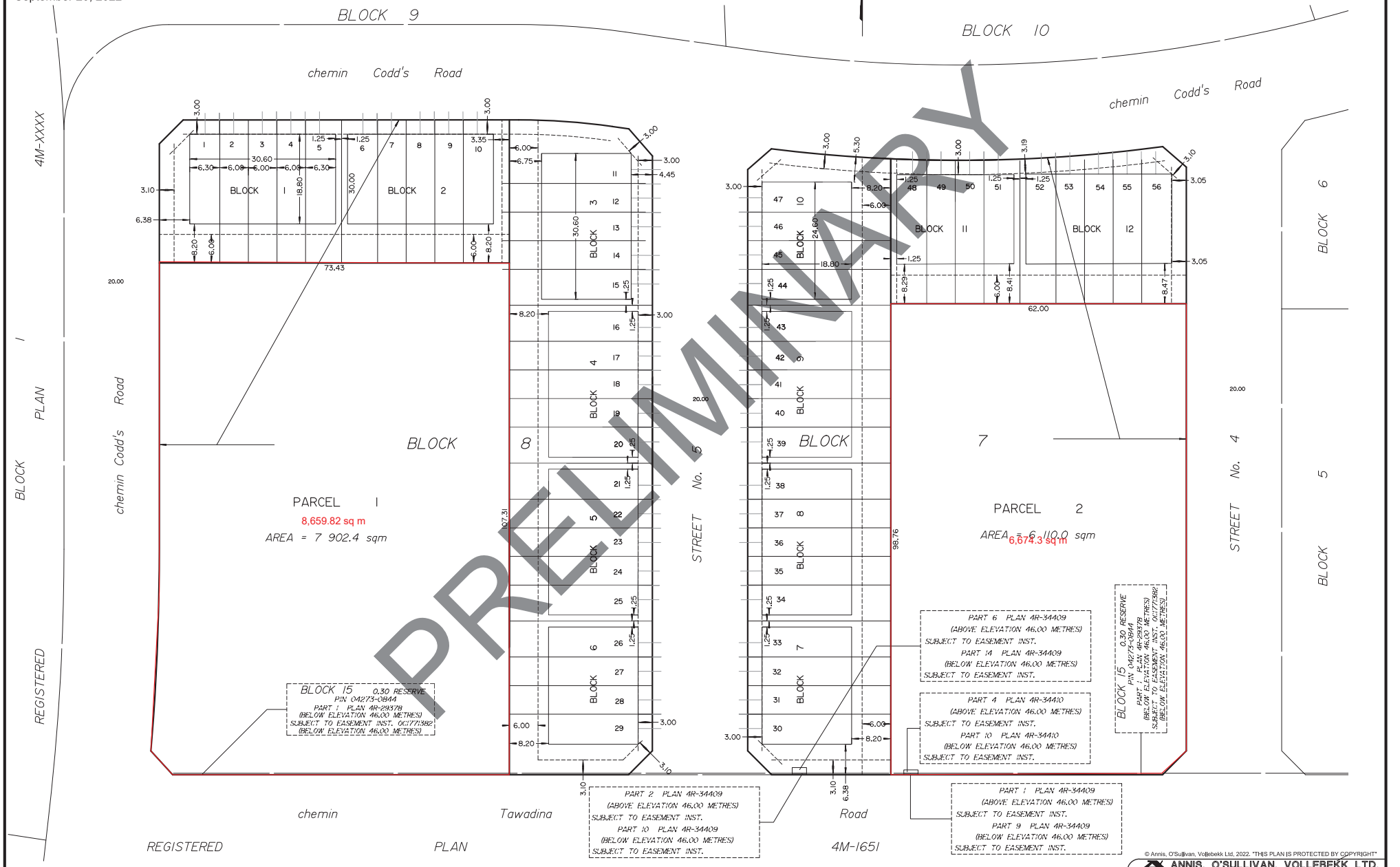
DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

Notes & Legend

Caution

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Boundary information compiled from



PRELIMINARY

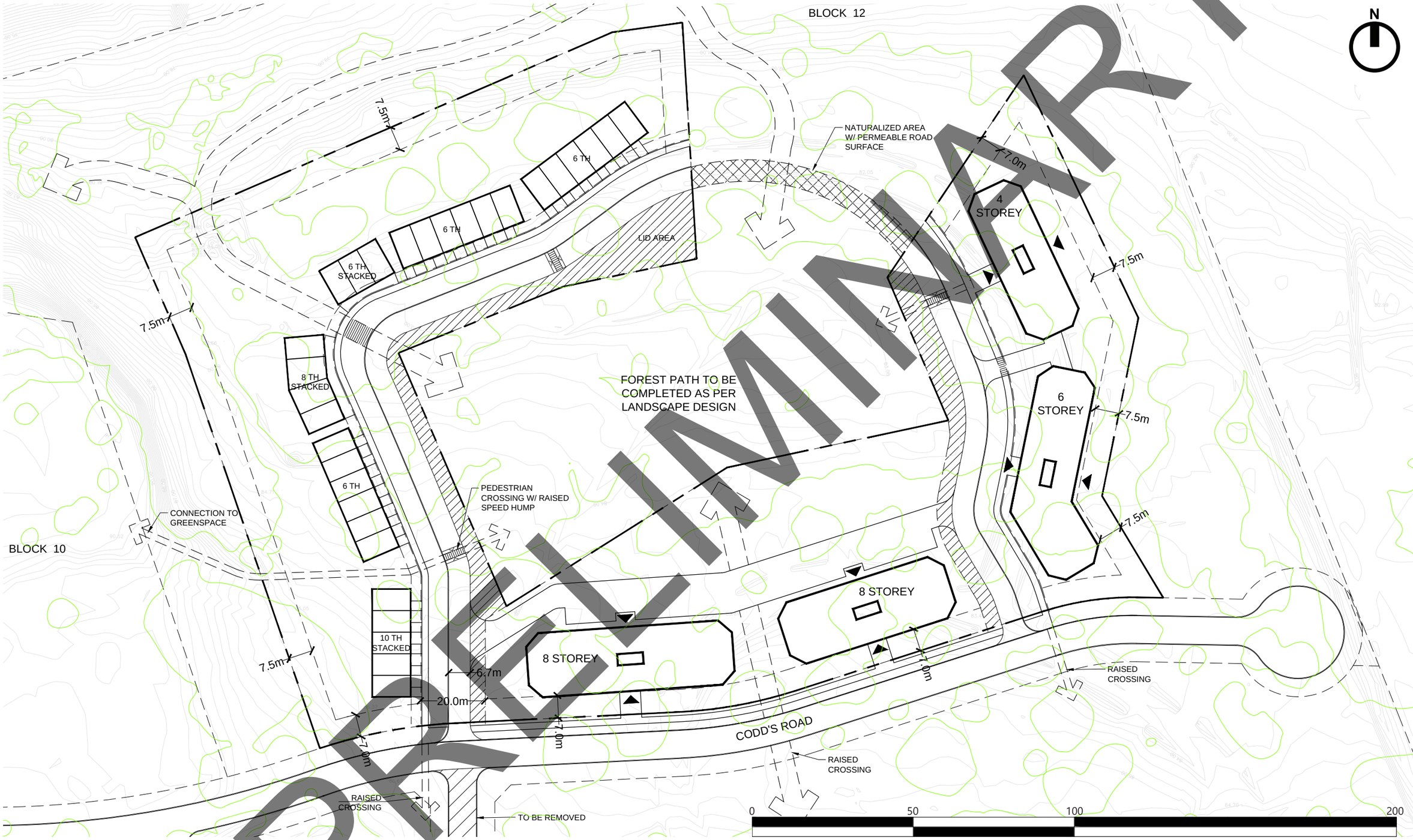
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14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com
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Job No. 21181-20 CLC Blks 7 8 4M-XXXX SK D1 N

Y:\CLC\21181-20_Wateridge 2021_Land\Drawings\21181-20 CLC Blks 7 8 4MXXXX SK D1.dwg

OPTION 1 - CRESCENT PLAN



PRELIMINARY

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2. Trip Gen Trigger

Considering the Development's Land Use Type and Size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

Land Use Type	Minimum Development Size	
Single-family homes	40 units	
Townhomes or apartments	90 units	✓
Office	3,500 m^2	
Industrial	5,000 m^2	
Fast-food restaurant or coffee shop	100 m^2	
Destination Retail	1,000 m^2	
Gas Station or convenience market	75 m^2	

**If the development has a land use type other than what is presented in the table above, estimates of person trip generation may be made based on average trip generation characteristics represented in the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.*

Based on the above, the Trip Generation Trigger is satisfied.

3. Location Triggers

	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?		✓
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?*		✓

**DPA and TOD are identified in the City of Ottawa Official Plan (DPA in Section 2.5.1 and Schedules A and B; TOD in Annex 6) See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA.*

Based on the above, the Location Trigger is not satisfied.

4. Safety Triggers

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

Based on the above, the Safety Trigger is not satisfied.

5. Summary

	Yes	No
Does the development satisfy the Trip Generation Trigger?	✓	
Does the development satisfy the Location Trigger?		✓
Does the development satisfy the Safety Trigger?		✓

Based on the results of the TIA Screening Form, the Trip Generation Trigger is satisfied. As such, a TIA is required for the proposed development.

Appendix B – OC Transpo Routes

12

PARLIAMENT
PARLEMENT

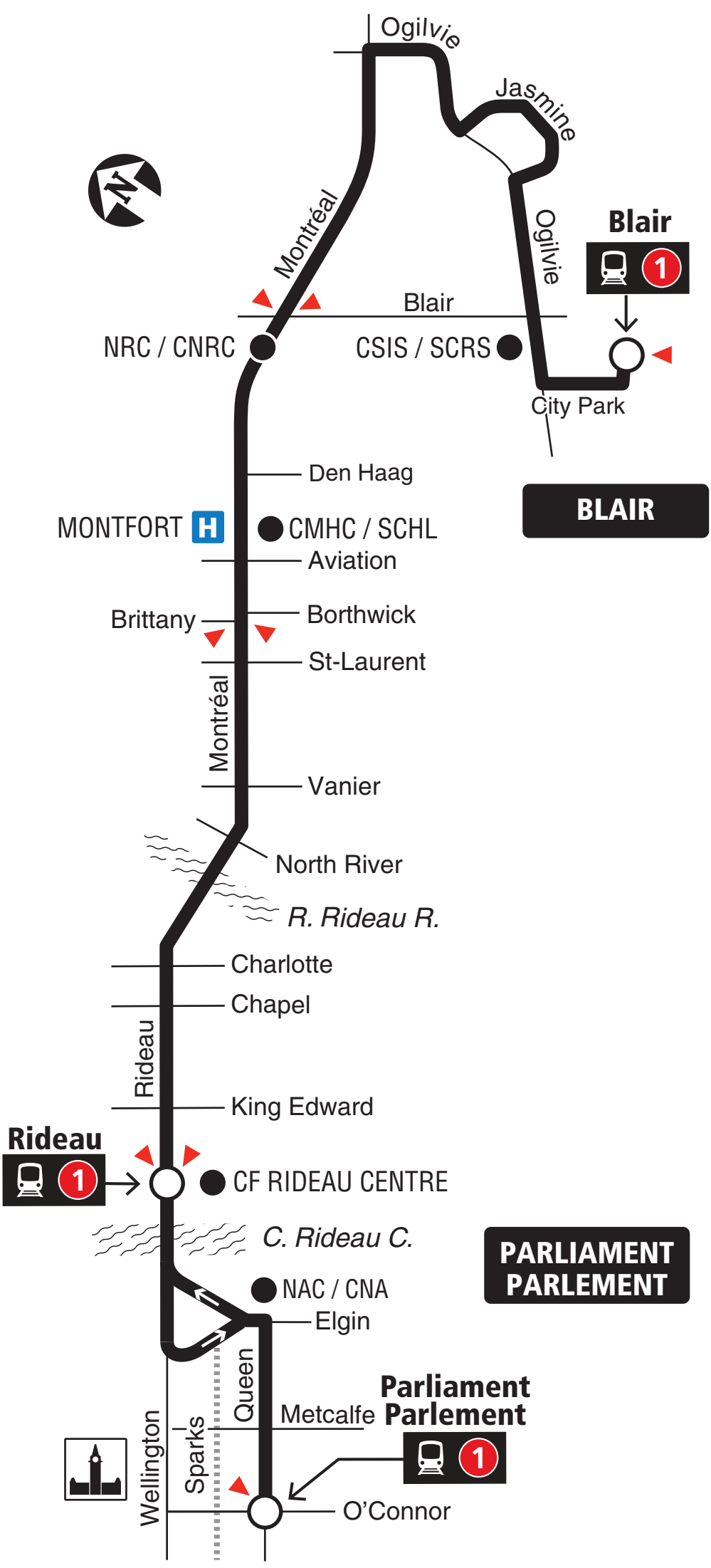
BLAIR

Fréquent

7 days a week / 7 jours par semaine

All day service

Service toute la journée



04.2023

Station

Timepoint / Heures de passage

04.2023

Schedule / Horaire 613-560-1000

Text / Texto* 560560

plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

*Standard message rates may apply / Les tarifs réguliers de messagerie texte peuvent s'appliquer

Customer Service
Service à la clientèle **613-560-5000**

Lost and Found / Objets perdus..... **613-563-4011**

Security / Sécurité **613-741-2478**

Effective April 23, 2023

En vigueur 23 avril 2023

OC Transpo

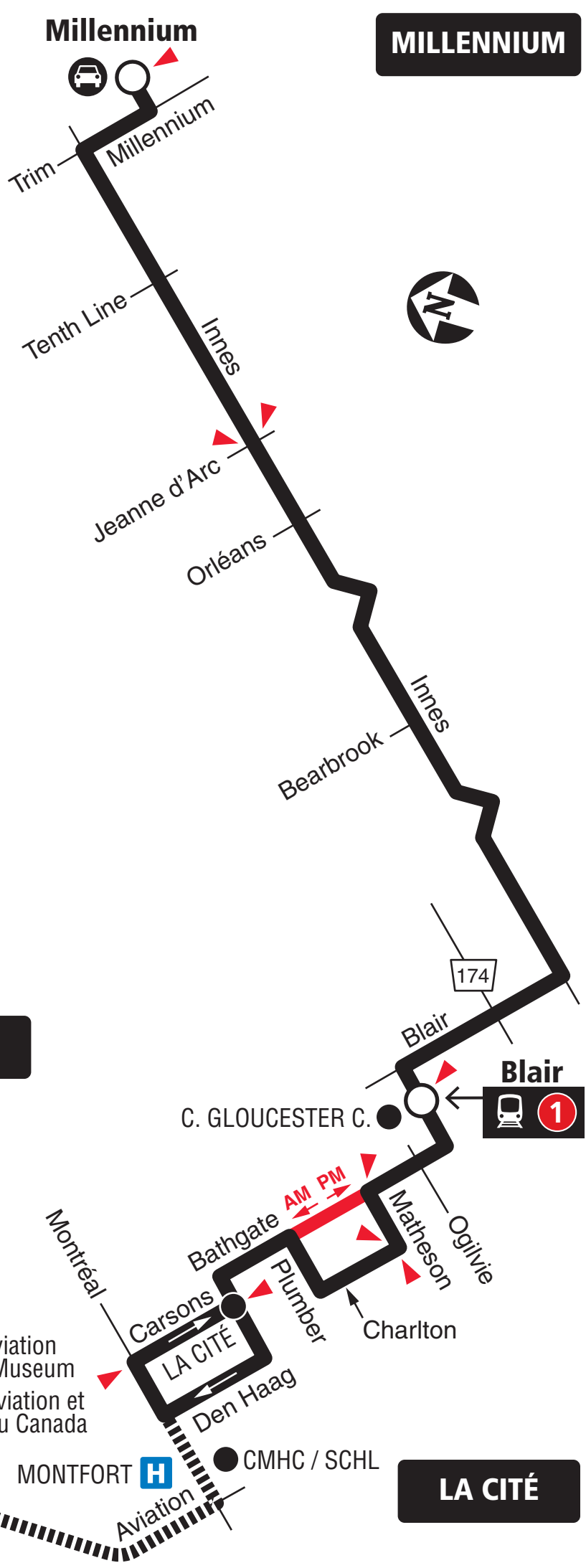
INFO 613-560-5000
octranspo.com

25 Fréquent

MILLENNIUM
LA CITÉ
BLAIR

7 days a week / 7 jours par semaine

All day service
Service toute la journée



○	Station
▮▮▮▮▮▮▮▮▮▮▮▮▮	Selected time periods Périodes de temps sélectionnées
🚗	Park & Ride / Parc-o-bus
▲	Timepoint / Heures de passage

2020.07

Schedule / Horaire.....613-560-1000
Text / Texto 560560

plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

Customer Service
Service à la clientèle **613-741-4390**

Lost and Found / Objets perdus..... **613-563-4011**

Security / Sécurité **613-741-2478**

Effective August 8, 2020
En vigueur 8 août 2020

OC Transpo

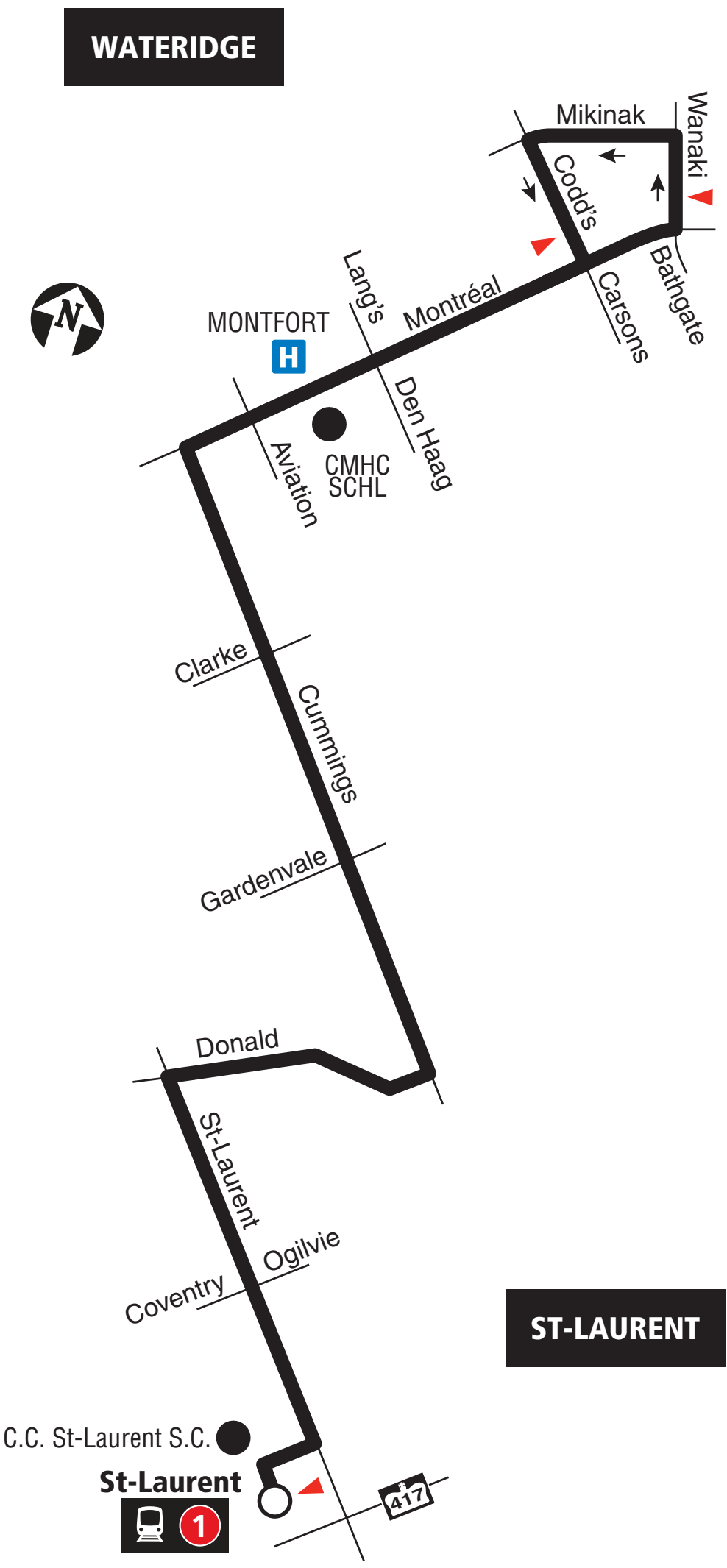
INFO 613-741-4390
octranspo.com

27

WATERIDGE
ST-LAURENT

Local

Monday to Friday / Lundi au vendredi
Selected time periods
Périodes sélectionnées



2022.06

Station

Timepoint / Heures de passage

2022.06

Schedule / Horaire.....613-560-1000
Text / Texto 560560
plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

Customer Service
Service à la clientèle **613-560-5000**

Lost and Found / Objets perdus.....**613-563-4011**

Security / Sécurité.....**613-741-2478**

Effective June 26, 2022
En vigueur 26 juin 2022

OC Transpo

INFO 613-560-5000
octranspo.com

Appendix C – Collision Records

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: AVATION PKWY/HEMLOCK PRIV NB ONRAMP btwn AVIATION PKWY & HEMLOCK PRIV

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Nov-20, Mon,11:05	Clear	Other	P.D. only	Dry	North	Reversing	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: AVIATION PKWY @ AVIATION RAMP 55/AVIATION RAMP

Traffic Control: Stop sign **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Oct-22, Tue,06:10	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: AVIATION PKWY @ AVIATION/ROCKCLIFFE PKWY WB ON

Traffic Control: Stop sign **Total Collisions:** 5

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Sep-25, Sun,13:06	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-23, Mon,15:21	Clear	Angle	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Jul-05, Thu,06:50	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Pick-up truck	Cyclist	0
					South	Slowing or stopping	Bicycle	Other motor vehicle	
2018-Aug-18, Sat,13:14	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2019-Feb-19, Tue,09:13	Clear	Rear end	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
					South	Turning right	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: AVIATION PKWY @ HEMLOCK RD NB ONRAMP

Traffic Control: Yield sign **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Nov-14, Wed,07:30	Clear	Sideswipe	Non-fatal injury	Dry	North	Merging	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: AVIATION PKWY @ MONTREAL RD

Traffic Control: Traffic signal **Total Collisions:** 87

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jan-20, Wed,07:49	Snow	Rear end	P.D. only	Slush	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jan-21, Thu,07:14	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Feb-02, Tue,17:10	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Feb-13, Sat,09:28	Clear	Turning movement	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Feb-15, Mon,17:56	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2016-Mar-02, Wed,18:48	Clear	Turning movement	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-17, Thu,10:40	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2016-Jul-12, Tue,16:00	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Truck and trailer	Other motor vehicle	
2016-Jul-13, Wed,22:07	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: AVIATION PKWY @ MONTREAL RD

Traffic Control: Traffic signal **Total Collisions:** 87

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jul-18, Mon,08:08	Clear	Turning movement	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jul-20, Wed,10:36	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2016-Aug-18, Thu,00:08	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Passenger van	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Oct-05, Wed,10:25	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Oct-05, Wed,12:30	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Oct-25, Tue,10:00	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2016-Nov-18, Fri,13:28	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Dec-01, Thu,08:08	Rain	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2016-Dec-01, Thu,20:07	Clear	Turning movement	P.D. only	Wet	West	Turning left	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Dec-15, Thu,18:16	Clear	Turning movement	P.D. only	Wet	West	Turning left	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Dec-19, Mon,15:05	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2017-Jan-06, Fri,08:45	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Unknown	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: AVIATION PKWY @ MONTREAL RD

Traffic Control: Traffic signal **Total Collisions:** 87

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jan-13, Fri,09:49	Snow	Other	P.D. only	Wet	South	Reversing	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-10, Fri,08:06	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	School bus	Other motor vehicle	
2017-Feb-13, Mon,10:18	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-11, Sat,20:00	Clear	Rear end	P.D. only	Ice	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Passenger van	Other motor vehicle	
2017-Mar-24, Fri,11:31	Snow	Rear end	P.D. only	Slush	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Merging	Automobile, station wagon	Other motor vehicle	
2017-Apr-05, Wed,15:30	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2017-Apr-09, Sun,15:31	Rain	Sideswipe	P.D. only	Wet	West	Unknown	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Apr-28, Fri,07:56	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-May-08, Mon,15:48	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jun-05, Mon,09:40	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Jun-12, Mon,16:00	Clear	Other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Debris falling off vehicle	0
					South	Stopped	Tow truck	Other	

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: AVIATION PKWY @ MONTREAL RD

Traffic Control: Traffic signal **Total Collisions:** 87

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jul-22, Sat,08:41	Clear	Angle	P.D. only	Dry	East	Overtaking	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Overtaking	Automobile, station wagon	Other motor vehicle	
2017-Oct-02, Mon,18:48	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Oct-05, Thu,15:20	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Oct-07, Sat,20:18	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2017-Oct-16, Mon,12:38	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Oct-17, Tue,06:00	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Oct-27, Fri,11:16	Clear	Angle	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Passenger van	Other motor vehicle	
2017-Oct-28, Sat,23:45	Rain	Turning movement	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Dec-29, Fri,18:59	Clear	Rear end	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Jan-07, Sun,17:14	Snow	Turning movement	P.D. only	Loose snow	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Passenger van	Other motor vehicle	
2018-Apr-17, Tue,09:03	Clear	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: AVIATION PKWY @ MONTREAL RD

Traffic Control: Traffic signal **Total Collisions:** 87

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Apr-24, Tue,16:26	Clear	Rear end	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-09, Wed,16:03	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-May-30, Wed,06:55	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Jun-03, Sun,15:38	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jul-22, Sun,12:16	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Aug-02, Thu,06:54	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Motorcycle	Other motor vehicle	
2018-Aug-07, Tue,16:32	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Passenger van	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2018-Aug-27, Mon,11:38	Clear	Rear end	P.D. only	Dry	West	Going ahead	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-10, Mon,10:08	Clear	Turning movement	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Sep-14, Fri,09:35	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-20, Thu,13:20	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Sep-25, Tue,15:54	Rain	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: AVIATION PKWY @ MONTREAL RD

Traffic Control: Traffic signal **Total Collisions:** 87

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Oct-10, Wed,10:30	Clear	Turning movement	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Oct-18, Thu,16:18	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-07, Wed,12:45	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-10, Sat,12:59	Snow	Rear end	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Dec-07, Fri,13:15	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Dec-17, Mon,16:02	Clear	Rear end	Non-fatal injury	Wet	East	Turning right	Unknown	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Feb-01, Fri,11:20	Clear	Rear end	P.D. only	Wet	East	Unknown	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Mar-09, Sat,14:09	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-15, Fri,16:00	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Mar-22, Fri,17:20	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Passenger van	Other motor vehicle	
2019-Apr-23, Tue,20:56	Rain	Turning movement	Non-fatal injury	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-May-17, Fri,16:19	Clear	Rear end	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: AVIATION PKWY @ MONTREAL RD

Traffic Control: Traffic signal **Total Collisions:** 87

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jul-18, Thu,19:07	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-30, Tue,17:45	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Motorcycle	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Aug-02, Fri,14:57	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-23, Fri,12:43	Clear	SMV other	P.D. only	Dry	North	Turning right	Automobile, station wagon	Curb	0
2019-Oct-01, Tue,20:51	Rain	Turning movement	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-05, Tue,08:59	Clear	Turning movement	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Dec-03, Tue,17:20	Clear	Rear end	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Dec-13, Fri,11:11	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-13, Fri,18:04	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-May-13, Wed,23:09	Clear	Angle	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2020-Jun-12, Fri,12:14	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2020-Jul-30, Thu,11:13	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Tow truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: AVIATION PKWY @ MONTREAL RD

Traffic Control: Traffic signal **Total Collisions:** 87

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Aug-07, Fri,09:17	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Motorcycle	Other motor vehicle	
2020-Oct-02, Fri,14:41	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Oct-21, Wed,15:30	Unknown	Rear end	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2020-Oct-30, Fri,19:09	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Nov-22, Sun,18:00	Snow	Rear end	P.D. only	Slush	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Nov-26, Thu,07:35	Rain	Rear end	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Dec-04, Fri,16:30	Rain	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2020-Dec-11, Fri,19:14	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	

Location: AVIATION PKWY btwn HEMLOCK RD NB ONRAMP & ROCKCLIFFE PRKY RAMPS S

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jan-18, Fri,09:00	Snow	SMV other	P.D. only	Loose snow	North	Unknown	Automobile, station wagon	Ran off road	0

Location: AVIATION PKWY btwn MONTREAL RD & RAMP

Traffic Control: No control **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: AVIATION PKWY btwn MONTREAL RD & RAMP

Traffic Control: No control **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Apr-05, Tue,08:25	Clear	Angle	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Nov-02, Wed,13:50	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-19, Tue,13:40	Clear	Sideswipe	P.D. only	Dry	South	Overtaking	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Mar-07, Sat,07:39	Clear	Angle	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	

Location: BRUNEL ST @ MONTREAL RD

Traffic Control: Stop sign **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Nov-17, Thu,14:47	Clear	Rear end	Non-fatal injury	Dry	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-03, Sat,01:37	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Unknown	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	

Location: HEMLOCK PRIV @ AVIATION PKWY ON RAMP

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Aug-21, Mon,16:00	Clear	Sideswipe	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: HEMLOCK RD @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 28

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: HEMLOCK RD @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 28

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-May-15, Sun,14:57	Clear	Sideswipe	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Cyclist	0
					North	Turning left	Bicycle	Other motor vehicle	
2016-Jul-07, Thu,22:35	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2016-Jul-11, Mon,12:53	Clear	SMV other	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Pedestrian	1
2016-Oct-12, Wed,08:27	Clear	SMV other	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Pedestrian	1
2016-Dec-03, Sat,02:38	Clear	SMV other	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Curb	0
2017-Jan-18, Wed,15:52	Rain	Turning movement	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Aug-10, Thu,16:00	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Truck - dump	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Sep-25, Mon,15:54	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Dec-13, Wed,15:26	Clear	Rear end	P.D. only	Wet	North	Unknown	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Feb-13, Tue,15:16	Clear	Turning movement	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Truck - tractor	Other motor vehicle	
2018-Feb-20, Tue,17:31	Rain	Approaching	P.D. only	Wet	South	Going ahead	Unknown	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-21, Thu,19:21	Clear	Turning movement	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	
2018-Jul-22, Sun,19:29	Clear	Angle	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: HEMLOCK RD @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 28

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Oct-29, Mon,19:34	Snow	Angle	Non-fatal injury	Wet	North	Turning left	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2018-Dec-05, Wed,16:45	Snow	Rear end	P.D. only	Slush	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-12, Wed,07:36	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-06, Sun,11:30	Clear	Angle	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Police vehicle	Other motor vehicle	
2019-Jan-08, Tue,05:43	Snow	SMV other	P.D. only	Loose snow	East	Turning right	Automobile, station wagon	Snowbank/drift	0
2019-Jan-31, Thu,10:56	Clear	Angle	P.D. only	Packed snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-08, Fri,08:23	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Passenger van	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2019-Jul-09, Tue,16:30	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Motorcycle	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Aug-09, Fri,15:57	Clear	Sideswipe	Non-fatal injury	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2019-Aug-29, Thu,17:16	Clear	Sideswipe	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2019-Sep-18, Wed,20:26	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Sep-30, Mon,13:06	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: HEMLOCK RD @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 28

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Nov-11, Mon,17:10	Snow	Angle	Non-fatal injury	Loose snow	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Sep-12, Sat,15:52	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Dec-02, Wed,17:08	Clear	SMV other	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Pedestrian	1

Location: HOCHELAGA ST @ MONTREAL RD

Traffic Control: Stop sign **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-May-20, Sun,13:31	Clear	Angle	P.D. only	Dry	East	Turning right	Unknown	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Feb-27, Thu,06:53	Snow	Sideswipe	P.D. only	Loose snow	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: MONTREAL RD @ BATHGATE DR/BURMA RD

Traffic Control: Traffic signal **Total Collisions:** 29

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jan-07, Thu,13:16	Clear	Turning movement	Non-fatal injury	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jan-29, Fri,08:30	Snow	SMV other	P.D. only	Slush	South	Turning right	Pick-up truck	Skidding/sliding	0
2016-Jan-29, Fri,08:46	Snow	SMV other	Non-fatal injury	Wet	North	Turning right	Automobile, station wagon	Pedestrian	1
2016-Feb-14, Sun,00:39	Clear	Angle	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2016 **To:** December 31, 2020

Location: MONTREAL RD @ BATHGATE DR/BURMA RD

Traffic Control: Traffic signal **Total Collisions:** 29

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Feb-25, Thu,18:10	Freezing Rain	Turning movement	P.D. only	Ice	West	Turning left	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Feb-26, Fri,01:50	Clear	Rear end	P.D. only	Ice	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Passenger van	Other motor vehicle	
2016-Mar-18, Fri,18:47	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Dec-18, Sun,00:16	Snow	Angle	Non-fatal injury	Packed snow	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jan-15, Sun,22:12	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jan-26, Thu,16:52	Clear	SMV other	Non-fatal injury	Wet	North	Turning right	Automobile, station wagon	Pedestrian	1
2017-Apr-06, Thu,17:36	Rain	Angle	P.D. only	Wet	South	Turning right	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Apr-14, Fri,04:20	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jun-23, Fri,09:14	Rain	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Aug-21, Mon,13:22	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Aug-21, Mon,15:21	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2016 **To:** December 31, 2020

Location: MONTREAL RD @ BATHGATE DR/BURMA RD

Traffic Control: Traffic signal **Total Collisions:** 29

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Nov-16, Thu,13:22	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Jan-21, Sun,23:09	Snow	SMV other	P.D. only	Packed snow	West	Changing lanes	Automobile, station wagon	Skidding/sliding	0
2018-Oct-21, Sun,11:58	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-26, Mon,11:42	Rain	Rear end	P.D. only	Slush	East	Going ahead	Delivery van	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Dec-31, Mon,18:30	Snow	Sideswipe	P.D. only	Ice	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-10, Sun,07:21	Snow	Rear end	Non-fatal injury	Packed snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jun-04, Tue,21:45	Clear	SMV other	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Pedestrian	1
2019-Sep-03, Tue,16:45	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2019-Sep-26, Thu,09:14	Clear	Sideswipe	P.D. only	Dry	East	Unknown	Automobile, station wagon	Other motor vehicle	0
					East	Unknown	Pick-up truck	Other motor vehicle	
2019-Oct-01, Tue,16:12	Clear	SMV other	P.D. only	Wet	East	Slowing or stopping	Passenger van	Ran off road	0
2019-Oct-16, Wed,22:08	Rain	SMV other	Non-fatal injury	Wet	North	Turning left	Automobile, station wagon	Pedestrian	1
2019-Oct-23, Wed,09:08	Clear	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Unknown	Automobile, station wagon	Other motor vehicle	
2020-Jan-27, Mon,20:37	Clear	SMV other	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Pedestrian	1

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: MONTREAL RD @ BATHGATE DR/BURMA RD

Traffic Control: Traffic signal **Total Collisions:** 29

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Jul-22, Wed,10:40	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

Location: MONTREAL RD @ CARSON'S RD/CODD'S RD

Traffic Control: Traffic signal **Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Mar-02, Wed,08:19	Snow	Rear end	P.D. only	Slush	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Dec-08, Thu,18:13	Clear	Rear end	P.D. only	Ice	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Mar-08, Wed,16:50	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-11, Mon,09:20	Clear	Rear end	Non-fatal injury	Dry	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-25, Wed,12:06	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Dec-28, Thu,08:01	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Jan-17, Wed,15:02	Clear	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Delivery van	Other motor vehicle	
2018-Mar-08, Thu,19:41	Snow	Angle	P.D. only	Loose snow	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-14, Mon,17:29	Clear	Rear end	P.D. only	Slush	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: MONTREAL RD @ CARSON'S RD/CODD'S RD

Traffic Control: Traffic signal **Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jan-21, Mon,14:59	Clear	Rear end	P.D. only	Ice	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Truck - closed	Other motor vehicle	
2019-Feb-03, Sun,14:02	Snow	Rear end	Non-fatal injury	Loose snow	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Passenger van	Other motor vehicle	
2019-May-08, Wed,06:47	Clear	Turning movement	Non-fatal injury	Dry	West	Going ahead	Motorcycle	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jun-06, Thu,23:15	Clear	SMV other	Non-fatal injury	Dry	West	Slowing or stopping	Motorcycle	Skidding/sliding	0
2019-Jun-09, Sun,11:27	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Aug-02, Fri,15:57	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Municipal transit bus	Other motor vehicle	
2019-Oct-05, Sat,07:40	Clear	Rear end	Non-fatal injury	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2020-Jan-10, Fri,22:30	Fog, mist, smoke, dust	Rear end	Non-fatal injury	Wet	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Feb-07, Fri,14:30	Snow	Sideswipe	P.D. only	Ice	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

Location: MONTREAL RD @ DEN HAAG DR/LANG'S RD

Traffic Control: Traffic signal **Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Feb-17, Wed,16:45	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	Passenger van	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: MONTREAL RD @ DEN HAAG DR/LANG'S RD

Traffic Control: Traffic signal **Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Mar-15, Tue,09:23	Clear	Sideswipe	P.D. only	Wet	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jul-16, Sat,06:55	Clear	Other	P.D. only	Dry	West	Going ahead	Pick-up truck	Pole (utility, power)	0
					West	Going ahead	Automobile, station wagon	Debris falling off vehicle	
2016-Aug-17, Wed,13:15	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Truck - dump	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Oct-14, Fri,08:58	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-09, Thu,16:08	Clear	Rear end	Non-fatal injury	Dry	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-15, Fri,15:42	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-20, Wed,18:00	Clear	Rear end	P.D. only	Dry	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Passenger van	Other motor vehicle	
2018-Oct-15, Mon,10:08	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-14, Mon,07:42	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-21, Mon,14:00	Snow	Rear end	P.D. only	Packed snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: MONTREAL RD @ DEN HAAG DR/LANG'S RD

Traffic Control: Traffic signal **Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jun-17, Mon,17:00	Clear	Other	P.D. only	Dry	South	Reversing	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-15, Thu,14:22	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-21, Sat,18:30	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Sep-27, Fri,11:47	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Oct-30, Wed,07:53	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Unknown	Unknown	Other motor vehicle	
2020-Jan-17, Fri,08:26	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Feb-08, Sat,18:45	Clear	Turning movement	P.D. only	Ice	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	

Location: MONTREAL RD @ FOXVIEW PL/DESLOGES PRIV

Traffic Control: Stop sign **Total Collisions:** 5

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jun-16, Thu,15:01	Clear	Turning movement	P.D. only	Dry	East	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Mar-04, Sat,12:22	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Aug-30, Wed,09:38	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2016 **To:** December 31, 2020

Location: MONTREAL RD @ FOXVIEW PL/DESLOGES PRIV

Traffic Control: Stop sign **Total Collisions:** 5

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-15, Mon,18:15	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Jan-16, Thu,17:21	Clear	Angle	P.D. only	Slush	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	

Location: MONTREAL RD @ MONTFORT HOSPITAL

Traffic Control: Traffic signal **Total Collisions:** 15

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Feb-17, Wed,15:56	Snow	Rear end	Non-fatal injury	Loose snow	East	Turning left	Pick-up truck	Other motor vehicle	0
					East	Turning left	Passenger van	Other motor vehicle	
2016-Mar-24, Thu,21:34	Snow	Angle	P.D. only	Loose snow	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Police vehicle	Other motor vehicle	
2016-Apr-20, Wed,08:44	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jul-11, Mon,09:33	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Truck - dump	Other motor vehicle	
2017-Apr-05, Wed,06:08	Rain	SMV other	Non-fatal injury	Wet	West	Going ahead	Delivery van	Pole (sign, parking meter)	0
2017-Apr-12, Wed,14:53	Clear	Sideswipe	P.D. only	Dry	East	Unknown	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Municipal transit bus	Other motor vehicle	
2018-May-08, Tue,16:10	Clear	Rear end	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-20, Wed,17:31	Clear	SMV other	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Pedestrian	1

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From: January 1, 2016 **To:** December 31, 2020

Location: MONTREAL RD @ MONTFORT HOSPITAL

Traffic Control: Traffic signal **Total Collisions:** 15

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Sep-15, Sat,14:39	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-25, Thu,18:22	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-23, Tue,11:38	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Oct-02, Wed,07:45	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2019-Oct-17, Thu,19:01	Clear	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Passenger van	Other motor vehicle	
2020-Oct-17, Sat,16:01	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Nov-29, Sun,03:18	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Pole (utility, power)	0

Location: MONTREAL RD btwn AVIATION PKWY & DEN HAAG DR (1)

Traffic Control: No control **Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jun-23, Fri,08:45	Rain	Sideswipe	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-05, Tue,16:26	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Passenger van	Other motor vehicle	
2020-Apr-17, Fri,20:44	Clear	Rear end	Non-fatal injury	Dry	East	Merging	Pick-up truck	Other motor vehicle	0
					East	Merging	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: MONTREAL RD btwn AVIATION PKWY & DEN HAAG DR/LANG'S RD

Traffic Control: No control **Total Collisions:** 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Feb-07, Wed,10:39	Snow	SMV unattended vehicle	P.D. only	Packed snow	Unknown	Unknown	Automobile, station wagon	Unattended vehicle	0
2018-Aug-10, Fri,11:40	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-23, Tue,13:36	Clear	Angle	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-16, Fri,07:53	Snow	Rear end	P.D. only	Loose snow	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Truck - open	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Apr-22, Mon,17:25	Clear	Sideswipe	P.D. only	Dry	West	Pulling away from shoulder or curb	Municipal transit bus	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-May-29, Wed,13:30	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-05, Fri,09:35	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: MONTREAL RD btwn BRUNEL ST & CODD'S RD

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Dec-05, Mon,13:20	Snow	SMV other	P.D. only	Slush	West	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0

Location: MONTREAL RD btwn BURMA RD & HOCHELAGA ST

Traffic Control: No control **Total Collisions:** 6

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Apr-10, Tue,18:00	Clear	SMV other	P.D. only	Dry	South	Turning left	Automobile, station wagon	Pole (sign, parking meter)	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: MONTREAL RD btwn BURMA RD & HOCHELAGA ST

Traffic Control: No control **Total Collisions:** 6

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Nov-06, Tue,07:10	Rain	Rear end	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Municipal transit bus	Other motor vehicle	
2019-Jul-09, Tue,07:31	Clear	Approaching	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-28, Mon,07:50	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-09, Sat,19:17	Clear	SMV other	P.D. only	Dry	South	Turning right	Automobile, station wagon	Pedestrian	1
2020-Feb-09, Sun,22:29	Snow	SMV other	Non-fatal injury	Loose snow	West	Going ahead	Automobile, station wagon	Pole (utility, power)	0

Location: MONTREAL RD btwn CARSON'S RD/CODD'S RD & DEN HAAG DR/LANG'S RD

Traffic Control: No control **Total Collisions:** 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Apr-09, Sun,01:37	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Animal - wild	0
2017-Sep-21, Thu,12:24	Clear	Angle	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jan-01, Mon,09:04	Clear	Rear end	P.D. only	Ice	West	Going ahead	Automobile, station wagon	Skidding/sliding	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Oct-29, Mon,18:46	Rain	Rear end	P.D. only	Wet	East	Pulling away from shoulder or curb	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-14, Mon,09:09	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-15, Sat,18:36	Rain	Sideswipe	P.D. only	Wet	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Municipal transit bus	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: MONTREAL RD btwn CARSON'S RD/CODD'S RD & DEN HAAG DR/LANG'S RD

Traffic Control: No control **Total Collisions:** 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jul-14, Sun,17:37	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
					West	Stopped	Municipal transit bus	Other motor vehicle	
2019-Dec-06, Fri,12:24	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Mar-27, Fri,06:20	Clear	SMV other	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Building or wall	0

Location: MONTREAL RD btwn FOXVIEW PL & HOCHELAGA ST

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Nov-29, Thu,11:19	Snow	Angle	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Truck and trailer	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: HEMLOCK RD btwn LONDON TER & ST. LAURENT BLVD

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Nov-30, Thu,16:48	Freezing Rain	Angle	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: LONDON TER @ HEMLOCK RD

Traffic Control: Stop sign **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jul-28, Sat,17:58	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	

Appendix D – Traffic Count Data

ACCURATE TRUSTED TRAFFIC DATA

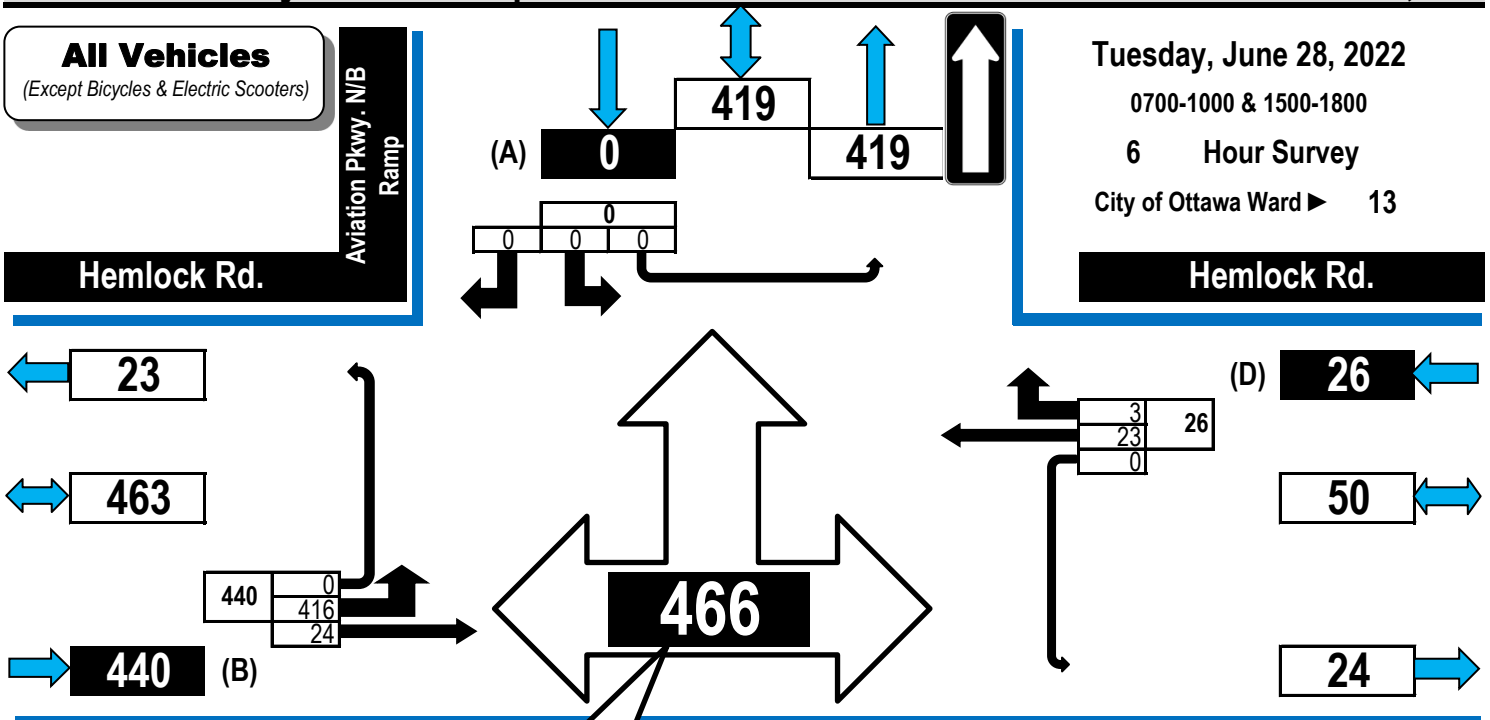
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



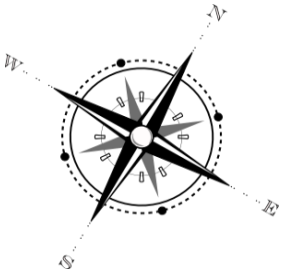
Aviation Parkway N/B On Ramp & Hemlock Road — Ottawa, ON

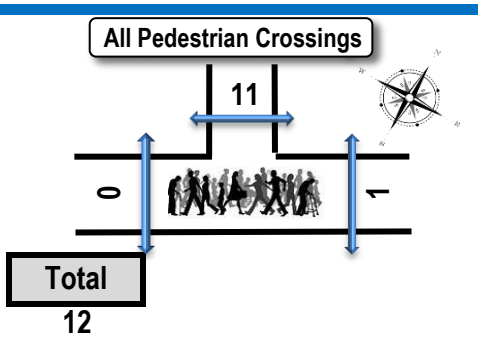
All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, June 28, 2022
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ▶ 13

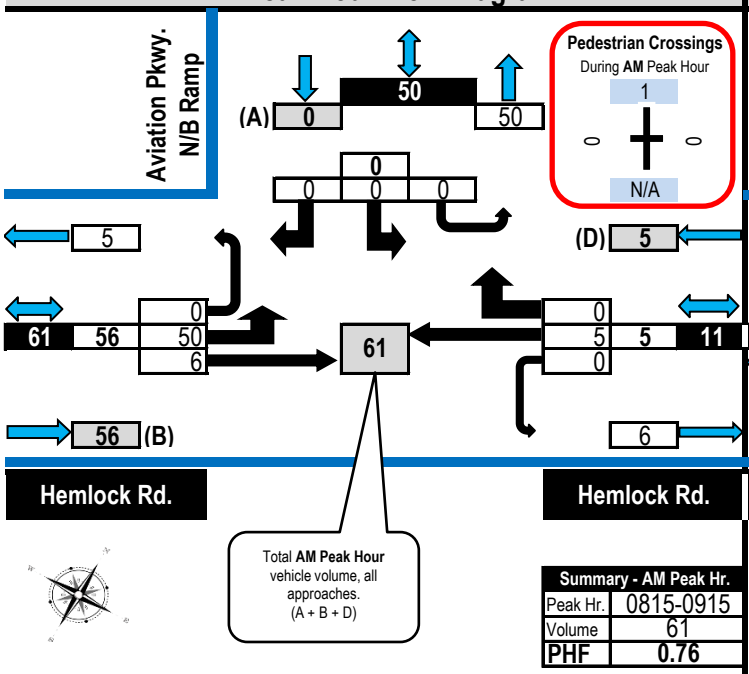


Total vehicle volume, all approaches. (A + B + D)





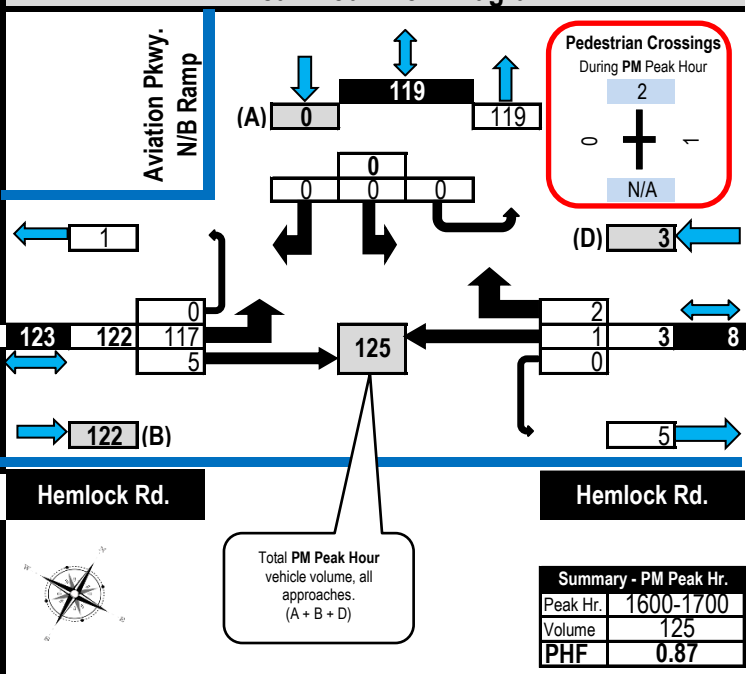
AM Peak Hour Flow Diagram



Total **AM Peak Hour** vehicle volume, all approaches. (A + B + D)

Summary - AM Peak Hr.	
Peak Hr.	0815-0915
Volume	61
PHF	0.76

PM Peak Hour Flow Diagram

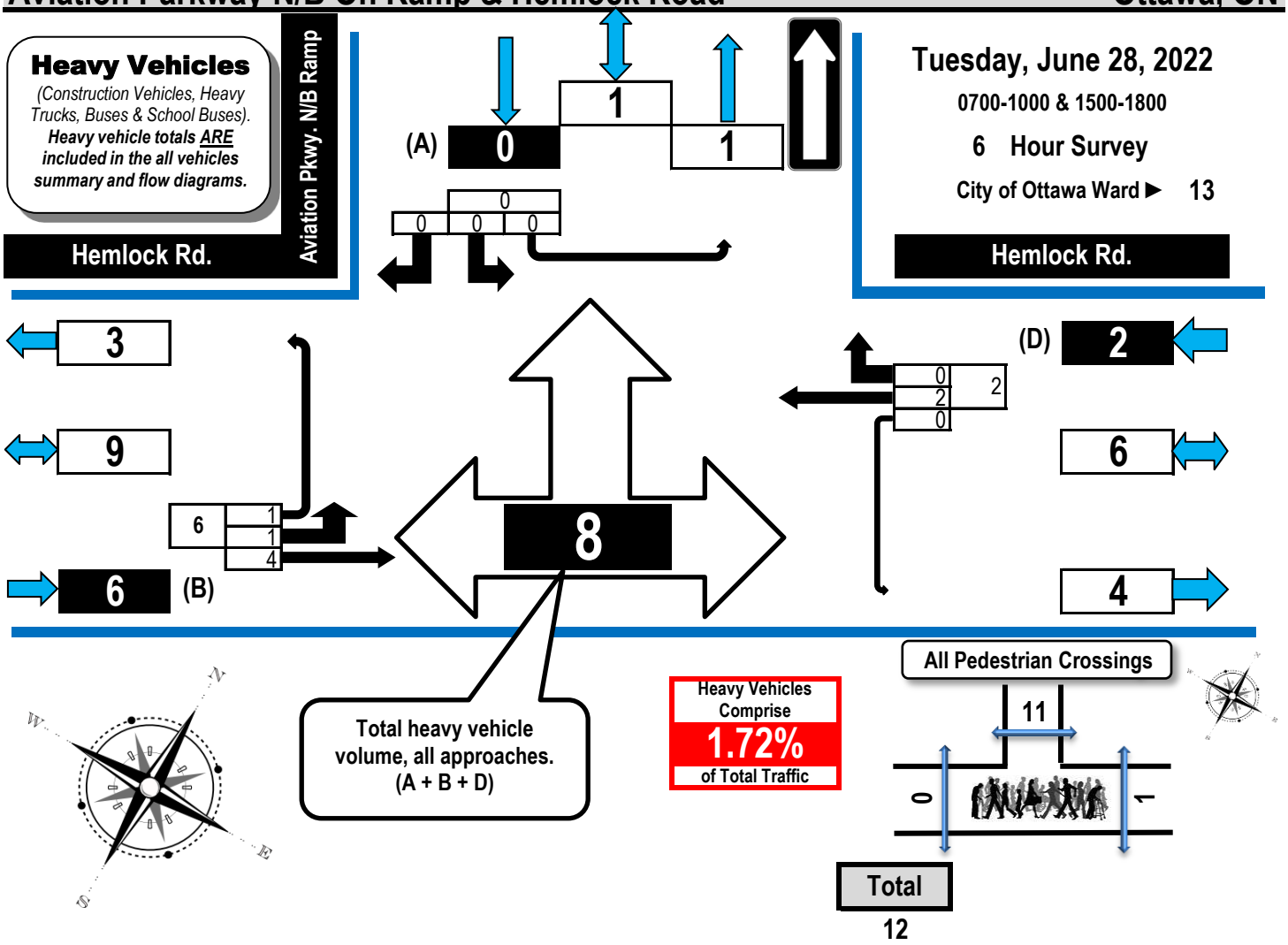


Total **PM Peak Hour** vehicle volume, all approaches. (A + B + D)

Summary - PM Peak Hr.	
Peak Hr.	1600-1700
Volume	125
PHF	0.87

Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram

Aviation Parkway N/B On Ramp & Hemlock Road — Ottawa, ON

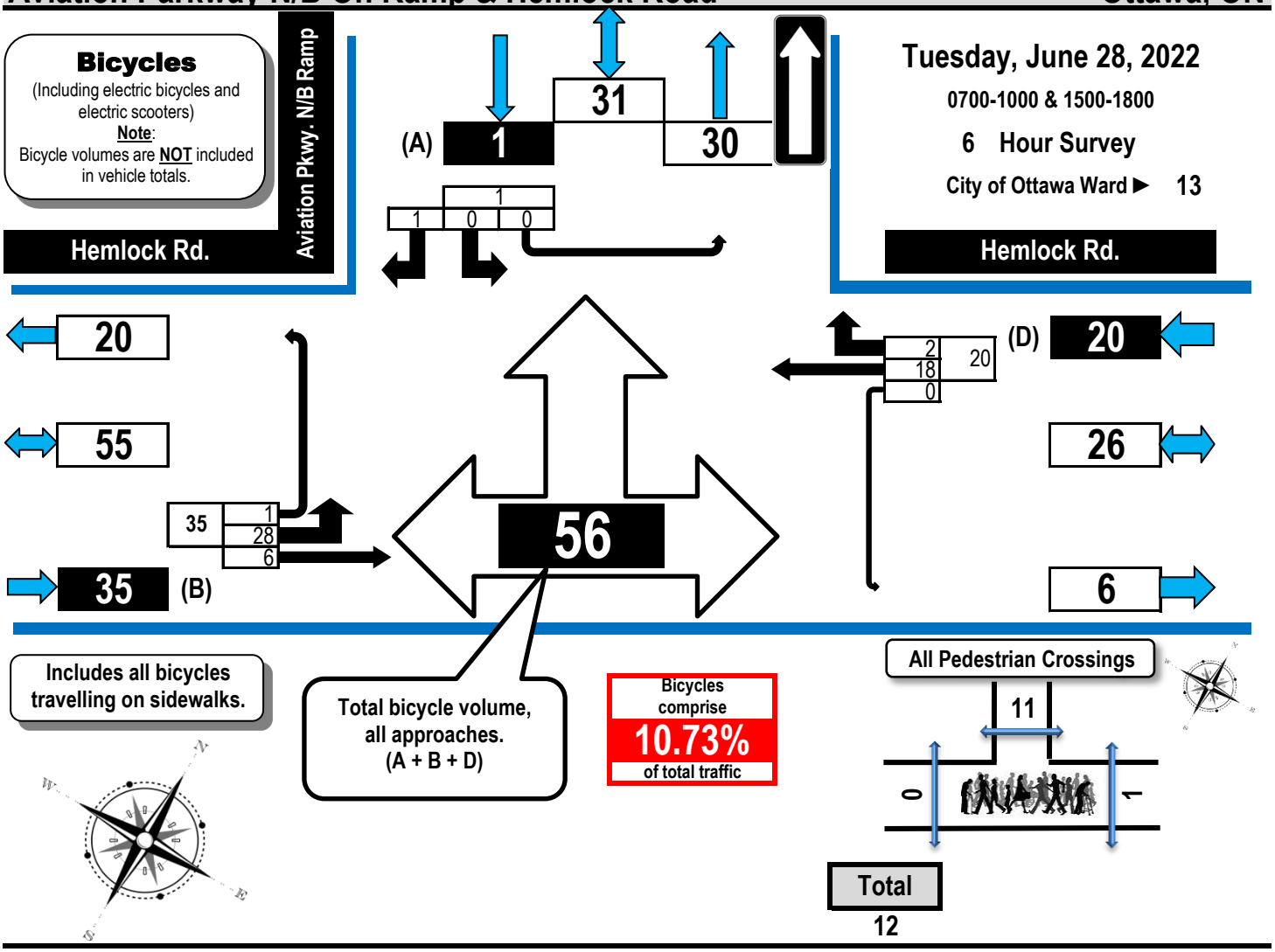


	Hemlock Rd.					Hemlock Rd.					N/A					Aviation Pkwy. N/B Ramp					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	4		0	4		2	0	0	2						0		0	0	0	6
0800-0900	0	0		0	0		0	0	0	0						0		0	0	0	0
0900-1000	1	0		0	1		0	0	0	0						0		0	0	0	1
1500-1600	0	0		0	0		0	0	0	0						0		0	0	0	0
1600-1700	0	0		0	0		0	0	0	0						0		0	0	0	0
1700-1800	0	0		1	1		0	0	0	0						0		0	0	0	1
Totals	1	4		1	6		2	0	0	2						0		0	0	0	8

Comments:
The bicycle totals include 1 E-scooter.

Turning Movement Count
Bicycle Summary
Flow Diagram

Aviation Parkway N/B On Ramp & Hemlock Road — Ottawa, ON



	Hemlock Rd.					Hemlock Rd.					N/A					Aviation Pkwy. N/B Ramp					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	3	0		0	3		1	0	0	1						0		0	0	0	4
0800-0900	3	0		0	3		5	0	0	5						0		0	0	0	8
0900-1000	1	0		0	1		1	0	0	1						0		0	0	0	2
1500-1600	6	4		1	11		3	1	0	4						0		1	0	1	16
1600-1700	8	1		0	9		2	0	0	2						0		0	0	0	11
1700-1800	7	1		0	8		6	1	0	7						0		0	0	0	15
Totals	28	6		1	35		18	2	0	20						0		1	0	1	56

Comments:

The bicycle totals include 1 E-scooter.

ACCURATE TRUSTED TRAFFIC DATA

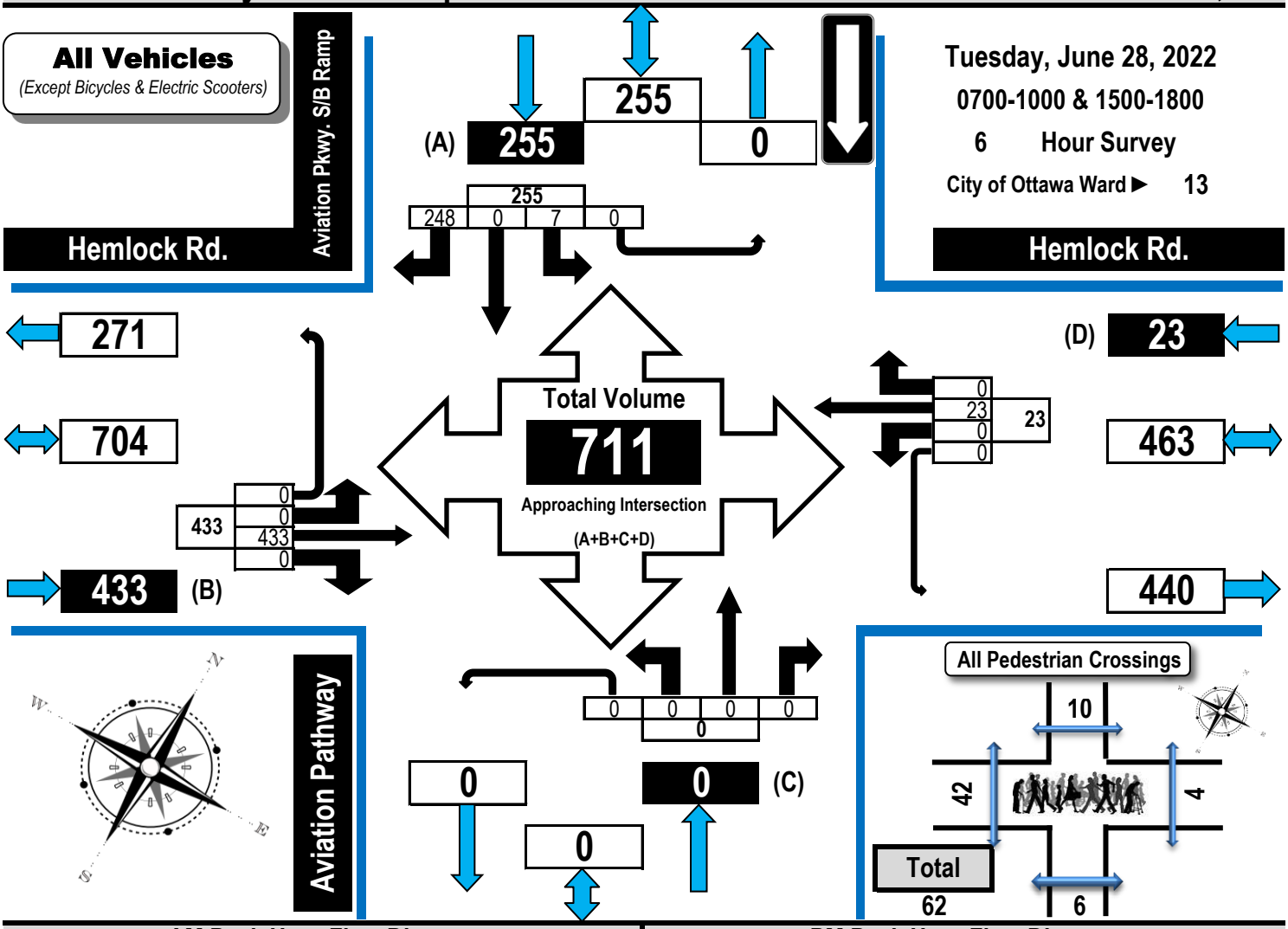
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



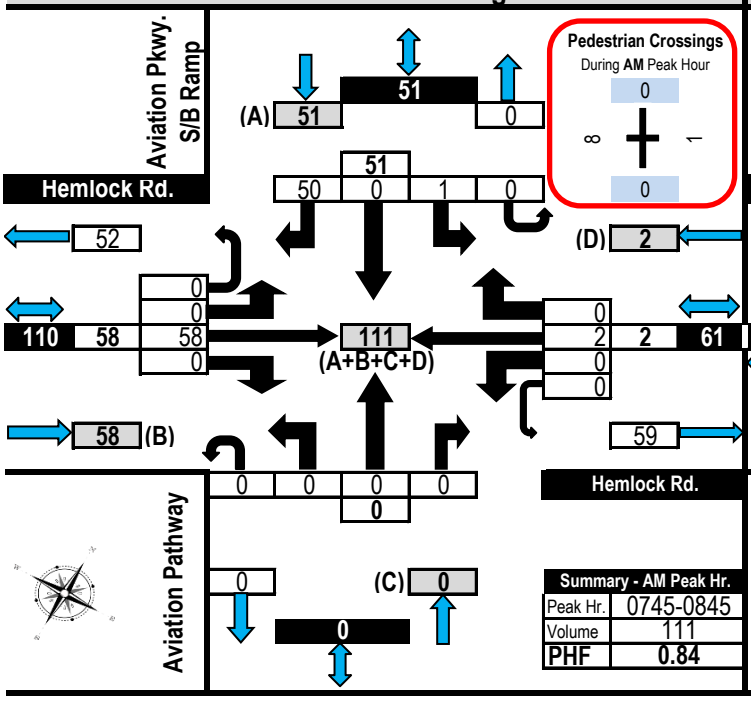
Aviation Parkway S/B Off Ramp & Hemlock Road — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, June 28, 2022
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ► 13

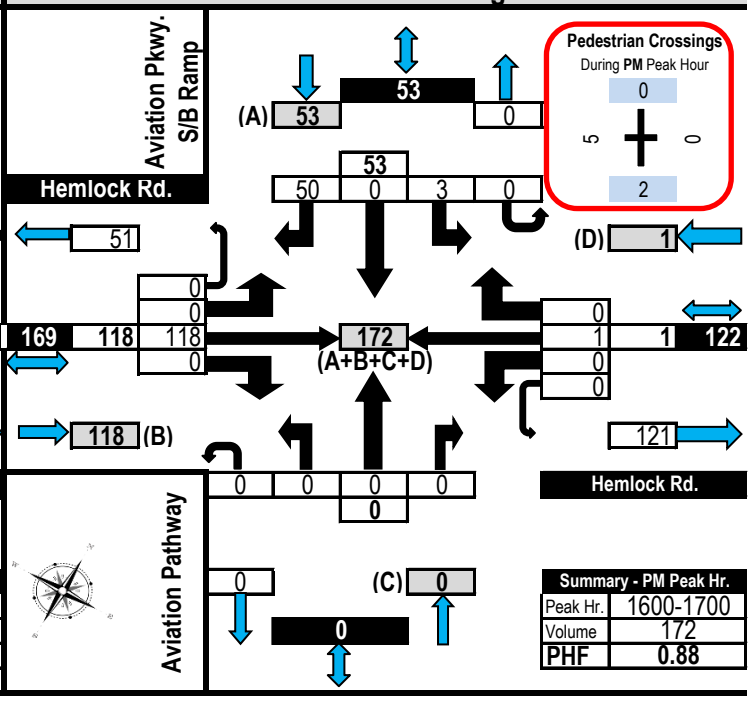


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0745-0845
Volume	111
PHF	0.84

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1600-1700
Volume	172
PHF	0.88

ACCURATE TRUSTED TRAFFIC DATA

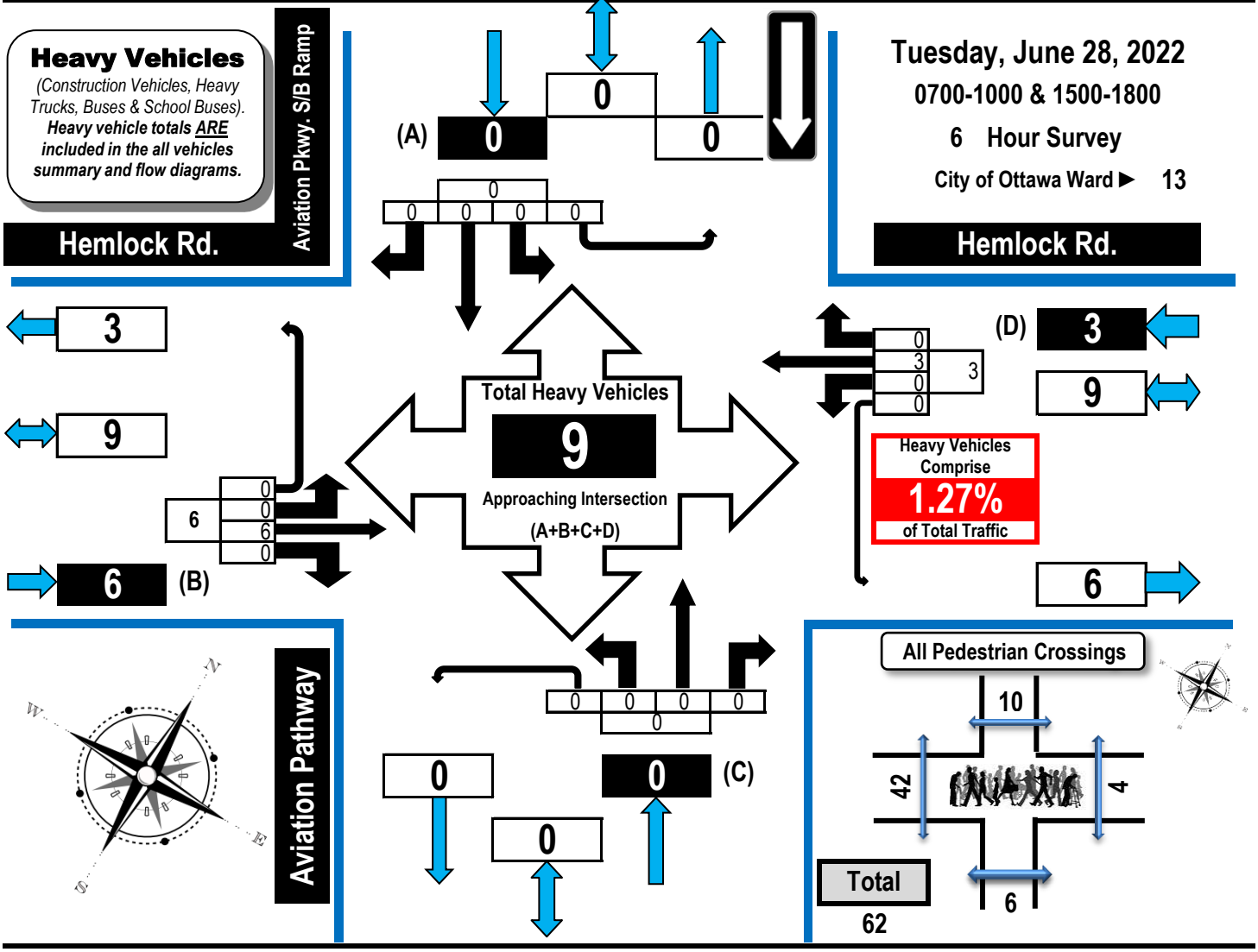
Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram



Aviation Parkway S/B Off Ramp & Hemlock Road — Ottawa, ON

Heavy Vehicles
(Construction Vehicles, Heavy Trucks, Buses & School Buses).
Heavy vehicle totals ARE included in the all vehicles summary and flow diagrams.

Tuesday, June 28, 2022
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	Hemlock Rd.					Hemlock Rd.					Aviation Pathway					Aviation Pkwy. S/B Ramp					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	4	0	0	4	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	6
0800-0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900-1000	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1500-1600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-1700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700-1800	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Totals	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	9

Comments:
The Aviation Pathway is located immediately west of and running parallel with the Aviation Parkway. The bicycle summary and flow chart summarizes all bicycle movements at the Aviation Pathway and Hemlock Road. Ten cyclists travelled to and from the Aviation Parkway S/B off Ramp. The bicycle totals include 7 E-bicycles, E-scooters and E-unicycle.

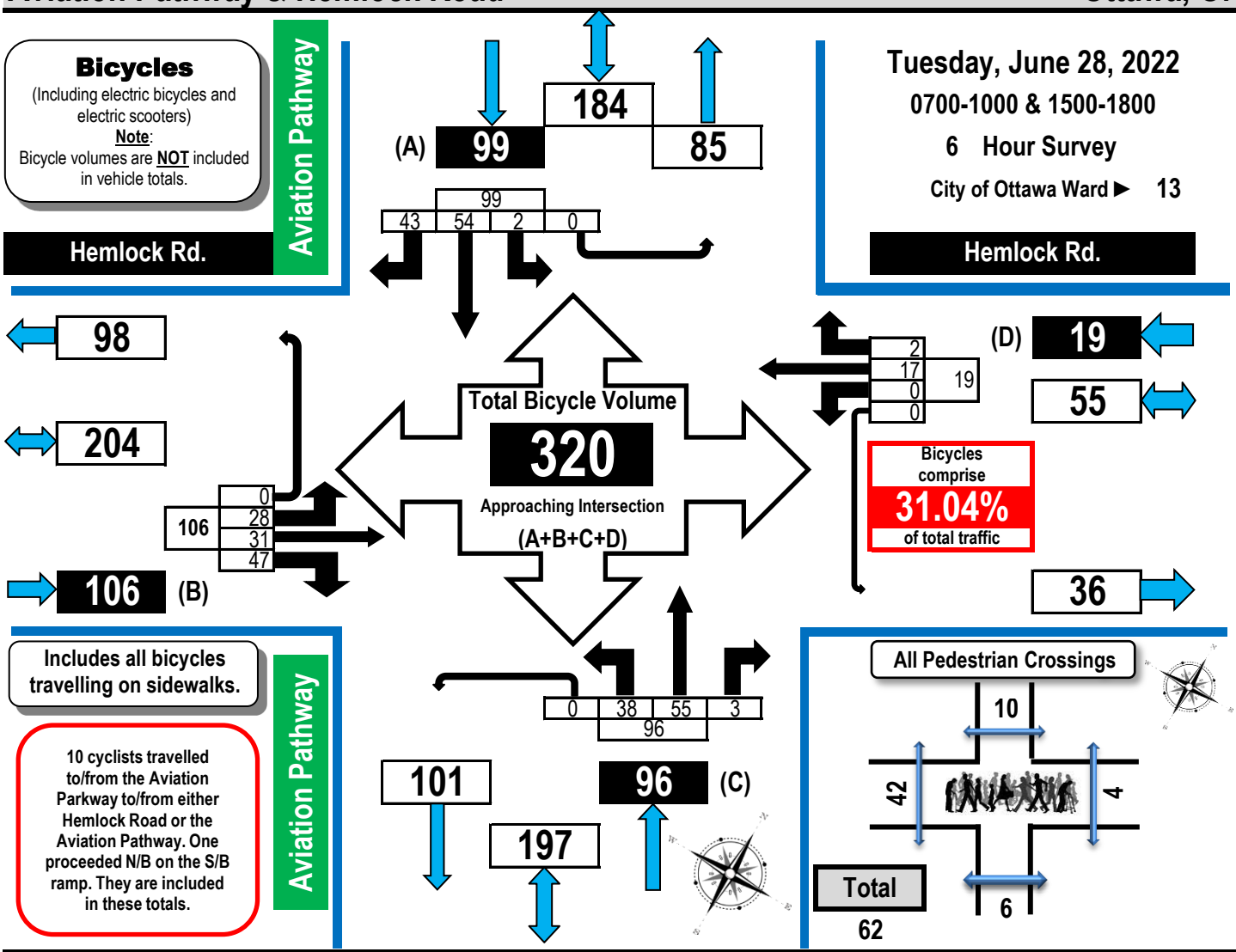
ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Bicycle Summary
Flow Diagram

Aviation Pathway & Hemlock Road — Ottawa, ON

Bicycles
(Including electric bicycles and electric scooters)
Note:
Bicycle volumes are **NOT** included in vehicle totals.

Tuesday, June 28, 2022
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City of Ottawa Ward ► 13



	Hemlock Rd. Eastbound					Hemlock Rd. Westbound					Aviation Pathway Northbound					Aviation Pathway. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	3	3	11	0	17	0	1	0	0	1	1	4	0	0	5	1	7	12	0	20	43
0800-0900	2	3	13	0	18	0	5	0	0	5	6	4	0	0	10	0	8	3	0	11	44
0900-1000	0	1	5	0	6	0	1	0	0	1	1	11	0	0	12	0	3	5	0	8	27
1500-1600	7	8	3	0	18	0	3	1	0	4	6	8	2	0	16	1	11	4	0	16	54
1600-1700	11	9	7	0	27	0	2	0	0	2	17	15	0	0	32	0	8	4	0	12	73
1700-1800	5	7	8	0	20	0	5	1	0	6	7	13	1	0	21	0	17	15	0	32	79
Totals	**28**	**31**	**47**	**0**	**106**	**0**	**17**	**2**	**0**	**19**	**38**	**55**	**3**	**0**	**96**	**2**	**54**	**43**	**0**	**99**	**320**

Comments:

The Aviation Pathway is located immediately west of and running parallel with the Aviation Parkway. The bicycle summary and flow chart summarizes all bicycle movements at the Aviation Pathway and Hemlock Road. Ten cyclists travelled to and from the Aviation Parkway S/B off Ramp. The bicycle totals include 7 E-bicycles, E-scooters and E-unicycle.

ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



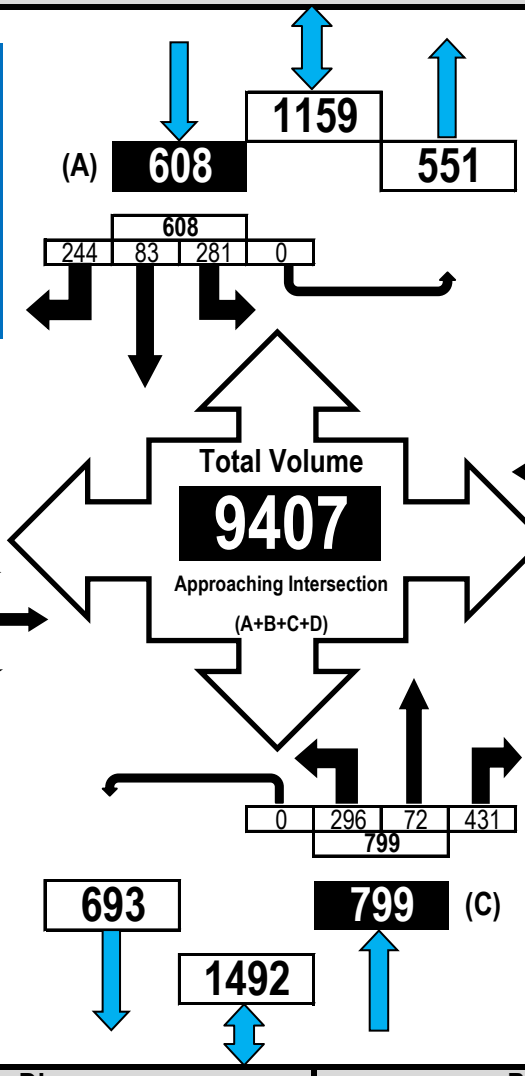
Bathgate Drive/Wanaki Road & Montreal Road — Ottawa, ON

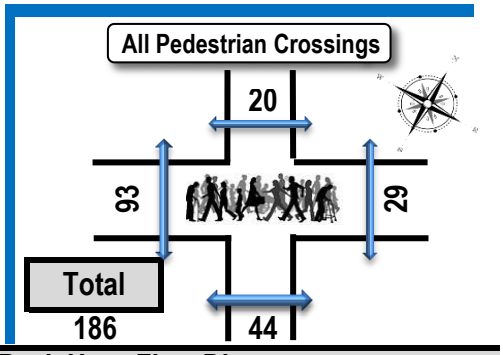
All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, June 28, 2022
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ▶ 13

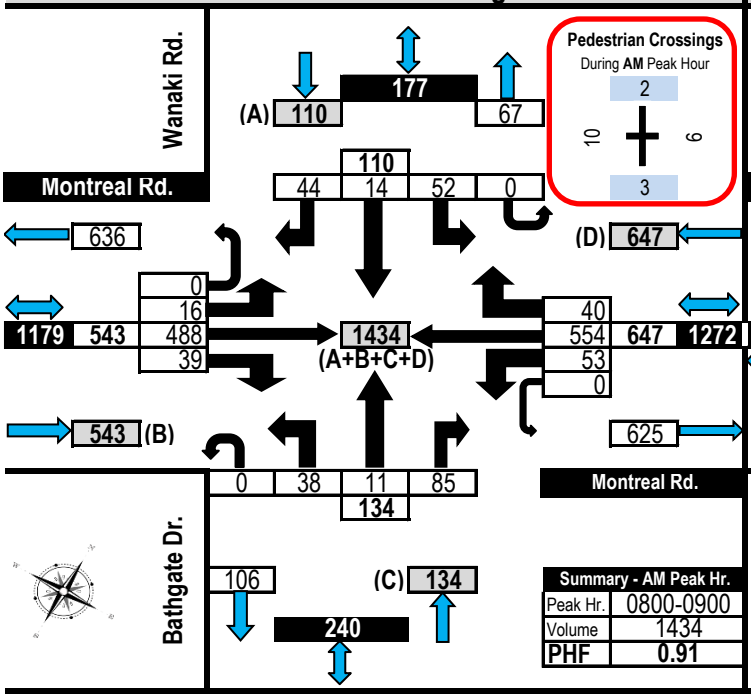
Wanaki Rd. / Montreal Rd. / Bathgate Dr.







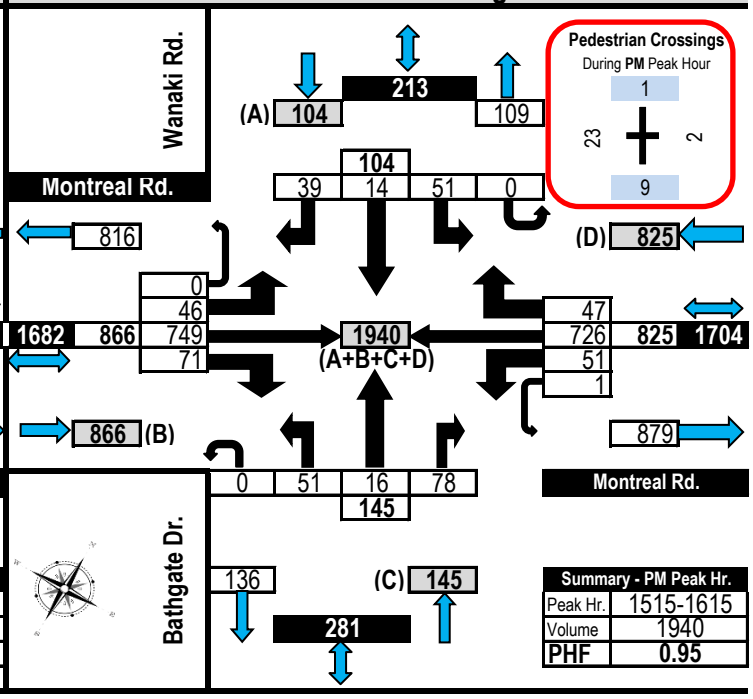
AM Peak Hour Flow Diagram



Summary - AM Peak Hr.

Peak Hr.	0800-0900
Volume	1434
PHF	0.91

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.

Peak Hr.	1515-1615
Volume	1940
PHF	0.95

ACCURATE TRUSTED TRAFFIC DATA

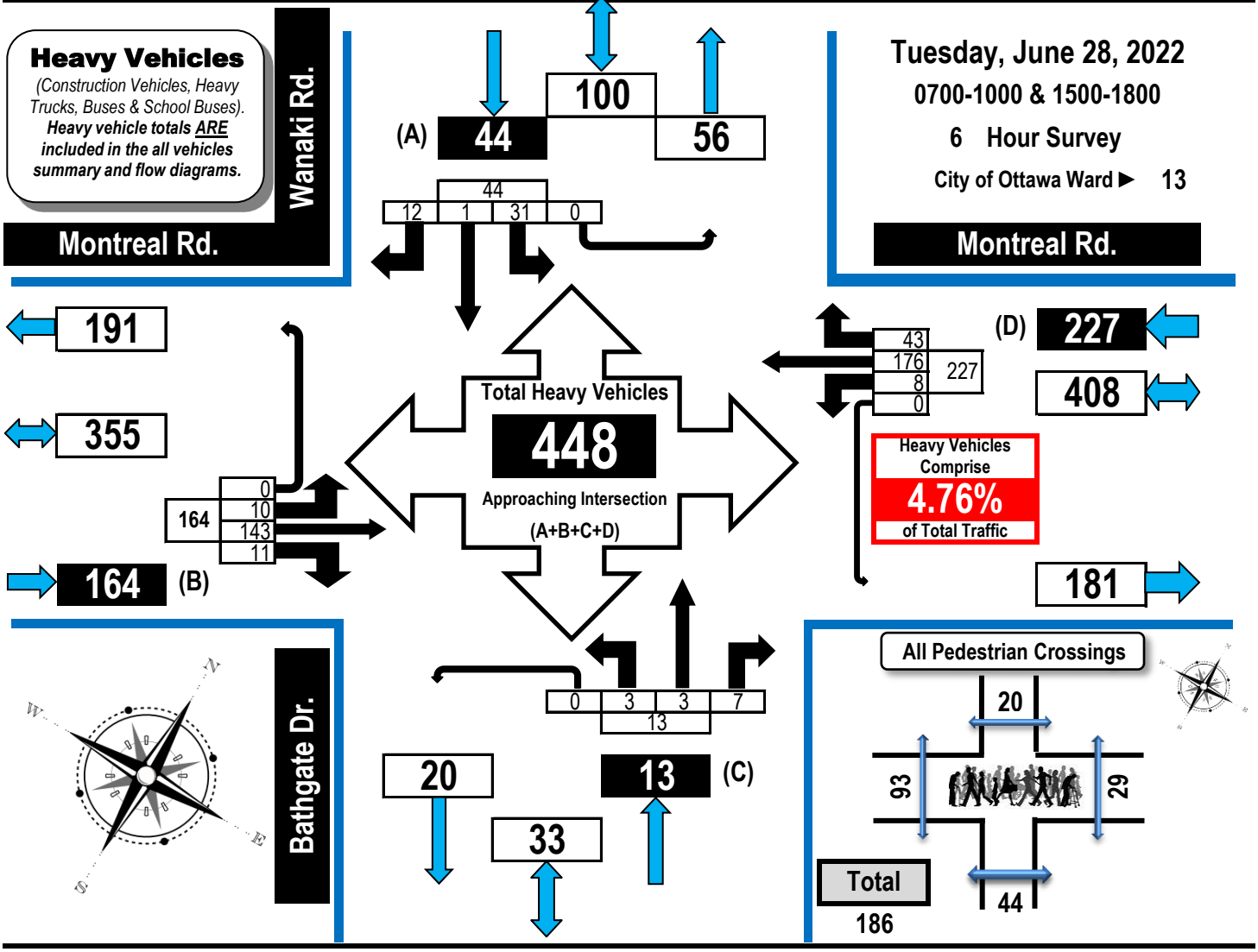
Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram



Bathgate Drive/Wanaki Road & Montreal Road — Ottawa, ON

Heavy Vehicles
(Construction Vehicles, Heavy Trucks, Buses & School Buses).
Heavy vehicle totals ARE included in the all vehicles summary and flow diagrams.

Tuesday, June 28, 2022
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City of Ottawa Ward ► 13

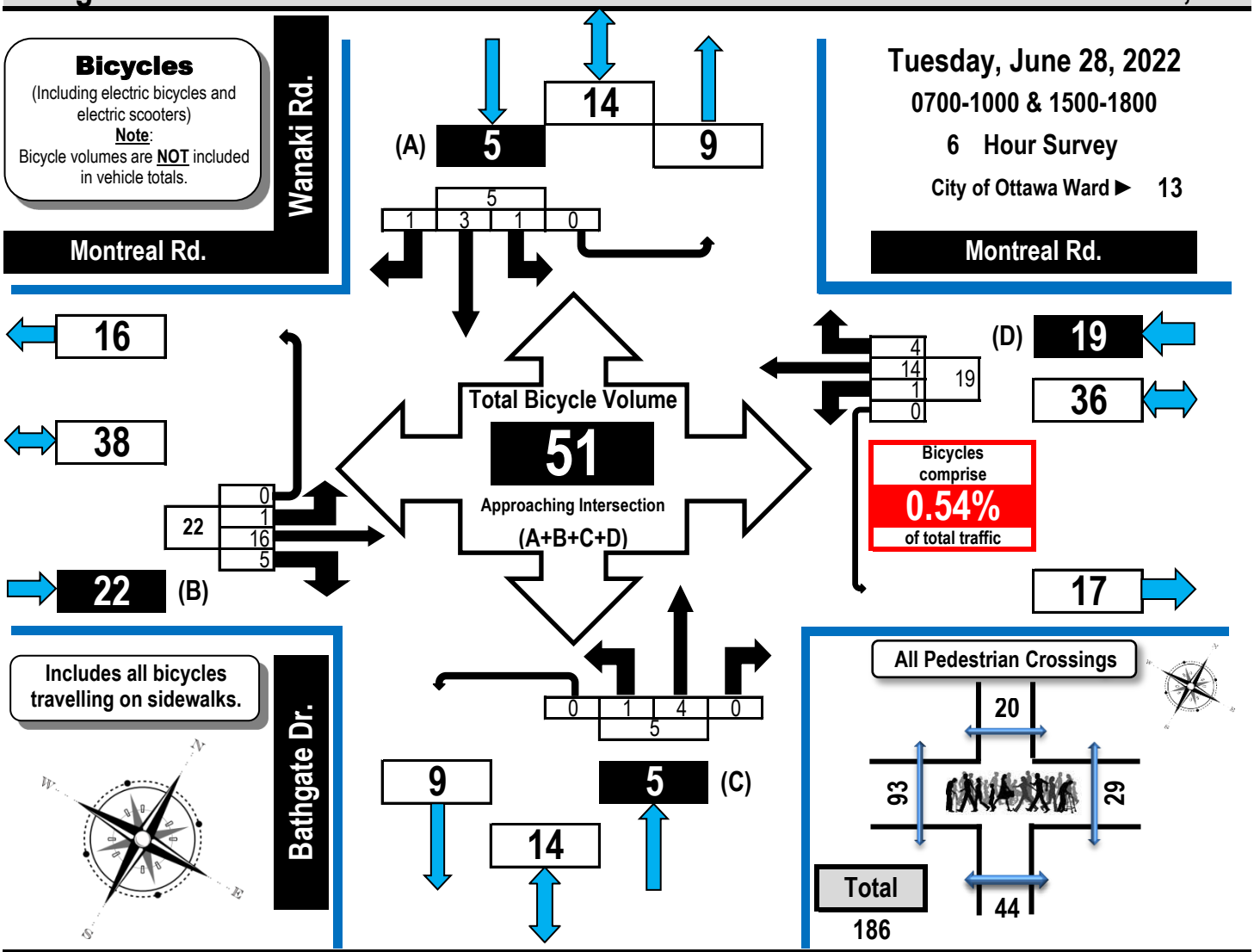


	Montreal Rd. Eastbound					Montreal Rd. Westbound					Bathgate Dr. Northbound					Wanaki Rd. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	17	0	0	17	1	41	13	0	55	1	0	0	0	1	4	0	0	0	4	77
0800-0900	3	31	3	0	37	2	36	10	0	48	1	1	2	0	4	7	0	4	0	11	100
0900-1000	1	36	3	0	40	3	37	13	0	53	1	0	1	0	2	8	0	3	0	11	106
1500-1600	2	31	3	0	36	0	37	3	0	40	0	0	2	0	2	4	0	1	0	5	83
1600-1700	2	19	2	0	23	1	18	3	0	22	0	2	1	0	3	5	1	4	0	10	58
1700-1800	2	9	0	0	11	1	7	1	0	9	0	0	1	0	1	3	0	0	0	3	24
Totals	**10**	**143**	**11**	**0**	**164**	**8**	**176**	**43**	**0**	**227**	**3**	**3**	**7**	**0**	**13**	**31**	**1**	**12**	**0**	**44**	**448**

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 25.67% of the heavy vehicle traffic. The bicycle totals include 4 E-bicycles, E-motorcycles and E-scooters. The pedestrian crossing totals include 4 pedestrians with accessibility issues using either a cane, walker or wheelchair. The heavy vehicle traffic to and from Wanaki Road appears to be construction related.

Turning Movement Count
Bicycle Summary
Flow Diagram

Bathgate Drive/Wanaki Road & Montreal Road — Ottawa, ON



	Montreal Rd. Eastbound					Montreal Rd. Westbound					Bathgate Dr. Northbound					Wanaki Rd. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	1	2	0	3	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	6
0800-0900	0	5	0	0	5	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	9
0900-1000	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
1500-1600	0	1	2	0	3	0	2	1	0	3	1	1	0	0	2	0	0	0	0	0	8
1600-1700	0	2	0	0	2	0	5	3	0	8	0	3	0	0	3	0	0	1	0	1	14
1700-1800	1	5	1	0	7	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2	11
Totals	1	16	5	0	22	1	14	4	0	19	1	4	0	0	5	1	3	1	0	5	51

Comments:

OC Transpo and Para Transpo buses, private buses and school buses comprise 25.67% of the heavy vehicle traffic. The bicycle totals include 4 E-bicycles, E-motorcycles and E-scooters. The pedestrian crossing totals include 4 pedestrians with accessibility issues using either a cane, walker or wheelchair. The heavy vehicle traffic to and from Wanaki Road appears to be construction related.

ACCURATE TRUSTED TRAFFIC DATA

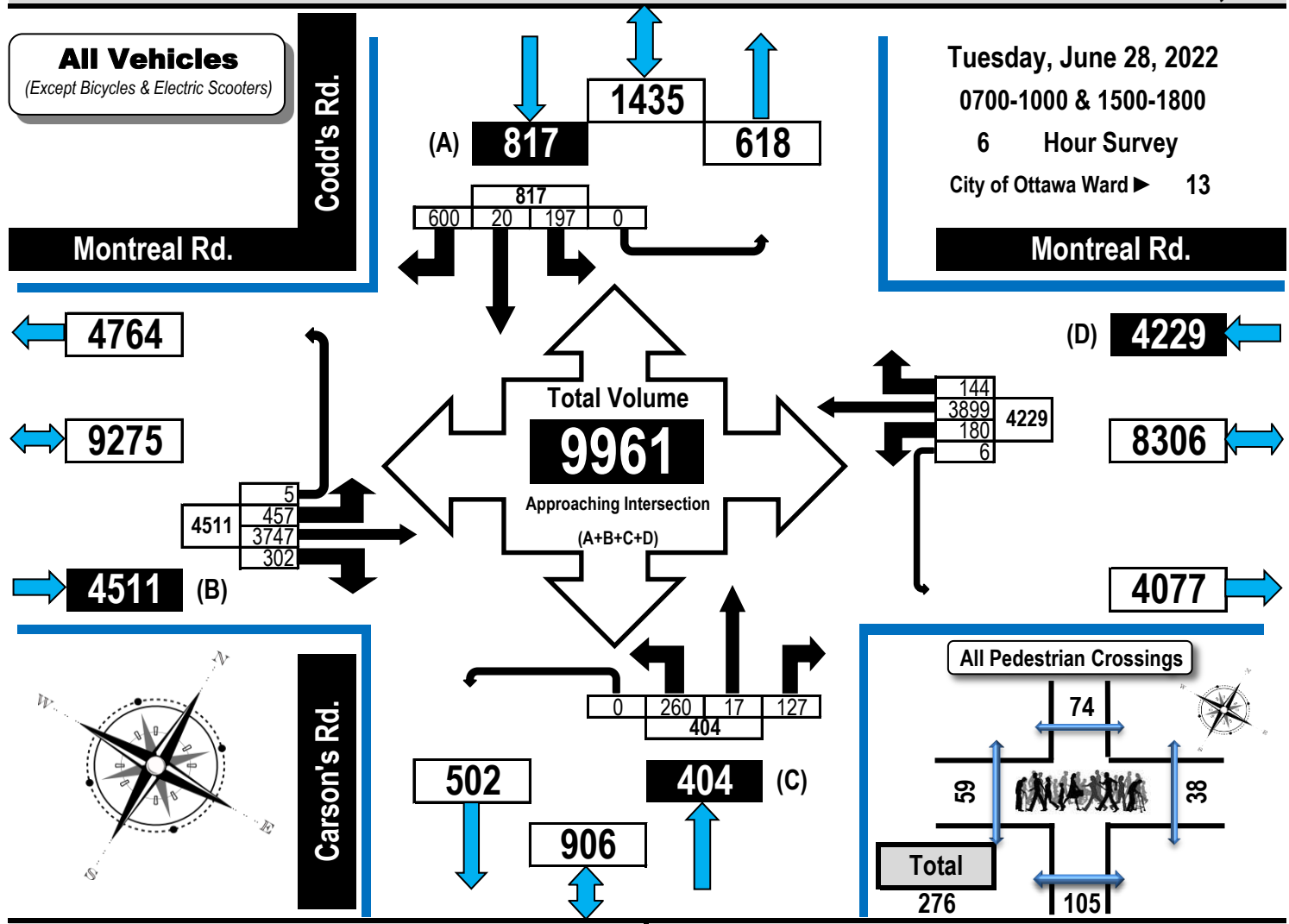
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



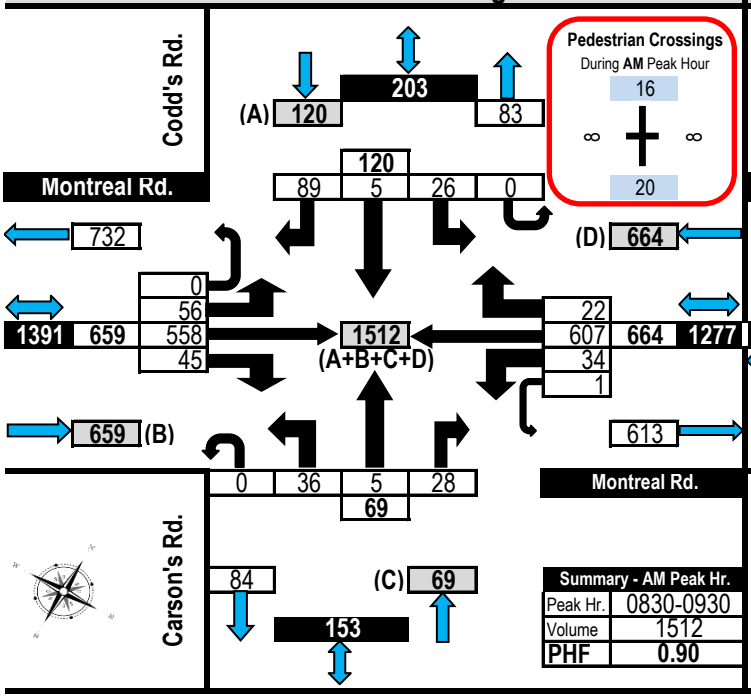
Carson's Road/Codd's Road & Montreal Road — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, June 28, 2022
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ▶ 13

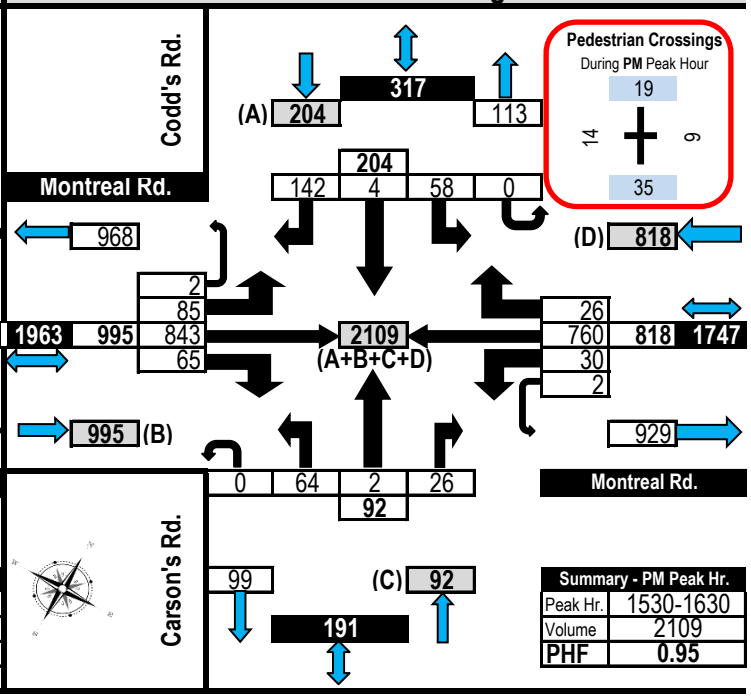


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0830-0930
Volume	1512
PHF	0.90

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1530-1630
Volume	2109
PHF	0.95

ACCURATE TRUSTED TRAFFIC DATA

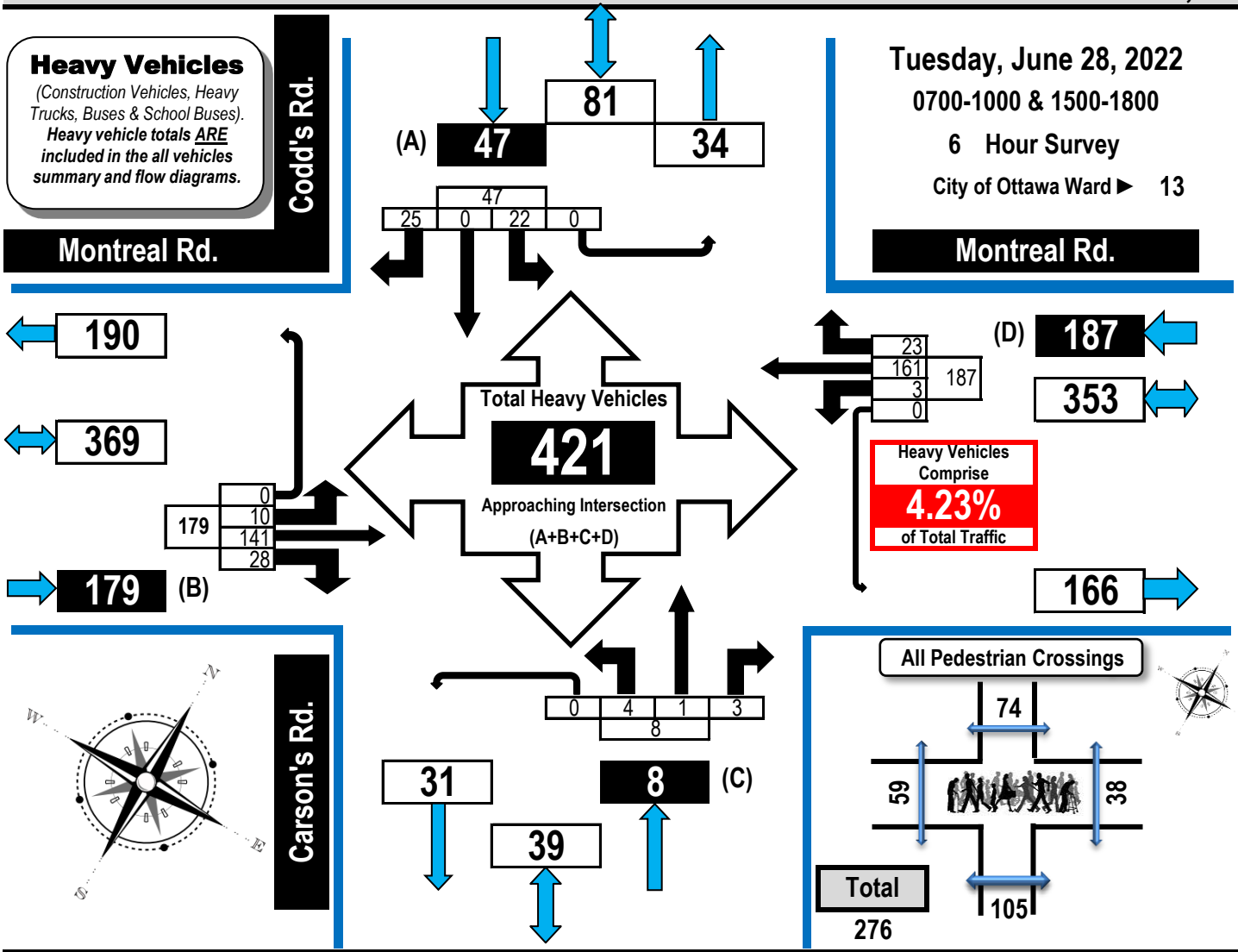
Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram



Carson's Road/Codd's Road & Montreal Road — Ottawa, ON

Heavy Vehicles
(Construction Vehicles, Heavy Trucks, Buses & School Buses).
Heavy vehicle totals ARE included in the all vehicles summary and flow diagrams.

Tuesday, June 28, 2022
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ► 13

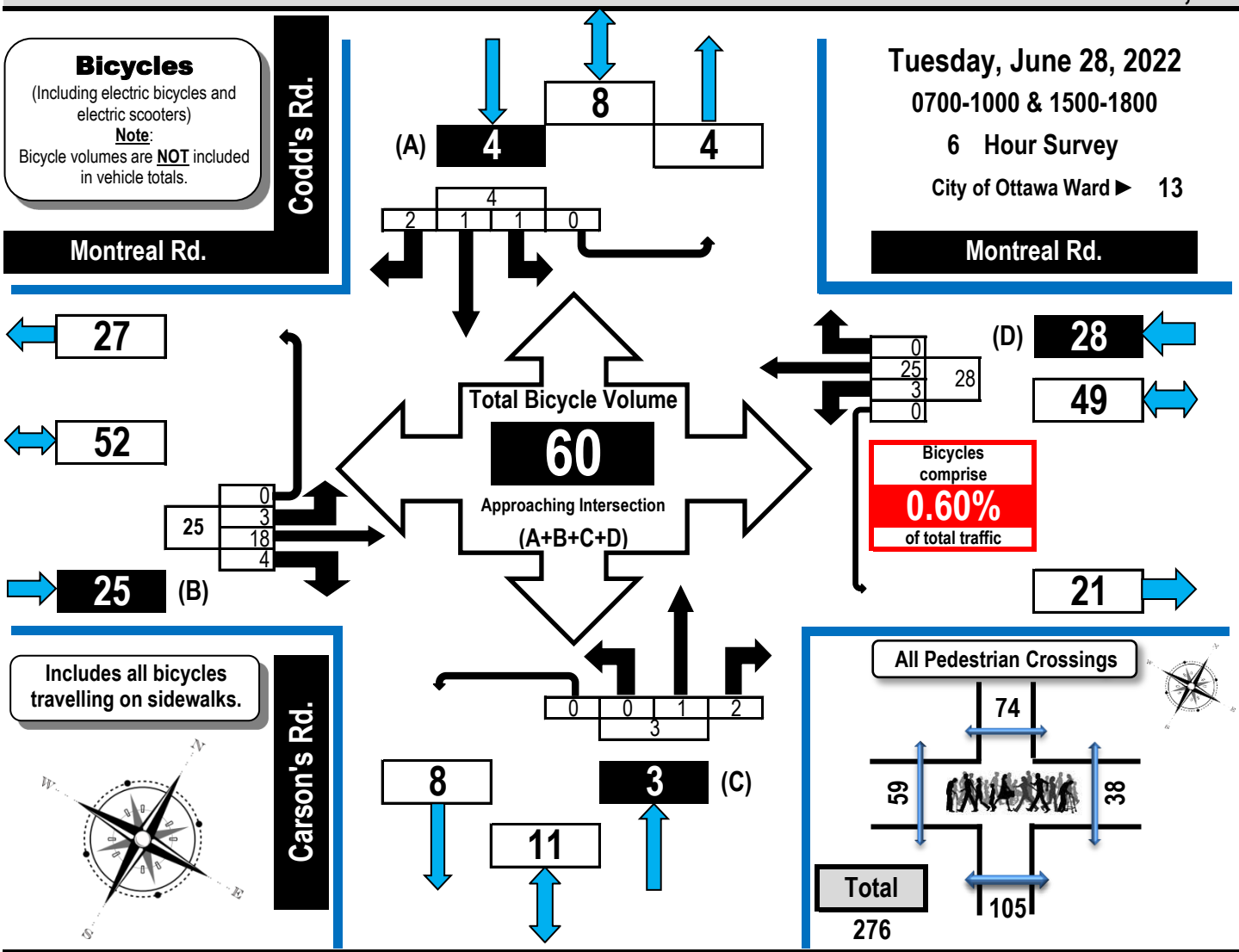


	Montreal Rd. Eastbound					Montreal Rd. Westbound					Carson's Rd. Northbound					Codd's Rd. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	2	14	4	0	20	1	37	6	0	44	1	0	0	0	1	3	0	3	0	6	71
0800-0900	2	36	6	0	44	2	32	5	0	39	0	0	0	0	0	2	0	5	0	7	90
0900-1000	2	35	3	0	40	0	34	4	0	38	1	1	1	0	3	5	0	2	0	7	88
1500-1600	2	27	3	0	32	0	32	4	0	36	0	0	1	0	1	8	0	7	0	15	84
1600-1700	1	18	6	0	25	0	20	3	0	23	1	0	1	0	2	4	0	5	0	9	59
1700-1800	1	11	6	0	18	0	6	1	0	7	1	0	0	0	1	0	0	3	0	3	29
Totals	10	141	28	0	179	3	161	23	0	187	4	1	3	0	8	22	0	25	0	47	421

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 31.59% of the heavy vehicle traffic. The bicycle totals include 7 E-bicycles and E-scooters. The pedestrian crossings totals include 16 pedestrians with accessibility issues using either a cane, walker or wheelchair.

Turning Movement Count
Bicycle Summary
Flow Diagram

Carson's Road/Codd's Road & Montreal Road — Ottawa, ON



	Montreal Rd. Eastbound					Montreal Rd. Westbound					Carson's Rd. Northbound					Codd's Rd. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	1	2	0	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6
0800-0900	0	4	3	0	7	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	13
0900-1000	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
1500-1600	0	2	0	0	2	2	3	0	0	5	0	0	1	0	1	0	0	2	0	2	10
1600-1700	2	4	0	0	6	0	11	0	0	11	0	1	0	0	1	1	0	0	0	1	19
1700-1800	0	4	1	0	5	1	1	0	0	2	0	0	1	0	1	0	0	0	0	0	8
Totals	**3**	**18**	**4**	**0**	**25**	**3**	**25**	**0**	**0**	**28**	**0**	**1**	**2**	**0**	**3**	**1**	**1**	**2**	**0**	**4**	**60**

Comments:

OC Transpo and Para Transpo buses, private buses and school buses comprise 31.59% of the heavy vehicle traffic. The bicycle totals include 7 E-bicycles and E-scooters. The pedestrian crossings totals include 16 pedestrians with accessibility issues using either a cane, walker or wheelchair.

ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



Hemlock Road & St. Laurent Boulevard — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Wednesday, January 11, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 13

St. Laurent Blvd. / Hemlock Rd.

(A) 1405 — 2631 — 1226
1405: 168 | 1180 | 57 | 0

(B) 3249 — 3236 — 6485
3249: 0 | 129 | 444 | 2676

(C) 4042 — 4159 — 8201
4042: 0 | 2679 | 1051 | 312

(D) 738 — 1551 — 813
738: 46 | 389 | 303 | 0

Total Volume
9434
Approaching Intersection
(A+B+C+D)

All Pedestrian Crossings
86 | 56 | 148 | Total 316 | 26

AM Peak Hour Flow Diagram

(A) 232 — 390 — 158
232: 28 | 193 | 11 | 0
Pedestrian Crossings During AM Peak Hour: 19 | 13 | 28 | 3

(B) 480 — 481 — 961
480: 0 | 16 | 54 | 410

(C) 517 — 650 — 1167
517: 0 | 359 | 136 | 22

(D) 147 — 87
147: 6 | 94 | 47 | 0

1376 (A+B+C+D)
1376: 480 | 54 | 410 | 147 | 234

Summary - AM Peak Hr.	
Peak Hr.	0800-0900
Volume	1376
PHF	0.95

PM Peak Hour Flow Diagram

(A) 223 — 453 — 230
223: 29 | 183 | 11 | 0
Pedestrian Crossings During PM Peak Hour: 15 | 8 | 28 | 7

(B) 520 — 535 — 1055
520: 0 | 31 | 104 | 385

(C) 713 — 613 — 1326
713: 0 | 459 | 186 | 68

(D) 105 — 183
105: 13 | 47 | 45 | 0

1561 (A+B+C+D)
1561: 520 | 104 | 385 | 105 | 288

Summary - PM Peak Hr.	
Peak Hr.	1545-1645
Volume	1561
PHF	0.94

ACCURATE TRUSTED TRAFFIC DATA

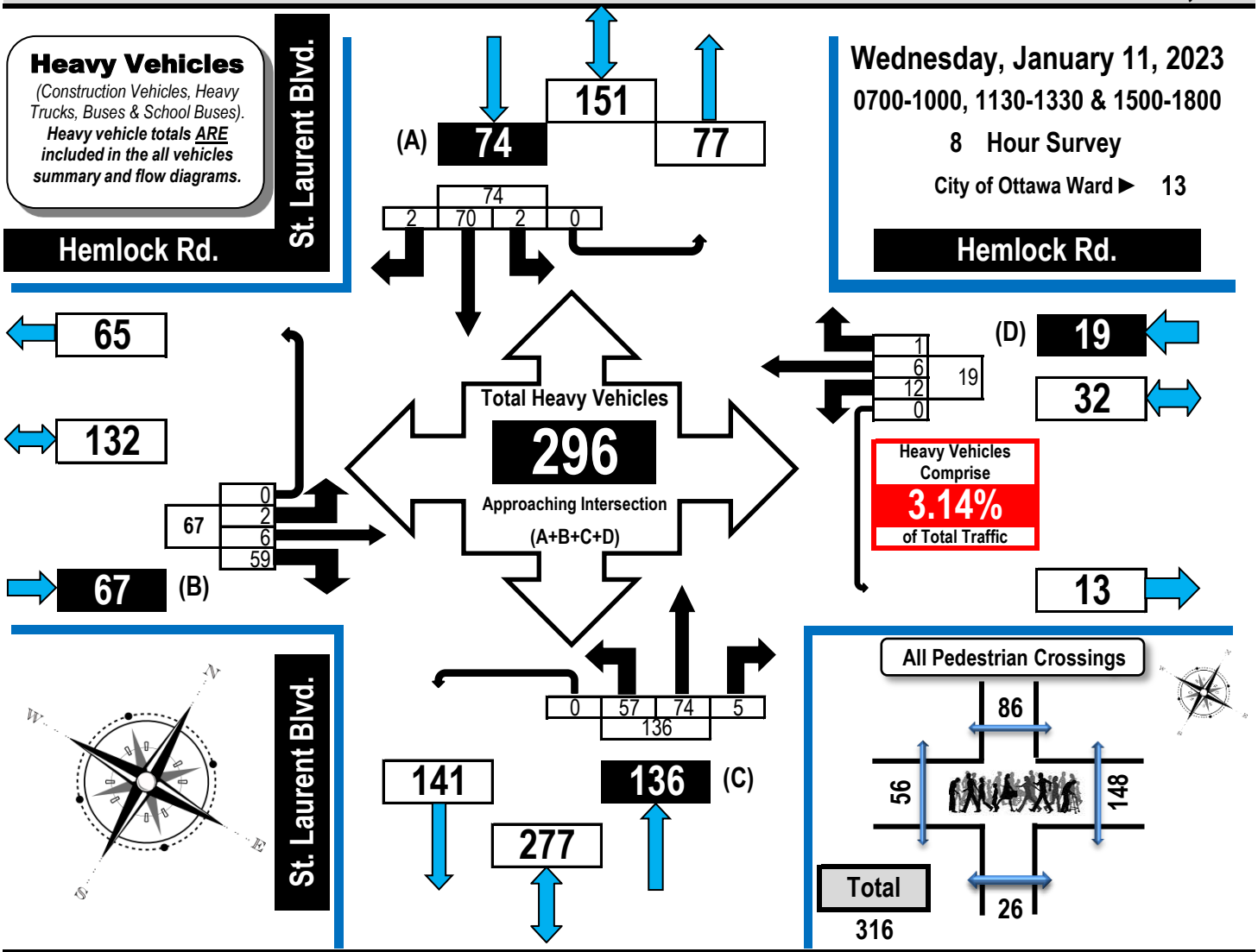
Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram



Hemlock Road & St. Laurent Boulevard — Ottawa, ON

Heavy Vehicles
(Construction Vehicles, Heavy Trucks, Buses & School Buses).
Heavy vehicle totals ARE included in the all vehicles summary and flow diagrams.

Wednesday, January 11, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 13



	Hemlock Rd.					Hemlock Rd.					St. Laurent Blvd.					St. Laurent Blvd.					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	1	7	0	8	1	0	0	0	1	6	10	0	0	16	0	6	0	0	6	31
0800-0900	1	1	10	0	12	3	2	1	0	6	12	15	0	0	27	1	9	0	0	10	55
0900-1000	1	2	8	0	11	2	1	0	0	3	11	10	0	0	21	0	7	1	0	8	43
1130-1230	0	0	11	0	11	3	1	0	0	4	8	11	1	0	20	1	4	1	0	6	41
1230-1330	0	0	6	0	6	0	0	0	0	0	6	7	2	0	15	0	8	0	0	8	29
1500-1600	0	1	9	0	10	2	0	0	0	2	6	11	0	0	17	0	16	0	0	16	45
1600-1700	0	1	6	0	7	1	1	0	0	2	5	5	0	0	10	0	11	0	0	11	30
1700-1800	0	0	2	0	2	0	1	0	0	1	3	5	2	0	10	0	9	0	0	9	22
Totals	2	6	59	0	67	12	6	1	0	19	57	74	5	0	136	2	70	2	0	74	296

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 54.39% of the heavy vehicle traffic. The pedestrian crossing totals include 3 with mobility issues using a cane, walker or wheelchair.

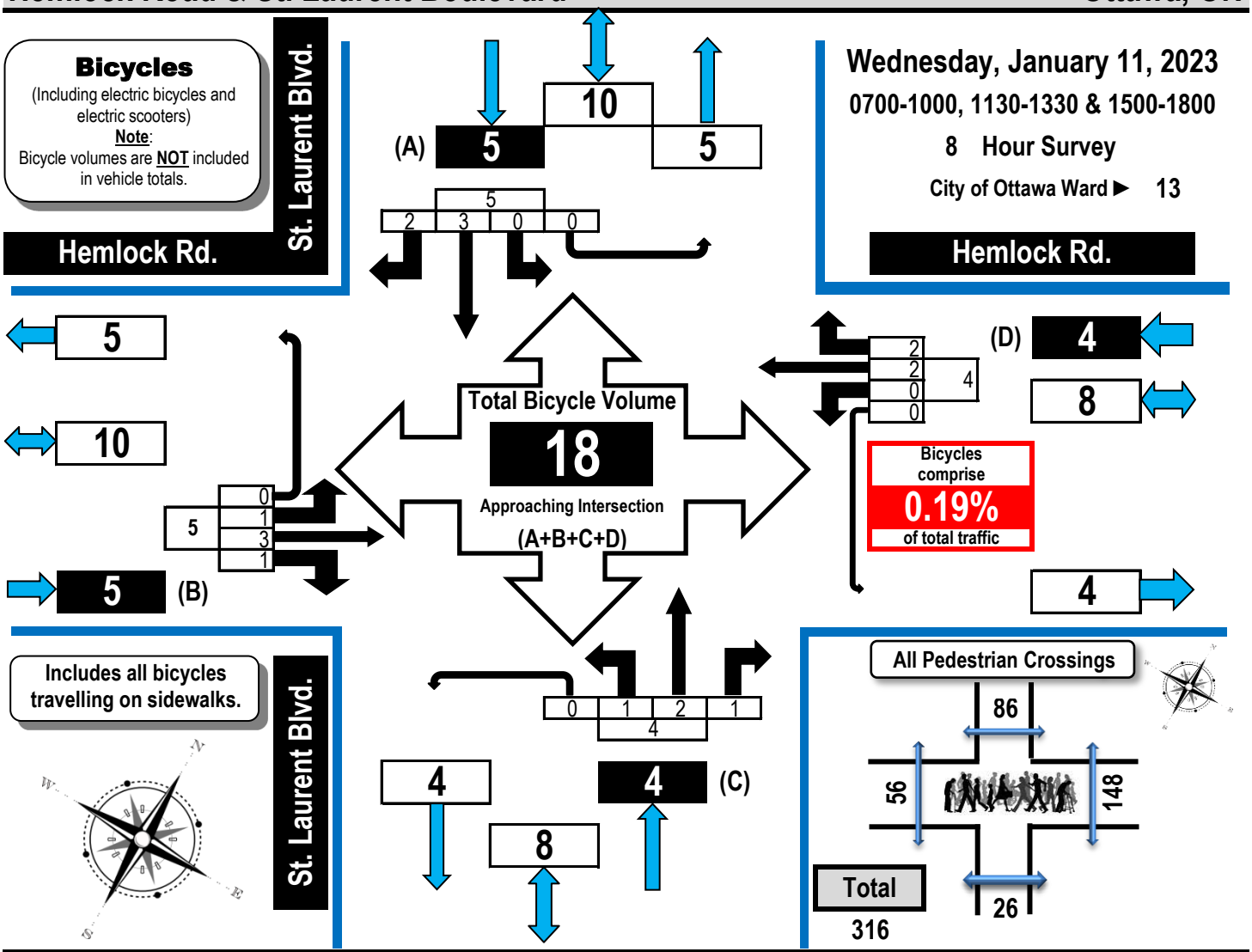
ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Bicycle Summary
Flow Diagram

Hemlock Road & St. Laurent Boulevard — Ottawa, ON

Bicycles
(Including electric bicycles and electric scooters)
Note:
Bicycle volumes are NOT included in vehicle totals.

Wednesday, January 11, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 13



Includes all bicycles travelling on sidewalks.

	Hemlock Rd. Eastbound					Hemlock Rd. Westbound					St. Laurent Blvd. Northbound					St. Laurent Blvd. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	0	0	0	0	0	2	0	0	2	1	1	0	0	2	0	1	0	0	1	5
0800-0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
0900-1000	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	2
1130-1230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1230-1330	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
1500-1600	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1600-1700	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	3
1700-1800	1	0	1	0	2	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	4
Totals	1	3	1	0	5	0	2	2	0	4	1	2	1	0	4	0	3	2	0	5	18

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 54.39% of the heavy vehicle traffic. The pedestrian crossing totals include 3 with mobility issues using a cane, walker or wheelchair.

ACCURATE TRUSTED TRAFFIC DATA

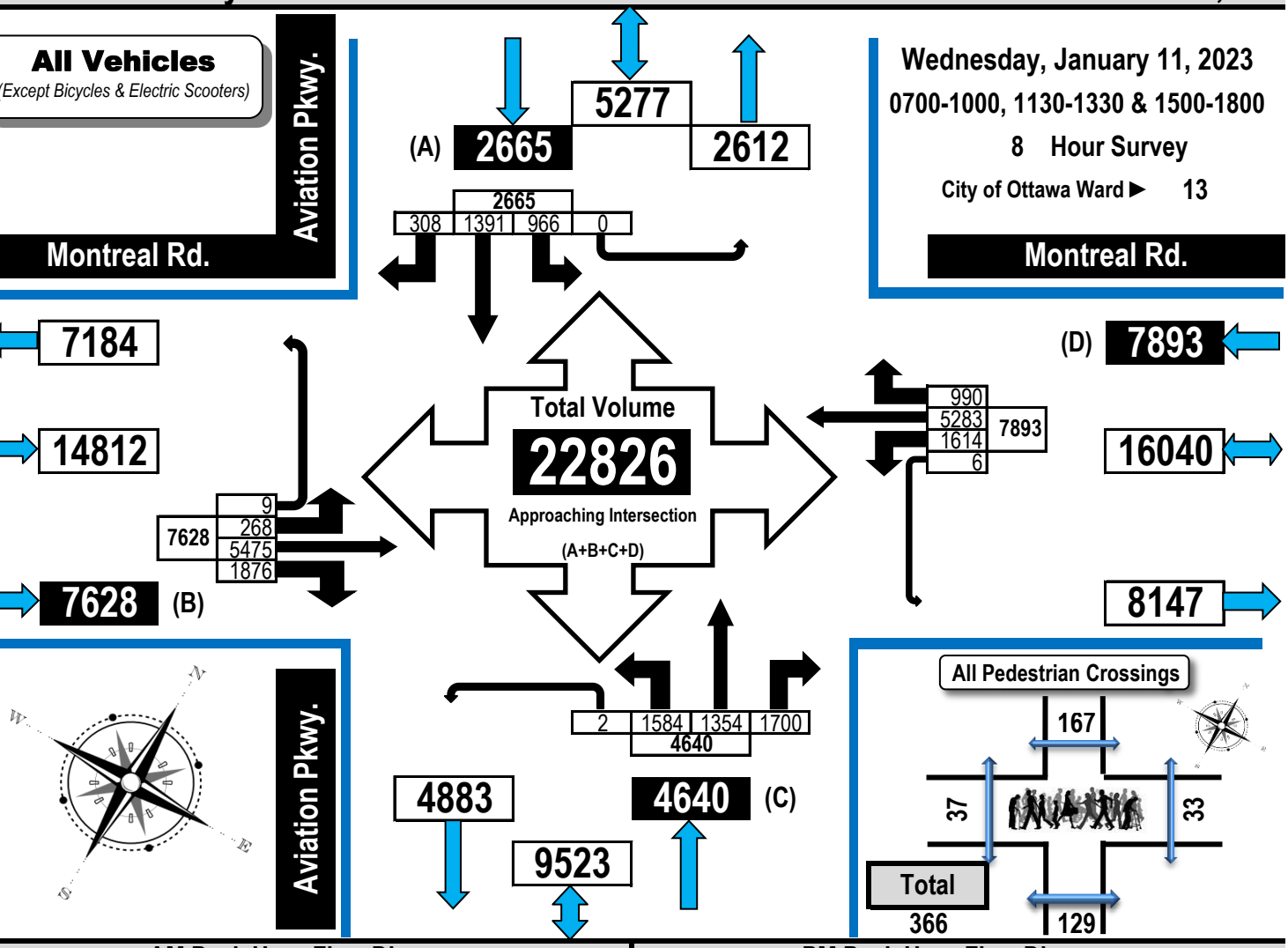
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles



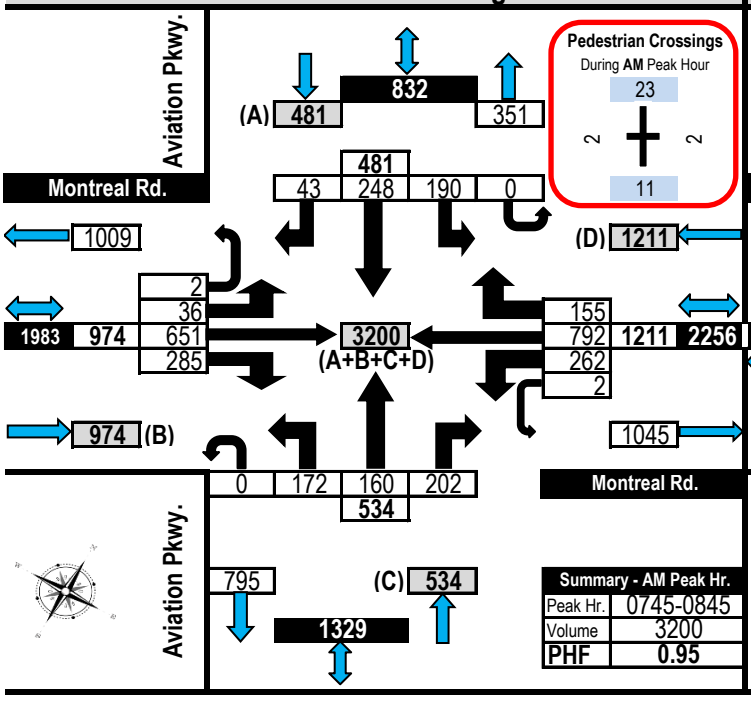
Aviation Parkway & Montreal Road — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Wednesday, January 11, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 13

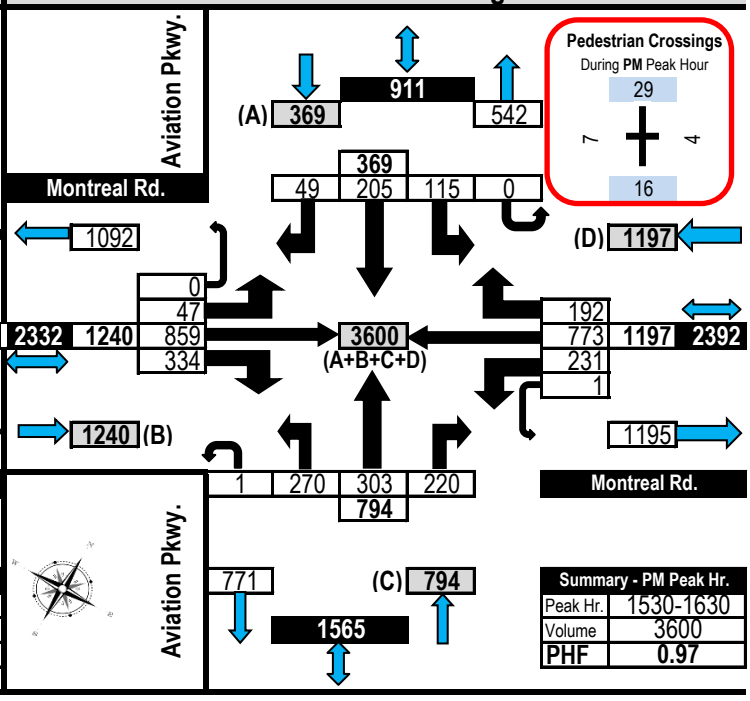


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0745-0845
Volume	3200
PHF	0.95

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1530-1630
Volume	3600
PHF	0.97

ACCURATE TRUSTED TRAFFIC DATA

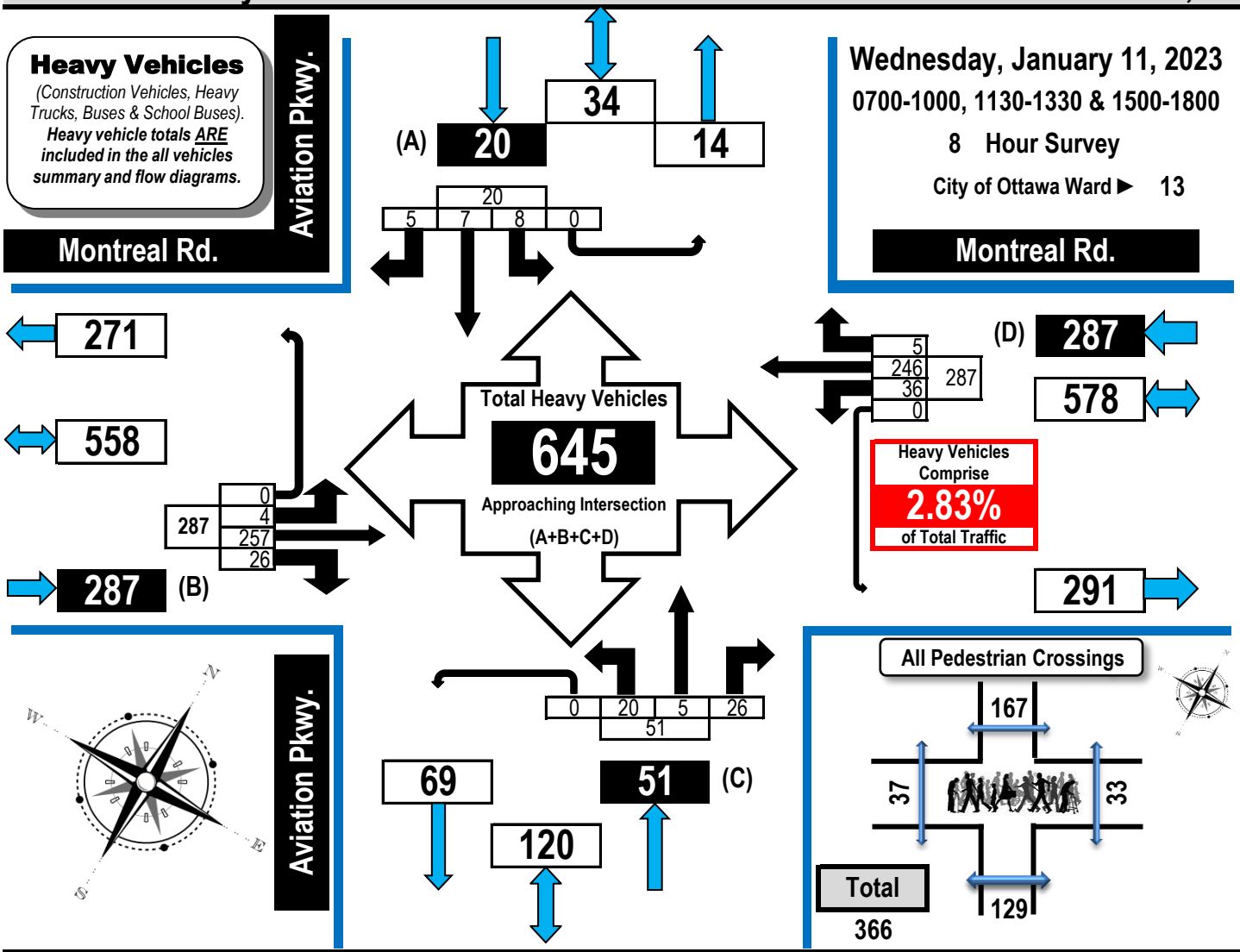
Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram



Aviation Parkway & Montreal Road — Ottawa, ON

Heavy Vehicles
(Construction Vehicles, Heavy Trucks, Buses & School Buses).
Heavy vehicle totals ARE included in the all vehicles summary and flow diagrams.

Wednesday, January 11, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 13



	Montreal Rd. Eastbound					Montreal Rd. Westbound					Aviation Pkwy. Northbound					Aviation Pkwy. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	40	4	0	44	6	31	0	0	37	3	0	8	0	11	2	1	0	0	3	95
0800-0900	0	33	6	0	39	6	48	0	0	54	2	1	1	0	4	0	2	1	0	3	100
0900-1000	1	33	3	0	37	2	28	1	0	31	6	4	8	0	18	2	1	3	0	6	92
1130-1230	1	38	3	0	42	5	26	0	0	31	5	0	2	0	7	1	0	0	0	1	81
1230-1330	1	29	1	0	31	2	23	0	0	25	2	0	2	0	4	0	0	1	0	1	61
1500-1600	0	26	2	0	28	6	39	3	0	48	1	0	2	0	3	1	1	0	0	2	81
1600-1700	1	32	4	0	37	5	28	0	0	33	1	0	2	0	3	0	1	0	0	1	74
1700-1800	0	26	3	0	29	4	23	1	0	28	0	0	1	0	1	2	1	0	0	3	61
Totals	**4**	**257**	**26**	**0**	**287**	**36**	**246**	**5**	**0**	**287**	**20**	**5**	**26**	**0**	**51**	**8**	**7**	**5**	**0**	**20**	**645**

Comments:
Para Transpo, OC Transpo, private buses and school buses comprise 59.38% of the heavy vehicle traffic. The bicycle totals include 2 E-scooters (stand-up type). The pedestrian crossings totals include 8 with mobility issues using either a cane, walker or wheelchair.

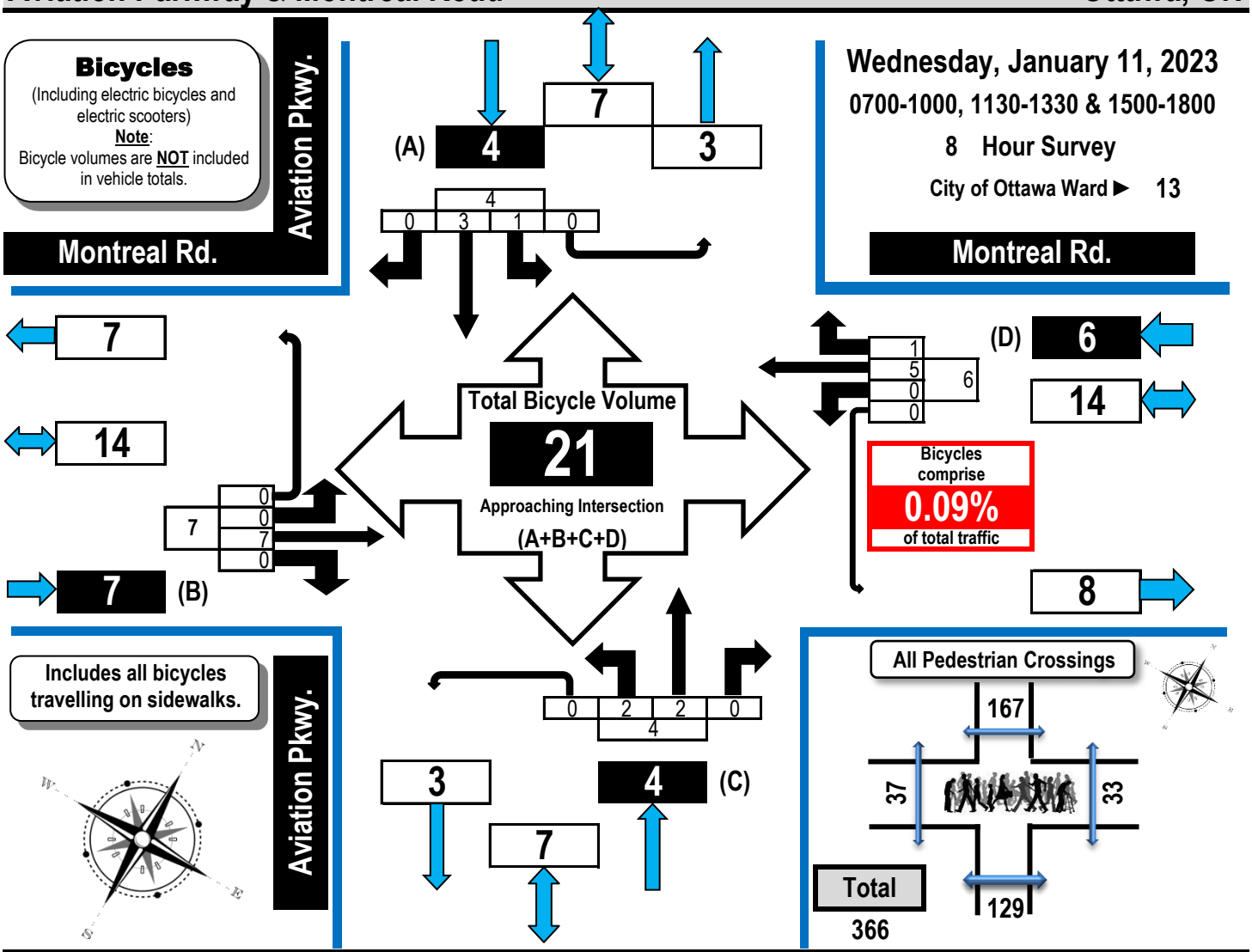
ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Bicycle Summary
Flow Diagram

Aviation Parkway & Montreal Road — Ottawa, ON

Bicycles
(Including electric bicycles and electric scooters)
Note:
Bicycle volumes are **NOT** included in vehicle totals.

Wednesday, January 11, 2023
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 13



	Montreal Rd. Eastbound					Montreal Rd. Westbound					Aviation Pkwy. Northbound					Aviation Pkwy. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	2	0	0	2	0	2	0	0	2	2	0	0	0	2	0	1	0	0	1	7
0800-0900	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	4
0900-1000	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
1130-1230	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
1230-1330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
1500-1600	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
1600-1700	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	4
1700-1800	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Totals	**0**	**7**	**0**	**0**	**7**	**0**	**5**	**1**	**0**	**6**	**2**	**2**	**0**	**0**	**4**	**1**	**3**	**0**	**0**	**4**	**21**

Comments:

Para Transpo, OC Transpo, private buses and school buses comprise 59.38% of the heavy vehicle traffic. The bicycle totals include 2 E-scooters (stand-up type). The pedestrian crossings totals include 8 with mobility issues using either a cane, walker or wheelchair.

Appendix E – Intersection Capacity Analyses

Existing Traffic

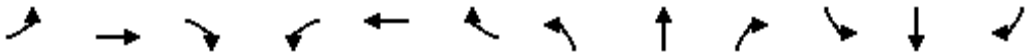
Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	63	5	0	1	55
Future Vol, veh/h	0	63	5	0	1	55
Conflicting Peds, #/hr	0	0	0	0	1	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	70	6	0	1	61

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	77	14
Stage 1	-	-	-	-	6	-
Stage 2	-	-	-	-	71	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	931	1072
Stage 1	0	-	-	0	1022	-
Stage 2	0	-	-	0	957	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	931	1063
Mov Cap-2 Maneuver	-	-	-	-	931	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	1060
HCM Lane V/C Ratio	-	-	0.059
HCM Control Delay (s)	-	-	8.6
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.2



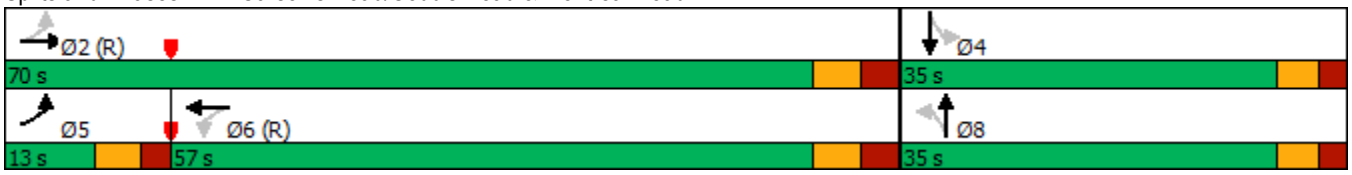
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	681	49	37	1024	24	39	5	31	28	4	97
Future Volume (vph)	61	681	49	37	1024	24	39	5	31	28	4	97
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	1.00		0.99	0.98		0.99	0.98	
Frt		0.990			0.997			0.872			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3175	0	1679	3177	0	1729	1466	0	1662	1481	0
Flt Permitted	0.193			0.346			0.627			0.731		
Satd. Flow (perm)	338	3175	0	604	3177	0	1133	1466	0	1269	1481	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			3			34			108	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	68	757	54	41	1138	27	43	6	34	31	4	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	811	0	41	1165	0	43	40	0	31	112	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	13.0	70.0		57.0	57.0		35.0	35.0		35.0	35.0	
Total Split (%)	12.4%	66.7%		54.3%	54.3%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	7.0	63.1		50.1	50.1		29.4	29.4		29.4	29.4	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	84.3	83.4		73.2	73.2		9.1	9.1		9.1	9.1	
Actuated g/C Ratio	0.80	0.79		0.70	0.70		0.09	0.09		0.09	0.09	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.32		0.10	0.53		0.44	0.25		0.28	0.49	
Control Delay	2.9	2.5		7.6	9.7		58.2	21.0		50.0	17.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	2.9	2.5		7.6	9.7		58.2	21.0		50.0	17.0	
LOS	A	A		A	A		E	C		D	B	
Approach Delay		2.5			9.6			40.3			24.2	
Approach LOS		A			A			D			C	
Queue Length 50th (m)	2.3	15.5		2.6	56.6		8.5	1.2		6.1	0.8	
Queue Length 95th (m)	m3.3	17.2		7.7	85.7		18.8	10.8		14.9	16.4	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	360	2523		421	2216		317	434		355	492	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.19	0.32		0.10	0.53		0.14	0.09		0.09	0.23	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 44 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 8.9 Intersection LOS: A
Intersection Capacity Utilization 62.7% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road



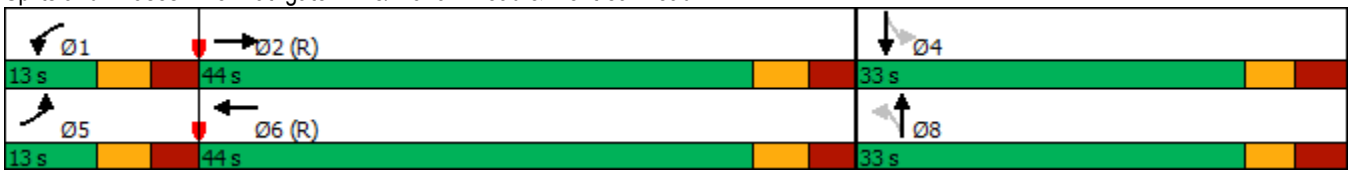
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	680	43	58	998	44	41	12	93	57	15	48
Future Volume (vph)	17	680	43	58	998	44	41	12	93	57	15	48
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.98		0.99	0.98	
Frt		0.991			0.994			0.867			0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3224	0	1662	3214	0	1679	1501	0	1530	1487	0
Flt Permitted	0.950			0.950			0.711			0.682		
Satd. Flow (perm)	1451	3224	0	1660	3214	0	1247	1501	0	1086	1487	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			6			103			53	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	19	756	48	64	1109	49	46	13	103	63	17	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	804	0	64	1158	0	46	116	0	63	70	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	44.0		13.0	44.0		33.0	33.0		33.0	33.0	
Total Split (%)	14.4%	48.9%		14.4%	48.9%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	6.1	37.1		6.1	37.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	6.8	56.1		9.0	63.5		10.6	10.6		10.6	10.6	
Actuated g/C Ratio	0.08	0.62		0.10	0.71		0.12	0.12		0.12	0.12	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.40		0.39	0.51		0.32	0.43		0.50	0.32	
Control Delay	42.0	12.8		43.9	10.9		40.4	14.4		49.1	17.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.0	12.8		43.9	10.9		40.4	14.4		49.1	17.7	
LOS	D	B		D	B		D	B		D	B	
Approach Delay		13.5			12.7			21.8			32.6	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	3.2	40.2		10.6	36.8		7.4	2.0		10.4	2.7	
Queue Length 95th (m)	9.6	67.0		21.8	102.3		16.5	15.8		21.5	13.5	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	112	2013		167	2268		361	508		314	468	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.40		0.38	0.51		0.13	0.23		0.20	0.15	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 30 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 14.7 Intersection LOS: B
Intersection Capacity Utilization 63.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	54	410	47	94	6	359	136	22	11	193	28
Future Volume (vph)	16	54	410	47	94	6	359	136	22	11	193	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95			0.99	0.99		0.97	0.98			0.99	
Frt			0.850		0.991			0.979			0.984	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1631	1784	1517	1631	1761	0	1679	1598	0	0	1692	0
Flt Permitted	0.685			0.718			0.524				0.986	
Satd. Flow (perm)	1113	1784	1517	1222	1761	0	902	1598	0	0	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			456		5			16			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	38		6	6		38	26		56	56		26
Confl. Bikes (#/hr)												9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	2%	2%	6%	2%	0%	3%	11%	0%	9%	5%	0%
Adj. Flow (vph)	18	60	456	52	104	7	399	151	24	12	214	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	60	456	52	111	0	399	175	0	0	257	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	9.8	9.8	13.1	9.9	9.9		56.6	57.7			37.5	
Actuated g/C Ratio	0.13	0.13	0.17	0.13	0.13		0.75	0.76			0.49	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.13	0.26	0.71	0.33	0.47		0.50	0.14			0.31	
Control Delay	29.4	31.2	9.7	34.3	35.1		6.6	3.9			15.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	29.4	31.2	9.7	34.3	35.1		6.6	3.9			15.6	
LOS	C	C	A	C	D		A	A			B	
Approach Delay		12.8			34.9			5.8			15.6	
Approach LOS		B			C			A			B	
Queue Length 50th (m)	2.3	7.9	0.0	6.9	14.3		17.4	5.9			21.7	
Queue Length 95th (m)	7.4	17.0	22.2	15.9	27.0		35.3	14.0			46.4	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	337	540	647	370	537		811	1219			828	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.05	0.11	0.70	0.14	0.21		0.49	0.14			0.31	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 29 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 13.0 Intersection LOS: B
Intersection Capacity Utilization 68.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road



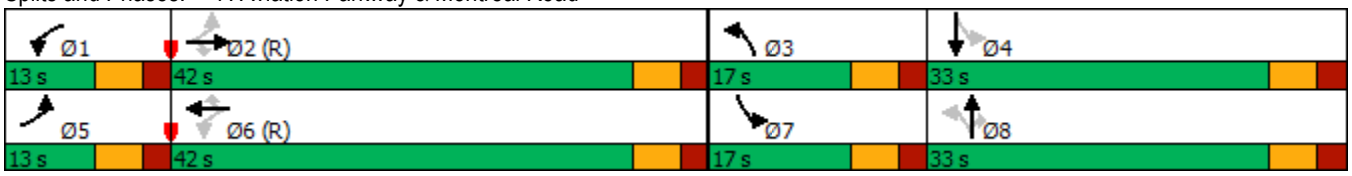
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	651	285	262	792	155	172	160	202	190	248	43
Future Volume (vph)	36	651	285	262	792	155	172	160	202	190	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.90	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	1662	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.271			0.185			0.277			0.556		
Satd. Flow (perm)	485	3232	1431	321	3262	1385	498	1820	1521	1008	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			215			156			224		8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	40	723	317	291	880	172	191	178	224	211	276	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	723	317	291	880	172	191	178	224	211	324	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	42.0	42.0	13.0	42.0	42.0	17.0	33.0	33.0	17.0	33.0	
Total Split (%)	12.4%	40.0%	40.0%	12.4%	40.0%	40.0%	16.2%	31.4%	31.4%	16.2%	31.4%	
Maximum Green (s)	7.1	36.1	36.1	7.1	36.1	36.1	11.1	26.8	26.8	11.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	38.8	32.3	32.3	50.1	45.2	45.2	34.0	22.5	22.5	34.7	22.9	
Actuated g/C Ratio	0.37	0.31	0.31	0.48	0.43	0.43	0.32	0.21	0.21	0.33	0.22	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.16	0.73	0.54	0.85	0.63	0.25	0.66	0.46	0.45	0.51	0.83	
Control Delay	16.8	36.8	12.8	52.3	33.6	14.8	33.7	38.9	7.3	27.1	55.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.8	36.8	12.8	52.3	33.6	14.8	33.7	38.9	7.3	27.1	55.8	
LOS	B	D	B	D	C	B	C	D	A	C	E	
Approach Delay		29.0			35.3			25.3			44.5	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	4.2	66.8	15.0	~53.0	97.1	11.6	25.5	31.3	0.0	28.5	61.3	
Queue Length 95th (m)	10.2	85.1	39.0	#104.5	120.7	31.9	40.9	49.6	17.6	44.9	89.4	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	266	1111	633	341	1404	685	296	464	555	415	457	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.15	0.65	0.50	0.85	0.63	0.25	0.65	0.38	0.40	0.51	0.71	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 17 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 33.1 Intersection LOS: C
Intersection Capacity Utilization 85.9% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	122	1	0	3	52
Future Vol, veh/h	0	122	1	0	3	52
Conflicting Peds, #/hr	2	0	0	2	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	136	1	0	3	58

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	137	6
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	136	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	861	1083
Stage 1	0	-	-	0	1028	-
Stage 2	0	-	-	0	895	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	861	1077
Mov Cap-2 Maneuver	-	-	-	-	861	-
Stage 1	-	-	-	-	1028	-
Stage 2	-	-	-	-	895	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	1062
HCM Lane V/C Ratio	-	-	0.058
HCM Control Delay (s)	-	-	8.6
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.2

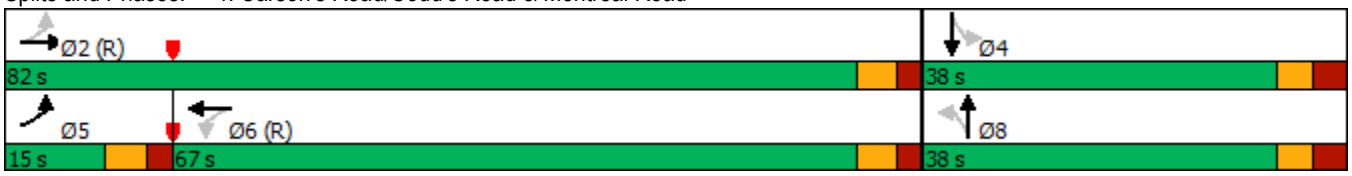
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	1020	67	31	760	27	66	2	27	60	4	146
Future Volume (vph)	88	1020	67	31	760	27	66	2	27	60	4	146
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99	1.00		0.99	0.97		0.98	0.97	
Frt		0.991			0.995			0.859			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3311	0	1729	3289	0	1695	1513	0	1517	1472	0
Flt Permitted	0.274			0.233			0.445			0.736		
Satd. Flow (perm)	473	3311	0	421	3289	0	786	1513	0	1150	1472	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			4			30			162	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	98	1133	74	34	844	30	73	2	30	67	4	162
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	1207	0	34	874	0	73	32	0	67	166	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	35.0		35.0	35.0		29.5	29.5		29.5	29.5	
Total Split (s)	15.0	82.0		67.0	67.0		38.0	38.0		38.0	38.0	
Total Split (%)	12.5%	68.3%		55.8%	55.8%		31.7%	31.7%		31.7%	31.7%	
Maximum Green (s)	9.0	76.0		61.0	61.0		31.5	31.5		31.5	31.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0		22.0	22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	93.9	93.9		80.6	80.6		13.6	13.6		13.6	13.6	
Actuated g/C Ratio	0.78	0.78		0.67	0.67		0.11	0.11		0.11	0.11	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.22	0.47		0.12	0.40		0.82	0.16		0.52	0.54	
Control Delay	2.2	1.7		4.5	4.2		106.5	17.8		62.4	14.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	2.2	1.7		4.5	4.2		106.5	17.8		62.4	14.0	
LOS	A	A		A	A		F	B		E	B	
Approach Delay		1.8			4.3			79.4			27.9	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	1.3	8.6		0.9	12.1		17.1	0.4		15.1	0.9	
Queue Length 95th (m)	m3.7	20.7		2.4	16.0		#32.6	9.2		28.2	19.5	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	459	2592		282	2210		206	419		301	505	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.47		0.12	0.40		0.35	0.08		0.22	0.33	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 8.2 Intersection LOS: A
Intersection Capacity Utilization 74.2% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road



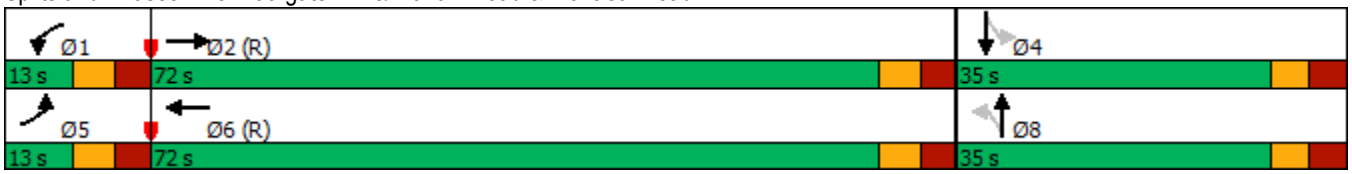
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	987	73	53	726	48	53	16	80	53	14	40
Future Volume (vph)	47	987	73	53	726	48	53	16	80	53	14	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.96		0.96	0.99	
Frt		0.990			0.991			0.875			0.890	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3309	0	1729	3223	0	1729	1485	0	1572	1513	0
Flt Permitted	0.950			0.950			0.718			0.688		
Satd. Flow (perm)	1602	3309	0	1728	3223	0	1302	1485	0	1098	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			9			89			44	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	52	1097	81	59	807	53	59	18	89	59	16	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	1178	0	59	860	0	59	107	0	59	60	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	72.0		13.0	72.0		35.0	35.0		35.0	35.0	
Total Split (%)	10.8%	60.0%		10.8%	60.0%		29.2%	29.2%		29.2%	29.2%	
Maximum Green (s)	6.1	65.1		6.1	65.1		28.1	28.1		28.1	28.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	9.5	80.3		9.8	80.5		11.8	11.8		11.8	11.8	
Actuated g/C Ratio	0.08	0.67		0.08	0.67		0.10	0.10		0.10	0.10	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.41	0.53		0.42	0.40		0.46	0.47		0.55	0.32	
Control Delay	45.0	24.4		60.5	11.0		61.3	20.9		69.0	23.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.0	24.4		60.5	11.0		61.3	20.9		69.0	23.8	
LOS	D	C		E	B		E	C		E	C	
Approach Delay		25.3			14.1			35.3			46.2	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	12.0	103.8		13.4	46.4		13.3	3.9		13.5	3.5	
Queue Length 95th (m)	25.7	126.3		26.3	73.4		25.7	19.8		26.1	15.6	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	128	2218		141	2165		304	415		257	387	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.41	0.53		0.42	0.40		0.19	0.26		0.23	0.16	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 22.8 Intersection LOS: C
Intersection Capacity Utilization 66.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	104	385	45	47	13	459	186	68	11	183	29
Future Volume (vph)	31	104	385	45	47	13	459	186	68	11	183	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95			0.98	0.99		0.98	0.97			0.99	
Frt			0.850		0.968			0.960			0.983	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1729	1802	1517	1695	1736	0	1712	1650	0	0	1677	0
Flt Permitted	0.714			0.682			0.511				0.981	
Satd. Flow (perm)	1241	1802	1517	1193	1736	0	906	1650	0	0	1643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			428		14			38			11	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	30		14	14		30	16		56	56		16
Confl. Bikes (#/hr)			27									
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	1%	2%	2%	0%	0%	1%	3%	0%	0%	7%	0%
Adj. Flow (vph)	34	116	428	50	52	14	510	207	76	12	203	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	116	428	50	66	0	510	283	0	0	247	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	10.2	10.2	16.9	10.0	10.0		56.3	57.5			33.5	
Actuated g/C Ratio	0.13	0.13	0.22	0.13	0.13		0.74	0.76			0.44	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.20	0.48	0.64	0.32	0.27		0.60	0.22			0.34	
Control Delay	30.8	36.3	7.6	33.9	26.2		8.1	4.1			18.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	30.8	36.3	7.6	33.9	26.2		8.1	4.1			18.0	
LOS	C	D	A	C	C		A	A			B	
Approach Delay		14.8			29.5			6.6			18.0	
Approach LOS		B			C			A			B	
Queue Length 50th (m)	4.4	15.6	0.0	6.6	6.8		24.6	9.8			24.4	
Queue Length 95th (m)	11.4	28.6	21.5	15.3	16.3		48.5	21.4			44.7	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	376	546	670	361	535		851	1259			731	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.09	0.21	0.64	0.14	0.12		0.60	0.22			0.34	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 19 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 12.5 Intersection LOS: B
Intersection Capacity Utilization 73.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road



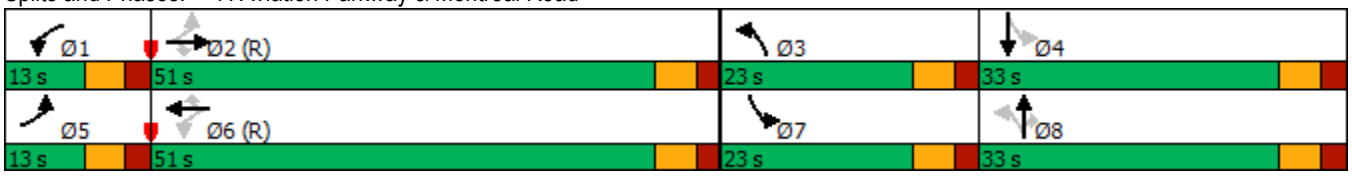
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	859	334	231	773	192	270	303	220	115	205	49
Future Volume (vph)	47	859	334	231	773	192	270	303	220	115	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.94	0.99		0.86	0.99		0.97	1.00	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	1679	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.255			0.109			0.224			0.357		
Satd. Flow (perm)	453	3325	1444	191	3293	1328	399	1820	1469	647	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			136			244		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	52	954	371	257	859	213	300	337	244	128	228	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	954	371	257	859	213	300	337	244	128	282	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	48.5	41.8	41.8	58.5	51.1	51.1	45.7	29.3	29.3	34.4	22.8	
Actuated g/C Ratio	0.40	0.35	0.35	0.49	0.43	0.43	0.38	0.24	0.24	0.29	0.19	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.20	0.82	0.60	0.98	0.61	0.33	0.87	0.76	0.45	0.45	0.83	
Control Delay	18.4	42.3	20.1	78.8	31.7	14.5	52.7	54.0	7.4	29.1	65.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.4	42.3	20.1	78.8	31.7	14.5	52.7	54.0	7.4	29.1	65.0	
LOS	B	D	C	E	C	B	D	D	A	C	E	
Approach Delay		35.4			38.1			40.7			53.8	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	6.1	103.7	35.7	~54.7	94.5	19.0	50.7	72.9	0.0	19.3	61.9	
Queue Length 95th (m)	13.2	127.3	66.1	#119.0	118.8	38.9	#93.3	#114.1	20.2	31.8	90.0	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	260	1249	652	263	1402	643	347	450	547	370	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.20	0.76	0.57	0.98	0.61	0.33	0.86	0.75	0.45	0.35	0.71	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 39.3 Intersection LOS: D
Intersection Capacity Utilization 91.6% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



Future (2027) Background Traffic

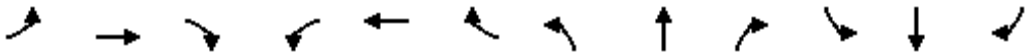
Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	134	110	0	72	55
Future Vol, veh/h	0	134	110	0	72	55
Conflicting Peds, #/hr	0	0	0	0	1	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	134	110	0	72	55

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	245	118
Stage 1	-	-	-	-	110	-
Stage 2	-	-	-	-	135	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	748	939
Stage 1	0	-	-	0	920	-
Stage 2	0	-	-	0	896	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	748	931
Mov Cap-2 Maneuver	-	-	-	-	748	-
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	896	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	818
HCM Lane V/C Ratio	-	-	0.155
HCM Control Delay (s)	-	-	10.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	689	49	37	1026	95	39	6	31	122	6	245
Future Volume (vph)	159	689	49	37	1026	95	39	6	31	122	6	245
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.98		0.99	0.98	
Frt		0.990			0.987			0.874			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3175	0	1679	3106	0	1729	1467	0	1662	1479	0
Flt Permitted	0.180			0.371			0.260			0.733		
Satd. Flow (perm)	315	3175	0	647	3106	0	471	1467	0	1272	1479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			13			31			182	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	159	689	49	37	1026	95	39	6	31	122	6	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	738	0	37	1121	0	39	37	0	122	251	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	13.0	70.0		57.0	57.0		35.0	35.0		35.0	35.0	
Total Split (%)	12.4%	66.7%		54.3%	54.3%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	7.0	63.1		50.1	50.1		29.4	29.4		29.4	29.4	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	78.0	77.1		62.2	62.2		15.4	15.4		15.4	15.4	
Actuated g/C Ratio	0.74	0.73		0.59	0.59		0.15	0.15		0.15	0.15	

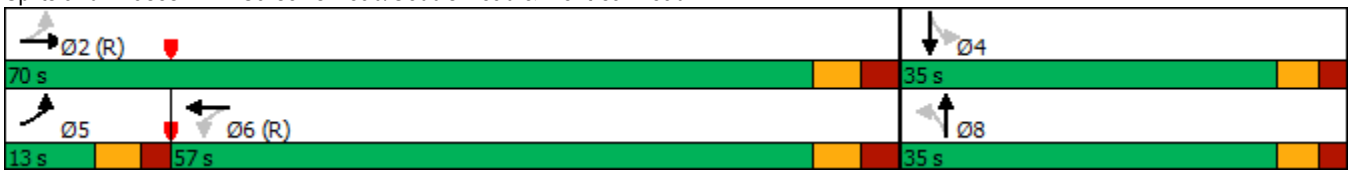
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.46	0.32		0.10	0.61		0.57	0.15		0.66	0.67	
Control Delay	15.4	3.8		12.7	16.6		70.7	16.3		57.9	21.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.4	3.8		12.7	16.6		70.7	16.3		57.9	21.7	
LOS	B	A		B	B		E	B		E	C	
Approach Delay		5.8			16.4			44.2			33.6	
Approach LOS		A			B			D			C	
Queue Length 50th (m)	6.3	16.2		3.0	70.1		7.5	1.1		23.9	12.8	
Queue Length 95th (m)	m26.7	26.5		9.8	115.2		17.8	9.3		39.7	36.2	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	349	2334		383	1845		131	433		356	545	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.46	0.32		0.10	0.61		0.30	0.09		0.34	0.46	

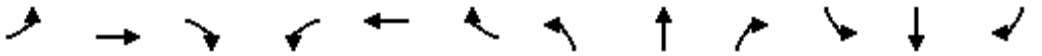
Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 44 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 16.0 Intersection LOS: B
Intersection Capacity Utilization 85.6% ICU Level of Service E
Analysis Period (min) 15

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

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





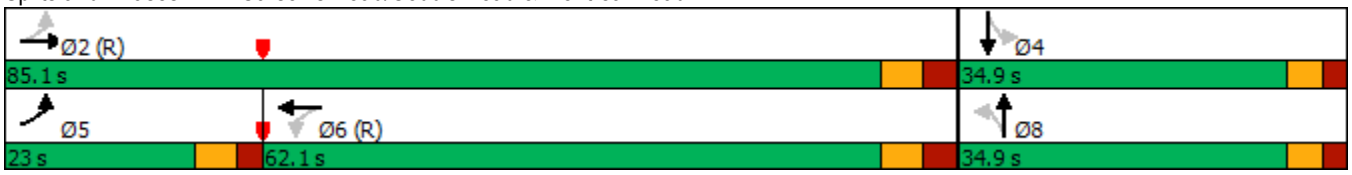
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	689	49	37	1026	95	39	6	31	122	6	245
Future Volume (vph)	159	689	49	37	1026	95	39	6	31	122	6	245
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.98		0.99	0.98	
Frt		0.990			0.987			0.874			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3174	0	1679	3104	0	1729	1465	0	1662	1477	0
Flt Permitted	0.190			0.371			0.238			0.733		
Satd. Flow (perm)	332	3174	0	646	3104	0	431	1465	0	1271	1477	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			11			31			245	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	159	689	49	37	1026	95	39	6	31	122	6	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	738	0	37	1121	0	39	37	0	122	251	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	23.0	85.1		62.1	62.1		34.9	34.9		34.9	34.9	
Total Split (%)	19.2%	70.9%		51.8%	51.8%		29.1%	29.1%		29.1%	29.1%	
Maximum Green (s)	17.0	78.2		55.2	55.2		29.3	29.3		29.3	29.3	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	91.6	90.7		75.7	75.7		16.8	16.8		16.8	16.8	
Actuated g/C Ratio	0.76	0.76		0.63	0.63		0.14	0.14		0.14	0.14	

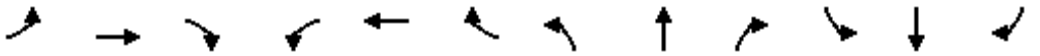
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.45	0.31		0.09	0.57		0.65	0.16		0.69	0.60	
Control Delay	7.3	4.1		3.9	5.9		91.8	18.2		67.7	12.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.3	4.1		3.9	5.9		91.8	18.2		67.7	12.3	
LOS	A	A		A	A		F	B		E	B	
Approach Delay		4.6			5.8			55.9			30.4	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	2.8	6.8		2.2	35.7		8.8	1.3		27.7	1.3	
Queue Length 95th (m)	10.6	38.1		m1.6	14.5		20.4	10.3		45.1	23.5	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	441	2402		407	1962		105	381		310	545	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.31		0.09	0.57		0.37	0.10		0.39	0.46	

Intersection Summary

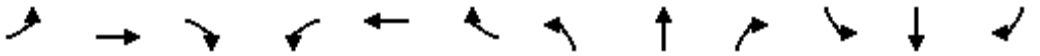
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 10.6 Intersection LOS: B
Intersection Capacity Utilization 85.6% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	781	43	58	1070	56	41	13	93	79	17	50
Future Volume (vph)	18	781	43	58	1070	56	41	13	93	79	17	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.98		0.99	0.99	
Frt		0.992			0.993			0.868			0.888	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3228	0	1662	3206	0	1679	1502	0	1530	1492	0
Flt Permitted	0.950			0.950			0.713			0.689		
Satd. Flow (perm)	1451	3228	0	1660	3206	0	1251	1502	0	1097	1492	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			7			93			50	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	18	781	43	58	1070	56	41	13	93	79	17	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	824	0	58	1126	0	41	106	0	79	67	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	44.0		13.0	44.0		33.0	33.0		33.0	33.0	
Total Split (%)	14.4%	48.9%		14.4%	48.9%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	6.1	37.1		6.1	37.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	6.7	55.3		8.6	62.4		11.7	11.7		11.8	11.8	
Actuated g/C Ratio	0.07	0.61		0.10	0.69		0.13	0.13		0.13	0.13	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	781	43	58	1070	56	41	13	93	79	17	50
Future Volume (vph)	18	781	43	58	1070	56	41	13	93	79	17	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.97		0.98	0.98	
Frt		0.992			0.993			0.868			0.888	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3228	0	1662	3206	0	1679	1496	0	1530	1489	0
Flt Permitted	0.950			0.950			0.713			0.689		
Satd. Flow (perm)	1450	3228	0	1659	3206	0	1247	1496	0	1092	1489	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			6			93			50	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	18	781	43	58	1070	56	41	13	93	79	17	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	824	0	58	1126	0	41	106	0	79	67	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	22.2	73.6		17.4	68.8		29.0	29.0		29.0	29.0	
Total Split (%)	18.5%	61.3%		14.5%	57.3%		24.2%	24.2%		24.2%	24.2%	
Maximum Green (s)	15.3	66.7		10.5	61.9		22.1	22.1		22.1	22.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	9.8	79.0		8.9	83.3		14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.08	0.66		0.07	0.69		0.12	0.12		0.12	0.12	

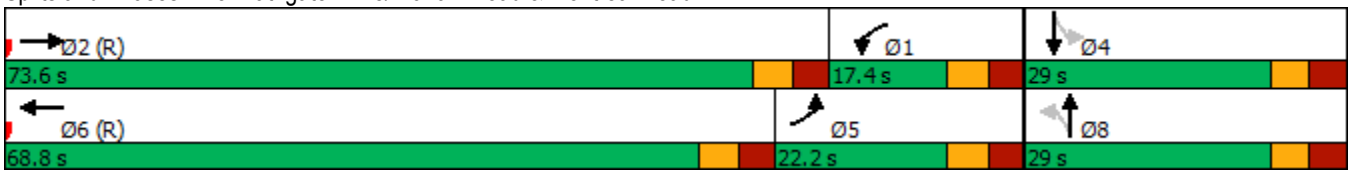
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.15	0.39		0.48	0.51		0.28	0.41		0.62	0.31	
Control Delay	44.3	3.2		65.7	12.5		51.2	16.8		70.3	21.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.3	3.2		65.7	12.5		51.2	16.8		70.3	21.2	
LOS	D	A		E	B		D	B		E	C	
Approach Delay		4.0			15.1			26.4			47.8	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	4.5	17.2		13.3	41.7		9.0	2.8		18.0	3.6	
Queue Length 95th (m)	m12.5	21.1		26.8	119.8		18.9	18.0		32.5	16.0	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	185	2127		145	2228		229	351		201	315	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.10	0.39		0.40	0.51		0.18	0.30		0.39	0.21	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 17 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 13.9 Intersection LOS: B
Intersection Capacity Utilization 66.8% ICU Level of Service C
Analysis Period (min) 15

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

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road

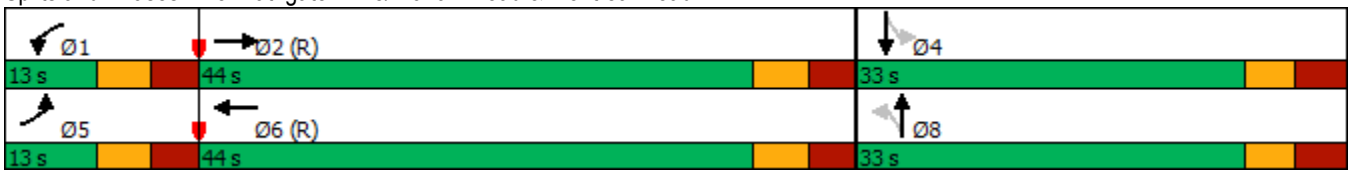


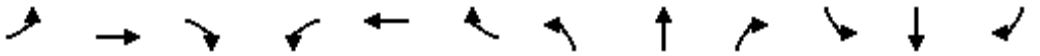
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.41		0.36	0.51		0.25	0.38		0.55	0.28	
Control Delay	41.8	13.6		43.8	11.6		36.9	13.4		49.7	16.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.8	13.6		43.8	11.6		36.9	13.4		49.7	16.6	
LOS	D	B		D	B		D	B		D	B	
Approach Delay		14.2			13.2			20.0			34.5	
Approach LOS		B			B			B			C	
Queue Length 50th (m)	3.0	42.7		9.6	37.5		6.5	2.0		13.0	2.6	
Queue Length 95th (m)	9.3	71.5		20.3	102.7		14.7	14.8		25.1	12.9	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	111	1986		160	2224		362	501		318	468	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.16	0.41		0.36	0.51		0.11	0.21		0.25	0.14	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 30 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 15.3 Intersection LOS: B
Intersection Capacity Utilization 66.8% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	106	410	78	168	6	359	136	42	11	193	28
Future Volume (vph)	16	106	410	78	168	6	359	136	42	11	193	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95			0.99	1.00		0.97	0.97			0.99	
Frt			0.850		0.995			0.965			0.984	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1631	1784	1517	1631	1772	0	1679	1571	0	0	1692	0
Flt Permitted	0.603			0.689			0.529				0.986	
Satd. Flow (perm)	984	1784	1517	1173	1772	0	909	1571	0	0	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			410		2			32			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	38		6	6		38	26		56	56		26
Confl. Bikes (#/hr)												9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	2%	2%	6%	2%	0%	3%	11%	0%	9%	5%	0%
Adj. Flow (vph)	16	106	410	78	168	6	359	136	42	11	193	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	106	410	78	174	0	359	178	0	0	232	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	12.7	12.7	12.1	12.7	12.7		51.4	51.4			33.5	
Actuated g/C Ratio	0.17	0.17	0.16	0.17	0.17		0.68	0.68			0.44	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.10	0.36	0.70	0.40	0.59		0.49	0.17			0.31	
Control Delay	26.0	30.2	10.3	33.1	36.3		8.1	4.7			16.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	26.0	30.2	10.3	33.1	36.3		8.1	4.7			16.6	
LOS	C	C	B	C	D		A	A			B	
Approach Delay		14.8			35.3			7.0			16.6	
Approach LOS		B			D			A			B	
Queue Length 50th (m)	2.0	13.6	0.0	10.1	23.1		17.8	6.3			19.7	
Queue Length 95th (m)	6.5	25.1	22.7	20.5	38.2		36.8	15.6			41.9	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	298	540	589	355	538		740	1074			740	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.05	0.20	0.70	0.22	0.32		0.49	0.17			0.31	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 29 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.7 Intersection LOS: B
Intersection Capacity Utilization 68.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road



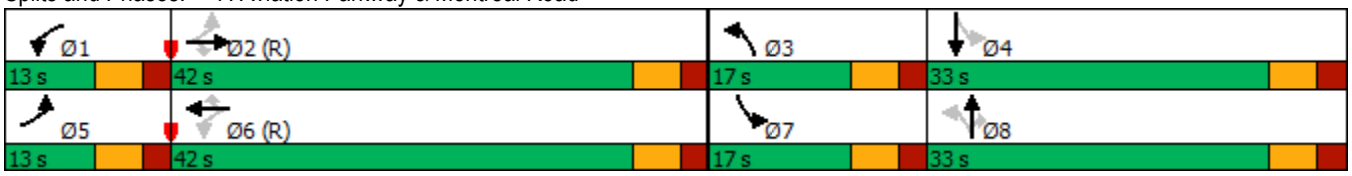
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	712	285	337	897	162	172	160	250	192	248	43
Future Volume (vph)	36	712	285	337	897	162	172	160	250	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.90	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	1662	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.296			0.180			0.320			0.583		
Satd. Flow (perm)	530	3232	1431	313	3262	1385	575	1820	1521	1057	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			196			156			250		8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	712	285	337	897	162	172	160	250	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	712	285	337	897	162	172	160	250	192	291	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	42.0	42.0	13.0	42.0	42.0	17.0	33.0	33.0	17.0	33.0	
Total Split (%)	12.4%	40.0%	40.0%	12.4%	40.0%	40.0%	16.2%	31.4%	31.4%	16.2%	31.4%	
Maximum Green (s)	7.1	36.1	36.1	7.1	36.1	36.1	11.1	26.8	26.8	11.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	37.5	31.0	31.0	52.5	46.9	46.9	32.3	21.1	21.1	33.1	21.5	
Actuated g/C Ratio	0.36	0.30	0.30	0.50	0.45	0.45	0.31	0.20	0.20	0.32	0.20	

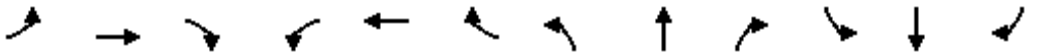
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.75	0.51	0.88	0.62	0.23	0.58	0.44	0.50	0.47	0.79	
Control Delay	16.1	38.2	12.3	46.8	25.4	9.5	30.9	39.5	7.7	27.0	53.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.1	38.2	12.3	46.8	25.4	9.5	30.9	39.5	7.7	27.0	53.9	
LOS	B	D	B	D	C	A	C	D	A	C	D	
Approach Delay		30.3			28.7			23.3			43.2	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.6	65.8	13.0	~51.4	92.9	9.0	23.4	28.7	0.0	26.5	54.9	
Queue Length 95th (m)	9.4	83.4	34.8	#126.0	114.0	28.5	36.9	45.0	18.4	40.9	79.7	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	273	1111	620	384	1456	704	303	464	574	411	457	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.64	0.46	0.88	0.62	0.23	0.57	0.34	0.44	0.47	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 17 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 30.3 Intersection LOS: C
Intersection Capacity Utilization 90.2% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





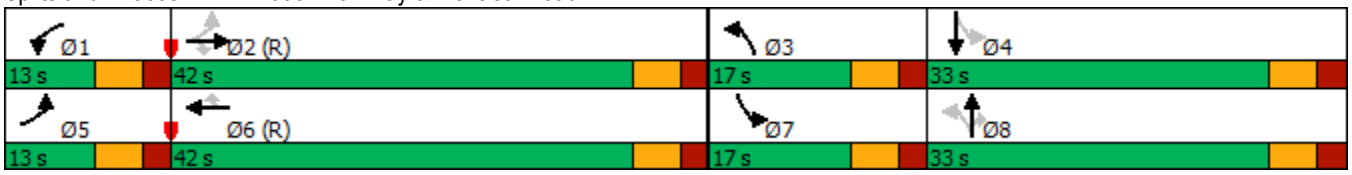
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	712	285	337	897	162	172	160	250	192	248	43
Future Volume (vph)	36	712	285	337	897	162	172	160	250	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.90	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.257			0.950			0.315			0.593		
Satd. Flow (perm)	460	3232	1431	3196	3262	1385	566	1820	1521	1075	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			196			156			250		8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	712	285	337	897	162	172	160	250	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	712	285	337	897	162	172	160	250	192	291	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	42.0	42.0	13.0	42.0	42.0	17.0	33.0	33.0	17.0	33.0	
Total Split (%)	12.4%	40.0%	40.0%	12.4%	40.0%	40.0%	16.2%	31.4%	31.4%	16.2%	31.4%	
Maximum Green (s)	7.1	36.1	36.1	7.1	36.1	36.1	11.1	26.8	26.8	11.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	42.6	36.1	36.1	12.9	47.2	47.2	32.3	21.3	21.3	32.5	21.5	
Actuated g/C Ratio	0.41	0.34	0.34	0.12	0.45	0.45	0.31	0.20	0.20	0.31	0.20	

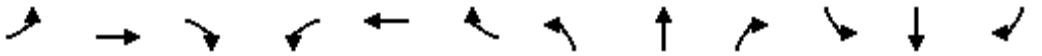
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.64	0.46	0.85	0.61	0.23	0.59	0.43	0.49	0.48	0.79	
Control Delay	15.8	32.2	11.2	59.9	27.4	9.8	31.5	39.2	7.7	27.4	53.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.8	32.2	11.2	59.9	27.4	9.8	31.5	39.2	7.7	27.4	53.9	
LOS	B	C	B	E	C	A	C	D	A	C	D	
Approach Delay		25.8			33.2			23.4			43.3	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.5	63.7	12.6	36.0	92.4	9.0	24.1	28.5	0.0	27.3	54.9	
Queue Length 95th (m)	9.4	83.4	34.8	#77.4	114.0	28.5	36.9	45.0	18.4	40.9	79.7	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	275	1111	620	395	1465	708	297	464	574	405	457	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.64	0.46	0.85	0.61	0.23	0.58	0.34	0.44	0.47	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 17 (16%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 30.8 Intersection LOS: C
Intersection Capacity Utilization 80.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





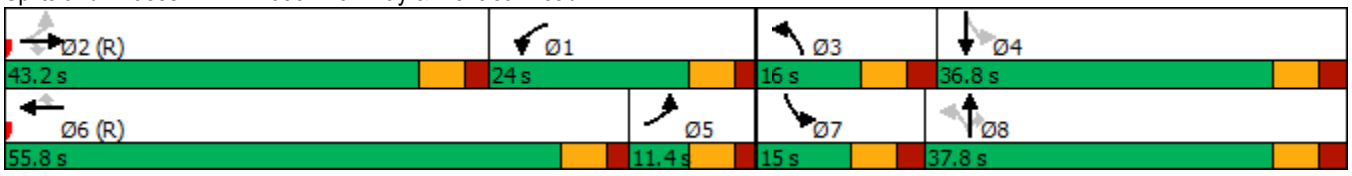
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	712	285	337	897	162	172	160	250	192	248	43
Future Volume (vph)	36	712	285	337	897	162	172	160	250	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.89	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.194			0.950			0.287			0.604		
Satd. Flow (perm)	347	3232	1428	3195	3262	1381	516	1820	1521	1095	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			207			151			250		7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	712	285	337	897	162	172	160	250	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	712	285	337	897	162	172	160	250	192	291	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.3	37.3	11.3	37.3	37.3	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.4	43.2	43.2	24.0	55.8	55.8	16.0	37.8	37.8	15.0	36.8	
Total Split (%)	9.5%	36.0%	36.0%	20.0%	46.5%	46.5%	13.3%	31.5%	31.5%	12.5%	30.7%	
Maximum Green (s)	5.2	37.0	37.0	17.8	49.6	49.6	9.3	31.1	31.1	8.3	30.1	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	49.1	43.9	43.9	16.4	59.7	59.7	34.5	24.7	24.7	33.2	24.0	
Actuated g/C Ratio	0.41	0.37	0.37	0.14	0.50	0.50	0.29	0.21	0.21	0.28	0.20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.60	0.44	0.76	0.55	0.21	0.70	0.43	0.49	0.55	0.81	
Control Delay	19.5	34.8	11.5	57.0	16.4	2.5	45.5	43.9	7.8	37.0	61.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.5	34.8	11.5	57.0	16.4	2.5	45.5	43.9	7.8	37.0	61.8	
LOS	B	C	B	E	B	A	D	D	A	D	E	
Approach Delay		27.9			24.6			28.9			52.0	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.7	72.4	12.5	42.1	84.3	0.0	29.7	32.8	0.0	33.6	64.1	
Queue Length 95th (m)	9.5	99.8	38.2	57.0	103.5	6.8	44.2	50.0	19.4	49.0	90.2	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	201	1182	653	478	1623	763	246	471	579	350	449	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.60	0.44	0.71	0.55	0.21	0.70	0.34	0.43	0.55	0.65	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 30.1 Intersection LOS: C
Intersection Capacity Utilization 85.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 7: Aviation Parkway & Montreal Road



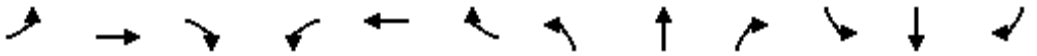
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	206	80	0	86	52
Future Vol, veh/h	0	206	80	0	86	52
Conflicting Peds, #/hr	2	0	0	2	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	206	80	0	86	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	286	85
Stage 1	-	-	-	-	80	-
Stage 2	-	-	-	-	206	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	709	980
Stage 1	0	-	-	0	948	-
Stage 2	0	-	-	0	833	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	709	975
Mov Cap-2 Maneuver	-	-	-	-	709	-
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	833	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	790
HCM Lane V/C Ratio	-	-	0.175
HCM Control Delay (s)	-	-	10.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.6



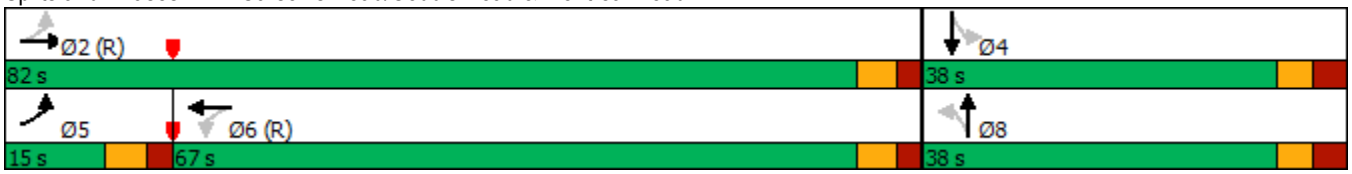
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1026	67	31	766	109	66	4	27	150	5	257
Future Volume (vph)	220	1026	67	31	766	109	66	4	27	150	5	257
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99	0.97		0.98	0.97	
Frt		0.991			0.981			0.869			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3311	0	1729	3192	0	1695	1534	0	1517	1470	0
Flt Permitted	0.252			0.261			0.301			0.737		
Satd. Flow (perm)	435	3311	0	471	3192	0	533	1534	0	1152	1470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			19			27			249	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	220	1026	67	31	766	109	66	4	27	150	5	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	1093	0	31	875	0	66	31	0	150	262	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	35.0		35.0	35.0		29.5	29.5		29.5	29.5	
Total Split (s)	15.0	82.0		67.0	67.0		38.0	38.0		38.0	38.0	
Total Split (%)	12.5%	68.3%		55.8%	55.8%		31.7%	31.7%		31.7%	31.7%	
Maximum Green (s)	9.0	76.0		61.0	61.0		31.5	31.5		31.5	31.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0		22.0	22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	86.6	86.6		70.6	70.6		20.9	20.9		20.9	20.9	
Actuated g/C Ratio	0.72	0.72		0.59	0.59		0.17	0.17		0.17	0.17	

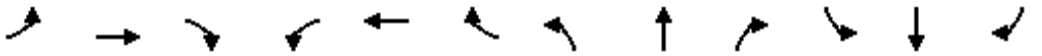
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.53	0.46		0.11	0.46		0.72	0.11		0.75	0.57	
Control Delay	13.2	2.7		6.4	9.1		83.9	15.7		68.4	10.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.2	2.7		6.4	9.1		83.9	15.7		68.4	10.9	
LOS	B	A		A	A		F	B		E	B	
Approach Delay		4.5			9.0			62.1			31.9	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	8.4	12.4		0.8	63.1		14.8	0.8		33.9	2.6	
Queue Length 95th (m)	m16.5	23.8		3.1	84.8		29.1	8.5		52.3	23.8	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	420	2393		277	1886		139	422		302	569	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.52	0.46		0.11	0.46		0.47	0.07		0.50	0.46	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 12.2 Intersection LOS: B
Intersection Capacity Utilization 82.6% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1026	67	31	766	109	66	4	27	150	5	257
Future Volume (vph)	220	1026	67	31	766	109	66	4	27	150	5	257
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.97		0.98	0.98	
Frt		0.991			0.981			0.869			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3309	0	1729	3184	0	1695	1540	0	1517	1474	0
Flt Permitted	0.250			0.261			0.299			0.737		
Satd. Flow (perm)	438	3309	0	470	3184	0	530	1540	0	1157	1474	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			15			27			257	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	220	1026	67	31	766	109	66	4	27	150	5	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	1093	0	31	875	0	66	31	0	150	262	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	29.0		29.0	29.0		35.5	35.5		35.5	35.5	
Total Split (s)	29.0	81.0		52.0	52.0		39.0	39.0		39.0	39.0	
Total Split (%)	24.2%	67.5%		43.3%	43.3%		32.5%	32.5%		32.5%	32.5%	
Maximum Green (s)	23.0	75.0		46.0	46.0		32.5	32.5		32.5	32.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	86.7	86.7		69.4	69.4		20.8	20.8		20.8	20.8	
Actuated g/C Ratio	0.72	0.72		0.58	0.58		0.17	0.17		0.17	0.17	

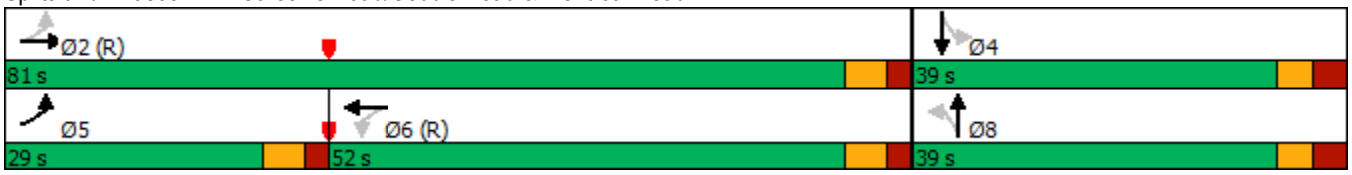
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.51	0.46		0.11	0.47		0.72	0.11		0.75	0.56	
Control Delay	9.9	2.2		6.0	7.1		84.2	15.7		68.2	10.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.9	2.2		6.0	7.1		84.2	15.7		68.2	10.0	
LOS	A	A		A	A		F	B		E	A	
Approach Delay		3.5			7.0			62.4			31.2	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	8.6	9.9		1.0	15.4		14.8	0.8		33.9	1.0	
Queue Length 95th (m)	m11.1	16.7		m3.2	94.1		29.2	8.5		52.3	21.8	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	550	2392		271	1847		143	436		313	586	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.40	0.46		0.11	0.47		0.46	0.07		0.48	0.45	

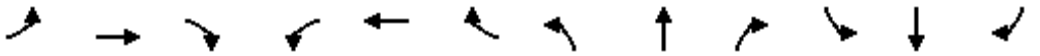
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 10.9 Intersection LOS: B
Intersection Capacity Utilization 83.9% ICU Level of Service E
Analysis Period (min) 15

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

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1081	73	53	812	69	53	18	80	67	15	41
Future Volume (vph)	49	1081	73	53	812	69	53	18	80	67	15	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.96		0.96	0.99	
Frt		0.991			0.988			0.878			0.890	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3210	0	1729	1492	0	1572	1513	0
Flt Permitted	0.950			0.950			0.720			0.694		
Satd. Flow (perm)	1602	3314	0	1728	3210	0	1306	1492	0	1107	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			11			80			41	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	49	1081	73	53	812	69	53	18	80	67	15	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	1154	0	53	881	0	53	98	0	67	56	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	72.0		13.0	72.0		35.0	35.0		35.0	35.0	
Total Split (%)	10.8%	60.0%		10.8%	60.0%		29.2%	29.2%		29.2%	29.2%	
Maximum Green (s)	6.1	65.1		6.1	65.1		28.1	28.1		28.1	28.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	9.2	80.0		9.3	80.0		12.6	12.6		12.6	12.6	
Actuated g/C Ratio	0.08	0.67		0.08	0.67		0.10	0.10		0.10	0.10	

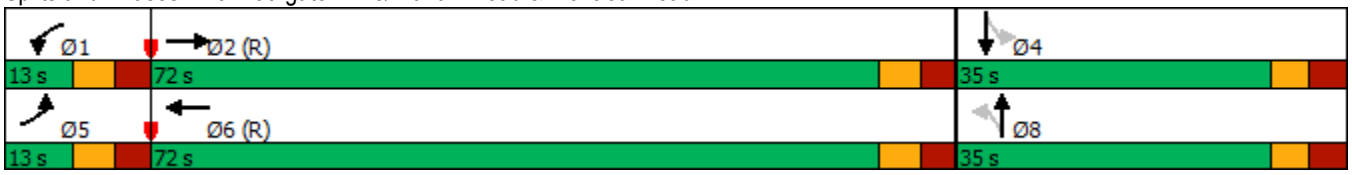
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.40	0.52		0.40	0.41		0.39	0.43		0.58	0.29	
Control Delay	48.0	21.7		60.7	11.4		56.5	20.2		69.3	23.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	48.0	21.7		60.7	11.4		56.5	20.2		69.3	23.4	
LOS	D	C		E	B		E	C		E	C	
Approach Delay		22.8			14.1			33.0			48.4	
Approach LOS		C			B			C			D	
Queue Length 50th (m)	11.5	89.0		12.1	48.7		11.8	3.9		15.3	3.3	
Queue Length 95th (m)	m24.3	118.8		24.4	76.7		23.5	18.9		28.9	14.8	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	125	2212		133	2144		305	410		259	385	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.39	0.52		0.40	0.41		0.17	0.24		0.26	0.15	

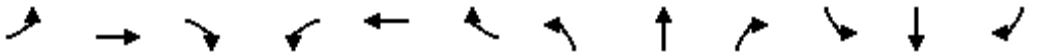
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 21.4 Intersection LOS: C
Intersection Capacity Utilization 68.9% ICU Level of Service C
Analysis Period (min) 15

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

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





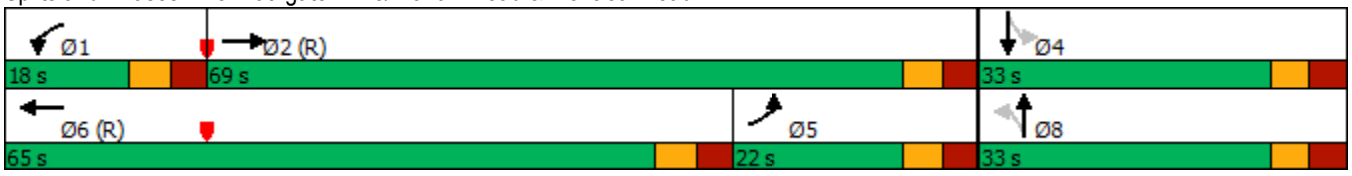
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1081	73	53	812	69	53	18	80	67	15	41
Future Volume (vph)	49	1081	73	53	812	69	53	18	80	67	15	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.96		0.96	0.99	
Frt		0.991			0.988			0.878			0.890	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3210	0	1729	1492	0	1572	1513	0
Flt Permitted	0.950			0.950			0.720			0.694		
Satd. Flow (perm)	1602	3314	0	1728	3210	0	1306	1492	0	1107	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			10			80			41	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	49	1081	73	53	812	69	53	18	80	67	15	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	1154	0	53	881	0	53	98	0	67	56	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	22.0	69.0		18.0	65.0		33.0	33.0		33.0	33.0	
Total Split (%)	18.3%	57.5%		15.0%	54.2%		27.5%	27.5%		27.5%	27.5%	
Maximum Green (s)	15.1	62.1		11.1	58.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	13.2	80.2		9.0	76.0		12.6	12.6		12.6	12.6	
Actuated g/C Ratio	0.11	0.67		0.08	0.63		0.10	0.10		0.10	0.10	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.28	0.52		0.41	0.43		0.39	0.43		0.58	0.29	
Control Delay	34.0	5.3		61.4	13.6		56.5	20.2		69.3	23.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.0	5.3		61.4	13.6		56.5	20.2		69.3	23.4	
LOS	C	A		E	B		E	C		E	C	
Approach Delay		6.5			16.4			33.0			48.4	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	9.8	29.2		12.1	56.5		11.8	3.9		15.3	3.3	
Queue Length 95th (m)	19.7	43.5		24.4	81.3		23.5	18.9		28.9	14.8	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	203	2216		163	2036		284	387		240	361	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.24	0.52		0.33	0.43		0.19	0.25		0.28	0.16	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 30 (25%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 14.1 Intersection LOS: B
Intersection Capacity Utilization 68.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	165	385	65	106	13	459	186	91	11	183	29
Future Volume (vph)	31	165	385	65	106	13	459	186	91	11	183	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96			0.98	0.99		0.98	0.96			0.99	
Frt			0.850		0.984			0.951			0.982	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1729	1802	1517	1695	1777	0	1712	1624	0	0	1676	0
Flt Permitted	0.681			0.624			0.527				0.981	
Satd. Flow (perm)	1187	1802	1517	1093	1777	0	933	1624	0	0	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			385		8			51			11	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	30		14	14		30	16		56	56		16
Confl. Bikes (#/hr)			27									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	2%	0%	0%	1%	3%	0%	0%	7%	0%
Adj. Flow (vph)	31	165	385	65	106	13	459	186	91	11	183	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	165	385	65	119	0	459	277	0	0	223	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	12.2	12.2	14.5	12.2	12.2		51.9	51.9			31.5	
Actuated g/C Ratio	0.16	0.16	0.19	0.16	0.16		0.68	0.68			0.42	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.16	0.57	0.64	0.37	0.41		0.58	0.25			0.33	
Control Delay	27.7	36.6	8.6	33.2	29.8		9.2	4.9			17.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	27.7	36.6	8.6	33.2	29.8		9.2	4.9			17.7	
LOS	C	D	A	C	C		A	A			B	
Approach Delay		17.6			31.0			7.6			17.7	
Approach LOS		B			C			A			B	
Queue Length 50th (m)	3.9	22.1	0.0	8.4	14.4		23.9	10.0			20.8	
Queue Length 95th (m)	10.3	37.1	21.5	18.0	26.8		48.1	22.9			40.2	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	359	546	601	331	544		786	1126			686	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.09	0.30	0.64	0.20	0.22		0.58	0.25			0.33	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 19 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 14.8 Intersection LOS: B
Intersection Capacity Utilization 81.2% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road



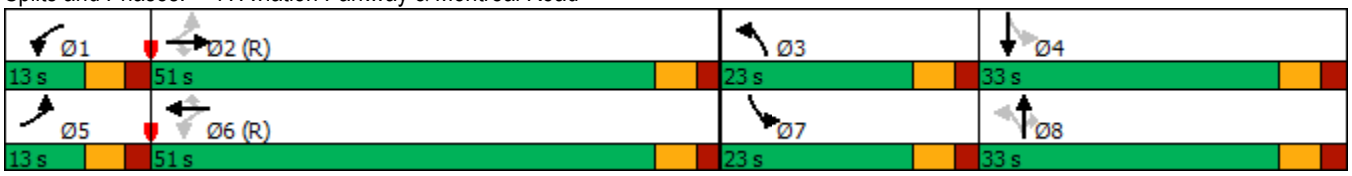
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	956	334	287	846	196	270	303	285	121	205	49
Future Volume (vph)	47	956	334	287	846	196	270	303	285	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	1679	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.283			0.109			0.251			0.403		
Satd. Flow (perm)	502	3325	1444	191	3293	1328	447	1820	1469	729	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			158			136			270		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	956	334	287	846	196	270	303	285	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	956	334	287	846	196	270	303	285	121	254	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	48.6	41.8	41.8	61.1	53.1	53.1	43.8	27.5	27.5	32.7	21.4	
Actuated g/C Ratio	0.40	0.35	0.35	0.51	0.44	0.44	0.36	0.23	0.23	0.27	0.18	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.83	0.55	0.98	0.58	0.30	0.79	0.73	0.52	0.42	0.79	
Control Delay	17.4	42.4	19.1	74.1	27.1	9.9	44.9	53.5	9.2	29.4	63.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.4	42.4	19.1	74.1	27.1	9.9	44.9	53.5	9.2	29.4	63.0	
LOS	B	D	B	E	C	A	D	D	A	C	E	
Approach Delay		35.7			34.7			36.1			52.1	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	5.4	104.7	31.4	~62.4	91.0	16.0	45.6	64.8	2.7	18.5	55.5	
Queue Length 95th (m)	12.3	127.9	58.6	#133.2	114.9	32.6	#69.4	95.7	25.3	30.2	80.6	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	279	1249	641	293	1456	663	348	432	554	378	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.77	0.52	0.98	0.58	0.30	0.78	0.70	0.51	0.32	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 37.0 Intersection LOS: D
Intersection Capacity Utilization 97.7% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



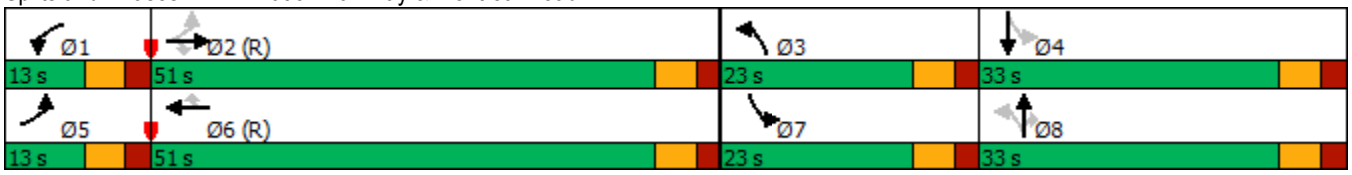
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	956	334	287	846	196	270	303	285	121	205	49
Future Volume (vph)	47	956	334	287	846	196	270	303	285	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.268			0.950			0.256			0.380		
Satd. Flow (perm)	475	3325	1444	3221	3293	1328	456	1820	1469	688	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			158			136			268		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	956	334	287	846	196	270	303	285	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	956	334	287	846	196	270	303	285	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	51.9	45.1	45.1	13.1	53.7	53.7	43.2	26.8	26.8	32.8	21.4	
Actuated g/C Ratio	0.43	0.38	0.38	0.11	0.45	0.45	0.36	0.22	0.22	0.27	0.18	

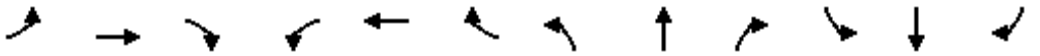
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.77	0.52	0.81	0.57	0.29	0.80	0.75	0.53	0.43	0.79	
Control Delay	17.1	37.8	17.9	64.7	27.4	10.1	46.7	55.1	9.5	29.9	63.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.1	37.8	17.9	64.7	27.4	10.1	46.7	55.1	9.5	29.9	63.0	
LOS	B	D	B	E	C	B	D	E	A	C	E	
Approach Delay		32.1			32.9			37.3			52.3	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	5.2	102.7	30.7	35.3	89.5	16.0	46.5	66.0	3.1	18.9	55.5	
Queue Length 95th (m)	12.3	127.9	58.6	#75.2	114.9	32.6	#68.3	95.7	25.9	30.2	80.6	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	282	1249	641	354	1473	669	343	426	549	370	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.77	0.52	0.81	0.57	0.29	0.79	0.71	0.52	0.33	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 35.4 Intersection LOS: D
Intersection Capacity Utilization 89.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





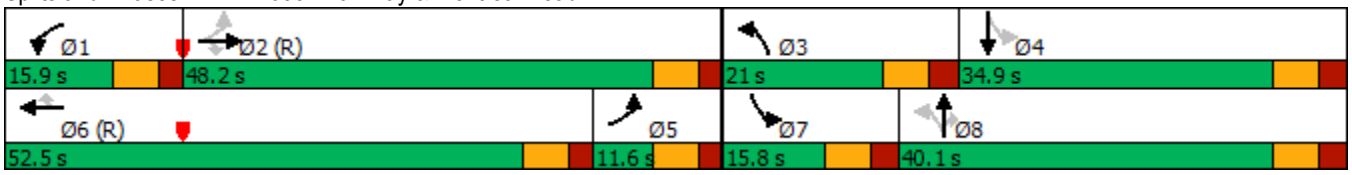
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	956	334	287	846	196	270	303	285	121	205	49
Future Volume (vph)	47	956	334	287	846	196	270	303	285	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.95	0.99		0.87	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1758	0
Flt Permitted	0.334			0.950			0.271			0.401		
Satd. Flow (perm)	588	3325	1449	3224	3293	1346	484	1820	1473	726	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			152			151			282		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	956	334	287	846	196	270	303	285	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	956	334	287	846	196	270	303	285	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.2	37.2	11.3	37.2	37.2	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.6	48.2	48.2	15.9	52.5	52.5	21.0	40.1	40.1	15.8	34.9	
Total Split (%)	9.7%	40.2%	40.2%	13.3%	43.8%	43.8%	17.5%	33.4%	33.4%	13.2%	29.1%	
Maximum Green (s)	5.4	42.0	42.0	9.7	46.3	46.3	14.3	33.4	33.4	9.1	28.2	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	43.0	43.0	43.0	15.3	55.1	55.1	41.4	27.2	27.2	30.5	21.7	
Actuated g/C Ratio	0.36	0.36	0.36	0.13	0.46	0.46	0.34	0.23	0.23	0.25	0.18	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.80	0.54	0.69	0.56	0.28	0.86	0.74	0.52	0.47	0.78	
Control Delay	30.3	41.2	20.1	54.7	20.3	3.1	56.4	53.8	7.8	32.5	61.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.3	41.2	20.1	54.7	20.3	3.1	56.4	53.8	7.8	32.5	61.4	
LOS	C	D	C	D	C	A	E	D	A	C	E	
Approach Delay		35.6			25.2			39.3			52.1	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	7.4	107.3	33.5	31.4	82.3	4.9	48.1	66.6	0.6	19.5	55.5	
Queue Length 95th (m)	15.8	133.6	62.6	#66.1	102.3	4.4	#67.3	91.1	20.9	30.6	79.3	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	262	1190	616	414	1513	700	313	506	613	262	420	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.80	0.54	0.69	0.56	0.28	0.86	0.60	0.46	0.46	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 100 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 34.5 Intersection LOS: C
Intersection Capacity Utilization 92.4% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



Future (2030) Background Traffic

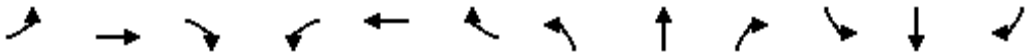
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	129	110	0	72	50
Future Vol, veh/h	0	129	110	0	72	50
Conflicting Peds, #/hr	0	0	0	0	1	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	129	110	0	72	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	240	118
Stage 1	-	-	-	-	110	-
Stage 2	-	-	-	-	130	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	753	939
Stage 1	0	-	-	0	920	-
Stage 2	0	-	-	0	901	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	753	931
Mov Cap-2 Maneuver	-	-	-	-	753	-
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	901	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	817
HCM Lane V/C Ratio	-	-	0.149
HCM Control Delay (s)	-	-	10.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	696	45	34	1028	93	36	6	28	120	6	237
Future Volume (vph)	154	696	45	34	1028	93	36	6	28	120	6	237
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.98		0.99	0.98	
Frt		0.991			0.988			0.876			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3181	0	1679	3110	0	1729	1467	0	1662	1479	0
Flt Permitted	0.181			0.370			0.271			0.735		
Satd. Flow (perm)	317	3181	0	645	3110	0	490	1467	0	1276	1479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			12			28			181	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	154	696	45	34	1028	93	36	6	28	120	6	237
Shared Lane Traffic (%)												
Lane Group Flow (vph)	154	741	0	34	1121	0	36	34	0	120	243	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	13.0	70.0		57.0	57.0		35.0	35.0		35.0	35.0	
Total Split (%)	12.4%	66.7%		54.3%	54.3%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	7.0	63.1		50.1	50.1		29.4	29.4		29.4	29.4	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	78.2	77.3		62.7	62.7		15.2	15.2		15.2	15.2	
Actuated g/C Ratio	0.74	0.74		0.60	0.60		0.14	0.14		0.14	0.14	

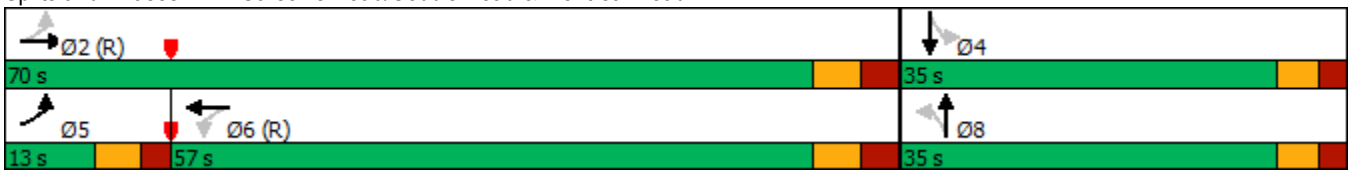
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.45	0.32		0.09	0.60		0.51	0.14		0.65	0.66	
Control Delay	14.4	3.7		12.2	16.1		64.5	16.9		57.8	20.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.4	3.7		12.2	16.1		64.5	16.9		57.8	20.7	
LOS	B	A		B	B		E	B		E	C	
Approach Delay		5.6			16.0			41.4			32.9	
Approach LOS		A			B			D			C	
Queue Length 50th (m)	5.9	16.0		2.7	69.3		6.9	1.1		23.5	11.5	
Queue Length 95th (m)	m24.6	26.3		9.0	113.0		16.8	9.0		39.3	34.0	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	348	2344		385	1861		137	430		357	544	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.44	0.32		0.09	0.60		0.26	0.08		0.34	0.45	

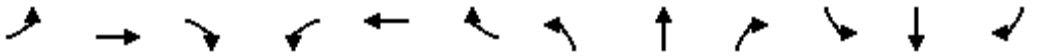
Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 44 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 15.4 Intersection LOS: B
Intersection Capacity Utilization 84.9% ICU Level of Service E
Analysis Period (min) 15

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

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





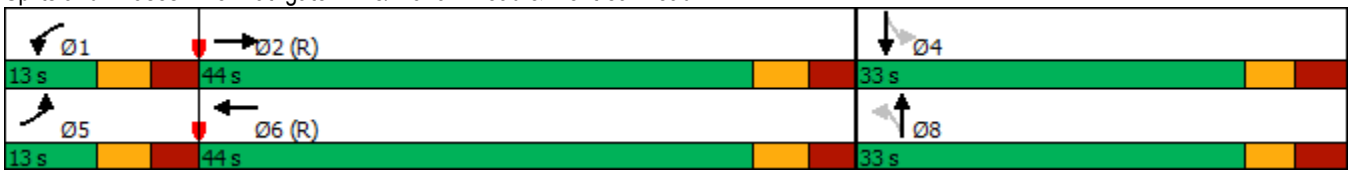
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	788	39	53	1072	52	38	12	85	74	16	46
Future Volume (vph)	17	788	39	53	1072	52	38	12	85	74	16	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.98		0.99	0.99	
Frt		0.993			0.993			0.869			0.889	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3232	0	1662	3208	0	1679	1504	0	1530	1494	0
Flt Permitted	0.950			0.950			0.717			0.694		
Satd. Flow (perm)	1451	3232	0	1660	3208	0	1258	1504	0	1105	1494	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			7			85			46	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	17	788	39	53	1072	52	38	12	85	74	16	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	827	0	53	1124	0	38	97	0	74	62	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	44.0		13.0	44.0		33.0	33.0		33.0	33.0	
Total Split (%)	14.4%	48.9%		14.4%	48.9%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	6.1	37.1		6.1	37.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	6.7	58.8		8.3	62.8		11.3	11.3		11.4	11.4	
Actuated g/C Ratio	0.07	0.65		0.09	0.70		0.13	0.13		0.13	0.13	

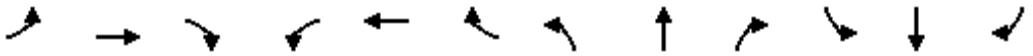
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.16	0.39		0.35	0.50		0.24	0.37		0.53	0.27	
Control Delay	41.8	11.9		43.8	11.2		37.1	13.9		49.3	17.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.8	11.9		43.8	11.2		37.1	13.9		49.3	17.2	
LOS	D	B		D	B		D	B		D	B	
Approach Delay		12.5			12.7			20.4			34.7	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	2.8	42.0		8.8	36.7		6.0	1.9		12.2	2.5	
Queue Length 95th (m)	9.0	70.0		19.2	100.2		14.0	14.2		24.0	12.6	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	110	2114		155	2242		364	496		320	465	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.39		0.34	0.50		0.10	0.20		0.23	0.13	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 30 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 14.4 Intersection LOS: B
Intersection Capacity Utilization 66.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	106	416	78	168	6	362	140	42	11	210	30
Future Volume (vph)	17	106	416	78	168	6	362	140	42	11	210	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95			0.99	1.00		0.97	0.97			0.99	
Frt			0.850		0.995			0.965			0.984	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1631	1784	1517	1631	1772	0	1679	1571	0	0	1693	0
Flt Permitted	0.603			0.689			0.513				0.987	
Satd. Flow (perm)	984	1784	1517	1173	1772	0	883	1571	0	0	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			416		2			31			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	38		6	6		38	26		56	56		26
Confl. Bikes (#/hr)												9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	2%	2%	6%	2%	0%	3%	11%	0%	9%	5%	0%
Adj. Flow (vph)	17	106	416	78	168	6	362	140	42	11	210	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	106	416	78	174	0	362	182	0	0	251	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	12.7	12.7	12.1	12.7	12.7		51.4	51.4			33.4	
Actuated g/C Ratio	0.17	0.17	0.16	0.17	0.17		0.68	0.68			0.44	

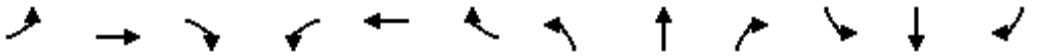
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.10	0.36	0.70	0.40	0.59		0.50	0.17			0.34	
Control Delay	26.1	30.2	10.3	33.1	36.3		8.3	4.8			17.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	26.1	30.2	10.3	33.1	36.3		8.3	4.8			17.0	
LOS	C	C	B	C	D		A	A			B	
Approach Delay		14.7			35.3			7.1			17.0	
Approach LOS		B			D			A			B	
Queue Length 50th (m)	2.1	13.6	0.0	10.1	23.1		18.1	6.5			21.8	
Queue Length 95th (m)	6.8	25.1	22.9	20.5	38.2		37.2	16.1			45.2	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	298	540	594	355	538		727	1074			740	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.06	0.20	0.70	0.22	0.32		0.50	0.17			0.34	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 29 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.8 Intersection LOS: B
Intersection Capacity Utilization 68.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road





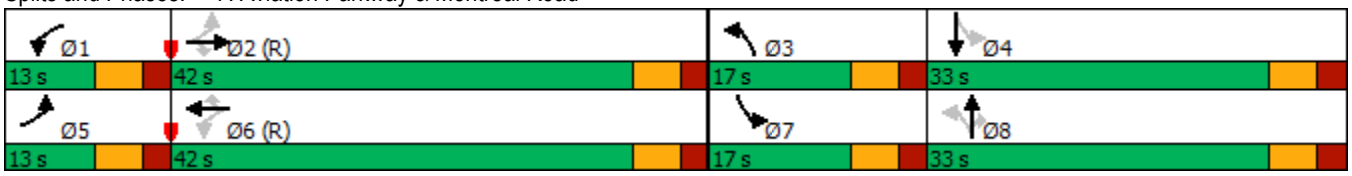
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	719	290	337	899	162	174	160	250	192	248	43
Future Volume (vph)	36	719	290	337	899	162	174	160	250	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.90	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	1662	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.293			0.176			0.318			0.586		
Satd. Flow (perm)	524	3232	1431	306	3262	1385	571	1820	1521	1062	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			198			156			250		8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	719	290	337	899	162	174	160	250	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	719	290	337	899	162	174	160	250	192	291	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	42.0	42.0	13.0	42.0	42.0	17.0	33.0	33.0	17.0	33.0	
Total Split (%)	12.4%	40.0%	40.0%	12.4%	40.0%	40.0%	16.2%	31.4%	31.4%	16.2%	31.4%	
Maximum Green (s)	7.1	36.1	36.1	7.1	36.1	36.1	11.1	26.8	26.8	11.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	37.6	31.1	31.1	52.5	46.9	46.9	32.4	21.1	21.1	33.1	21.5	
Actuated g/C Ratio	0.36	0.30	0.30	0.50	0.45	0.45	0.31	0.20	0.20	0.32	0.20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.75	0.52	0.89	0.62	0.23	0.59	0.44	0.50	0.47	0.79	
Control Delay	16.1	38.4	12.5	48.8	26.0	9.8	31.2	39.5	7.7	27.0	53.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.1	38.4	12.5	48.8	26.0	9.8	31.2	39.5	7.7	27.0	53.9	
LOS	B	D	B	D	C	A	C	D	A	C	D	
Approach Delay		30.4			29.6			23.4			43.2	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.7	66.5	13.5	~53.3	93.7	9.0	23.7	28.6	0.0	26.5	54.9	
Queue Length 95th (m)	9.4	84.4	35.7	#126.2	114.9	28.7	37.3	45.0	18.4	40.9	79.7	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	272	1111	621	380	1455	704	302	464	574	411	457	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.65	0.47	0.89	0.62	0.23	0.58	0.34	0.44	0.47	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 17 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 30.7 Intersection LOS: C
Intersection Capacity Utilization 90.4% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



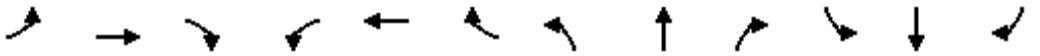
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	202	80	0	86	50
Future Vol, veh/h	0	202	80	0	86	50
Conflicting Peds, #/hr	2	0	0	2	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	202	80	0	86	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	282	85
Stage 1	-	-	-	-	80	-
Stage 2	-	-	-	-	202	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	712	980
Stage 1	0	-	-	0	948	-
Stage 2	0	-	-	0	837	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	712	975
Mov Cap-2 Maneuver	-	-	-	-	712	-
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	837	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	790
HCM Lane V/C Ratio	-	-	0.172
HCM Control Delay (s)	-	-	10.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.6



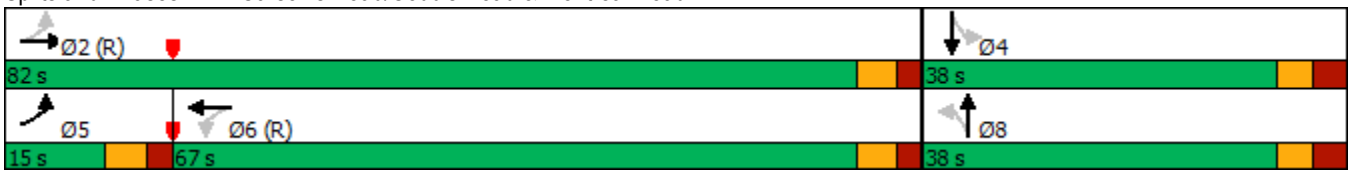
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	1030	65	30	772	108	64	4	26	148	5	253
Future Volume (vph)	217	1030	65	30	772	108	64	4	26	148	5	253
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99	0.97		0.98	0.97	
Frt		0.991			0.982			0.870			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3311	0	1729	3197	0	1695	1536	0	1517	1470	0
Flt Permitted	0.251			0.261			0.307			0.738		
Satd. Flow (perm)	433	3311	0	471	3197	0	543	1536	0	1153	1470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			19			26			247	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	217	1030	65	30	772	108	64	4	26	148	5	253
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	1095	0	30	880	0	64	30	0	148	258	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	35.0		35.0	35.0		29.5	29.5		29.5	29.5	
Total Split (s)	15.0	82.0		67.0	67.0		38.0	38.0		38.0	38.0	
Total Split (%)	12.5%	68.3%		55.8%	55.8%		31.7%	31.7%		31.7%	31.7%	
Maximum Green (s)	9.0	76.0		61.0	61.0		31.5	31.5		31.5	31.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0		22.0	22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	86.8	86.8		70.9	70.9		20.7	20.7		20.7	20.7	
Actuated g/C Ratio	0.72	0.72		0.59	0.59		0.17	0.17		0.17	0.17	

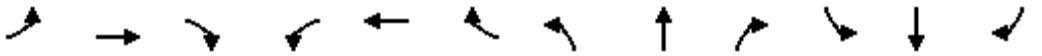
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.52	0.46		0.11	0.46		0.69	0.11		0.75	0.56	
Control Delay	12.8	2.7		6.3	8.6		80.1	16.0		68.5	10.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.8	2.7		6.3	8.6		80.1	16.0		68.5	10.8	
LOS	B	A		A	A		F	B		E	B	
Approach Delay		4.4			8.5			59.6			31.8	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	8.0	12.3		0.8	62.8		14.3	0.8		33.5	2.2	
Queue Length 95th (m)	m15.9	23.7		3.1	87.8		28.1	8.3		52.0	23.5	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	419	2398		278	1895		142	422		302	568	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.52	0.46		0.11	0.46		0.45	0.07		0.49	0.45	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 11.8 Intersection LOS: B
Intersection Capacity Utilization 82.3% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1030	67	31	772	109	66	4	27	150	5	257
Future Volume (vph)	220	1030	67	31	772	109	66	4	27	150	5	257
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.97		0.98	0.98	
Frt		0.991			0.981			0.869			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3309	0	1729	3185	0	1695	1540	0	1517	1474	0
Flt Permitted	0.247			0.260			0.299			0.737		
Satd. Flow (perm)	432	3309	0	468	3185	0	530	1540	0	1157	1474	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			15			27			257	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	220	1030	67	31	772	109	66	4	27	150	5	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	1097	0	31	881	0	66	31	0	150	262	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	29.0		29.0	29.0		35.5	35.5		35.5	35.5	
Total Split (s)	29.0	81.0		52.0	52.0		39.0	39.0		39.0	39.0	
Total Split (%)	24.2%	67.5%		43.3%	43.3%		32.5%	32.5%		32.5%	32.5%	
Maximum Green (s)	23.0	75.0		46.0	46.0		32.5	32.5		32.5	32.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	86.7	86.7		69.3	69.3		20.8	20.8		20.8	20.8	
Actuated g/C Ratio	0.72	0.72		0.58	0.58		0.17	0.17		0.17	0.17	

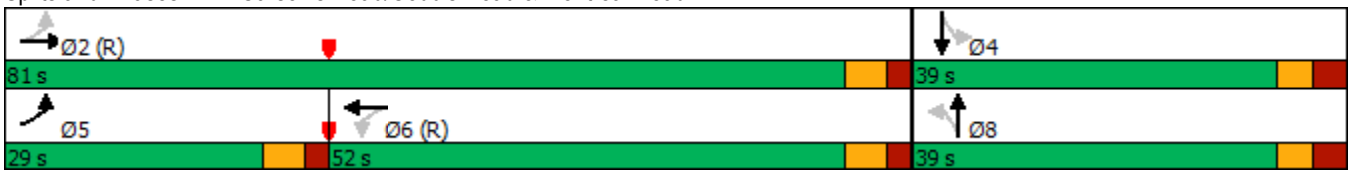
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.51	0.46		0.11	0.48		0.72	0.11		0.75	0.56	
Control Delay	10.2	2.2		6.0	7.1		84.2	15.7		68.2	10.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.2	2.2		6.0	7.1		84.2	15.7		68.2	10.0	
LOS	B	A		A	A		F	B		E	A	
Approach Delay		3.5			7.1			62.4			31.2	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	8.9	9.9		1.0	15.5		14.8	0.8		33.9	1.0	
Queue Length 95th (m)	m11.4	16.8		m3.4	100.4		29.2	8.5		52.3	21.8	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	547	2392		270	1846		143	436		313	586	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.40	0.46		0.11	0.48		0.46	0.07		0.48	0.45	

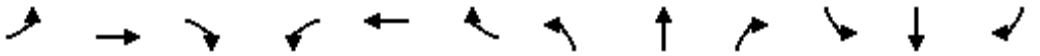
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 84.0% ICU Level of Service E
Analysis Period (min) 15

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

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	1085	71	51	818	68	51	18	78	65	15	40
Future Volume (vph)	48	1085	71	51	818	68	51	18	78	65	15	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.96		0.96	0.99	
Frt		0.991			0.988			0.878			0.891	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3211	0	1729	1492	0	1572	1515	0
Flt Permitted	0.950			0.950			0.721			0.695		
Satd. Flow (perm)	1602	3314	0	1728	3211	0	1308	1492	0	1108	1515	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			11			78			40	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	48	1085	71	51	818	68	51	18	78	65	15	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	1156	0	51	886	0	51	96	0	65	55	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	72.0		13.0	72.0		35.0	35.0		35.0	35.0	
Total Split (%)	10.8%	60.0%		10.8%	60.0%		29.2%	29.2%		29.2%	29.2%	
Maximum Green (s)	6.1	65.1		6.1	65.1		28.1	28.1		28.1	28.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	9.1	80.4		9.1	80.3		12.4	12.4		12.4	12.4	
Actuated g/C Ratio	0.08	0.67		0.08	0.67		0.10	0.10		0.10	0.10	

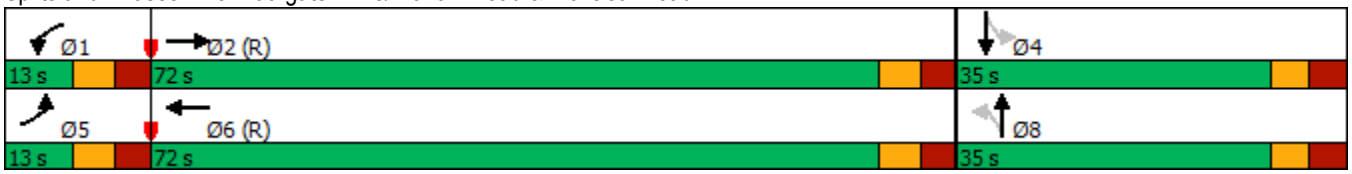
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.39	0.52		0.39	0.41		0.38	0.43		0.57	0.29	
Control Delay	47.5	21.6		60.6	11.2		56.5	20.6		69.2	23.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	47.5	21.6		60.6	11.2		56.5	20.6		69.2	23.5	
LOS	D	C		E	B		E	C		E	C	
Approach Delay		22.6			13.9			33.1			48.3	
Approach LOS		C			B			C			D	
Queue Length 50th (m)	11.2	89.6		11.6	48.6		11.4	3.9		14.8	3.3	
Queue Length 95th (m)	m24.1	118.9		23.7	77.0		22.8	18.9		28.2	14.8	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	124	2222		131	2152		306	409		259	385	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.39	0.52		0.39	0.41		0.17	0.23		0.25	0.14	

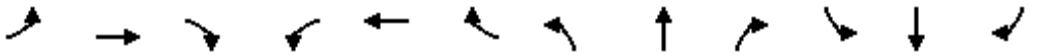
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 21.2 Intersection LOS: C
Intersection Capacity Utilization 68.9% ICU Level of Service C
Analysis Period (min) 15

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

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road



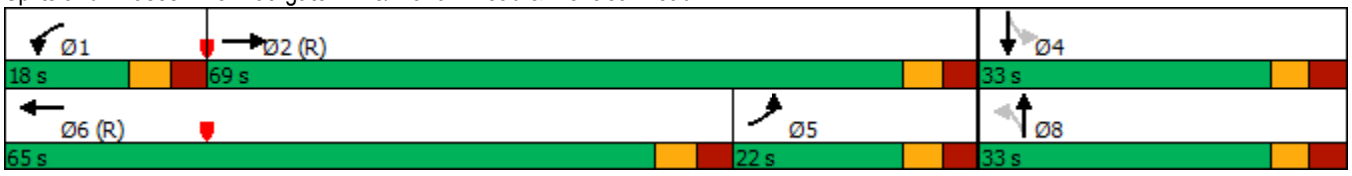


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1085	73	53	818	69	53	18	80	67	15	41
Future Volume (vph)	49	1085	73	53	818	69	53	18	80	67	15	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.96		0.96	0.99	
Frt		0.991			0.988			0.878			0.890	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3210	0	1729	1492	0	1572	1513	0
Flt Permitted	0.950			0.950			0.720			0.694		
Satd. Flow (perm)	1602	3314	0	1728	3210	0	1306	1492	0	1107	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			10			80			41	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	49	1085	73	53	818	69	53	18	80	67	15	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	1158	0	53	887	0	53	98	0	67	56	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	22.0	69.0		18.0	65.0		33.0	33.0		33.0	33.0	
Total Split (%)	18.3%	57.5%		15.0%	54.2%		27.5%	27.5%		27.5%	27.5%	
Maximum Green (s)	15.1	62.1		11.1	58.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	13.2	80.2		9.0	76.0		12.6	12.6		12.6	12.6	
Actuated g/C Ratio	0.11	0.67		0.08	0.63		0.10	0.10		0.10	0.10	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.28	0.52		0.41	0.44		0.39	0.43		0.58	0.29	
Control Delay	33.8	5.3		61.4	13.7		56.5	20.2		69.3	23.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.8	5.3		61.4	13.7		56.5	20.2		69.3	23.4	
LOS	C	A		E	B		E	C		E	C	
Approach Delay		6.5			16.4			33.0			48.4	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	9.8	29.3		12.1	57.0		11.8	3.9		15.3	3.3	
Queue Length 95th (m)	19.7	43.5		24.4	81.9		23.5	18.9		28.9	14.8	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	203	2216		163	2036		284	387		240	361	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.24	0.52		0.33	0.44		0.19	0.25		0.28	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 30 (25%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 69.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	165	388	65	106	13	468	197	91	11	193	30
Future Volume (vph)	32	165	388	65	106	13	468	197	91	11	193	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96			0.98	0.99		0.98	0.96			0.99	
Frt			0.850		0.984			0.953			0.983	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1729	1802	1517	1695	1777	0	1712	1630	0	0	1677	0
Flt Permitted	0.681			0.624			0.514				0.981	
Satd. Flow (perm)	1187	1802	1517	1093	1777	0	911	1630	0	0	1643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			388		8			48			11	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	30		14	14		30	16		56	56		16
Confl. Bikes (#/hr)			27									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	2%	0%	0%	1%	3%	0%	0%	7%	0%
Adj. Flow (vph)	32	165	388	65	106	13	468	197	91	11	193	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	165	388	65	119	0	468	288	0	0	234	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	12.2	12.2	14.9	12.2	12.2		51.9	51.9			31.1	
Actuated g/C Ratio	0.16	0.16	0.20	0.16	0.16		0.68	0.68			0.41	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.57	0.64	0.37	0.41		0.60	0.26			0.34	
Control Delay	27.8	36.6	8.5	33.2	29.8		9.6	5.0			18.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	27.8	36.6	8.5	33.2	29.8		9.6	5.0			18.2	
LOS	C	D	A	C	C		A	A			B	
Approach Delay		17.5			31.0			7.8			18.2	
Approach LOS		B			C			A			B	
Queue Length 50th (m)	4.0	22.1	0.0	8.4	14.4		24.6	10.7			22.4	
Queue Length 95th (m)	10.4	37.1	21.8	18.0	26.8		49.3	24.2			42.1	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	359	546	609	331	544		779	1129			679	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.09	0.30	0.64	0.20	0.22		0.60	0.26			0.34	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 19 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 14.8 Intersection LOS: B
Intersection Capacity Utilization 81.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road



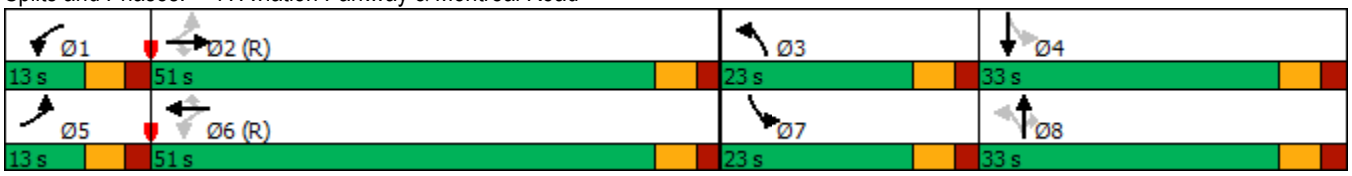
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	960	336	287	852	196	274	303	285	121	205	49
Future Volume (vph)	47	960	336	287	852	196	274	303	285	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	1679	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.278			0.107			0.251			0.406		
Satd. Flow (perm)	493	3325	1444	188	3293	1328	447	1820	1469	735	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			158			136			270		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	960	336	287	852	196	274	303	285	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	960	336	287	852	196	274	303	285	121	254	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	48.6	41.9	41.9	61.1	53.0	53.0	43.9	27.5	27.5	32.7	21.4	
Actuated g/C Ratio	0.40	0.35	0.35	0.51	0.44	0.44	0.37	0.23	0.23	0.27	0.18	

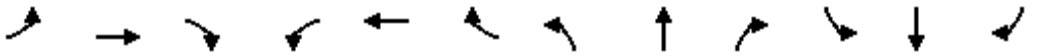
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.83	0.55	0.99	0.59	0.30	0.80	0.73	0.52	0.42	0.79	
Control Delay	17.4	42.5	19.2	77.0	27.1	9.9	45.7	53.4	9.2	29.3	63.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.4	42.5	19.2	77.0	27.1	9.9	45.7	53.4	9.2	29.3	63.0	
LOS	B	D	B	E	C	A	D	D	A	C	E	
Approach Delay		35.8			35.3			36.3			52.1	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	5.4	105.3	31.8	~62.8	91.8	16.1	46.4	64.9	2.7	18.5	55.5	
Queue Length 95th (m)	12.3	128.4	59.0	#133.2	116.0	33.1	#71.8	95.7	25.3	30.2	80.6	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	276	1249	641	290	1455	662	348	432	554	379	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.77	0.52	0.99	0.59	0.30	0.79	0.70	0.51	0.32	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 37.3 Intersection LOS: D
Intersection Capacity Utilization 98.1% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





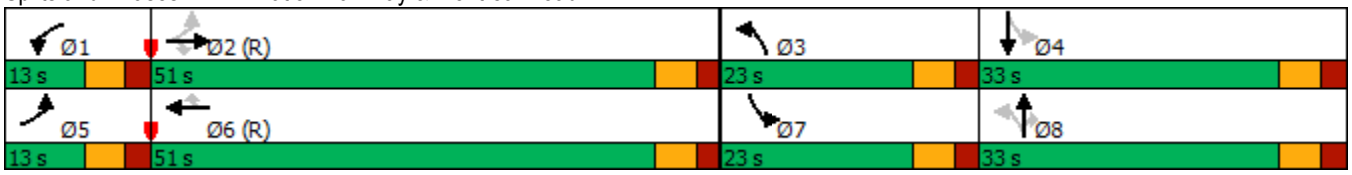
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	962	338	287	856	196	276	303	285	121	205	49
Future Volume (vph)	47	962	338	287	856	196	276	303	285	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.262			0.950			0.255			0.383		
Satd. Flow (perm)	465	3325	1444	3221	3293	1328	454	1820	1469	693	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			136			268		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	962	338	287	856	196	276	303	285	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	962	338	287	856	196	276	303	285	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	51.9	45.1	45.1	13.0	53.7	53.7	43.3	26.9	26.9	32.8	21.4	
Actuated g/C Ratio	0.43	0.38	0.38	0.11	0.45	0.45	0.36	0.22	0.22	0.27	0.18	

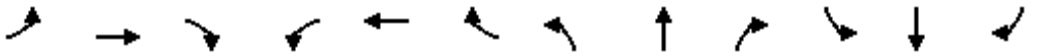
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.77	0.53	0.81	0.58	0.29	0.82	0.74	0.53	0.43	0.79	
Control Delay	17.1	38.0	18.1	64.9	27.5	10.1	48.5	55.0	9.5	29.8	63.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.1	38.0	18.1	64.9	27.5	10.1	48.5	55.0	9.5	29.8	63.0	
LOS	B	D	B	E	C	B	D	E	A	C	E	
Approach Delay		32.3			33.0			37.9			52.3	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	5.2	103.6	31.4	35.2	90.8	16.0	47.8	66.0	3.1	18.9	55.5	
Queue Length 95th (m)	12.3	128.7	59.7	#75.2	116.5	33.0	#71.9	95.7	25.9	30.2	80.6	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	279	1249	641	353	1472	668	342	426	549	371	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.77	0.53	0.81	0.58	0.29	0.81	0.71	0.52	0.33	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 35.6 Intersection LOS: D
Intersection Capacity Utilization 90.1% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





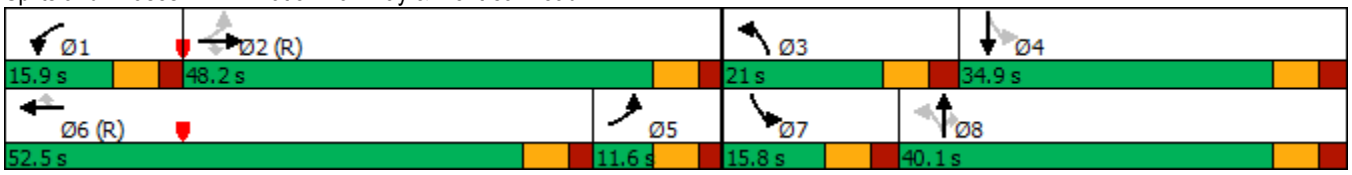
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	960	336	287	852	196	274	303	285	121	205	49
Future Volume (vph)	47	960	336	287	852	196	274	303	285	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.95	0.99		0.87	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1758	0
Flt Permitted	0.332			0.950			0.271			0.401		
Satd. Flow (perm)	584	3325	1449	3225	3293	1346	484	1820	1473	726	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			152			151			281		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	960	336	287	852	196	274	303	285	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	960	336	287	852	196	274	303	285	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.2	37.2	11.3	37.2	37.2	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.6	48.2	48.2	15.9	52.5	52.5	21.0	40.1	40.1	15.8	34.9	
Total Split (%)	9.7%	40.2%	40.2%	13.3%	43.8%	43.8%	17.5%	33.4%	33.4%	13.2%	29.1%	
Maximum Green (s)	5.4	42.0	42.0	9.7	46.3	46.3	14.3	33.4	33.4	9.1	28.2	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	42.9	42.9	42.9	15.3	55.1	55.1	41.5	27.2	27.2	30.5	21.7	
Actuated g/C Ratio	0.36	0.36	0.36	0.13	0.46	0.46	0.35	0.23	0.23	0.25	0.18	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.81	0.55	0.69	0.56	0.28	0.88	0.74	0.52	0.47	0.78	
Control Delay	30.3	41.4	20.2	54.8	20.3	3.1	58.1	53.7	7.9	32.5	61.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.3	41.4	20.2	54.8	20.3	3.1	58.1	53.7	7.9	32.5	61.4	
LOS	C	D	C	D	C	A	E	D	A	C	E	
Approach Delay		35.7			25.2			40.0			52.1	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	7.4	108.0	33.9	31.3	82.8	4.9	48.9	66.6	0.8	19.5	55.5	
Queue Length 95th (m)	15.8	134.2	63.2	#65.6	101.8	4.4	#69.7	91.1	21.1	30.6	79.3	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	260	1189	615	414	1512	699	313	506	612	262	420	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.81	0.55	0.69	0.56	0.28	0.88	0.60	0.47	0.46	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 100 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 34.6 Intersection LOS: C
Intersection Capacity Utilization 92.8% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



Future (2032) Background Traffic

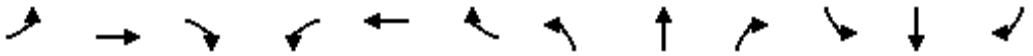
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	129	110	0	72	50
Future Vol, veh/h	0	129	110	0	72	50
Conflicting Peds, #/hr	0	0	0	0	1	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	129	110	0	72	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	240	118
Stage 1	-	-	-	-	110	-
Stage 2	-	-	-	-	130	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	753	939
Stage 1	0	-	-	0	920	-
Stage 2	0	-	-	0	901	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	753	931
Mov Cap-2 Maneuver	-	-	-	-	753	-
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	901	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	817
HCM Lane V/C Ratio	-	-	0.149
HCM Control Delay (s)	-	-	10.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	700	45	34	1030	93	36	6	28	120	6	237
Future Volume (vph)	154	700	45	34	1030	93	36	6	28	120	6	237
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.98		0.99	0.98	
Frt		0.991			0.988			0.876			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3181	0	1679	3110	0	1729	1467	0	1662	1479	0
Flt Permitted	0.181			0.369			0.271			0.735		
Satd. Flow (perm)	317	3181	0	644	3110	0	490	1467	0	1276	1479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			12			28			181	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	154	700	45	34	1030	93	36	6	28	120	6	237
Shared Lane Traffic (%)												
Lane Group Flow (vph)	154	745	0	34	1123	0	36	34	0	120	243	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	13.0	70.0		57.0	57.0		35.0	35.0		35.0	35.0	
Total Split (%)	12.4%	66.7%		54.3%	54.3%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	7.0	63.1		50.1	50.1		29.4	29.4		29.4	29.4	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	78.2	77.3		62.7	62.7		15.2	15.2		15.2	15.2	
Actuated g/C Ratio	0.74	0.74		0.60	0.60		0.14	0.14		0.14	0.14	

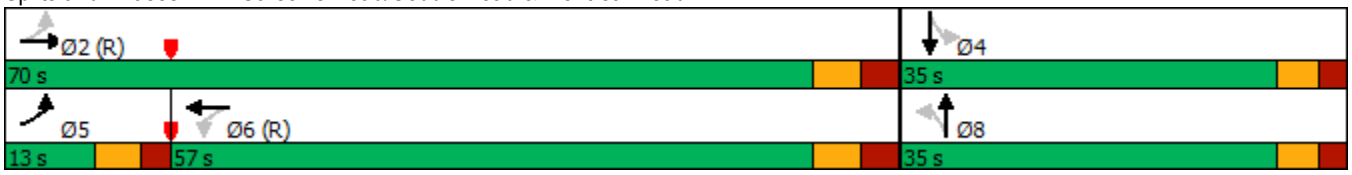
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.45	0.32		0.09	0.60		0.51	0.14		0.65	0.66	
Control Delay	14.4	3.7		12.3	16.2		64.5	16.9		57.8	20.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.4	3.7		12.3	16.2		64.5	16.9		57.8	20.7	
LOS	B	A		B	B		E	B		E	C	
Approach Delay		5.5			16.1			41.4			32.9	
Approach LOS		A			B			D			C	
Queue Length 50th (m)	5.8	16.1		2.7	69.5		6.9	1.1		23.5	11.5	
Queue Length 95th (m)	m24.6	26.3		9.0	113.4		16.8	9.0		39.3	34.0	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	348	2344		384	1861		137	430		357	544	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.44	0.32		0.09	0.60		0.26	0.08		0.34	0.45	

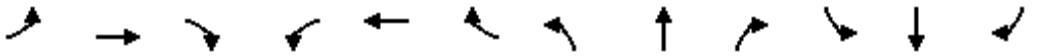
Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 44 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 15.4 Intersection LOS: B
Intersection Capacity Utilization 85.0% ICU Level of Service E
Analysis Period (min) 15

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

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





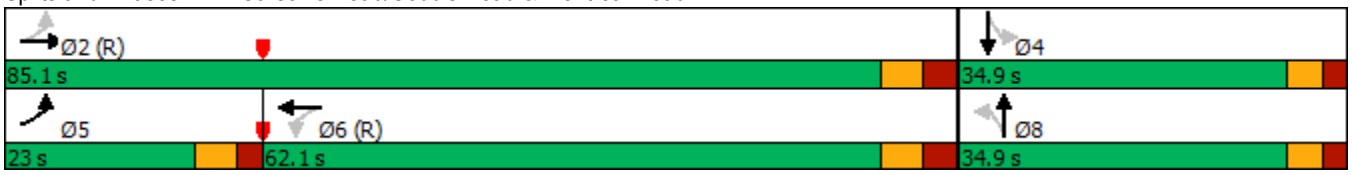
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	700	49	37	1030	95	39	6	31	122	6	245
Future Volume (vph)	159	700	49	37	1030	95	39	6	31	122	6	245
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.98		0.99	0.98	
Frt		0.990			0.987			0.874			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3175	0	1679	3104	0	1729	1465	0	1662	1477	0
Flt Permitted	0.189			0.367			0.238			0.733		
Satd. Flow (perm)	331	3175	0	639	3104	0	431	1465	0	1271	1477	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			11			31			245	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	159	700	49	37	1030	95	39	6	31	122	6	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	749	0	37	1125	0	39	37	0	122	251	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	23.0	85.1		62.1	62.1		34.9	34.9		34.9	34.9	
Total Split (%)	19.2%	70.9%		51.8%	51.8%		29.1%	29.1%		29.1%	29.1%	
Maximum Green (s)	17.0	78.2		55.2	55.2		29.3	29.3		29.3	29.3	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	91.6	90.7		75.7	75.7		16.8	16.8		16.8	16.8	
Actuated g/C Ratio	0.76	0.76		0.63	0.63		0.14	0.14		0.14	0.14	

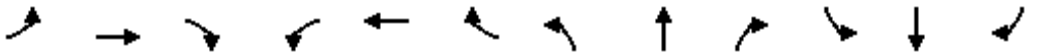
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.45	0.31		0.09	0.57		0.65	0.16		0.69	0.60	
Control Delay	7.3	4.1		3.9	5.9		91.8	18.2		67.7	12.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.3	4.1		3.9	5.9		91.8	18.2		67.7	12.3	
LOS	A	A		A	A		F	B		E	B	
Approach Delay		4.7			5.8			55.9			30.4	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	2.7	6.8		2.2	35.7		8.8	1.3		27.7	1.3	
Queue Length 95th (m)	10.6	38.4		m1.6	14.5		20.4	10.3		45.1	23.5	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	441	2403		402	1961		105	381		310	545	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.31		0.09	0.57		0.37	0.10		0.39	0.46	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 10.6 Intersection LOS: B
Intersection Capacity Utilization 85.8% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





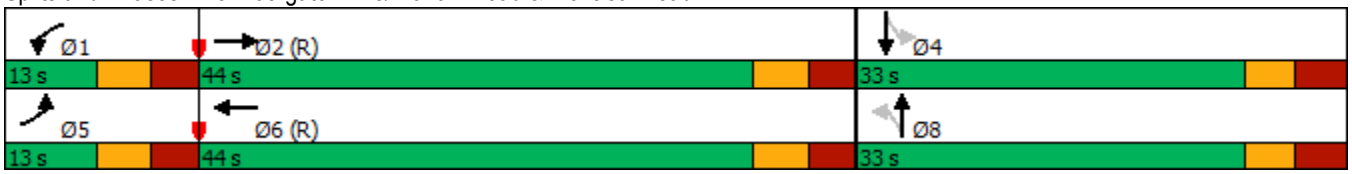
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	792	39	53	1074	52	38	12	85	74	16	46
Future Volume (vph)	17	792	39	53	1074	52	38	12	85	74	16	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.98		0.99	0.99	
Frt		0.993			0.993			0.869			0.889	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3232	0	1662	3208	0	1679	1504	0	1530	1494	0
Flt Permitted	0.950			0.950			0.717			0.694		
Satd. Flow (perm)	1451	3232	0	1660	3208	0	1258	1504	0	1105	1494	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			7			85			46	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	17	792	39	53	1074	52	38	12	85	74	16	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	831	0	53	1126	0	38	97	0	74	62	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	44.0		13.0	44.0		33.0	33.0		33.0	33.0	
Total Split (%)	14.4%	48.9%		14.4%	48.9%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	6.1	37.1		6.1	37.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	6.7	58.8		8.3	62.8		11.3	11.3		11.4	11.4	
Actuated g/C Ratio	0.07	0.65		0.09	0.70		0.13	0.13		0.13	0.13	

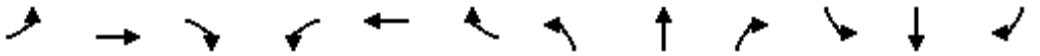
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.16	0.39		0.35	0.50		0.24	0.37		0.53	0.27	
Control Delay	41.8	12.0		43.8	11.2		37.1	13.9		49.3	17.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.8	12.0		43.8	11.2		37.1	13.9		49.3	17.2	
LOS	D	B		D	B		D	B		D	B	
Approach Delay		12.6			12.7			20.4			34.7	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	2.8	42.2		8.8	36.7		6.0	1.9		12.2	2.5	
Queue Length 95th (m)	9.0	70.4		19.2	100.3		14.0	14.2		24.0	12.6	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	110	2114		155	2242		364	496		320	465	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.39		0.34	0.50		0.10	0.20		0.23	0.13	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 30 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 14.4 Intersection LOS: B
Intersection Capacity Utilization 66.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	792	43	58	1074	56	41	13	93	79	17	50
Future Volume (vph)	18	792	43	58	1074	56	41	13	93	79	17	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.97		0.98	0.98	
Frt		0.992			0.993			0.868			0.888	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3228	0	1662	3206	0	1679	1496	0	1530	1489	0
Flt Permitted	0.950			0.950			0.713			0.689		
Satd. Flow (perm)	1450	3228	0	1659	3206	0	1247	1496	0	1092	1489	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			6			93			50	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	18	792	43	58	1074	56	41	13	93	79	17	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	835	0	58	1130	0	41	106	0	79	67	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	22.2	73.6		17.4	68.8		29.0	29.0		29.0	29.0	
Total Split (%)	18.5%	61.3%		14.5%	57.3%		24.2%	24.2%		24.2%	24.2%	
Maximum Green (s)	15.3	66.7		10.5	61.9		22.1	22.1		22.1	22.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	9.8	79.0		8.9	83.3		14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.08	0.66		0.07	0.69		0.12	0.12		0.12	0.12	

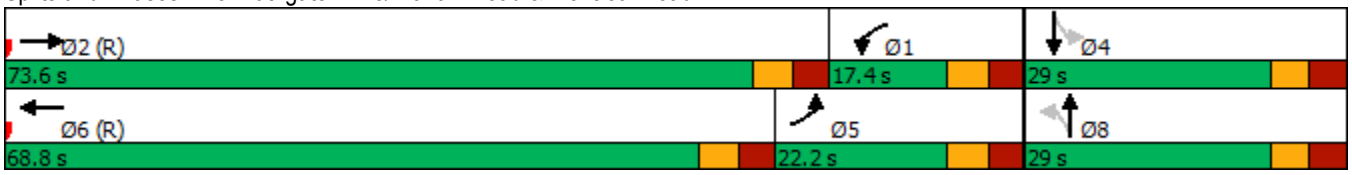
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.15	0.39		0.48	0.51		0.28	0.41		0.62	0.31	
Control Delay	44.1	3.2		65.7	12.6		51.2	16.8		70.3	21.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.1	3.2		65.7	12.6		51.2	16.8		70.3	21.2	
LOS	D	A		E	B		D	B		E	C	
Approach Delay		4.0			15.1			26.4			47.8	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	4.5	17.3		13.3	42.0		9.0	2.8		18.0	3.6	
Queue Length 95th (m)	m12.5	21.1		26.8	120.8		18.9	18.0		32.5	16.0	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	185	2127		145	2228		229	351		201	315	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.10	0.39		0.40	0.51		0.18	0.30		0.39	0.21	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 17 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 13.8 Intersection LOS: B
Intersection Capacity Utilization 66.9% ICU Level of Service C
Analysis Period (min) 15

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

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	106	419	78	168	6	365	143	42	11	222	30
Future Volume (vph)	17	106	419	78	168	6	365	143	42	11	222	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95			0.99	1.00		0.98	0.97			0.99	
Frt			0.850		0.995			0.966			0.985	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1631	1784	1517	1631	1772	0	1679	1573	0	0	1695	0
Flt Permitted	0.603			0.689			0.502				0.987	
Satd. Flow (perm)	984	1784	1517	1173	1772	0	865	1573	0	0	1670	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			419		2			30			9	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	38		6	6		38	26		56	56		26
Confl. Bikes (#/hr)												9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	2%	2%	6%	2%	0%	3%	11%	0%	9%	5%	0%
Adj. Flow (vph)	17	106	419	78	168	6	365	143	42	11	222	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	106	419	78	174	0	365	185	0	0	263	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	12.7	12.7	12.2	12.7	12.7		51.4	51.4			33.3	
Actuated g/C Ratio	0.17	0.17	0.16	0.17	0.17		0.68	0.68			0.44	

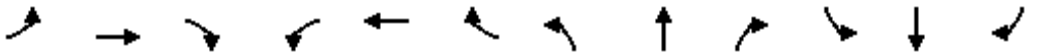
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.10	0.36	0.70	0.40	0.59		0.51	0.17			0.36	
Control Delay	26.1	30.2	10.3	33.1	36.3		8.4	4.8			17.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	26.1	30.2	10.3	33.1	36.3		8.4	4.8			17.4	
LOS	C	C	B	C	D		A	A			B	
Approach Delay		14.7			35.3			7.2			17.4	
Approach LOS		B			D			A			B	
Queue Length 50th (m)	2.1	13.6	0.0	10.1	23.1		18.3	6.7			23.3	
Queue Length 95th (m)	6.8	25.1	23.2	20.5	38.2		37.4	16.4			47.7	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	298	540	599	355	538		719	1075			737	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.06	0.20	0.70	0.22	0.32		0.51	0.17			0.36	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 29 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.8 Intersection LOS: B
Intersection Capacity Utilization 68.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road





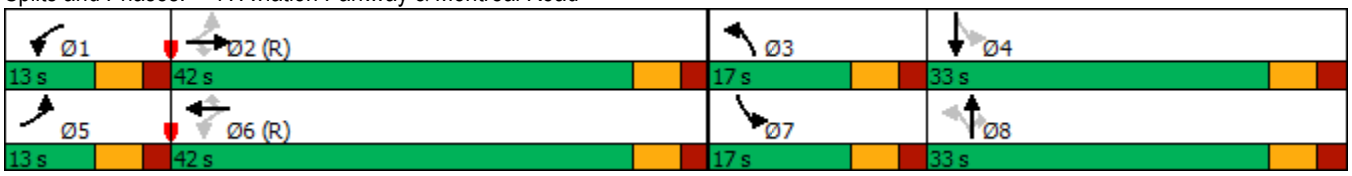
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	724	293	337	901	162	174	160	250	192	248	43
Future Volume (vph)	36	724	293	337	901	162	174	160	250	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.90	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	1662	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.291			0.175			0.318			0.586		
Satd. Flow (perm)	521	3232	1431	304	3262	1385	571	1820	1521	1062	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			199			156			250		8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	724	293	337	901	162	174	160	250	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	724	293	337	901	162	174	160	250	192	291	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	42.0	42.0	13.0	42.0	42.0	17.0	33.0	33.0	17.0	33.0	
Total Split (%)	12.4%	40.0%	40.0%	12.4%	40.0%	40.0%	16.2%	31.4%	31.4%	16.2%	31.4%	
Maximum Green (s)	7.1	36.1	36.1	7.1	36.1	36.1	11.1	26.8	26.8	11.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	37.6	31.1	31.1	52.5	46.9	46.9	32.4	21.1	21.1	33.1	21.5	
Actuated g/C Ratio	0.36	0.30	0.30	0.50	0.45	0.45	0.31	0.20	0.20	0.32	0.20	

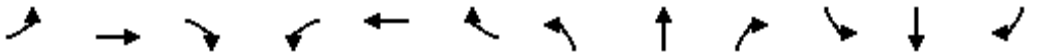
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.76	0.52	0.89	0.62	0.23	0.59	0.44	0.50	0.47	0.79	
Control Delay	16.1	38.5	12.6	49.4	26.0	9.8	31.2	39.4	7.7	27.0	53.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.1	38.5	12.6	49.4	26.0	9.8	31.2	39.4	7.7	27.0	53.9	
LOS	B	D	B	D	C	A	C	D	A	C	D	
Approach Delay		30.5			29.8			23.4			43.2	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.7	67.1	13.8	~53.9	93.9	9.0	23.7	28.6	0.0	26.5	54.9	
Queue Length 95th (m)	9.4	85.2	36.3	#127.3	115.3	28.8	37.3	45.0	18.4	40.9	79.7	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	271	1111	622	378	1455	704	303	464	574	411	457	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.65	0.47	0.89	0.62	0.23	0.57	0.34	0.44	0.47	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 17 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 30.8 Intersection LOS: C
Intersection Capacity Utilization 90.4% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





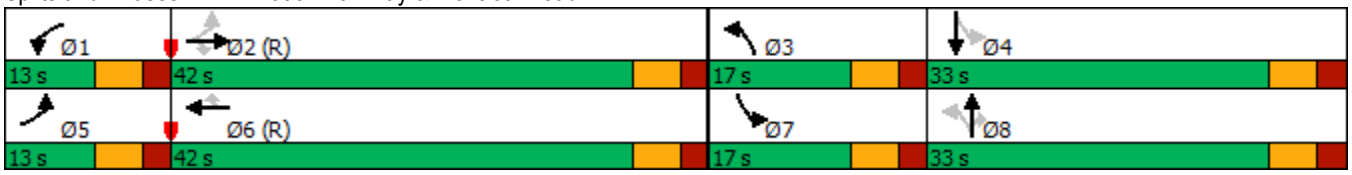
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	724	293	337	901	162	174	160	250	192	248	43
Future Volume (vph)	36	724	293	337	901	162	174	160	250	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.90	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.255			0.950			0.315			0.593		
Satd. Flow (perm)	456	3232	1431	3196	3262	1385	566	1820	1521	1075	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			199			156			250		8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	724	293	337	901	162	174	160	250	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	724	293	337	901	162	174	160	250	192	291	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	42.0	42.0	13.0	42.0	42.0	17.0	33.0	33.0	17.0	33.0	
Total Split (%)	12.4%	40.0%	40.0%	12.4%	40.0%	40.0%	16.2%	31.4%	31.4%	16.2%	31.4%	
Maximum Green (s)	7.1	36.1	36.1	7.1	36.1	36.1	11.1	26.8	26.8	11.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	42.6	36.1	36.1	12.9	47.2	47.2	32.3	21.4	21.4	32.5	21.5	
Actuated g/C Ratio	0.41	0.34	0.34	0.12	0.45	0.45	0.31	0.20	0.20	0.31	0.20	

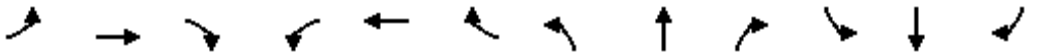
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.65	0.47	0.85	0.62	0.23	0.60	0.43	0.49	0.48	0.79	
Control Delay	15.8	32.5	11.5	60.0	27.4	9.7	31.8	39.2	7.7	27.4	53.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.8	32.5	11.5	60.0	27.4	9.7	31.8	39.2	7.7	27.4	53.9	
LOS	B	C	B	E	C	A	C	D	A	C	D	
Approach Delay		26.1			33.2			23.5			43.3	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.5	65.2	13.4	36.0	92.8	9.1	24.4	28.5	0.0	27.3	54.9	
Queue Length 95th (m)	9.4	85.2	36.3	#77.3	114.7	28.6	37.3	45.0	18.4	40.9	79.7	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	273	1111	622	395	1465	708	298	464	574	405	457	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.65	0.47	0.85	0.62	0.23	0.58	0.34	0.44	0.47	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 17 (16%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 30.9 Intersection LOS: C
Intersection Capacity Utilization 80.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





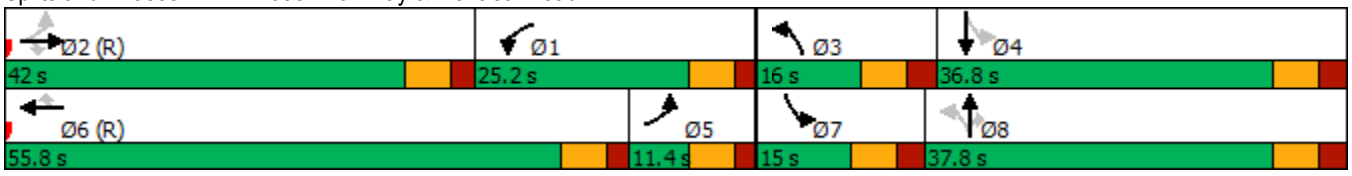
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	724	293	337	901	162	174	160	250	192	248	43
Future Volume (vph)	36	724	293	337	901	162	174	160	250	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.89	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.189			0.950			0.287			0.604		
Satd. Flow (perm)	338	3232	1427	3195	3262	1381	516	1820	1521	1095	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			207			151			250		7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	724	293	337	901	162	174	160	250	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	724	293	337	901	162	174	160	250	192	291	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.3	37.3	11.3	37.3	37.3	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.4	42.0	42.0	25.2	55.8	55.8	16.0	37.8	37.8	15.0	36.8	
Total Split (%)	9.5%	35.0%	35.0%	21.0%	46.5%	46.5%	13.3%	31.5%	31.5%	12.5%	30.7%	
Maximum Green (s)	5.2	35.8	35.8	19.0	49.6	49.6	9.3	31.1	31.1	8.3	30.1	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	48.2	43.0	43.0	17.2	59.5	59.5	34.8	24.7	24.7	33.4	24.0	
Actuated g/C Ratio	0.40	0.36	0.36	0.14	0.50	0.50	0.29	0.21	0.21	0.28	0.20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.63	0.46	0.73	0.56	0.21	0.70	0.43	0.49	0.54	0.81	
Control Delay	19.9	36.2	12.4	54.2	16.5	2.5	45.3	43.9	7.8	36.7	61.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.9	36.2	12.4	54.2	16.5	2.5	45.3	43.9	7.8	36.7	61.8	
LOS	B	D	B	D	B	A	D	D	A	D	E	
Approach Delay		29.0			23.9			28.9			51.8	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.7	75.2	14.0	41.7	84.9	0.0	30.0	32.8	0.0	33.6	64.1	
Queue Length 95th (m)	9.5	103.2	41.3	57.0	104.1	6.7	44.7	50.0	19.4	49.0	90.2	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	195	1157	643	510	1616	760	249	471	579	354	449	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.63	0.46	0.66	0.56	0.21	0.70	0.34	0.43	0.54	0.65	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 30.1 Intersection LOS: C
Intersection Capacity Utilization 85.3% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 7: Aviation Parkway & Montreal Road



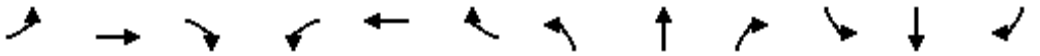
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	202	80	0	86	50
Future Vol, veh/h	0	202	80	0	86	50
Conflicting Peds, #/hr	2	0	0	2	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	202	80	0	86	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	282	85
Stage 1	-	-	-	-	80	-
Stage 2	-	-	-	-	202	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	712	980
Stage 1	0	-	-	0	948	-
Stage 2	0	-	-	0	837	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	712	975
Mov Cap-2 Maneuver	-	-	-	-	712	-
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	837	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	790
HCM Lane V/C Ratio	-	-	0.172
HCM Control Delay (s)	-	-	10.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	1032	65	30	776	108	64	4	26	148	5	253
Future Volume (vph)	217	1032	65	30	776	108	64	4	26	148	5	253
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99	0.97		0.98	0.97	
Frt		0.991			0.982			0.870			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3311	0	1729	3197	0	1695	1536	0	1517	1470	0
Flt Permitted	0.250			0.260			0.307			0.738		
Satd. Flow (perm)	432	3311	0	469	3197	0	543	1536	0	1153	1470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			18			26			246	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	217	1032	65	30	776	108	64	4	26	148	5	253
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	1097	0	30	884	0	64	30	0	148	258	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	35.0		35.0	35.0		29.5	29.5		29.5	29.5	
Total Split (s)	15.0	82.0		67.0	67.0		38.0	38.0		38.0	38.0	
Total Split (%)	12.5%	68.3%		55.8%	55.8%		31.7%	31.7%		31.7%	31.7%	
Maximum Green (s)	9.0	76.0		61.0	61.0		31.5	31.5		31.5	31.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0		22.0	22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	86.8	86.8		70.9	70.9		20.7	20.7		20.7	20.7	
Actuated g/C Ratio	0.72	0.72		0.59	0.59		0.17	0.17		0.17	0.17	

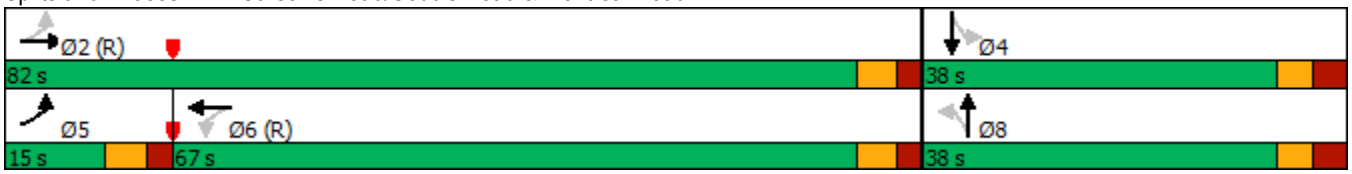
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.52	0.46		0.11	0.47		0.69	0.11		0.75	0.57	
Control Delay	12.9	2.7		6.2	8.6		80.1	16.0		68.5	10.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.9	2.7		6.2	8.6		80.1	16.0		68.5	10.9	
LOS	B	A		A	A		F	B		E	B	
Approach Delay		4.4			8.6			59.6			31.9	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	8.0	12.3		0.8	63.1		14.3	0.8		33.5	2.4	
Queue Length 95th (m)	m15.8	23.7		3.0	91.2		28.1	8.3		52.0	23.7	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	418	2398		277	1895		142	422		302	567	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.52	0.46		0.11	0.47		0.45	0.07		0.49	0.46	

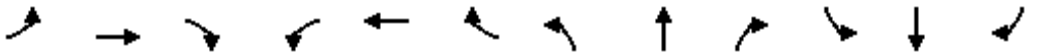
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 11.8 Intersection LOS: B
Intersection Capacity Utilization 82.4% ICU Level of Service E
Analysis Period (min) 15

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

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1032	67	31	776	109	66	4	27	150	5	257
Future Volume (vph)	220	1032	67	31	776	109	66	4	27	150	5	257
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.97		0.98	0.98	
Frt		0.991			0.982			0.869			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3309	0	1729	3188	0	1695	1540	0	1517	1474	0
Flt Permitted	0.246			0.260			0.299			0.737		
Satd. Flow (perm)	430	3309	0	468	3188	0	530	1540	0	1157	1474	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			15			27			257	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	220	1032	67	31	776	109	66	4	27	150	5	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	1099	0	31	885	0	66	31	0	150	262	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	29.0		29.0	29.0		35.5	35.5		35.5	35.5	
Total Split (s)	29.0	81.0		52.0	52.0		39.0	39.0		39.0	39.0	
Total Split (%)	24.2%	67.5%		43.3%	43.3%		32.5%	32.5%		32.5%	32.5%	
Maximum Green (s)	23.0	75.0		46.0	46.0		32.5	32.5		32.5	32.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	86.7	86.7		69.3	69.3		20.8	20.8		20.8	20.8	
Actuated g/C Ratio	0.72	0.72		0.58	0.58		0.17	0.17		0.17	0.17	

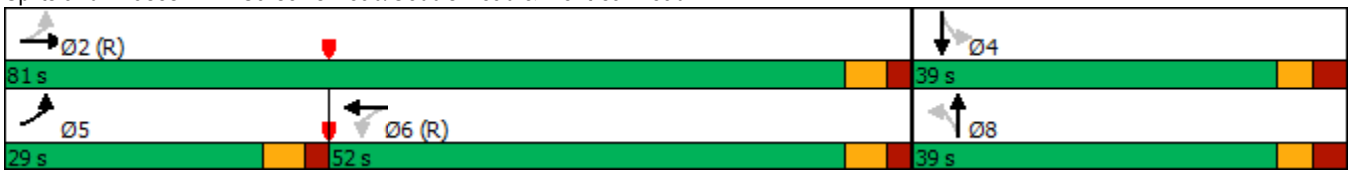
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.52	0.46		0.11	0.48		0.72	0.11		0.75	0.56	
Control Delay	10.5	2.2		6.1	7.2		84.2	15.7		68.2	10.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.5	2.2		6.1	7.2		84.2	15.7		68.2	10.0	
LOS	B	A		A	A		F	B		E	A	
Approach Delay		3.6			7.1			62.4			31.2	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	8.5	10.0		1.0	15.5		14.8	0.8		33.9	1.0	
Queue Length 95th (m)	m14.3	16.8		m3.4	101.6		29.2	8.5		52.3	21.8	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	546	2392		270	1848		143	436		313	586	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.40	0.46		0.11	0.48		0.46	0.07		0.48	0.45	

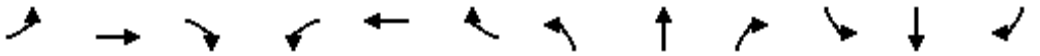
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 84.1% ICU Level of Service E
Analysis Period (min) 15

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

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	1087	71	51	822	68	51	18	78	65	15	40
Future Volume (vph)	48	1087	71	51	822	68	51	18	78	65	15	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.96		0.96	0.99	
Frt		0.991			0.989			0.878			0.891	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3214	0	1729	1492	0	1572	1515	0
Flt Permitted	0.950			0.950			0.721			0.695		
Satd. Flow (perm)	1603	3314	0	1728	3214	0	1308	1492	0	1108	1515	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			11			78			40	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	48	1087	71	51	822	68	51	18	78	65	15	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	1158	0	51	890	0	51	96	0	65	55	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	72.0		13.0	72.0		35.0	35.0		35.0	35.0	
Total Split (%)	10.8%	60.0%		10.8%	60.0%		29.2%	29.2%		29.2%	29.2%	
Maximum Green (s)	6.1	65.1		6.1	65.1		28.1	28.1		28.1	28.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	9.1	80.4		9.1	80.3		12.4	12.4		12.4	12.4	
Actuated g/C Ratio	0.08	0.67		0.08	0.67		0.10	0.10		0.10	0.10	

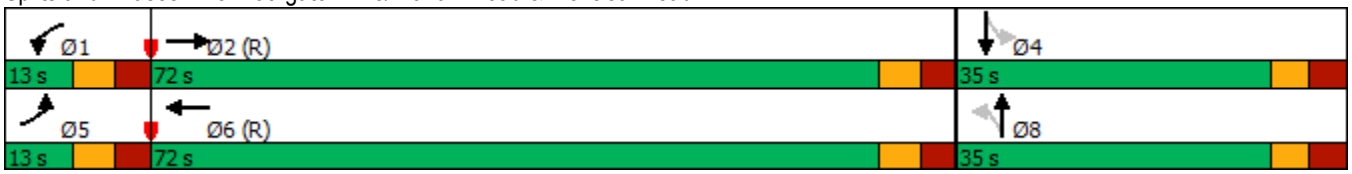
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.39	0.52		0.39	0.41		0.38	0.43		0.57	0.29	
Control Delay	47.5	21.6		60.6	11.2		56.5	20.6		69.2	23.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	47.5	21.6		60.6	11.2		56.5	20.6		69.2	23.5	
LOS	D	C		E	B		E	C		E	C	
Approach Delay		22.7			13.9			33.1			48.3	
Approach LOS		C			B			C			D	
Queue Length 50th (m)	11.2	89.9		11.6	48.8		11.4	3.9		14.8	3.3	
Queue Length 95th (m)	m24.1	119.4		23.7	77.3		22.8	18.9		28.2	14.8	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	124	2222		131	2154		306	409		259	385	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.39	0.52		0.39	0.41		0.17	0.23		0.25	0.14	

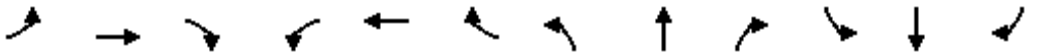
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 21.2 Intersection LOS: C
Intersection Capacity Utilization 68.9% ICU Level of Service C
Analysis Period (min) 15

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

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road



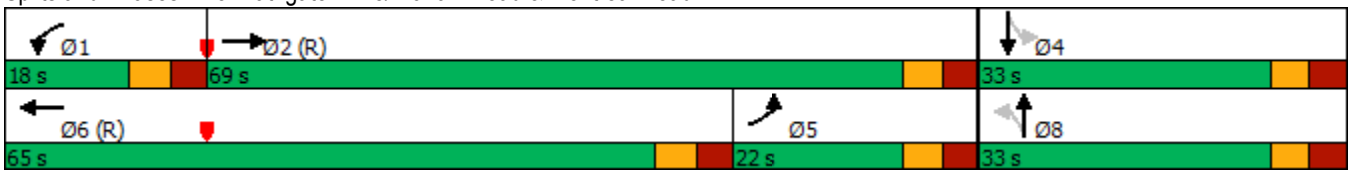


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1087	73	53	822	69	53	18	80	67	15	41
Future Volume (vph)	49	1087	73	53	822	69	53	18	80	67	15	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.96		0.96	0.99	
Frt		0.991			0.988			0.878			0.890	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3210	0	1729	1492	0	1572	1513	0
Flt Permitted	0.950			0.950			0.720			0.694		
Satd. Flow (perm)	1603	3314	0	1728	3210	0	1306	1492	0	1107	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			10			80			41	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	49	1087	73	53	822	69	53	18	80	67	15	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	1160	0	53	891	0	53	98	0	67	56	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	22.0	69.0		18.0	65.0		33.0	33.0		33.0	33.0	
Total Split (%)	18.3%	57.5%		15.0%	54.2%		27.5%	27.5%		27.5%	27.5%	
Maximum Green (s)	15.1	62.1		11.1	58.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	13.2	80.2		9.0	76.0		12.6	12.6		12.6	12.6	
Actuated g/C Ratio	0.11	0.67		0.08	0.63		0.10	0.10		0.10	0.10	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.28	0.52		0.41	0.44		0.39	0.43		0.58	0.29	
Control Delay	34.6	5.3		61.4	13.7		56.5	20.2		69.3	23.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.6	5.3		61.4	13.7		56.5	20.2		69.3	23.4	
LOS	C	A		E	B		E	C		E	C	
Approach Delay		6.5			16.4			33.0			48.4	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	10.6	29.4		12.1	57.3		11.8	3.9		15.3	3.3	
Queue Length 95th (m)	19.7	43.5		24.4	82.5		23.5	18.9		28.9	14.8	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	203	2216		163	2036		284	387		240	361	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.24	0.52		0.33	0.44		0.19	0.25		0.28	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 30 (25%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 69.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	165	390	65	106	13	474	204	91	11	199	30
Future Volume (vph)	33	165	390	65	106	13	474	204	91	11	199	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96			0.98	0.99		0.98	0.96			0.99	
Frt			0.850		0.984			0.954			0.983	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1729	1802	1517	1695	1777	0	1712	1633	0	0	1677	0
Flt Permitted	0.681			0.624			0.507				0.981	
Satd. Flow (perm)	1187	1802	1517	1093	1777	0	899	1633	0	0	1643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			390		8			46			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	30		14	14		30	16		56	56		16
Confl. Bikes (#/hr)			27									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	2%	0%	0%	1%	3%	0%	0%	7%	0%
Adj. Flow (vph)	33	165	390	65	106	13	474	204	91	11	199	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	165	390	65	119	0	474	295	0	0	240	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	12.2	12.2	15.2	12.2	12.2		51.9	51.9			30.8	
Actuated g/C Ratio	0.16	0.16	0.20	0.16	0.16		0.68	0.68			0.41	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.57	0.63	0.37	0.41		0.61	0.26			0.36	
Control Delay	27.9	36.6	8.3	33.2	29.8		9.8	5.1			18.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	27.9	36.6	8.3	33.2	29.8		9.8	5.1			18.6	
LOS	C	D	A	C	C		A	A			B	
Approach Delay		17.4			31.0			8.0			18.6	
Approach LOS		B			C			A			B	
Queue Length 50th (m)	4.1	22.1	0.0	8.4	14.4		24.9	11.2			23.6	
Queue Length 95th (m)	10.7	37.1	21.9	18.0	26.8		50.2	25.2			43.4	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	359	546	615	331	544		777	1130			671	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.09	0.30	0.63	0.20	0.22		0.61	0.26			0.36	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75.9			
Actuated Cycle Length: 75.9			
Offset: 19 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 14.9		Intersection LOS: B	
Intersection Capacity Utilization 82.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road



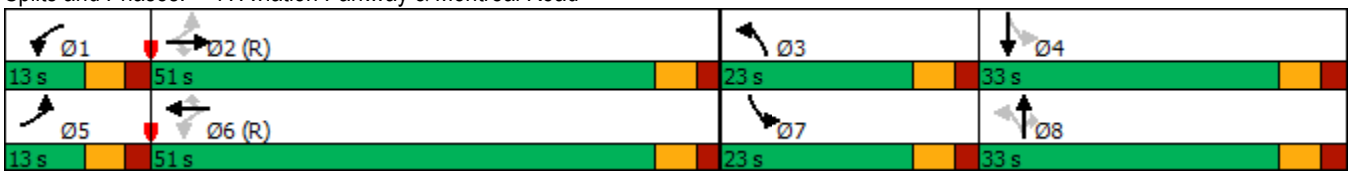
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	962	338	287	856	196	276	303	285	121	205	49
Future Volume (vph)	47	962	338	287	856	196	276	303	285	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	1679	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.276			0.107			0.251			0.406		
Satd. Flow (perm)	490	3325	1444	188	3293	1328	447	1820	1469	735	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			136			270		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	962	338	287	856	196	276	303	285	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	962	338	287	856	196	276	303	285	121	254	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	48.7	41.9	41.9	61.1	53.0	53.0	43.9	27.5	27.5	32.7	21.4	
Actuated g/C Ratio	0.41	0.35	0.35	0.51	0.44	0.44	0.37	0.23	0.23	0.27	0.18	

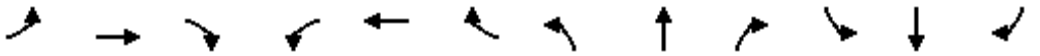
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.83	0.56	0.99	0.59	0.30	0.80	0.73	0.52	0.42	0.79	
Control Delay	17.4	42.6	19.3	77.5	27.1	10.0	46.3	53.4	9.2	29.3	63.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.4	42.6	19.3	77.5	27.1	10.0	46.3	53.4	9.2	29.3	63.0	
LOS	B	D	B	E	C	A	D	D	A	C	E	
Approach Delay		35.8			35.4			36.5			52.1	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	5.4	105.6	32.1	~62.7	92.3	16.1	46.9	64.9	2.7	18.5	55.5	
Queue Length 95th (m)	12.3	128.7	59.7	#134.0	116.6	33.0	#72.8	95.7	25.3	30.2	80.6	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	275	1249	641	289	1454	662	348	432	555	379	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.77	0.53	0.99	0.59	0.30	0.79	0.70	0.51	0.32	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 37.4 Intersection LOS: D
Intersection Capacity Utilization 98.3% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





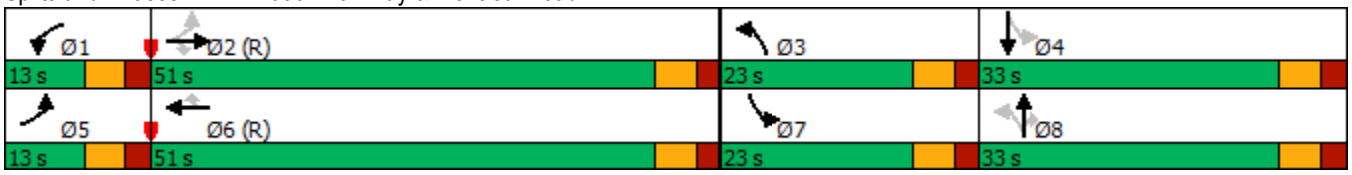
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	962	338	287	856	196	276	303	285	121	205	49
Future Volume (vph)	47	962	338	287	856	196	276	303	285	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.262			0.950			0.255			0.383		
Satd. Flow (perm)	465	3325	1444	3221	3293	1328	454	1820	1469	693	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			136			268		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	962	338	287	856	196	276	303	285	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	962	338	287	856	196	276	303	285	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	51.9	45.1	45.1	13.0	53.7	53.7	43.3	26.9	26.9	32.8	21.4	
Actuated g/C Ratio	0.43	0.38	0.38	0.11	0.45	0.45	0.36	0.22	0.22	0.27	0.18	

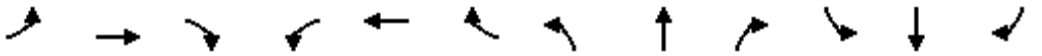
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.77	0.53	0.81	0.58	0.29	0.82	0.74	0.53	0.43	0.79	
Control Delay	17.1	38.0	18.1	64.9	27.5	10.1	48.5	55.0	9.5	29.8	63.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.1	38.0	18.1	64.9	27.5	10.1	48.5	55.0	9.5	29.8	63.0	
LOS	B	D	B	E	C	B	D	E	A	C	E	
Approach Delay		32.3			33.0			37.9			52.3	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	5.2	103.6	31.4	35.2	90.8	16.0	47.8	66.0	3.1	18.9	55.5	
Queue Length 95th (m)	12.3	128.7	59.7	#75.2	116.5	33.0	#71.9	95.7	25.9	30.2	80.6	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	279	1249	641	353	1472	668	342	426	549	371	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.77	0.53	0.81	0.58	0.29	0.81	0.71	0.52	0.33	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 35.6 Intersection LOS: D
Intersection Capacity Utilization 90.1% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





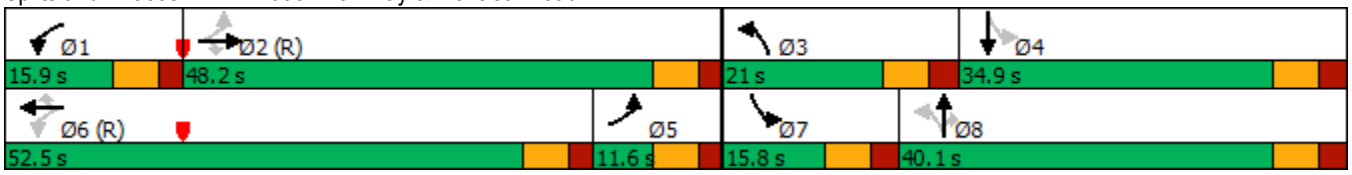
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	962	338	287	856	196	276	303	285	121	205	49
Future Volume (vph)	47	962	338	287	856	196	276	303	285	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.95	1.00		0.87	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1758	0
Flt Permitted	0.331			0.101			0.271			0.401		
Satd. Flow (perm)	583	3325	1449	345	3293	1346	484	1820	1473	726	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			153			151			281		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	962	338	287	856	196	276	303	285	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	962	338	287	856	196	276	303	285	121	254	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.2	37.2	11.3	37.2	37.2	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.6	48.2	48.2	15.9	52.5	52.5	21.0	40.1	40.1	15.8	34.9	
Total Split (%)	9.7%	40.2%	40.2%	13.3%	43.8%	43.8%	17.5%	33.4%	33.4%	13.2%	29.1%	
Maximum Green (s)	5.4	42.0	42.0	9.7	46.3	46.3	14.3	33.4	33.4	9.1	28.2	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	47.4	47.4	47.4	55.1	55.1	55.1	41.5	27.2	27.2	30.5	21.7	
Actuated g/C Ratio	0.40	0.40	0.40	0.46	0.46	0.46	0.35	0.23	0.23	0.25	0.18	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.73	0.51	0.68	0.57	0.28	0.88	0.74	0.52	0.47	0.78	
Control Delay	29.0	36.1	18.6	27.9	20.3	3.1	59.1	53.7	7.9	32.5	61.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	29.0	36.1	18.6	27.9	20.3	3.1	59.1	53.7	7.9	32.5	61.4	
LOS	C	D	B	C	C	A	E	D	A	C	E	
Approach Delay		31.5			19.4			40.3			52.1	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	7.0	102.8	32.3	18.2	83.4	4.9	49.4	66.6	0.8	19.5	55.5	
Queue Length 95th (m)	15.8	134.6	63.8	#38.4	101.9	4.4	#70.7	91.1	21.1	30.6	79.3	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	281	1312	664	427	1512	699	313	506	612	262	420	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.73	0.51	0.67	0.57	0.28	0.88	0.60	0.47	0.46	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 100 (83%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 31.3 Intersection LOS: C
Intersection Capacity Utilization 93.0% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



Future (2037) Background Traffic

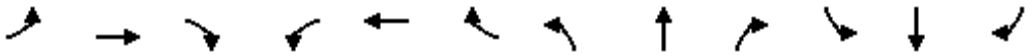
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	129	110	0	72	50
Future Vol, veh/h	0	129	110	0	72	50
Conflicting Peds, #/hr	0	0	0	0	1	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	129	110	0	72	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	240	118
Stage 1	-	-	-	-	110	-
Stage 2	-	-	-	-	130	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	753	939
Stage 1	0	-	-	0	920	-
Stage 2	0	-	-	0	901	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	753	931
Mov Cap-2 Maneuver	-	-	-	-	753	-
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	901	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	817
HCM Lane V/C Ratio	-	-	0.149
HCM Control Delay (s)	-	-	10.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.5



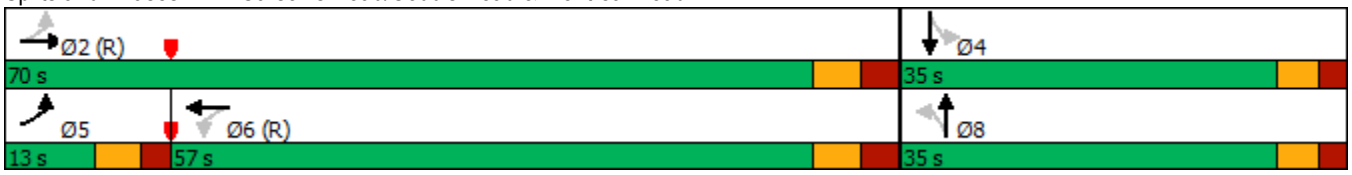
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	712	45	34	1034	93	36	6	28	120	6	237
Future Volume (vph)	154	712	45	34	1034	93	36	6	28	120	6	237
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.98		0.99	0.98	
Frt		0.991			0.988			0.876			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3181	0	1679	3110	0	1729	1467	0	1662	1479	0
Flt Permitted	0.179			0.364			0.271			0.735		
Satd. Flow (perm)	313	3181	0	635	3110	0	490	1467	0	1276	1479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			12			28			181	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	154	712	45	34	1034	93	36	6	28	120	6	237
Shared Lane Traffic (%)												
Lane Group Flow (vph)	154	757	0	34	1127	0	36	34	0	120	243	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	13.0	70.0		57.0	57.0		35.0	35.0		35.0	35.0	
Total Split (%)	12.4%	66.7%		54.3%	54.3%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	7.0	63.1		50.1	50.1		29.4	29.4		29.4	29.4	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	78.2	77.3		62.6	62.6		15.2	15.2		15.2	15.2	
Actuated g/C Ratio	0.74	0.74		0.60	0.60		0.14	0.14		0.14	0.14	

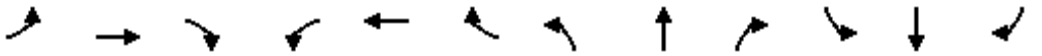
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.45	0.32		0.09	0.61		0.51	0.14		0.65	0.66	
Control Delay	14.7	4.0		12.4	16.3		64.5	16.9		57.8	20.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.7	4.0		12.4	16.3		64.5	16.9		57.8	20.7	
LOS	B	A		B	B		E	B		E	C	
Approach Delay		5.8			16.2			41.4			32.9	
Approach LOS		A			B			D			C	
Queue Length 50th (m)	5.7	16.2		2.7	69.8		6.9	1.1		23.5	11.5	
Queue Length 95th (m)	m24.1	26.5		9.1	114.2		16.8	9.0		39.3	34.0	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	346	2344		378	1859		137	430		357	544	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.45	0.32		0.09	0.61		0.26	0.08		0.34	0.45	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 44 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 15.5 Intersection LOS: B
Intersection Capacity Utilization 85.1% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





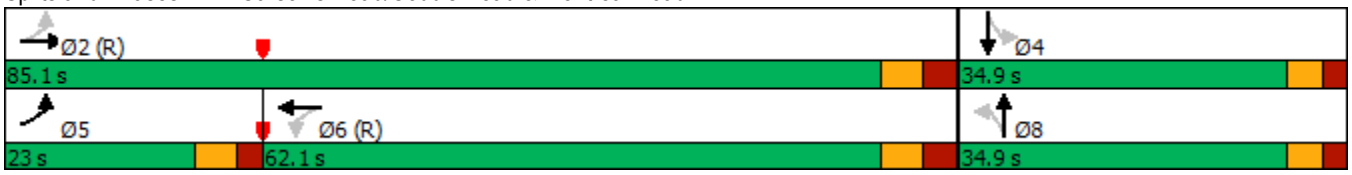
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	712	49	37	1034	95	39	6	31	122	6	245
Future Volume (vph)	159	712	49	37	1034	95	39	6	31	122	6	245
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.98		0.99	0.98	
Frt		0.990			0.987			0.874			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3175	0	1679	3104	0	1729	1465	0	1662	1477	0
Flt Permitted	0.187			0.363			0.238			0.733		
Satd. Flow (perm)	327	3175	0	632	3104	0	431	1465	0	1271	1477	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			11			31			245	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	159	712	49	37	1034	95	39	6	31	122	6	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	761	0	37	1129	0	39	37	0	122	251	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	23.0	85.1		62.1	62.1		34.9	34.9		34.9	34.9	
Total Split (%)	19.2%	70.9%		51.8%	51.8%		29.1%	29.1%		29.1%	29.1%	
Maximum Green (s)	17.0	78.2		55.2	55.2		29.3	29.3		29.3	29.3	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	91.6	90.7		75.7	75.7		16.8	16.8		16.8	16.8	
Actuated g/C Ratio	0.76	0.76		0.63	0.63		0.14	0.14		0.14	0.14	

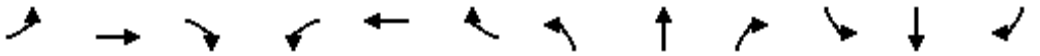
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.45	0.32		0.09	0.58		0.65	0.16		0.69	0.60	
Control Delay	7.4	4.1		3.9	5.9		91.8	18.2		67.7	12.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.4	4.1		3.9	5.9		91.8	18.2		67.7	12.3	
LOS	A	A		A	A		F	B		E	B	
Approach Delay		4.6			5.8			55.9			30.4	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	2.7	6.9		2.2	35.9		8.8	1.3		27.7	1.3	
Queue Length 95th (m)	10.3	39.2		m1.6	14.6		20.4	10.3		45.1	23.5	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	438	2403		398	1961		105	381		310	545	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.32		0.09	0.58		0.37	0.10		0.39	0.46	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 10.5 Intersection LOS: B
Intersection Capacity Utilization 85.9% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





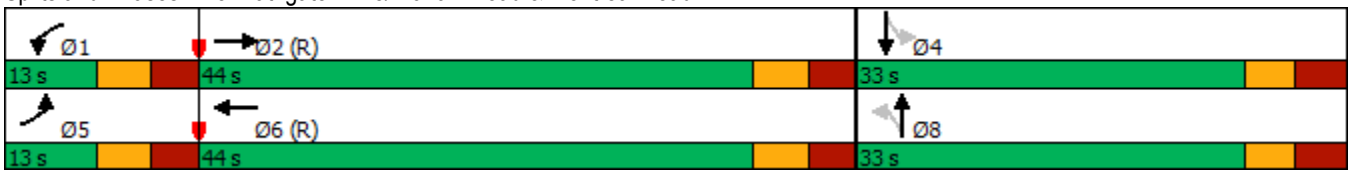
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	804	39	53	1078	52	38	12	85	74	16	46
Future Volume (vph)	17	804	39	53	1078	52	38	12	85	74	16	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.98		0.99	0.99	
Frt		0.993			0.993			0.869			0.889	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3232	0	1662	3208	0	1679	1504	0	1530	1494	0
Flt Permitted	0.950			0.950			0.717			0.694		
Satd. Flow (perm)	1451	3232	0	1660	3208	0	1258	1504	0	1105	1494	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			7			85			46	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	17	804	39	53	1078	52	38	12	85	74	16	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	843	0	53	1130	0	38	97	0	74	62	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	44.0		13.0	44.0		33.0	33.0		33.0	33.0	
Total Split (%)	14.4%	48.9%		14.4%	48.9%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	6.1	37.1		6.1	37.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	6.7	58.8		8.3	62.8		11.3	11.3		11.4	11.4	
Actuated g/C Ratio	0.07	0.65		0.09	0.70		0.13	0.13		0.13	0.13	

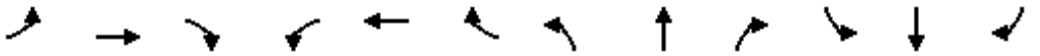
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.16	0.40		0.35	0.50		0.24	0.37		0.53	0.27	
Control Delay	41.8	12.0		43.8	11.3		37.1	13.9		49.3	17.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.8	12.0		43.8	11.3		37.1	13.9		49.3	17.2	
LOS	D	B		D	B		D	B		D	B	
Approach Delay		12.6			12.7			20.4			34.7	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	2.8	43.1		8.8	37.0		6.0	1.9		12.2	2.5	
Queue Length 95th (m)	9.0	71.7		19.2	100.9		14.0	14.2		24.0	12.6	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	110	2114		155	2242		364	496		320	465	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.40		0.34	0.50		0.10	0.20		0.23	0.13	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 30 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 14.4 Intersection LOS: B
Intersection Capacity Utilization 66.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	804	43	58	1078	56	41	13	93	79	17	50
Future Volume (vph)	18	804	43	58	1078	56	41	13	93	79	17	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.97		0.98	0.98	
Frt		0.992			0.993			0.868			0.888	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3228	0	1662	3206	0	1679	1496	0	1530	1489	0
Flt Permitted	0.950			0.950			0.713			0.689		
Satd. Flow (perm)	1450	3228	0	1659	3206	0	1247	1496	0	1092	1489	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			6			93			50	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	18	804	43	58	1078	56	41	13	93	79	17	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	847	0	58	1134	0	41	106	0	79	67	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	22.2	73.6		17.4	68.8		29.0	29.0		29.0	29.0	
Total Split (%)	18.5%	61.3%		14.5%	57.3%		24.2%	24.2%		24.2%	24.2%	
Maximum Green (s)	15.3	66.7		10.5	61.9		22.1	22.1		22.1	22.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	9.8	79.0		8.9	83.3		14.0	14.0		14.0	14.0	
Actuated g/C Ratio	0.08	0.66		0.07	0.69		0.12	0.12		0.12	0.12	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.15	0.40		0.48	0.51		0.28	0.41		0.62	0.31	
Control Delay	43.6	3.2		65.7	12.6		51.2	16.8		70.3	21.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	43.6	3.2		65.7	12.6		51.2	16.8		70.3	21.2	
LOS	D	A		E	B		D	B		E	C	
Approach Delay		4.0			15.2			26.4			47.8	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	4.5	17.4		13.3	42.3		9.0	2.8		18.0	3.6	
Queue Length 95th (m)	m12.3	21.2		26.8	121.2		18.9	18.0		32.5	16.0	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	185	2127		145	2228		229	351		201	315	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.10	0.40		0.40	0.51		0.18	0.30		0.39	0.21	

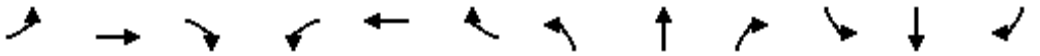
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 17 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 13.8 Intersection LOS: B
Intersection Capacity Utilization 67.0% ICU Level of Service C
Analysis Period (min) 15

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

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	106	428	78	168	6	370	150	42	11	251	33
Future Volume (vph)	18	106	428	78	168	6	370	150	42	11	251	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95			0.99	1.00		0.98	0.97			0.99	
Frt			0.850		0.995			0.967			0.985	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1631	1784	1517	1631	1772	0	1679	1575	0	0	1695	0
Flt Permitted	0.603			0.689			0.473				0.988	
Satd. Flow (perm)	984	1784	1517	1173	1772	0	817	1575	0	0	1673	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			428		2			29			9	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	38		6	6		38	26		56	56		26
Confl. Bikes (#/hr)												9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	2%	2%	6%	2%	0%	3%	11%	0%	9%	5%	0%
Adj. Flow (vph)	18	106	428	78	168	6	370	150	42	11	251	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	106	428	78	174	0	370	192	0	0	295	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	12.7	12.7	12.6	12.7	12.7		51.4	51.4			32.9	
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17		0.68	0.68			0.43	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.11	0.36	0.70	0.40	0.59		0.53	0.18			0.40	
Control Delay	26.3	30.2	10.1	33.1	36.3		8.8	4.9			18.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	26.3	30.2	10.1	33.1	36.3		8.8	4.9			18.3	
LOS	C	C	B	C	D		A	A			B	
Approach Delay		14.5			35.3			7.4			18.3	
Approach LOS		B			D			A			B	
Queue Length 50th (m)	2.2	13.6	0.0	10.1	23.1		18.6	7.1			27.2	
Queue Length 95th (m)	7.0	25.1	23.4	20.5	38.2		38.0	17.1			54.1	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	298	540	611	355	538		698	1076			730	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.06	0.20	0.70	0.22	0.32		0.53	0.18			0.40	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 29 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.9 Intersection LOS: B
Intersection Capacity Utilization 70.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road



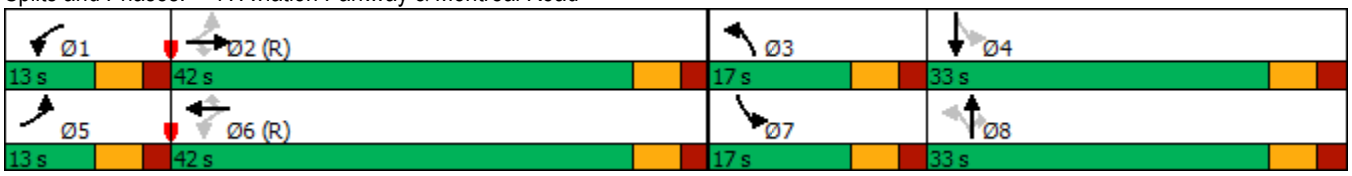
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	735	300	337	904	162	177	160	250	192	248	43
Future Volume (vph)	36	735	300	337	904	162	177	160	250	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.90	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	1662	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.253			0.205			0.315			0.593		
Satd. Flow (perm)	453	3232	1431	356	3262	1385	566	1820	1521	1075	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200			156			250		8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	735	300	337	904	162	177	160	250	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	735	300	337	904	162	177	160	250	192	291	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	42.0	42.0	13.0	42.0	42.0	17.0	33.0	33.0	17.0	33.0	
Total Split (%)	12.4%	40.0%	40.0%	12.4%	40.0%	40.0%	16.2%	31.4%	31.4%	16.2%	31.4%	
Maximum Green (s)	7.1	36.1	36.1	7.1	36.1	36.1	11.1	26.8	26.8	11.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	42.6	36.1	36.1	52.7	47.1	47.1	32.4	21.4	21.4	32.5	21.5	
Actuated g/C Ratio	0.41	0.34	0.34	0.50	0.45	0.45	0.31	0.20	0.20	0.31	0.20	

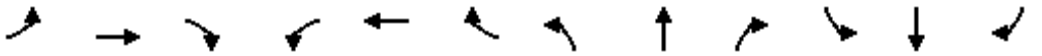
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.66	0.48	1.00	0.62	0.23	0.61	0.43	0.49	0.48	0.79	
Control Delay	15.8	32.8	11.9	71.6	27.9	10.0	32.2	39.2	7.7	27.4	53.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.8	32.8	11.9	71.6	27.9	10.0	32.2	39.2	7.7	27.4	53.9	
LOS	B	C	B	E	C	B	C	D	A	C	D	
Approach Delay		26.3			36.4			23.6			43.3	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	3.5	66.5	14.3	~54.1	93.9	9.0	24.9	28.5	0.0	27.3	54.9	
Queue Length 95th (m)	9.4	86.6	37.8	#141.2	116.2	28.6	38.0	45.0	18.4	40.9	79.7	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	272	1111	623	338	1464	707	298	464	574	405	457	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.66	0.48	1.00	0.62	0.23	0.59	0.34	0.44	0.47	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 17 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 32.2 Intersection LOS: C
Intersection Capacity Utilization 90.5% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





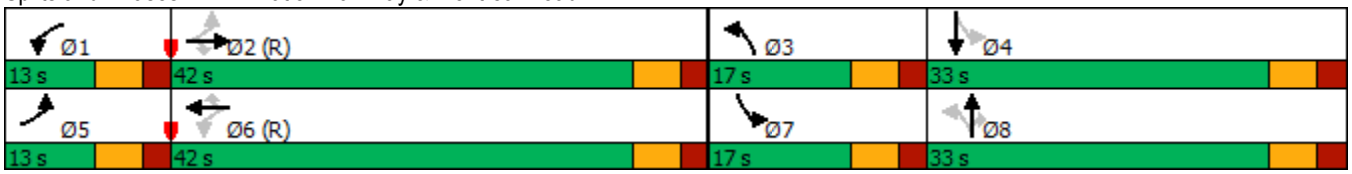
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	735	300	337	904	162	177	160	250	192	248	43
Future Volume (vph)	36	735	300	337	904	162	177	160	250	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.90	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.229			0.232			0.315			0.593		
Satd. Flow (perm)	410	3232	1431	782	3262	1385	566	1820	1521	1075	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200			156			250		8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	735	300	337	904	162	177	160	250	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	735	300	337	904	162	177	160	250	192	291	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	42.0	42.0	13.0	42.0	42.0	17.0	33.0	33.0	17.0	33.0	
Total Split (%)	12.4%	40.0%	40.0%	12.4%	40.0%	40.0%	16.2%	31.4%	31.4%	16.2%	31.4%	
Maximum Green (s)	7.1	36.1	36.1	7.1	36.1	36.1	11.1	26.8	26.8	11.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	46.3	39.8	39.8	52.6	47.1	47.1	32.4	21.4	21.4	32.5	21.5	
Actuated g/C Ratio	0.44	0.38	0.38	0.50	0.45	0.45	0.31	0.20	0.20	0.31	0.20	

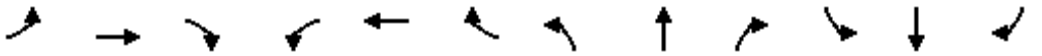
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.60	0.45	0.56	0.62	0.23	0.61	0.43	0.49	0.48	0.79	
Control Delay	15.7	29.7	11.3	17.5	27.5	9.7	32.2	39.2	7.7	27.4	53.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.7	29.7	11.3	17.5	27.5	9.7	32.2	39.2	7.7	27.4	53.9	
LOS	B	C	B	B	C	A	C	D	A	C	D	
Approach Delay		24.1			23.0			23.6			43.3	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.5	66.0	14.2	23.7	93.2	9.1	24.9	28.5	0.0	27.3	54.9	
Queue Length 95th (m)	9.4	86.6	37.8	28.1	115.3	28.8	38.0	45.0	18.4	40.9	79.7	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	272	1225	666	603	1464	707	298	464	574	405	457	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.60	0.45	0.56	0.62	0.23	0.59	0.34	0.44	0.47	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 17 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 26.2 Intersection LOS: C
Intersection Capacity Utilization 81.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 7: Aviation Parkway & Montreal Road





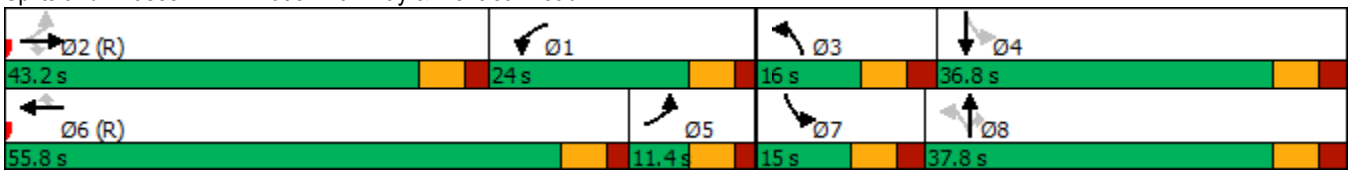
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	735	300	337	904	162	177	160	250	192	248	43
Future Volume (vph)	36	735	300	337	904	162	177	160	250	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.89	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.191			0.950			0.286			0.607		
Satd. Flow (perm)	342	3232	1428	3196	3262	1381	514	1820	1521	1101	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			207			151			250		7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	735	300	337	904	162	177	160	250	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	735	300	337	904	162	177	160	250	192	291	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.3	37.3	11.3	37.3	37.3	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.4	43.2	43.2	24.0	55.8	55.8	16.0	37.8	37.8	15.0	36.8	
Total Split (%)	9.5%	36.0%	36.0%	20.0%	46.5%	46.5%	13.3%	31.5%	31.5%	12.5%	30.7%	
Maximum Green (s)	5.2	37.0	37.0	17.8	49.6	49.6	9.3	31.1	31.1	8.3	30.1	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	49.1	43.9	43.9	16.4	59.7	59.7	34.6	24.7	24.7	33.2	24.0	
Actuated g/C Ratio	0.41	0.37	0.37	0.14	0.50	0.50	0.29	0.21	0.21	0.28	0.20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.62	0.46	0.76	0.56	0.21	0.72	0.43	0.49	0.55	0.81	
Control Delay	19.6	35.4	12.6	56.9	16.4	2.5	47.2	43.9	7.8	37.0	61.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.6	35.4	12.6	56.9	16.4	2.5	47.2	43.9	7.8	37.0	61.8	
LOS	B	D	B	E	B	A	D	D	A	D	E	
Approach Delay		28.5			24.5			29.5			51.9	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.7	75.5	15.0	42.1	85.3	0.0	30.6	32.8	0.0	33.6	64.1	
Queue Length 95th (m)	9.5	103.7	42.6	57.0	104.7	6.7	#45.7	50.0	19.4	49.0	90.2	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	200	1181	653	478	1622	762	246	471	579	351	449	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.62	0.46	0.71	0.56	0.21	0.72	0.34	0.43	0.55	0.65	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 30.3 Intersection LOS: C
Intersection Capacity Utilization 85.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



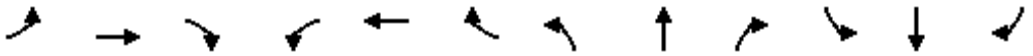
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	202	80	0	86	50
Future Vol, veh/h	0	202	80	0	86	50
Conflicting Peds, #/hr	2	0	0	2	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	202	80	0	86	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	282	85
Stage 1	-	-	-	-	80	-
Stage 2	-	-	-	-	202	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	712	980
Stage 1	0	-	-	0	948	-
Stage 2	0	-	-	0	837	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	712	975
Mov Cap-2 Maneuver	-	-	-	-	712	-
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	837	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	790
HCM Lane V/C Ratio	-	-	0.172
HCM Control Delay (s)	-	-	10.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.6



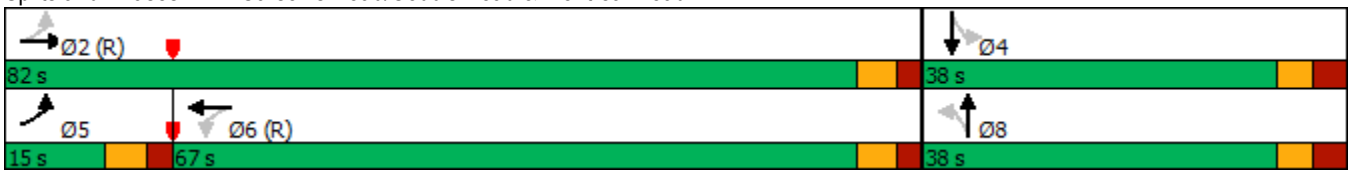
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	1038	65	30	786	108	64	4	26	148	5	253
Future Volume (vph)	217	1038	65	30	786	108	64	4	26	148	5	253
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99	0.97		0.98	0.97	
Frt		0.991			0.982			0.870			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3311	0	1729	3198	0	1695	1536	0	1517	1470	0
Flt Permitted	0.246			0.259			0.307			0.738		
Satd. Flow (perm)	425	3311	0	467	3198	0	543	1536	0	1153	1470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			18			26			243	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	217	1038	65	30	786	108	64	4	26	148	5	253
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	1103	0	30	894	0	64	30	0	148	258	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	35.0		35.0	35.0		29.5	29.5		29.5	29.5	
Total Split (s)	15.0	82.0		67.0	67.0		38.0	38.0		38.0	38.0	
Total Split (%)	12.5%	68.3%		55.8%	55.8%		31.7%	31.7%		31.7%	31.7%	
Maximum Green (s)	9.0	76.0		61.0	61.0		31.5	31.5		31.5	31.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0		22.0	22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	86.8	86.8		70.9	70.9		20.7	20.7		20.7	20.7	
Actuated g/C Ratio	0.72	0.72		0.59	0.59		0.17	0.17		0.17	0.17	

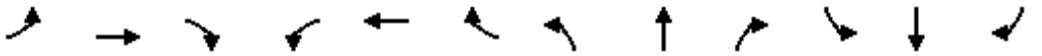
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.53	0.46		0.11	0.47		0.69	0.11		0.75	0.57	
Control Delay	13.4	2.7		6.2	8.6		80.1	16.0		68.5	11.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.4	2.7		6.2	8.6		80.1	16.0		68.5	11.3	
LOS	B	A		A	A		F	B		E	B	
Approach Delay		4.5			8.6			59.6			32.1	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	8.2	12.4		0.8	64.2		14.3	0.8		33.5	3.0	
Queue Length 95th (m)	m15.9	24.0		3.0	90.0		28.1	8.3		52.0	24.5	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	414	2398		275	1895		142	422		302	565	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.52	0.46		0.11	0.47		0.45	0.07		0.49	0.46	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 11.8 Intersection LOS: B
Intersection Capacity Utilization 82.7% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1038	67	31	786	109	66	4	27	150	5	257
Future Volume (vph)	220	1038	67	31	786	109	66	4	27	150	5	257
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.97		0.98	0.98	
Frt		0.991			0.982			0.869			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3309	0	1729	3189	0	1695	1540	0	1517	1474	0
Flt Permitted	0.242			0.258			0.299			0.737		
Satd. Flow (perm)	424	3309	0	465	3189	0	530	1540	0	1157	1474	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			15			27			257	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	220	1038	67	31	786	109	66	4	27	150	5	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	1105	0	31	895	0	66	31	0	150	262	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	29.0		29.0	29.0		35.5	35.5		35.5	35.5	
Total Split (s)	29.0	81.0		52.0	52.0		39.0	39.0		39.0	39.0	
Total Split (%)	24.2%	67.5%		43.3%	43.3%		32.5%	32.5%		32.5%	32.5%	
Maximum Green (s)	23.0	75.0		46.0	46.0		32.5	32.5		32.5	32.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	86.7	86.7		69.2	69.2		20.8	20.8		20.8	20.8	
Actuated g/C Ratio	0.72	0.72		0.58	0.58		0.17	0.17		0.17	0.17	

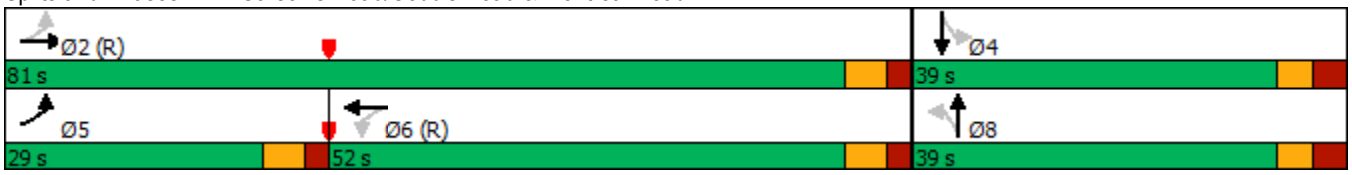
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.52	0.46		0.12	0.48		0.72	0.11		0.75	0.56	
Control Delay	10.7	2.2		6.1	7.3		84.2	15.7		68.2	10.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.7	2.2		6.1	7.3		84.2	15.7		68.2	10.0	
LOS	B	A		A	A		F	B		E	A	
Approach Delay		3.6			7.2			62.4			31.2	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	9.3	10.0		1.0	15.6		14.8	0.8		33.9	1.0	
Queue Length 95th (m)	m11.4	16.8		m3.5	106.9		29.2	8.5		52.3	21.8	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	543	2392		268	1846		143	436		313	586	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.41	0.46		0.12	0.48		0.46	0.07		0.48	0.45	

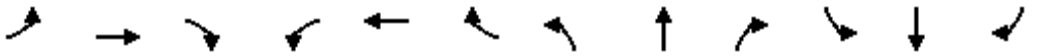
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 84.4% ICU Level of Service E
Analysis Period (min) 15

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

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	1093	71	51	832	68	51	18	78	65	15	40
Future Volume (vph)	48	1093	71	51	832	68	51	18	78	65	15	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.96		0.96	0.99	
Frt		0.991			0.989			0.878			0.891	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3214	0	1729	1492	0	1572	1515	0
Flt Permitted	0.950			0.950			0.721			0.695		
Satd. Flow (perm)	1603	3314	0	1728	3214	0	1308	1492	0	1108	1515	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			11			78			40	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	48	1093	71	51	832	68	51	18	78	65	15	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	1164	0	51	900	0	51	96	0	65	55	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	72.0		13.0	72.0		35.0	35.0		35.0	35.0	
Total Split (%)	10.8%	60.0%		10.8%	60.0%		29.2%	29.2%		29.2%	29.2%	
Maximum Green (s)	6.1	65.1		6.1	65.1		28.1	28.1		28.1	28.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	9.1	80.4		9.1	80.3		12.4	12.4		12.4	12.4	
Actuated g/C Ratio	0.08	0.67		0.08	0.67		0.10	0.10		0.10	0.10	

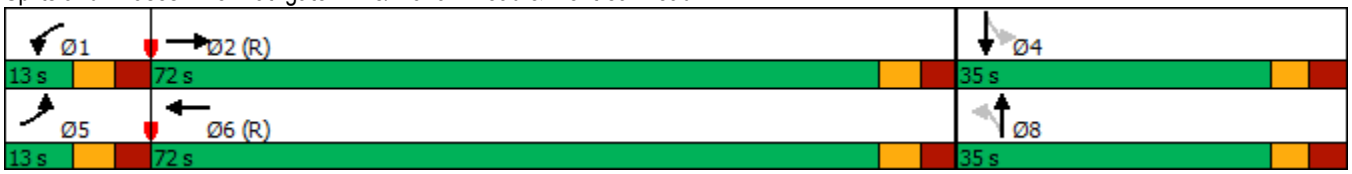
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.39	0.52		0.39	0.42		0.38	0.43		0.57	0.29	
Control Delay	47.6	21.4		60.6	11.3		56.5	20.6		69.2	23.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	47.6	21.4		60.6	11.3		56.5	20.6		69.2	23.5	
LOS	D	C		E	B		E	C		E	C	
Approach Delay		22.5			13.9			33.1			48.3	
Approach LOS		C			B			C			D	
Queue Length 50th (m)	11.2	90.5		11.6	49.7		11.4	3.9		14.8	3.3	
Queue Length 95th (m)	m24.2	120.2		23.7	78.4		22.8	18.9		28.2	14.8	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	124	2222		131	2154		306	409		259	385	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.39	0.52		0.39	0.42		0.17	0.23		0.25	0.14	

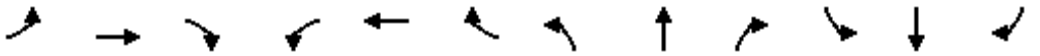
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 21.0 Intersection LOS: C
Intersection Capacity Utilization 69.1% ICU Level of Service C
Analysis Period (min) 15

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

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road



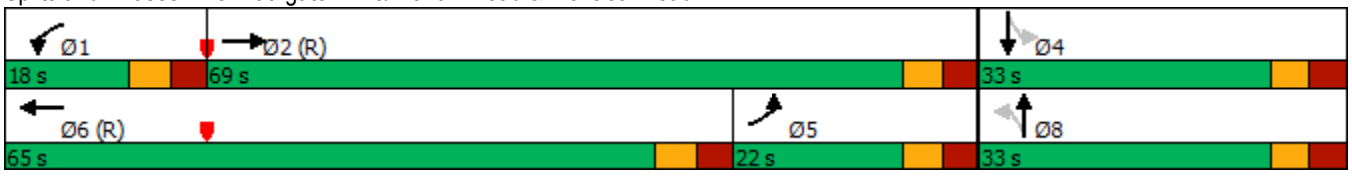


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1093	73	53	832	69	53	18	80	67	15	41
Future Volume (vph)	49	1093	73	53	832	69	53	18	80	67	15	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.96		0.96	0.99	
Frt		0.991			0.989			0.878			0.890	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3214	0	1729	1492	0	1572	1513	0
Flt Permitted	0.950			0.950			0.720			0.694		
Satd. Flow (perm)	1603	3314	0	1728	3214	0	1306	1492	0	1107	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			10			80			41	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	49	1093	73	53	832	69	53	18	80	67	15	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	1166	0	53	901	0	53	98	0	67	56	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	22.0	69.0		18.0	65.0		33.0	33.0		33.0	33.0	
Total Split (%)	18.3%	57.5%		15.0%	54.2%		27.5%	27.5%		27.5%	27.5%	
Maximum Green (s)	15.1	62.1		11.1	58.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	13.2	80.2		9.0	76.0		12.6	12.6		12.6	12.6	
Actuated g/C Ratio	0.11	0.67		0.08	0.63		0.10	0.10		0.10	0.10	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.28	0.53		0.41	0.44		0.39	0.43		0.58	0.29	
Control Delay	33.9	5.3		61.4	13.8		56.5	20.2		69.3	23.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.9	5.3		61.4	13.8		56.5	20.2		69.3	23.4	
LOS	C	A		E	B		E	C		E	C	
Approach Delay		6.5			16.4			33.0			48.4	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	9.7	29.5		12.1	58.2		11.8	3.9		15.3	3.3	
Queue Length 95th (m)	19.4	43.5		24.4	83.6		23.5	18.9		28.9	14.8	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	203	2216		163	2039		284	387		240	361	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.24	0.53		0.33	0.44		0.19	0.25		0.28	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 30 (25%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 69.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	165	395	65	106	13	488	223	91	11	215	32
Future Volume (vph)	36	165	395	65	106	13	488	223	91	11	215	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96			0.98	0.99		0.98	0.96			0.99	
Frt			0.850		0.984			0.957			0.983	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1729	1802	1517	1695	1777	0	1712	1641	0	0	1676	0
Flt Permitted	0.681			0.624			0.484				0.982	
Satd. Flow (perm)	1187	1802	1517	1093	1777	0	859	1641	0	0	1644	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			395		8			42			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	30		14	14		30	16		56	56		16
Confl. Bikes (#/hr)			27									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	2%	0%	0%	1%	3%	0%	0%	7%	0%
Adj. Flow (vph)	36	165	395	65	106	13	488	223	91	11	215	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	165	395	65	119	0	488	314	0	0	258	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	12.2	12.2	16.1	12.2	12.2		51.9	51.9			29.9	
Actuated g/C Ratio	0.16	0.16	0.21	0.16	0.16		0.68	0.68			0.39	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.57	0.62	0.37	0.41		0.64	0.28			0.40	
Control Delay	28.2	36.6	8.0	33.2	29.8		10.4	5.3			19.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	28.2	36.6	8.0	33.2	29.8		10.4	5.3			19.6	
LOS	C	D	A	C	C		B	A			B	
Approach Delay		17.1			31.0			8.4			19.6	
Approach LOS		B			C			A			B	
Queue Length 50th (m)	4.5	22.1	0.0	8.4	14.4		25.9	12.4			26.8	
Queue Length 95th (m)	11.4	37.1	21.9	18.0	26.8		52.1	27.5			46.9	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	359	546	633	331	544		768	1135			653	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.10	0.30	0.62	0.20	0.22		0.64	0.28			0.40	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 19 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 15.1 Intersection LOS: B
Intersection Capacity Utilization 82.9% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road



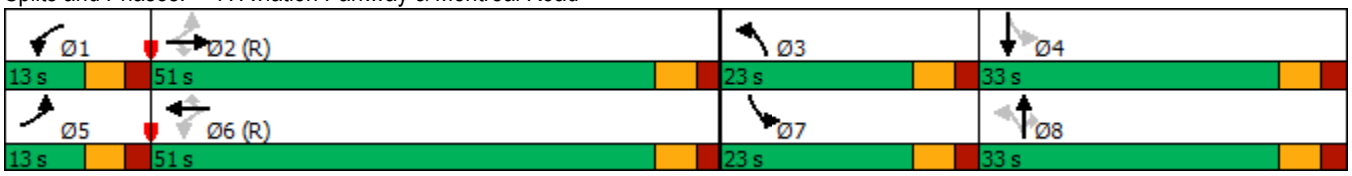
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	968	342	287	866	196	283	303	285	121	205	49
Future Volume (vph)	47	968	342	287	866	196	283	303	285	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	1679	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.256			0.124			0.257			0.385		
Satd. Flow (perm)	455	3325	1444	218	3293	1328	458	1820	1469	697	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			160			136			267		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	968	342	287	866	196	283	303	285	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	968	342	287	866	196	283	303	285	121	254	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	51.9	45.1	45.1	61.6	53.6	53.6	43.3	27.0	27.0	32.8	21.4	
Actuated g/C Ratio	0.43	0.38	0.38	0.51	0.45	0.45	0.36	0.22	0.22	0.27	0.18	

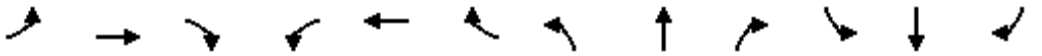
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.78	0.53	1.07	0.59	0.29	0.83	0.74	0.53	0.42	0.79	
Control Delay	17.2	38.2	18.3	96.6	27.6	10.1	50.1	54.8	9.6	29.8	63.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.2	38.2	18.3	96.6	27.6	10.1	50.1	54.8	9.6	29.8	63.0	
LOS	B	D	B	F	C	B	D	D	A	C	E	
Approach Delay		32.4			39.7			38.5			52.2	
Approach LOS		C			D			D			D	
Queue Length 50th (m)	5.2	104.5	32.1	~55.1	92.2	16.2	49.1	66.0	3.3	18.9	55.5	
Queue Length 95th (m)	12.3	129.8	60.5	#127.5	118.2	33.2	#75.8	95.7	26.1	30.2	80.6	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	275	1249	642	269	1470	668	344	426	548	372	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.78	0.53	1.07	0.59	0.29	0.82	0.71	0.52	0.33	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 38.1 Intersection LOS: D
Intersection Capacity Utilization 98.9% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





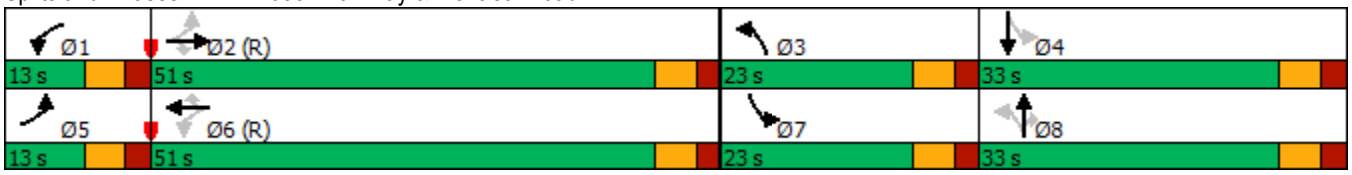
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	968	342	287	866	196	283	303	285	121	205	49
Future Volume (vph)	47	968	342	287	866	196	283	303	285	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.236			0.151			0.257			0.385		
Satd. Flow (perm)	419	3325	1444	514	3293	1328	458	1820	1469	697	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			160			136			267		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	968	342	287	866	196	283	303	285	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	968	342	287	866	196	283	303	285	121	254	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	55.7	48.9	48.9	61.1	53.6	53.6	43.3	27.0	27.0	32.8	21.4	
Actuated g/C Ratio	0.46	0.41	0.41	0.51	0.45	0.45	0.36	0.22	0.22	0.27	0.18	

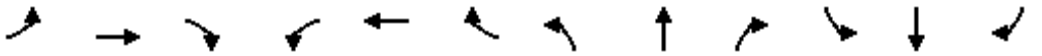
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.71	0.50	0.61	0.59	0.29	0.83	0.74	0.53	0.42	0.79	
Control Delay	17.1	34.3	17.2	19.7	27.6	10.1	50.1	54.8	9.6	29.8	63.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.1	34.3	17.2	19.7	27.6	10.1	50.1	54.8	9.6	29.8	63.0	
LOS	B	C	B	B	C	B	D	D	A	C	E	
Approach Delay		29.4			23.4			38.5			52.2	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	5.2	103.7	31.8	20.8	92.1	16.2	49.1	66.0	3.3	18.9	55.5	
Queue Length 95th (m)	12.3	129.8	60.5	#28.0	118.0	33.1	#75.8	95.7	26.1	30.2	80.6	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	275	1355	683	470	1470	668	344	426	548	372	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.71	0.50	0.61	0.59	0.29	0.82	0.71	0.52	0.33	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 31.5 Intersection LOS: C
Intersection Capacity Utilization 90.7% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





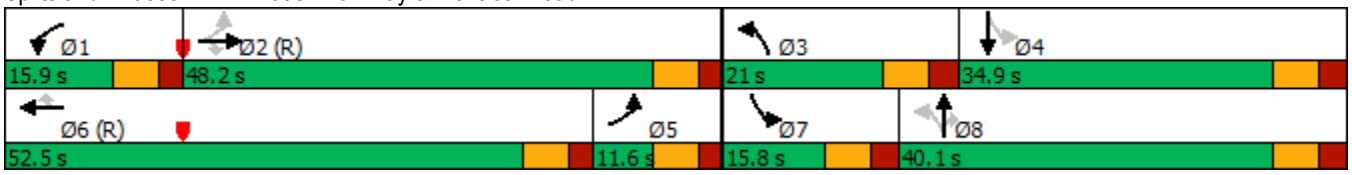
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	968	342	287	866	196	283	303	285	121	205	49
Future Volume (vph)	47	968	342	287	866	196	283	303	285	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.95	0.99		0.87	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1758	0
Flt Permitted	0.327			0.950			0.271			0.401		
Satd. Flow (perm)	576	3325	1449	3225	3293	1346	484	1820	1473	726	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			153			151			281		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	968	342	287	866	196	283	303	285	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	968	342	287	866	196	283	303	285	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.2	37.2	11.3	37.2	37.2	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.6	48.2	48.2	15.9	52.5	52.5	21.0	40.1	40.1	15.8	34.9	
Total Split (%)	9.7%	40.2%	40.2%	13.3%	43.8%	43.8%	17.5%	33.4%	33.4%	13.2%	29.1%	
Maximum Green (s)	5.4	42.0	42.0	9.7	46.3	46.3	14.3	33.4	33.4	9.1	28.2	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	42.9	42.9	42.9	15.3	55.1	55.1	41.5	27.2	27.2	30.5	21.7	
Actuated g/C Ratio	0.36	0.36	0.36	0.13	0.46	0.46	0.35	0.23	0.23	0.25	0.18	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.81	0.56	0.69	0.57	0.28	0.90	0.74	0.52	0.47	0.78	
Control Delay	30.4	41.8	20.6	54.9	20.3	3.0	62.8	53.7	7.9	32.5	61.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.4	41.8	20.6	54.9	20.3	3.0	62.8	53.7	7.9	32.5	61.4	
LOS	C	D	C	D	C	A	E	D	A	C	E	
Approach Delay		36.1			25.2			41.7			52.1	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	7.4	109.3	35.1	31.1	84.6	4.9	50.9	66.6	0.8	19.5	55.5	
Queue Length 95th (m)	15.8	135.6	65.0	#65.4	101.1	4.3	#75.0	91.1	21.1	30.6	79.3	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	258	1189	616	414	1512	699	313	506	612	262	420	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.81	0.56	0.69	0.57	0.28	0.90	0.60	0.47	0.46	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 100 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 35.1 Intersection LOS: D
Intersection Capacity Utilization 93.5% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



Future (2027) Total Traffic

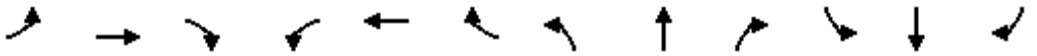
Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↾	
Traffic Vol, veh/h	0	142	113	0	78	55
Future Vol, veh/h	0	142	113	0	78	55
Conflicting Peds, #/hr	0	0	0	0	1	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	142	113	0	78	55

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	256	121
Stage 1	-	-	-	-	113	-
Stage 2	-	-	-	-	143	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	737	936
Stage 1	0	-	-	0	917	-
Stage 2	0	-	-	0	889	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	737	928
Mov Cap-2 Maneuver	-	-	-	-	737	-
Stage 1	-	-	-	-	917	-
Stage 2	-	-	-	-	889	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	806
HCM Lane V/C Ratio	-	-	0.165
HCM Control Delay (s)	-	-	10.3
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.6



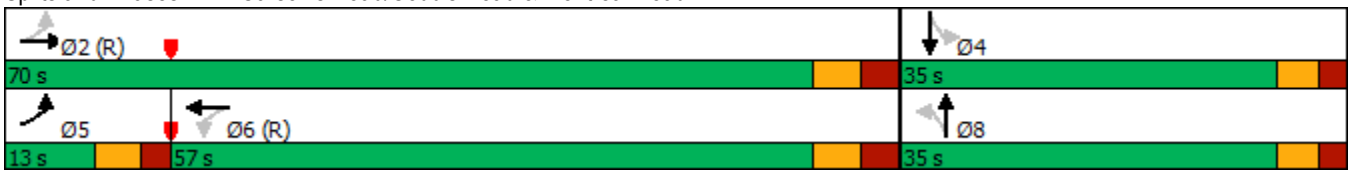
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	698	49	37	1028	95	39	7	31	123	7	247
Future Volume (vph)	164	698	49	37	1028	95	39	7	31	123	7	247
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.98		0.99	0.98	
Frt		0.990			0.987			0.878			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3176	0	1679	3106	0	1729	1469	0	1662	1479	0
Flt Permitted	0.178			0.368			0.258			0.732		
Satd. Flow (perm)	312	3176	0	642	3106	0	467	1469	0	1270	1479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			13			31			181	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	164	698	49	37	1028	95	39	7	31	123	7	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	164	747	0	37	1123	0	39	38	0	123	254	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	13.0	70.0		57.0	57.0		35.0	35.0		35.0	35.0	
Total Split (%)	12.4%	66.7%		54.3%	54.3%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	7.0	63.1		50.1	50.1		29.4	29.4		29.4	29.4	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	77.9	77.0		61.8	61.8		15.5	15.5		15.5	15.5	
Actuated g/C Ratio	0.74	0.73		0.59	0.59		0.15	0.15		0.15	0.15	

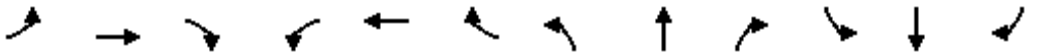
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.47	0.32		0.10	0.61		0.57	0.16		0.66	0.68	
Control Delay	16.2	3.8		12.9	16.9		70.9	16.6		57.8	22.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.2	3.8		12.9	16.9		70.9	16.6		57.8	22.5	
LOS	B	A		B	B		E	B		E	C	
Approach Delay		6.0			16.8			44.1			34.0	
Approach LOS		A			B			D			C	
Queue Length 50th (m)	7.5	16.3		3.1	71.0		7.5	1.2		24.0	13.6	
Queue Length 95th (m)	m28.0	26.7		10.0	116.8		17.8	9.4		40.1	37.0	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	350	2332		377	1834		130	433		355	544	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.47	0.32		0.10	0.61		0.30	0.09		0.35	0.47	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 44 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 16.3 Intersection LOS: B
Intersection Capacity Utilization 86.1% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





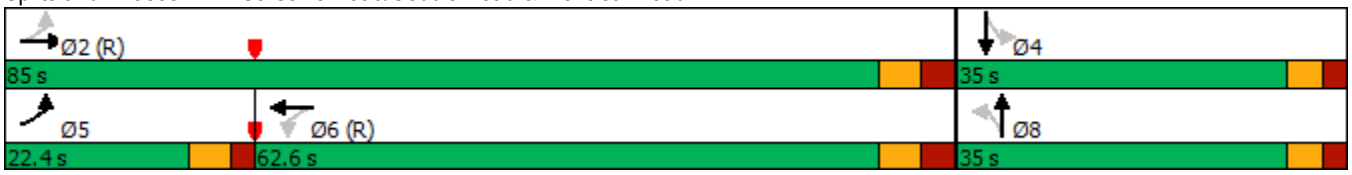
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	698	49	37	1028	95	39	7	31	123	7	247
Future Volume (vph)	164	698	49	37	1028	95	39	7	31	123	7	247
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.98		0.99	0.98	
Frt		0.990			0.987			0.878			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3175	0	1679	3104	0	1729	1468	0	1662	1477	0
Flt Permitted	0.188			0.368			0.237			0.732		
Satd. Flow (perm)	329	3175	0	641	3104	0	429	1468	0	1269	1477	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			11			31			247	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	164	698	49	37	1028	95	39	7	31	123	7	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	164	747	0	37	1123	0	39	38	0	123	254	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	22.4	85.0		62.6	62.6		35.0	35.0		35.0	35.0	
Total Split (%)	18.7%	70.8%		52.2%	52.2%		29.2%	29.2%		29.2%	29.2%	
Maximum Green (s)	16.4	78.1		55.7	55.7		29.4	29.4		29.4	29.4	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	91.5	90.6		75.4	75.4		16.9	16.9		16.9	16.9	
Actuated g/C Ratio	0.76	0.76		0.63	0.63		0.14	0.14		0.14	0.14	

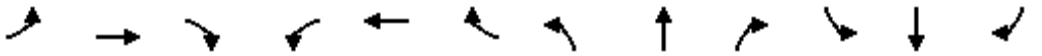
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.47	0.31		0.09	0.57		0.65	0.16		0.69	0.60	
Control Delay	11.6	3.3		3.2	6.2		91.7	18.7		67.7	12.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.6	3.3		3.2	6.2		91.7	18.7		67.7	12.4	
LOS	B	A		A	A		F	B		E	B	
Approach Delay		4.8			6.1			55.7			30.4	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	6.2	11.7		0.7	11.0		8.8	1.5		27.9	1.5	
Queue Length 95th (m)	15.8	25.7		m1.6	64.1		20.4	10.6		45.3	23.7	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	433	2400		402	1954		105	383		310	548	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.38	0.31		0.09	0.57		0.37	0.10		0.40	0.46	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 58 (48%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 10.8 Intersection LOS: B
Intersection Capacity Utilization 86.1% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





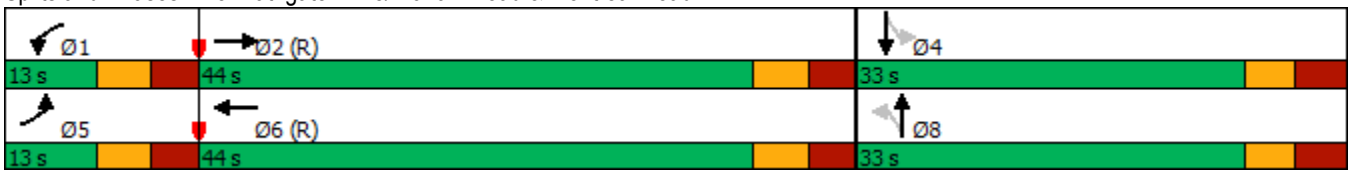
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	782	43	58	1070	62	41	14	93	80	18	52
Future Volume (vph)	28	782	43	58	1070	62	41	14	93	80	18	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.98		0.99	0.99	
Frt		0.992			0.992			0.870			0.889	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3228	0	1662	3199	0	1679	1505	0	1530	1494	0
Flt Permitted	0.950			0.950			0.711			0.688		
Satd. Flow (perm)	1451	3228	0	1660	3199	0	1247	1505	0	1095	1494	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			8			93			52	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	28	782	43	58	1070	62	41	14	93	80	18	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	825	0	58	1132	0	41	107	0	80	70	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	44.0		13.0	44.0		33.0	33.0		33.0	33.0	
Total Split (%)	14.4%	48.9%		14.4%	48.9%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	6.1	37.1		6.1	37.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	7.3	55.2		8.6	61.9		11.8	11.8		11.9	11.9	
Actuated g/C Ratio	0.08	0.61		0.10	0.69		0.13	0.13		0.13	0.13	

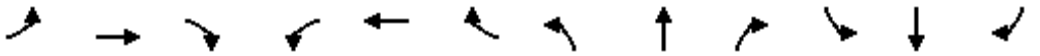
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.24	0.42		0.36	0.51		0.25	0.38		0.56	0.29	
Control Delay	43.0	13.7		43.8	12.1		36.8	13.5		49.8	16.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	43.0	13.7		43.8	12.1		36.8	13.5		49.8	16.6	
LOS	D	B		D	B		D	B		D	B	
Approach Delay		14.6			13.7			20.0			34.3	
Approach LOS		B			B			B			C	
Queue Length 50th (m)	4.7	43.0		9.6	38.0		6.5	2.2		13.1	2.8	
Queue Length 95th (m)	12.4	71.8		20.3	106.6		14.7	15.1		25.4	13.3	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	120	1984		160	2203		361	502		317	470	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.23	0.42		0.36	0.51		0.11	0.21		0.25	0.15	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 30 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 15.7 Intersection LOS: B
Intersection Capacity Utilization 67.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	782	43	58	1070	62	41	14	93	80	18	52
Future Volume (vph)	28	782	43	58	1070	62	41	14	93	80	18	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.97		0.98	0.98	
Frt		0.992			0.992			0.870			0.889	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3228	0	1662	3199	0	1679	1499	0	1530	1491	0
Flt Permitted	0.950			0.950			0.711			0.688		
Satd. Flow (perm)	1450	3228	0	1659	3199	0	1244	1499	0	1091	1491	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			8			93			52	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	28	782	43	58	1070	62	41	14	93	80	18	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	825	0	58	1132	0	41	107	0	80	70	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	16.0	70.0		19.0	73.0		31.0	31.0		31.0	31.0	
Total Split (%)	13.3%	58.3%		15.8%	60.8%		25.8%	25.8%		25.8%	25.8%	
Maximum Green (s)	9.1	63.1		12.1	66.1		24.1	24.1		24.1	24.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	7.9	78.2		9.5	82.5		14.1	14.1		14.1	14.1	
Actuated g/C Ratio	0.07	0.65		0.08	0.69		0.12	0.12		0.12	0.12	

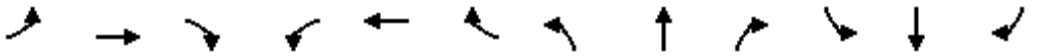
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.29	0.39		0.44	0.51		0.28	0.41		0.62	0.32	
Control Delay	41.9	3.6		62.2	12.1		51.0	16.9		70.1	21.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.9	3.6		62.2	12.1		51.0	16.9		70.1	21.2	
LOS	D	A		E	B		D	B		E	C	
Approach Delay		4.8			14.5			26.4			47.3	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	6.5	15.8		13.3	73.2		8.9	3.0		18.2	3.9	
Queue Length 95th (m)	14.4	25.3		26.0	107.0		18.8	18.2		32.9	16.4	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	110	2105		170	2201		249	375		219	340	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.39		0.34	0.51		0.16	0.29		0.37	0.21	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 13.8 Intersection LOS: B
Intersection Capacity Utilization 67.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	111	410	79	170	6	359	136	45	11	193	28
Future Volume (vph)	16	111	410	79	170	6	359	136	45	11	193	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95			0.99	1.00		0.97	0.97			0.99	
Frt			0.850		0.995			0.963			0.984	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1631	1784	1517	1631	1772	0	1679	1567	0	0	1692	0
Flt Permitted	0.598			0.685			0.529				0.986	
Satd. Flow (perm)	976	1784	1517	1166	1772	0	909	1567	0	0	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			410		2			34			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	38		6	6		38	26		56	56		26
Confl. Bikes (#/hr)												9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	2%	2%	6%	2%	0%	3%	11%	0%	9%	5%	0%
Adj. Flow (vph)	16	111	410	79	170	6	359	136	45	11	193	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	111	410	79	176	0	359	181	0	0	232	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	12.7	12.7	12.1	12.7	12.7		51.4	51.4			33.4	
Actuated g/C Ratio	0.17	0.17	0.16	0.17	0.17		0.68	0.68			0.44	

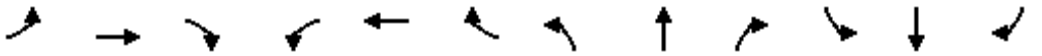
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.10	0.37	0.70	0.41	0.59		0.49	0.17			0.31	
Control Delay	25.9	30.5	10.3	33.2	36.4		8.2	4.7			16.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	25.9	30.5	10.3	33.2	36.4		8.2	4.7			16.6	
LOS	C	C	B	C	D		A	A			B	
Approach Delay		15.0			35.4			7.0			16.6	
Approach LOS		B			D			A			B	
Queue Length 50th (m)	2.0	14.3	0.0	10.2	23.3		17.8	6.4			19.7	
Queue Length 95th (m)	6.4	25.9	22.8	20.8	38.5		36.9	15.8			41.9	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	295	540	589	353	538		739	1071			738	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.05	0.21	0.70	0.22	0.33		0.49	0.17			0.31	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 29 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.8 Intersection LOS: B
Intersection Capacity Utilization 68.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road





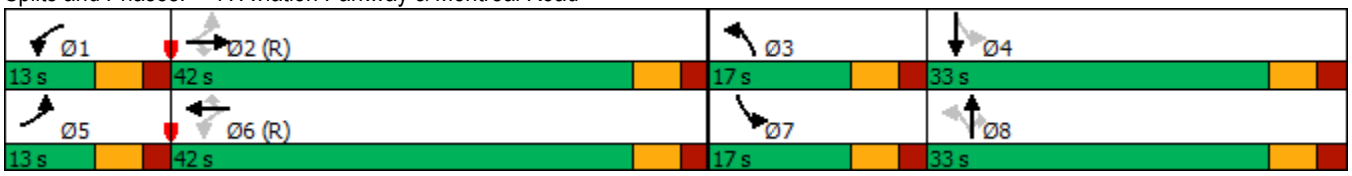
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	721	285	339	900	162	172	160	256	192	248	43
Future Volume (vph)	36	721	285	339	900	162	172	160	256	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.90	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	1662	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.293			0.176			0.320			0.583		
Satd. Flow (perm)	524	3232	1431	306	3262	1385	575	1820	1521	1057	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			194			156			256		8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	721	285	339	900	162	172	160	256	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	721	285	339	900	162	172	160	256	192	291	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	42.0	42.0	13.0	42.0	42.0	17.0	33.0	33.0	17.0	33.0	
Total Split (%)	12.4%	40.0%	40.0%	12.4%	40.0%	40.0%	16.2%	31.4%	31.4%	16.2%	31.4%	
Maximum Green (s)	7.1	36.1	36.1	7.1	36.1	36.1	11.1	26.8	26.8	11.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	37.6	31.1	31.1	52.5	46.9	46.9	32.3	21.1	21.1	33.1	21.5	
Actuated g/C Ratio	0.36	0.30	0.30	0.50	0.45	0.45	0.31	0.20	0.20	0.32	0.20	

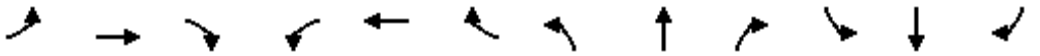
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.75	0.51	0.89	0.62	0.23	0.58	0.44	0.50	0.47	0.79	
Control Delay	16.1	38.4	12.5	48.7	25.3	9.3	30.9	39.5	7.7	27.0	53.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.1	38.4	12.5	48.7	25.3	9.3	30.9	39.5	7.7	27.0	53.9	
LOS	B	D	B	D	C	A	C	D	A	C	D	
Approach Delay		30.6			29.1			23.2			43.2	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.6	66.8	13.3	~53.7	93.1	9.0	23.4	28.6	0.0	26.5	54.9	
Queue Length 95th (m)	9.4	84.8	35.3	#127.4	114.2	28.7	36.9	45.0	18.6	40.9	79.7	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	272	1111	619	380	1456	704	303	464	578	410	457	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.65	0.46	0.89	0.62	0.23	0.57	0.34	0.44	0.47	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 17 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 30.5 Intersection LOS: C
Intersection Capacity Utilization 90.4% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





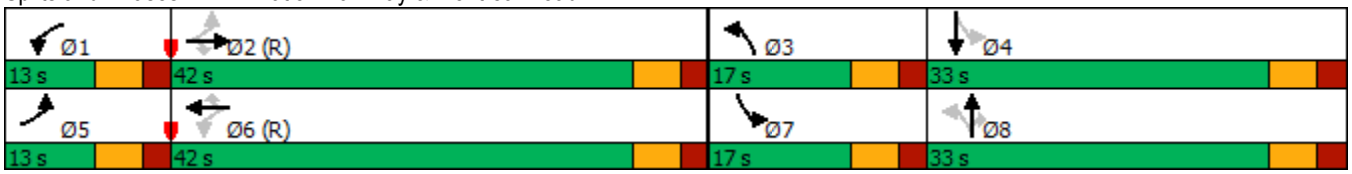
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	721	285	339	900	162	172	160	256	192	248	43
Future Volume (vph)	36	721	285	339	900	162	172	160	256	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.90	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.232			0.238			0.315			0.593		
Satd. Flow (perm)	415	3232	1431	802	3262	1385	566	1820	1521	1075	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			194			156			256		8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	721	285	339	900	162	172	160	256	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	721	285	339	900	162	172	160	256	192	291	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	42.0	42.0	13.0	42.0	42.0	17.0	33.0	33.0	17.0	33.0	
Total Split (%)	12.4%	40.0%	40.0%	12.4%	40.0%	40.0%	16.2%	31.4%	31.4%	16.2%	31.4%	
Maximum Green (s)	7.1	36.1	36.1	7.1	36.1	36.1	11.1	26.8	26.8	11.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	46.3	39.8	39.8	52.7	47.2	47.2	32.3	21.3	21.3	32.5	21.5	
Actuated g/C Ratio	0.44	0.38	0.38	0.50	0.45	0.45	0.31	0.20	0.20	0.31	0.20	

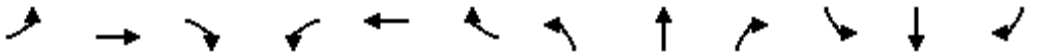
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.59	0.43	0.55	0.61	0.23	0.59	0.43	0.50	0.48	0.79	
Control Delay	15.7	29.5	10.9	17.2	27.1	9.6	31.5	39.2	7.7	27.4	53.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.7	29.5	10.9	17.2	27.1	9.6	31.5	39.2	7.7	27.4	53.9	
LOS	B	C	B	B	C	A	C	D	A	C	D	
Approach Delay		23.9			22.7			23.2			43.3	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.5	64.4	12.8	23.8	92.6	9.0	24.1	28.5	0.0	27.3	54.9	
Queue Length 95th (m)	9.4	84.8	35.3	27.7	114.2	28.7	36.9	45.0	18.6	40.9	79.7	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	274	1225	663	613	1465	708	297	464	578	405	457	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.59	0.43	0.55	0.61	0.23	0.58	0.34	0.44	0.47	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 17 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 26.0 Intersection LOS: C
Intersection Capacity Utilization 80.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 7: Aviation Parkway & Montreal Road





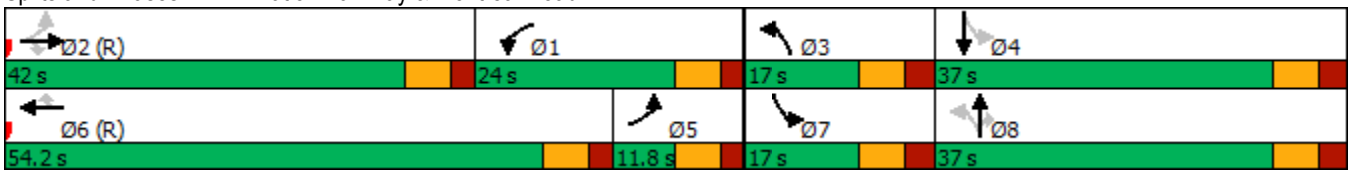
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	721	285	339	900	162	172	160	256	192	248	43
Future Volume (vph)	36	721	285	339	900	162	172	160	256	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.89	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.187			0.950			0.298			0.580		
Satd. Flow (perm)	334	3232	1427	3195	3262	1381	536	1820	1521	1052	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			207			151			256		7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	721	285	339	900	162	172	160	256	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	721	285	339	900	162	172	160	256	192	291	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.3	37.3	11.3	37.3	37.3	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.8	42.0	42.0	24.0	54.2	54.2	17.0	37.0	37.0	17.0	37.0	
Total Split (%)	9.8%	35.0%	35.0%	20.0%	45.2%	45.2%	14.2%	30.8%	30.8%	14.2%	30.8%	
Maximum Green (s)	5.6	35.8	35.8	17.8	48.0	48.0	10.3	30.3	30.3	10.3	30.3	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	48.6	43.1	43.1	16.5	58.7	58.7	34.5	23.9	23.9	34.8	24.1	
Actuated g/C Ratio	0.40	0.36	0.36	0.14	0.49	0.49	0.29	0.20	0.20	0.29	0.20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.62	0.44	0.77	0.56	0.22	0.67	0.44	0.50	0.53	0.81	
Control Delay	20.2	36.0	11.8	65.1	23.9	6.7	41.9	44.9	8.1	34.6	61.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	20.2	36.0	11.8	65.1	23.9	6.7	41.9	44.9	8.1	34.6	61.6	
LOS	C	D	B	E	C	A	D	D	A	C	E	
Approach Delay		28.9			31.9			28.0			50.8	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.8	74.6	12.6	42.7	95.5	11.9	29.3	33.2	0.0	33.1	64.1	
Queue Length 95th (m)	9.7	102.9	38.8	57.9	125.9	19.9	43.4	50.5	19.9	48.1	89.9	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	200	1159	644	478	1594	752	259	459	575	365	452	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.62	0.44	0.71	0.56	0.22	0.66	0.35	0.45	0.53	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 32.9 Intersection LOS: C
Intersection Capacity Utilization 85.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 7: Aviation Parkway & Montreal Road



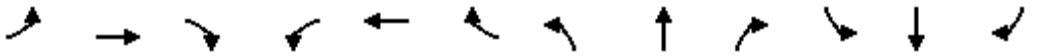
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	208	87	0	88	52
Future Vol, veh/h	0	208	87	0	88	52
Conflicting Peds, #/hr	2	0	0	2	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	208	87	0	88	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	295	92
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	208	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	700	971
Stage 1	0	-	-	0	941	-
Stage 2	0	-	-	0	832	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	700	966
Mov Cap-2 Maneuver	-	-	-	-	700	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	832	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	780
HCM Lane V/C Ratio	-	-	0.179
HCM Control Delay (s)	-	-	10.6
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.7



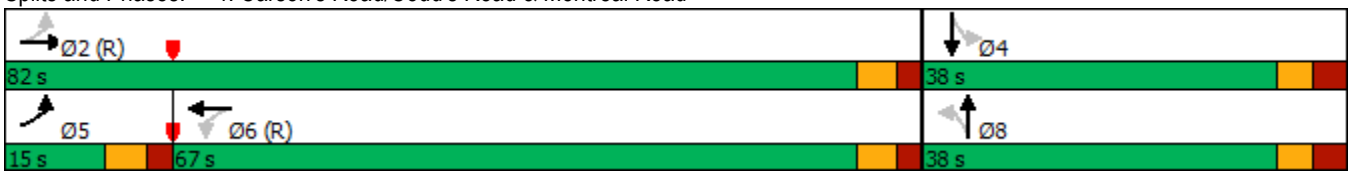
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	1029	67	31	775	109	66	4	27	150	6	262
Future Volume (vph)	222	1029	67	31	775	109	66	4	27	150	6	262
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99	0.97		0.98	0.97	
Frt		0.991			0.982			0.869			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3311	0	1729	3196	0	1695	1534	0	1517	1470	0
Flt Permitted	0.249			0.260			0.286			0.737		
Satd. Flow (perm)	430	3311	0	469	3196	0	506	1534	0	1152	1470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			19			27			246	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	222	1029	67	31	775	109	66	4	27	150	6	262
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	1096	0	31	884	0	66	31	0	150	268	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	35.0		35.0	35.0		29.5	29.5		29.5	29.5	
Total Split (s)	15.0	82.0		67.0	67.0		38.0	38.0		38.0	38.0	
Total Split (%)	12.5%	68.3%		55.8%	55.8%		31.7%	31.7%		31.7%	31.7%	
Maximum Green (s)	9.0	76.0		61.0	61.0		31.5	31.5		31.5	31.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0		22.0	22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	86.6	86.6		70.6	70.6		20.9	20.9		20.9	20.9	
Actuated g/C Ratio	0.72	0.72		0.59	0.59		0.17	0.17		0.17	0.17	

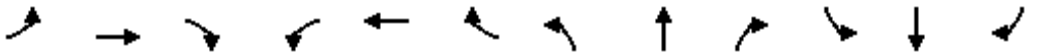
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.54	0.46		0.11	0.47		0.76	0.11		0.75	0.59	
Control Delay	13.9	2.8		6.5	8.9		91.3	15.7		68.4	12.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.9	2.8		6.5	8.9		91.3	15.7		68.4	12.1	
LOS	B	A		A	A		F	B		E	B	
Approach Delay		4.6			8.8			67.1			32.3	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	9.0	12.6		0.8	64.1		14.9	0.8		33.9	4.4	
Queue Length 95th (m)	m17.1	24.0		2.5	63.2		#29.7	8.5		52.3	26.4	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	417	2393		275	1887		132	422		302	567	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.53	0.46		0.11	0.47		0.50	0.07		0.50	0.47	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 12.4 Intersection LOS: B
Intersection Capacity Utilization 83.2% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





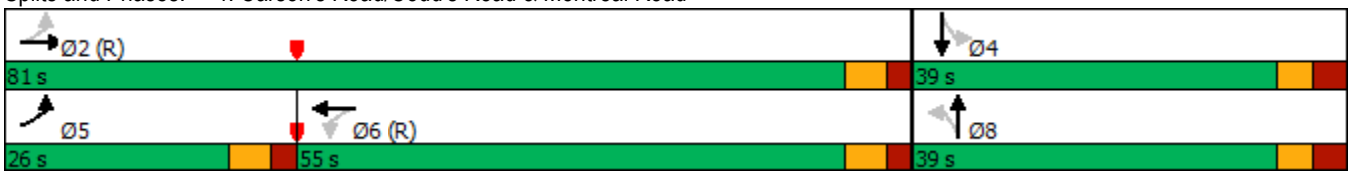
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	1028	67	31	775	109	66	4	27	150	6	262
Future Volume (vph)	222	1028	67	31	775	109	66	4	27	150	6	262
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.97		0.98	0.98	
Frt		0.991			0.982			0.869			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3309	0	1729	3189	0	1695	1540	0	1517	1474	0
Flt Permitted	0.247			0.261			0.284			0.737		
Satd. Flow (perm)	432	3309	0	470	3189	0	503	1540	0	1157	1474	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			16			27			262	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	222	1028	67	31	775	109	66	4	27	150	6	262
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	1095	0	31	884	0	66	31	0	150	268	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	29.0		29.0	29.0		35.5	35.5		35.5	35.5	
Total Split (s)	26.0	81.0		55.0	55.0		39.0	39.0		39.0	39.0	
Total Split (%)	21.7%	67.5%		45.8%	45.8%		32.5%	32.5%		32.5%	32.5%	
Maximum Green (s)	20.0	75.0		49.0	49.0		32.5	32.5		32.5	32.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	86.7	86.7		69.5	69.5		20.8	20.8		20.8	20.8	
Actuated g/C Ratio	0.72	0.72		0.58	0.58		0.17	0.17		0.17	0.17	

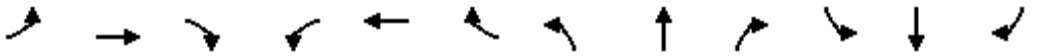
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.52	0.46		0.11	0.48		0.76	0.11		0.75	0.57	
Control Delay	8.5	1.9		8.3	8.5		92.4	15.7		68.2	10.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	8.5	1.9		8.3	8.5		92.4	15.7		68.2	10.1	
LOS	A	A		A	A		F	B		E	B	
Approach Delay		3.0			8.5			67.9			30.9	
Approach LOS		A			A			E			C	
Queue Length 50th (m)	9.2	8.5		1.5	22.7		14.9	0.8		33.9	1.2	
Queue Length 95th (m)	m9.5	11.9		4.0	28.8		#30.1	8.5		52.3	22.4	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	516	2392		271	1852		136	436		313	590	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.43	0.46		0.11	0.48		0.49	0.07		0.48	0.45	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 11.4 Intersection LOS: B
Intersection Capacity Utilization 84.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





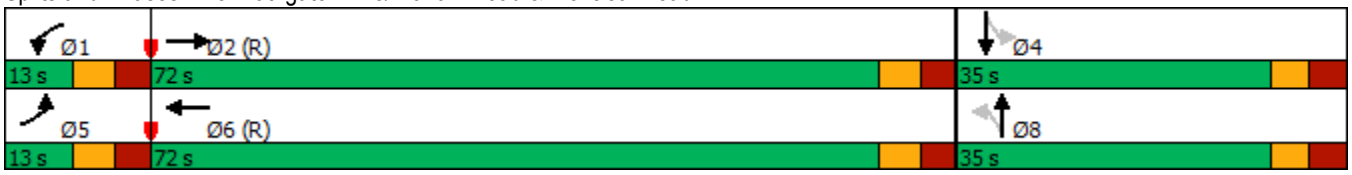
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	1081	73	53	813	71	53	19	80	72	16	50
Future Volume (vph)	52	1081	73	53	813	71	53	19	80	72	16	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.96		0.96	0.99	
Frt		0.991			0.988			0.879			0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3210	0	1729	1494	0	1572	1502	0
Flt Permitted	0.950			0.950			0.714			0.693		
Satd. Flow (perm)	1602	3314	0	1728	3210	0	1295	1494	0	1105	1502	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			12			80			50	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	52	1081	73	53	813	71	53	19	80	72	16	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	1154	0	53	884	0	53	99	0	72	66	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	72.0		13.0	72.0		35.0	35.0		35.0	35.0	
Total Split (%)	10.8%	60.0%		10.8%	60.0%		29.2%	29.2%		29.2%	29.2%	
Maximum Green (s)	6.1	65.1		6.1	65.1		28.1	28.1		28.1	28.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	9.5	79.4		9.3	79.2		13.2	13.2		13.2	13.2	
Actuated g/C Ratio	0.08	0.66		0.08	0.66		0.11	0.11		0.11	0.11	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.41	0.53		0.40	0.42		0.37	0.42		0.60	0.32	
Control Delay	48.4	22.2		60.7	11.9		55.2	20.0		69.6	21.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	48.4	22.2		60.7	11.9		55.2	20.0		69.6	21.5	
LOS	D	C		E	B		E	B		E	C	
Approach Delay		23.3			14.6			32.3			46.6	
Approach LOS		C			B			C			D	
Queue Length 50th (m)	12.2	89.1		12.1	50.0		11.8	4.1		16.4	3.4	
Queue Length 95th (m)	m25.5	119.9		24.4	79.3		23.3	19.1		30.2	15.7	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	128	2196		133	2122		303	411		258	390	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.41	0.53		0.40	0.42		0.17	0.24		0.28	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 21.8		Intersection LOS: C	
Intersection Capacity Utilization 68.9%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	167	385	68	110	13	459	186	92	11	183	29
Future Volume (vph)	31	167	385	68	110	13	459	186	92	11	183	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96			0.98	0.99		0.98	0.96			0.99	
Frt			0.850		0.984			0.950			0.982	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1729	1802	1517	1695	1778	0	1712	1622	0	0	1676	0
Flt Permitted	0.678			0.619			0.526				0.981	
Satd. Flow (perm)	1182	1802	1517	1084	1778	0	932	1622	0	0	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			385		8			51			11	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	30		14	14		30	16		56	56		16
Confl. Bikes (#/hr)			27									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	2%	0%	0%	1%	3%	0%	0%	7%	0%
Adj. Flow (vph)	31	167	385	68	110	13	459	186	92	11	183	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	167	385	68	123	0	459	278	0	0	223	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	12.3	12.3	14.5	12.3	12.3		51.8	51.8			31.4	
Actuated g/C Ratio	0.16	0.16	0.19	0.16	0.16		0.68	0.68			0.41	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.16	0.57	0.64	0.39	0.42		0.59	0.25			0.33	
Control Delay	27.5	36.5	8.6	33.7	30.0		9.3	4.9			17.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	27.5	36.5	8.6	33.7	30.0		9.3	4.9			17.8	
LOS	C	D	A	C	C		A	A			B	
Approach Delay		17.6			31.3			7.7			17.8	
Approach LOS		B			C			A			B	
Queue Length 50th (m)	3.9	22.4	0.0	8.8	15.0		24.0	10.1			20.8	
Queue Length 95th (m)	10.2	37.4	21.5	18.7	27.5		48.4	23.1			40.2	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	358	546	601	328	544		784	1122			685	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.09	0.31	0.64	0.21	0.23		0.59	0.25			0.33	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 19 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 14.9 Intersection LOS: B
Intersection Capacity Utilization 81.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road



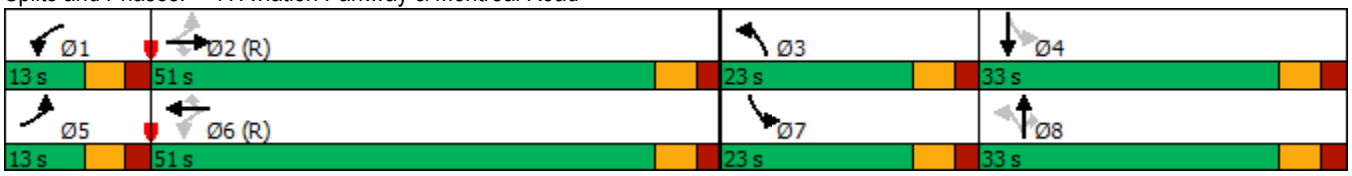
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	959	334	292	854	196	270	303	287	121	205	49
Future Volume (vph)	47	959	334	292	854	196	270	303	287	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	1679	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.278			0.108			0.251			0.403		
Satd. Flow (perm)	493	3325	1444	190	3293	1328	447	1820	1469	729	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157			136			270		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	959	334	292	854	196	270	303	287	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	959	334	292	854	196	270	303	287	121	254	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	48.6	41.8	41.8	61.2	53.1	53.1	43.8	27.4	27.4	32.7	21.4	
Actuated g/C Ratio	0.40	0.35	0.35	0.51	0.44	0.44	0.36	0.23	0.23	0.27	0.18	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.83	0.55	1.00	0.59	0.30	0.79	0.73	0.53	0.42	0.79	
Control Delay	17.4	42.5	19.2	79.2	27.2	9.8	45.0	53.6	9.4	29.4	63.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.4	42.5	19.2	79.2	27.2	9.8	45.0	53.6	9.4	29.4	63.0	
LOS	B	D	B	E	C	A	D	D	A	C	E	
Approach Delay		35.8			36.0			36.1			52.1	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	5.4	105.1	31.6	~65.1	91.7	16.0	45.6	64.9	3.1	18.5	55.5	
Queue Length 95th (m)	12.3	128.3	58.7	#134.9	115.4	32.8	#69.4	95.7	26.2	30.2	80.6	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	276	1249	640	292	1457	663	348	432	554	378	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.77	0.52	1.00	0.59	0.30	0.78	0.70	0.52	0.32	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 37.5 Intersection LOS: D
Intersection Capacity Utilization 98.1% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



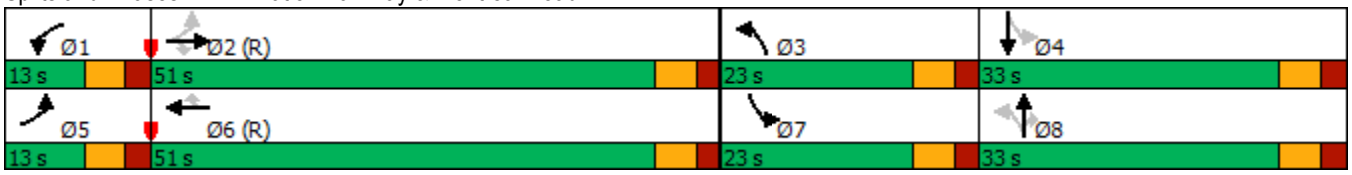
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	959	334	292	854	196	270	303	287	121	205	49
Future Volume (vph)	47	959	334	292	854	196	270	303	287	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.264			0.950			0.256			0.380		
Satd. Flow (perm)	468	3325	1444	3221	3293	1328	456	1820	1469	688	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157			136			267		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	959	334	292	854	196	270	303	287	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	959	334	292	854	196	270	303	287	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	51.9	45.1	45.1	13.1	53.7	53.7	43.2	26.8	26.8	32.8	21.4	
Actuated g/C Ratio	0.43	0.38	0.38	0.11	0.45	0.45	0.36	0.22	0.22	0.27	0.18	

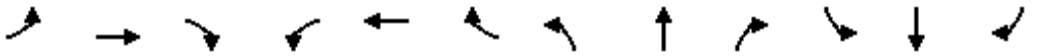
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.77	0.52	0.82	0.58	0.29	0.80	0.75	0.54	0.43	0.79	
Control Delay	17.1	37.8	18.0	65.9	27.4	10.0	46.7	55.1	9.8	29.9	63.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.1	37.8	18.0	65.9	27.4	10.0	46.7	55.1	9.8	29.9	63.0	
LOS	B	D	B	E	C	B	D	E	A	C	E	
Approach Delay		32.2			33.2			37.4			52.3	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	5.2	103.2	30.9	36.0	90.4	16.0	46.5	66.0	3.7	18.9	55.5	
Queue Length 95th (m)	12.3	128.3	58.7	#76.0	115.6	32.8	#68.3	95.7	26.9	30.2	80.6	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	280	1249	640	354	1473	669	343	426	548	370	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.77	0.52	0.82	0.58	0.29	0.79	0.71	0.52	0.33	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 35.6 Intersection LOS: D
Intersection Capacity Utilization 89.8% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





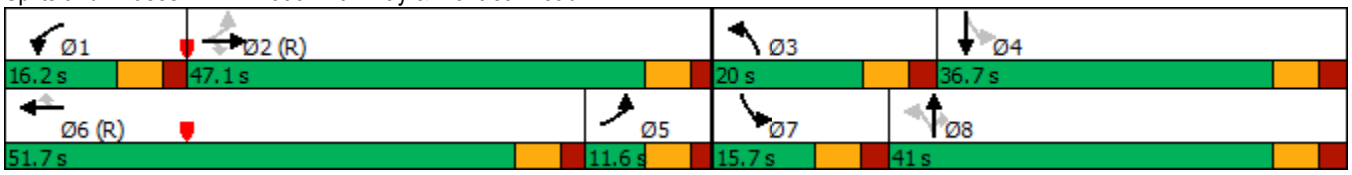
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	959	334	292	854	196	270	303	287	121	205	49
Future Volume (vph)	47	959	334	292	854	196	270	303	287	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.95	0.99		0.87	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1758	0
Flt Permitted	0.331			0.950			0.287			0.378		
Satd. Flow (perm)	583	3325	1449	3225	3293	1346	512	1820	1474	684	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			151			151			287		10	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	959	334	292	854	196	270	303	287	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	959	334	292	854	196	270	303	287	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.2	37.2	11.3	37.2	37.2	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.6	47.1	47.1	16.2	51.7	51.7	20.0	41.0	41.0	15.7	36.7	
Total Split (%)	9.7%	39.3%	39.3%	13.5%	43.1%	43.1%	16.7%	34.2%	34.2%	13.1%	30.6%	
Maximum Green (s)	5.4	40.9	40.9	10.0	45.5	45.5	13.3	34.3	34.3	9.0	30.0	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	42.7	42.7	42.7	16.1	55.7	55.7	39.9	26.6	26.6	30.8	22.1	
Actuated g/C Ratio	0.36	0.36	0.36	0.13	0.46	0.46	0.33	0.22	0.22	0.26	0.18	

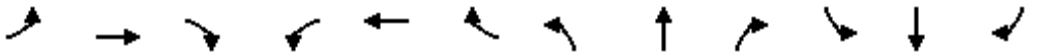
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.81	0.54	0.67	0.56	0.28	0.89	0.75	0.52	0.48	0.77	
Control Delay	31.0	41.9	20.5	56.5	19.0	2.6	61.8	55.1	7.6	33.1	59.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	31.0	41.9	20.5	56.5	19.0	2.6	61.8	55.1	7.6	33.1	59.4	
LOS	C	D	C	E	B	A	E	E	A	C	E	
Approach Delay		36.2			24.8			41.3			50.9	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	7.5	109.4	34.2	27.8	67.1	0.5	48.8	67.3	0.0	19.8	55.2	
Queue Length 95th (m)	16.0	136.1	63.8	#65.8	86.7	5.6	#65.1	90.2	20.1	30.3	77.4	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	259	1184	613	436	1529	705	303	520	626	255	447	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.81	0.54	0.67	0.56	0.28	0.89	0.58	0.46	0.47	0.57	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104 (87%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 34.8 Intersection LOS: C
Intersection Capacity Utilization 92.7% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





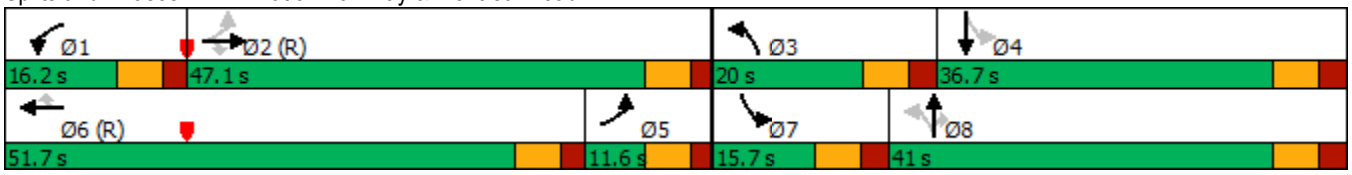
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	959	334	292	854	196	270	303	287	121	205	49
Future Volume (vph)	47	959	334	292	854	196	270	303	287	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.95	0.99		0.87	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1758	0
Flt Permitted	0.331			0.950			0.287			0.378		
Satd. Flow (perm)	583	3325	1449	3225	3293	1346	512	1820	1474	684	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			151			151			287		10	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	959	334	292	854	196	270	303	287	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	959	334	292	854	196	270	303	287	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.2	37.2	11.3	37.2	37.2	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.6	47.1	47.1	16.2	51.7	51.7	20.0	41.0	41.0	15.7	36.7	
Total Split (%)	9.7%	39.3%	39.3%	13.5%	43.1%	43.1%	16.7%	34.2%	34.2%	13.1%	30.6%	
Maximum Green (s)	5.4	40.9	40.9	10.0	45.5	45.5	13.3	34.3	34.3	9.0	30.0	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	42.7	42.7	42.7	16.1	55.7	55.7	39.9	26.6	26.6	30.8	22.1	
Actuated g/C Ratio	0.36	0.36	0.36	0.13	0.46	0.46	0.33	0.22	0.22	0.26	0.18	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.81	0.54	0.67	0.56	0.28	0.89	0.75	0.52	0.48	0.77	
Control Delay	31.0	41.9	20.5	56.5	19.0	2.6	61.8	55.1	7.6	33.1	59.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	31.0	41.9	20.5	56.5	19.0	2.6	61.8	55.1	7.6	33.1	59.4	
LOS	C	D	C	E	B	A	E	E	A	C	E	
Approach Delay		36.2			24.8			41.3			50.9	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	7.5	109.4	34.2	27.8	67.1	0.5	48.8	67.3	0.0	19.8	55.2	
Queue Length 95th (m)	16.0	136.1	63.8	#65.8	86.7	5.6	#65.1	90.2	20.1	30.3	77.4	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	259	1184	613	436	1529	705	303	520	626	255	447	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.81	0.54	0.67	0.56	0.28	0.89	0.58	0.46	0.47	0.57	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104 (87%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 34.8 Intersection LOS: C
Intersection Capacity Utilization 92.7% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



Future (2030) Total Traffic

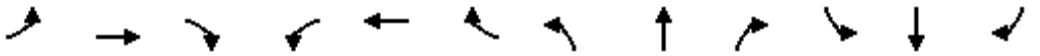
Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	169	135	0	102	50
Future Vol, veh/h	0	169	135	0	102	50
Conflicting Peds, #/hr	0	0	0	0	1	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	169	135	0	102	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	305	143
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	170	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	691	910
Stage 1	0	-	-	0	896	-
Stage 2	0	-	-	0	865	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	691	903
Mov Cap-2 Maneuver	-	-	-	-	691	-
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	865	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	749
HCM Lane V/C Ratio	-	-	0.203
HCM Control Delay (s)	-	-	11
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.8



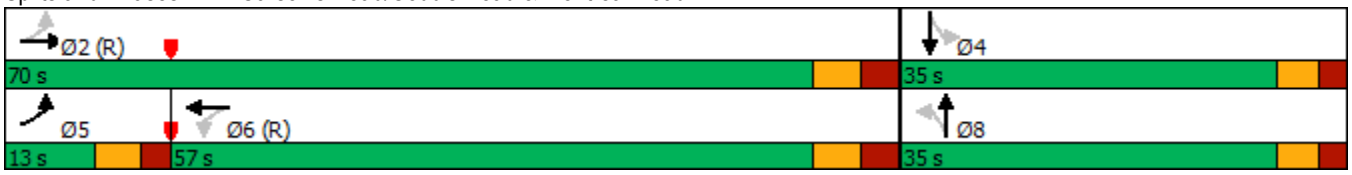
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	739	45	34	1048	99	36	10	28	131	9	263
Future Volume (vph)	185	739	45	34	1048	99	36	10	28	131	9	263
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.98		0.99	0.98	
Frt		0.991			0.987			0.889			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3182	0	1679	3105	0	1729	1473	0	1662	1481	0
Flt Permitted	0.166			0.355			0.247			0.732		
Satd. Flow (perm)	290	3182	0	620	3105	0	447	1473	0	1270	1481	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			13			28			179	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	185	739	45	34	1048	99	36	10	28	131	9	263
Shared Lane Traffic (%)												
Lane Group Flow (vph)	185	784	0	34	1147	0	36	38	0	131	272	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	13.0	70.0		57.0	57.0		35.0	35.0		35.0	35.0	
Total Split (%)	12.4%	66.7%		54.3%	54.3%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	7.0	63.1		50.1	50.1		29.4	29.4		29.4	29.4	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	77.2	76.3		60.1	60.1		16.2	16.2		16.2	16.2	
Actuated g/C Ratio	0.74	0.73		0.57	0.57		0.15	0.15		0.15	0.15	

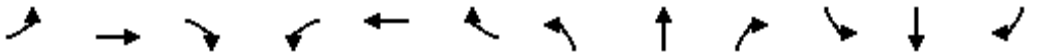
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.53	0.34		0.10	0.64		0.53	0.15		0.67	0.72	
Control Delay	21.1	4.2		13.9	18.6		66.3	17.8		57.8	25.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.1	4.2		13.9	18.6		66.3	17.8		57.8	25.5	
LOS	C	A		B	B		E	B		E	C	
Approach Delay		7.4			18.4			41.4			36.0	
Approach LOS		A			B			D			D	
Queue Length 50th (m)	13.7	17.8		3.0	77.4		6.8	1.8		25.5	17.3	
Queue Length 95th (m)	m34.3	28.6		9.6	124.5		16.8	9.8		41.9	42.3	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	347	2316		354	1783		125	432		355	543	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.53	0.34		0.10	0.64		0.29	0.09		0.37	0.50	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 44 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 17.7 Intersection LOS: B
Intersection Capacity Utilization 89.0% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





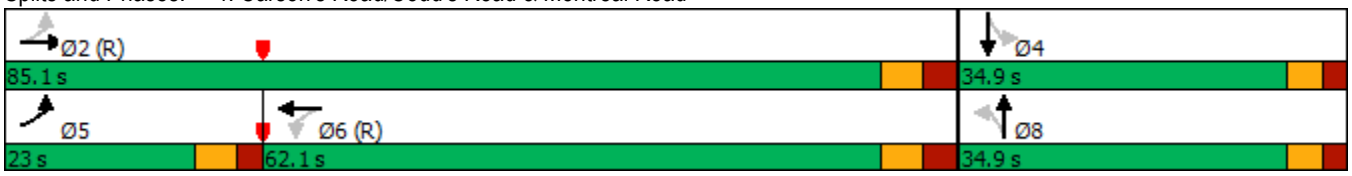
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	740	49	37	1050	102	39	11	31	134	9	275
Future Volume (vph)	191	740	49	37	1050	102	39	11	31	134	9	275
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.98		0.99	0.98	
Frt		0.991			0.987			0.889			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3179	0	1679	3102	0	1729	1472	0	1662	1479	0
Flt Permitted	0.174			0.353			0.222			0.730		
Satd. Flow (perm)	304	3179	0	615	3102	0	402	1472	0	1266	1479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			11			31			275	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	191	740	49	37	1050	102	39	11	31	134	9	275
Shared Lane Traffic (%)												
Lane Group Flow (vph)	191	789	0	37	1152	0	39	42	0	134	284	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	23.0	85.1		62.1	62.1		34.9	34.9		34.9	34.9	
Total Split (%)	19.2%	70.9%		51.8%	51.8%		29.1%	29.1%		29.1%	29.1%	
Maximum Green (s)	17.0	78.2		55.2	55.2		29.3	29.3		29.3	29.3	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	90.4	89.5		72.8	72.8		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.75	0.75		0.61	0.61		0.15	0.15		0.15	0.15	

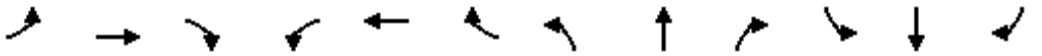
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.55	0.33		0.10	0.61		0.65	0.17		0.71	0.62	
Control Delay	9.5	4.8		3.1	4.9		91.9	19.9		67.5	12.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.5	4.8		3.1	4.9		91.9	19.9		67.5	12.1	
LOS	A	A		A	A		F	B		E	B	
Approach Delay		5.7			4.9			54.6			29.8	
Approach LOS		A			A			D			C	
Queue Length 50th (m)	3.4	9.9		0.8	12.5		8.8	2.3		30.4	1.8	
Queue Length 95th (m)	17.6	51.6		m1.6	17.1		#20.6	11.5		48.1	25.0	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	422	2374		373	1886		98	382		309	568	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.45	0.33		0.10	0.61		0.40	0.11		0.43	0.50	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 10.6 Intersection LOS: B
Intersection Capacity Utilization 90.1% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





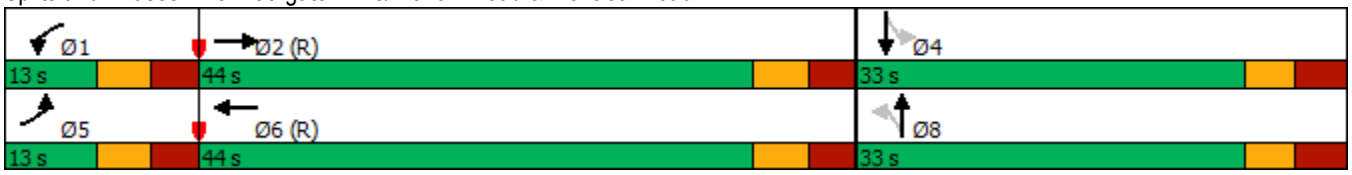
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	798	39	53	1079	81	38	16	85	86	19	66
Future Volume (vph)	60	798	39	53	1079	81	38	16	85	86	19	66
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.98		0.99	0.98	
Frt		0.993			0.990			0.874			0.884	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3232	0	1662	3183	0	1679	1510	0	1530	1481	0
Flt Permitted	0.950			0.950			0.702			0.692		
Satd. Flow (perm)	1451	3232	0	1660	3183	0	1231	1510	0	1101	1481	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			10			85			66	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	60	798	39	53	1079	81	38	16	85	86	19	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	837	0	53	1160	0	38	101	0	86	85	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	44.0		13.0	44.0		33.0	33.0		33.0	33.0	
Total Split (%)	14.4%	48.9%		14.4%	48.9%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	6.1	37.1		6.1	37.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	9.4	57.9		8.3	54.1		12.2	12.2		12.3	12.3	
Actuated g/C Ratio	0.10	0.64		0.09	0.60		0.14	0.14		0.14	0.14	

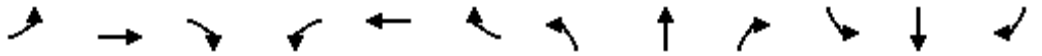
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.40	0.40		0.35	0.60		0.23	0.36		0.57	0.33	
Control Delay	44.5	12.7		43.8	17.9		35.7	13.8		49.9	15.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.5	12.7		43.8	17.9		35.7	13.8		49.9	15.4	
LOS	D	B		D	B		D	B		D	B	
Approach Delay		14.8			19.1			19.8			32.7	
Approach LOS		B			B			B			C	
Queue Length 50th (m)	9.9	43.7		8.8	73.2		5.9	2.5		14.1	2.9	
Queue Length 95th (m)	20.9	73.4		19.2	#122.3		13.8	14.9		26.7	14.4	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	152	2083		155	1919		356	498		319	476	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.39	0.40		0.34	0.60		0.11	0.20		0.27	0.18	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 30 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 18.5 Intersection LOS: B
Intersection Capacity Utilization 68.2% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	800	43	58	1079	85	41	17	93	92	20	71
Future Volume (vph)	62	800	43	58	1079	85	41	17	93	92	20	71
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.97		0.98	0.98	
Frt		0.992			0.989			0.873			0.883	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3228	0	1662	3177	0	1679	1503	0	1530	1475	0
Flt Permitted	0.950			0.950			0.698			0.686		
Satd. Flow (perm)	1450	3228	0	1659	3177	0	1222	1503	0	1088	1475	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			10			93			71	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	62	800	43	58	1079	85	41	17	93	92	20	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	843	0	58	1164	0	41	110	0	92	91	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	22.2	73.6		17.4	68.8		29.0	29.0		29.0	29.0	
Total Split (%)	18.5%	61.3%		14.5%	57.3%		24.2%	24.2%		24.2%	24.2%	
Maximum Green (s)	15.3	66.7		10.5	61.9		22.1	22.1		22.1	22.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	12.7	77.7		8.9	73.9		15.3	15.3		15.3	15.3	
Actuated g/C Ratio	0.11	0.65		0.07	0.62		0.13	0.13		0.13	0.13	

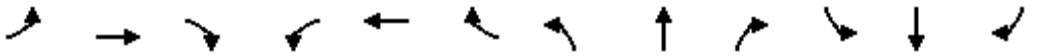
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.40	0.40		0.48	0.59		0.26	0.40		0.67	0.37	
Control Delay	50.1	3.4		65.7	17.9		49.2	16.7		71.4	18.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	50.1	3.4		65.7	17.9		49.2	16.7		71.4	18.8	
LOS	D	A		E	B		D	B		E	B	
Approach Delay		6.6			20.1			25.5			45.3	
Approach LOS		A			C			C			D	
Queue Length 50th (m)	15.4	17.3		13.3	89.7		8.8	3.6		20.9	4.2	
Queue Length 95th (m)	29.9	20.8		26.8	130.3		18.6	18.8		36.4	18.2	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	185	2092		145	1959		225	352		200	329	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.34	0.40		0.40	0.59		0.18	0.31		0.46	0.28	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 17 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 17.3 Intersection LOS: B
Intersection Capacity Utilization 68.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	131	416	87	184	6	362	140	57	11	210	30
Future Volume (vph)	17	131	416	87	184	6	362	140	57	11	210	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95			0.99	1.00		0.97	0.96			0.99	
Frt			0.850		0.995			0.957			0.984	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1631	1784	1517	1631	1772	0	1679	1555	0	0	1693	0
Flt Permitted	0.567			0.673			0.510				0.986	
Satd. Flow (perm)	927	1784	1517	1146	1772	0	878	1555	0	0	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			416		2			42			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	38		6	6		38	26		56	56		26
Confl. Bikes (#/hr)												9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	2%	2%	6%	2%	0%	3%	11%	0%	9%	5%	0%
Adj. Flow (vph)	17	131	416	87	184	6	362	140	57	11	210	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	131	416	87	190	0	362	197	0	0	251	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	13.3	13.3	12.0	13.3	13.3		50.8	50.8			32.9	
Actuated g/C Ratio	0.18	0.18	0.16	0.18	0.18		0.67	0.67			0.43	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.10	0.42	0.71	0.43	0.61		0.51	0.19			0.35	
Control Delay	25.5	30.9	10.5	33.6	36.4		8.7	4.9			17.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	25.5	30.9	10.5	33.6	36.4		8.7	4.9			17.4	
LOS	C	C	B	C	D		A	A			B	
Approach Delay		15.7			35.5			7.4			17.4	
Approach LOS		B			D			A			B	
Queue Length 50th (m)	2.1	16.9	0.0	11.3	25.2		18.6	7.0			22.2	
Queue Length 95th (m)	6.7	29.5	23.5	22.3	40.7		38.6	17.3			45.2	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	280	540	593	347	538		716	1054			727	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.06	0.24	0.70	0.25	0.35		0.51	0.19			0.35	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 29 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 16.5 Intersection LOS: B
Intersection Capacity Utilization 77.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	763	290	356	927	162	174	160	280	192	248	43
Future Volume (vph)	36	763	290	356	927	162	174	160	280	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.90	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	1662	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.241			0.191			0.315			0.593		
Satd. Flow (perm)	432	3232	1431	332	3262	1385	566	1820	1521	1075	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			186			156			262		8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	763	290	356	927	162	174	160	280	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	763	290	356	927	162	174	160	280	192	291	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	42.0	42.0	13.0	42.0	42.0	17.0	33.0	33.0	17.0	33.0	
Total Split (%)	12.4%	40.0%	40.0%	12.4%	40.0%	40.0%	16.2%	31.4%	31.4%	16.2%	31.4%	
Maximum Green (s)	7.1	36.1	36.1	7.1	36.1	36.1	11.1	26.8	26.8	11.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	42.6	36.1	36.1	52.7	47.2	47.2	32.3	21.4	21.4	32.5	21.5	
Actuated g/C Ratio	0.41	0.34	0.34	0.50	0.45	0.45	0.31	0.20	0.20	0.31	0.20	

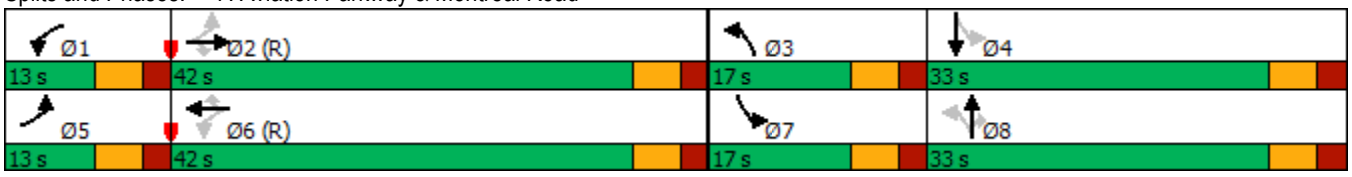
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.69	0.47	1.08	0.63	0.23	0.60	0.43	0.54	0.48	0.79	
Control Delay	15.8	33.5	12.4	93.9	26.5	8.8	31.8	39.2	9.4	27.4	53.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.8	33.5	12.4	93.9	26.5	8.8	31.8	39.2	9.4	27.4	53.9	
LOS	B	C	B	F	C	A	C	D	A	C	D	
Approach Delay		27.3			41.1			23.5			43.3	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	3.5	69.8	14.9	~55.4	94.4	9.4	24.4	28.5	3.0	27.3	54.9	
Queue Length 95th (m)	9.4	90.6	38.2	#154.5	117.3	m24.8	37.3	45.0	23.3	40.9	79.7	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	265	1111	614	329	1465	708	298	464	583	405	457	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.69	0.47	1.08	0.63	0.23	0.58	0.34	0.48	0.47	0.64	

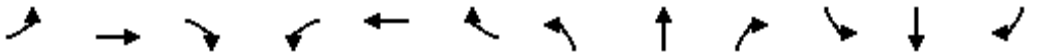
Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 17 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 34.3 Intersection LOS: C
Intersection Capacity Utilization 91.5% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Aviation Parkway & Montreal Road





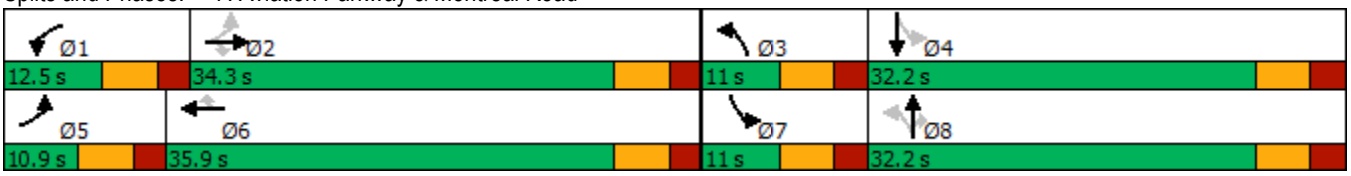
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	764	290	358	930	162	174	160	280	192	248	43
Future Volume (vph)	36	764	290	358	930	162	174	160	280	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.99		0.91	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1771	0
Flt Permitted	0.211			0.950			0.386			0.656		
Satd. Flow (perm)	378	3232	1434	3202	3262	1404	694	1820	1522	1190	1771	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209			182			222		10	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	764	290	358	930	162	174	160	280	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	764	290	358	930	162	174	160	280	192	291	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	10.9	34.3	34.3	12.5	35.9	35.9	11.0	32.2	32.2	11.0	32.2	
Total Split (%)	12.1%	38.1%	38.1%	13.9%	39.9%	39.9%	12.2%	35.8%	35.8%	12.2%	35.8%	
Maximum Green (s)	5.0	28.4	28.4	6.6	30.0	30.0	5.1	26.0	26.0	5.1	26.0	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	29.7	24.6	24.6	6.7	31.3	31.3	23.2	17.7	17.7	23.2	17.7	
Actuated g/C Ratio	0.38	0.31	0.31	0.09	0.40	0.40	0.30	0.23	0.23	0.30	0.23	

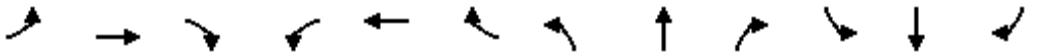
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.16	0.76	0.49	1.30	0.72	0.24	0.64	0.39	0.54	0.50	0.71	
Control Delay	14.3	30.2	10.2	192.9	26.1	3.7	31.7	29.1	11.2	24.7	37.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	14.3	30.2	10.2	192.9	26.1	3.7	31.7	29.1	11.2	24.7	37.9	
LOS	B	C	B	F	C	A	C	C	B	C	D	
Approach Delay		24.4			64.8			21.7			32.7	
Approach LOS		C			E			C			C	
Queue Length 50th (m)	2.7	53.1	8.7	~38.8	66.5	0.0	19.1	21.5	7.4	21.3	41.0	
Queue Length 95th (m)	8.5	82.7	31.4	#71.4	#110.5	10.1	33.0	37.7	27.5	36.1	65.8	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	230	1189	659	275	1311	673	272	613	659	387	603	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.64	0.44	1.30	0.71	0.24	0.64	0.26	0.42	0.50	0.48	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 78.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.30
Intersection Signal Delay: 41.1 Intersection LOS: D
Intersection Capacity Utilization 80.9% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





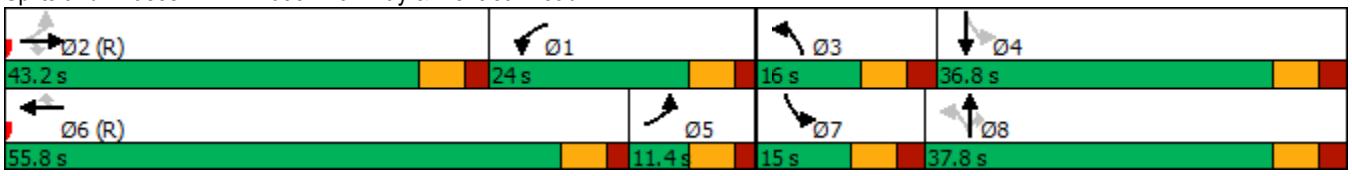
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	764	290	358	930	162	174	160	280	192	248	43
Future Volume (vph)	36	764	290	358	930	162	174	160	280	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.89	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.179			0.950			0.287			0.604		
Satd. Flow (perm)	320	3232	1428	3197	3262	1381	516	1820	1521	1095	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			207			151			280		7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	764	290	358	930	162	174	160	280	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	764	290	358	930	162	174	160	280	192	291	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.3	37.3	11.3	37.3	37.3	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.4	43.2	43.2	24.0	55.8	55.8	16.0	37.8	37.8	15.0	36.8	
Total Split (%)	9.5%	36.0%	36.0%	20.0%	46.5%	46.5%	13.3%	31.5%	31.5%	12.5%	30.7%	
Maximum Green (s)	5.2	37.0	37.0	17.8	49.6	49.6	9.3	31.1	31.1	8.3	30.1	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	49.0	43.8	43.8	16.8	59.9	59.9	34.4	24.7	24.7	33.0	24.0	
Actuated g/C Ratio	0.41	0.36	0.36	0.14	0.50	0.50	0.29	0.21	0.21	0.28	0.20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.65	0.44	0.80	0.57	0.21	0.71	0.43	0.52	0.55	0.81	
Control Delay	20.0	36.1	11.9	56.4	14.7	1.6	46.9	43.9	7.9	37.3	61.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	20.0	36.1	11.9	56.4	14.7	1.6	46.9	43.9	7.9	37.3	61.8	
LOS	C	D	B	E	B	A	D	D	A	D	E	
Approach Delay		29.1			23.5			28.3			52.0	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.7	79.4	13.3	44.9	88.4	0.0	30.0	32.8	0.0	33.6	64.1	
Queue Length 95th (m)	9.5	108.6	39.7	60.1	82.3	1.9	44.7	50.0	20.6	49.0	90.2	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	191	1178	652	478	1627	764	244	471	601	348	449	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.65	0.44	0.75	0.57	0.21	0.71	0.34	0.47	0.55	0.65	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 29.8 Intersection LOS: C
Intersection Capacity Utilization 85.9% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 7: Aviation Parkway & Montreal Road



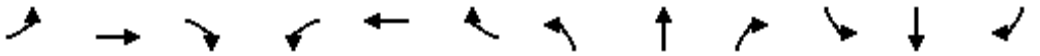
Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	229	121	0	106	50
Future Vol, veh/h	0	229	121	0	106	50
Conflicting Peds, #/hr	2	0	0	2	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	229	121	0	106	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	350	126
Stage 1	-	-	-	-	121	-
Stage 2	-	-	-	-	229	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	651	930
Stage 1	0	-	-	0	909	-
Stage 2	0	-	-	0	814	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	651	925
Mov Cap-2 Maneuver	-	-	-	-	651	-
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	814	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	719
HCM Lane V/C Ratio	-	-	0.217
HCM Control Delay (s)	-	-	11.4
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.8



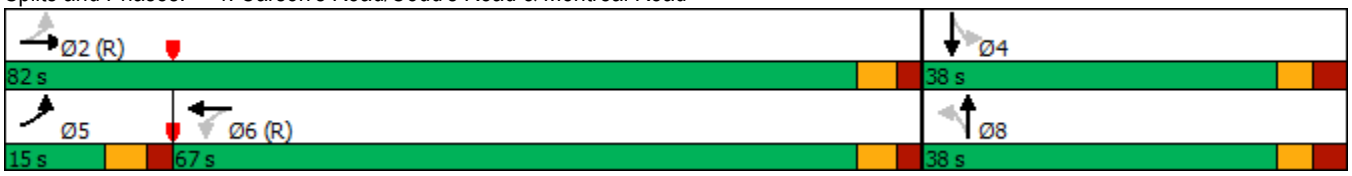
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	258	1037	65	30	809	125	64	7	26	169	9	292
Future Volume (vph)	258	1037	65	30	809	125	64	7	26	169	9	292
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99	0.97		0.98	0.97	
Frt		0.991			0.980			0.882			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3311	0	1729	3184	0	1695	1562	0	1517	1473	0
Flt Permitted	0.224			0.259			0.245			0.736		
Satd. Flow (perm)	387	3311	0	467	3184	0	434	1562	0	1150	1473	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			21			26			237	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	258	1037	65	30	809	125	64	7	26	169	9	292
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	1102	0	30	934	0	64	33	0	169	301	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	35.0		35.0	35.0		29.5	29.5		29.5	29.5	
Total Split (s)	15.0	82.0		67.0	67.0		38.0	38.0		38.0	38.0	
Total Split (%)	12.5%	68.3%		55.8%	55.8%		31.7%	31.7%		31.7%	31.7%	
Maximum Green (s)	9.0	76.0		61.0	61.0		31.5	31.5		31.5	31.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0		22.0	22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	84.8	84.8		67.6	67.6		22.7	22.7		22.7	22.7	
Actuated g/C Ratio	0.71	0.71		0.56	0.56		0.19	0.19		0.19	0.19	

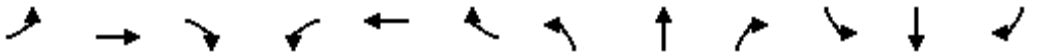
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.66	0.47		0.11	0.52		0.78	0.10		0.78	0.64	
Control Delay	24.8	3.2		7.0	9.1		97.8	16.6		68.5	16.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.8	3.2		7.0	9.1		97.8	16.6		68.5	16.4	
LOS	C	A		A	A		F	B		E	B	
Approach Delay		7.3			9.1			70.2			35.2	
Approach LOS		A			A			E			D	
Queue Length 50th (m)	17.4	14.8		0.9	74.5		14.4	1.4		38.1	12.9	
Queue Length 95th (m)	m31.7	26.0		m2.4	53.7		#31.9	9.2		57.7	37.9	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	392	2341		263	1802		113	429		301	561	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.66	0.47		0.11	0.52		0.57	0.08		0.56	0.54	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 14.5 Intersection LOS: B
Intersection Capacity Utilization 88.8% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





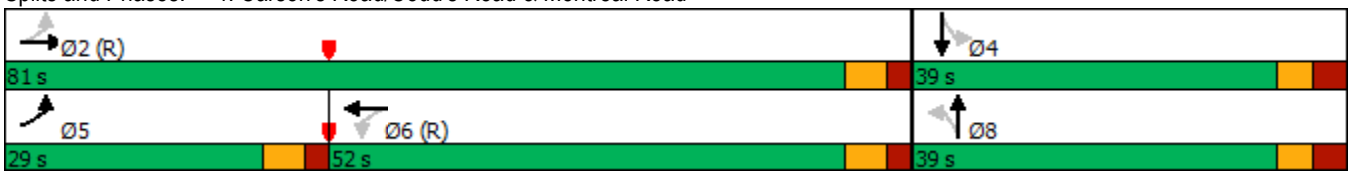
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	261	1042	67	31	811	126	66	7	27	168	10	297
Future Volume (vph)	261	1042	67	31	811	126	66	7	27	168	10	297
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.98		0.99	0.98		0.98	0.98	
Frt		0.991			0.980			0.881			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3309	0	1729	3175	0	1695	1565	0	1517	1479	0
Flt Permitted	0.214			0.257			0.234			0.735		
Satd. Flow (perm)	374	3309	0	463	3175	0	415	1565	0	1154	1479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			17			27			297	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	261	1042	67	31	811	126	66	7	27	168	10	297
Shared Lane Traffic (%)												
Lane Group Flow (vph)	261	1109	0	31	937	0	66	34	0	168	307	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	29.0		29.0	29.0		35.5	35.5		35.5	35.5	
Total Split (s)	29.0	81.0		52.0	52.0		39.0	39.0		39.0	39.0	
Total Split (%)	24.2%	67.5%		43.3%	43.3%		32.5%	32.5%		32.5%	32.5%	
Maximum Green (s)	23.0	75.0		46.0	46.0		32.5	32.5		32.5	32.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	84.7	84.7		64.4	64.4		22.8	22.8		22.8	22.8	
Actuated g/C Ratio	0.71	0.71		0.54	0.54		0.19	0.19		0.19	0.19	

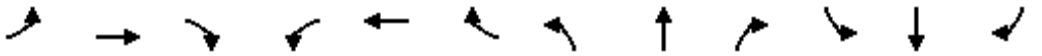
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.63	0.47		0.12	0.55		0.85	0.11		0.77	0.59	
Control Delay	18.6	2.6		8.6	10.6		110.4	16.2		67.1	9.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.6	2.6		8.6	10.6		110.4	16.2		67.1	9.7	
LOS	B	A		A	B		F	B		E	A	
Approach Delay		5.6			10.5			78.4			30.0	
Approach LOS		A			B			E			C	
Queue Length 50th (m)	20.1	10.5		1.2	18.9		15.1	1.4		37.9	2.0	
Queue Length 95th (m)	m14.3	19.4		m6.1	127.0		#33.7	9.1		56.9	24.1	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	510	2337		248	1712		112	443		312	617	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.51	0.47		0.13	0.55		0.59	0.08		0.54	0.50	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 13.7 Intersection LOS: B
Intersection Capacity Utilization 90.3% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	1092	71	51	822	88	51	21	78	94	19	90
Future Volume (vph)	69	1092	71	51	822	88	51	21	78	94	19	90
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.96		0.96	0.99	
Frt		0.991			0.985			0.882			0.876	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3198	0	1729	1502	0	1572	1476	0
Flt Permitted	0.950			0.950			0.687			0.693		
Satd. Flow (perm)	1603	3314	0	1728	3198	0	1246	1502	0	1105	1476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			15			78			90	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	69	1092	71	51	822	88	51	21	78	94	19	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	69	1163	0	51	910	0	51	99	0	94	109	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	72.0		13.0	72.0		35.0	35.0		35.0	35.0	
Total Split (%)	10.8%	60.0%		10.8%	60.0%		29.2%	29.2%		29.2%	29.2%	
Maximum Green (s)	6.1	65.1		6.1	65.1		28.1	28.1		28.1	28.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	10.9	77.4		8.9	72.9		15.5	15.5		15.5	15.5	
Actuated g/C Ratio	0.09	0.64		0.07	0.61		0.13	0.13		0.13	0.13	

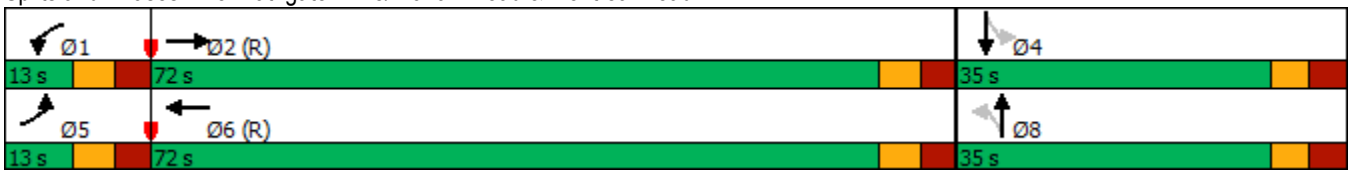
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.47	0.54		0.40	0.47		0.32	0.38		0.66	0.41	
Control Delay	51.0	22.7		61.4	14.6		50.5	18.3		70.1	17.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.0	22.7		61.4	14.6		50.5	18.3		70.1	17.2	
LOS	D	C		E	B		D	B		E	B	
Approach Delay		24.3			17.1			29.2			41.7	
Approach LOS		C			B			C			D	
Queue Length 50th (m)	16.6	92.3		11.6	58.2		11.1	4.4		21.4	4.0	
Queue Length 95th (m)	m31.5	121.0		24.0	85.3		21.9	18.9		36.8	19.1	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	146	2141		129	1949		291	411		258	414	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.47	0.54		0.40	0.47		0.18	0.24		0.36	0.26	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 23.3 Intersection LOS: C
Intersection Capacity Utilization 69.1% ICU Level of Service C
Analysis Period (min) 15

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

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road



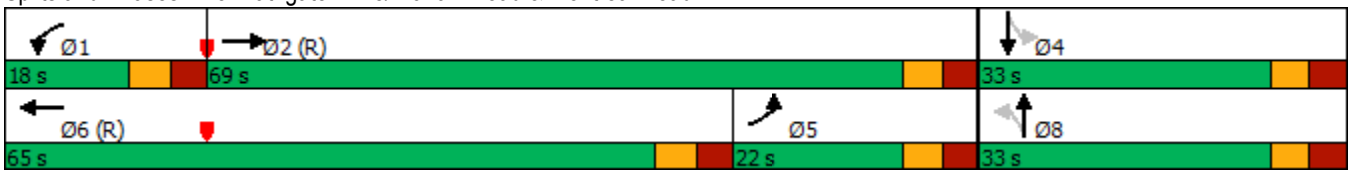
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	1093	73	53	825	89	53	22	80	96	20	91
Future Volume (vph)	72	1093	73	53	825	89	53	22	80	96	20	91
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		1.00	0.96		0.96	0.99	
Frt		0.991			0.985			0.882			0.877	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3197	0	1729	1503	0	1572	1479	0
Flt Permitted	0.950			0.950			0.685			0.691		
Satd. Flow (perm)	1603	3314	0	1728	3197	0	1243	1503	0	1102	1479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			13			80			91	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	72	1093	73	53	825	89	53	22	80	96	20	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	1166	0	53	914	0	53	102	0	96	111	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	22.0	69.0		18.0	65.0		33.0	33.0		33.0	33.0	
Total Split (%)	18.3%	57.5%		15.0%	54.2%		27.5%	27.5%		27.5%	27.5%	
Maximum Green (s)	15.1	62.1		11.1	58.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	13.3	77.1		9.0	72.9		15.7	15.7		15.7	15.7	
Actuated g/C Ratio	0.11	0.64		0.08	0.61		0.13	0.13		0.13	0.13	

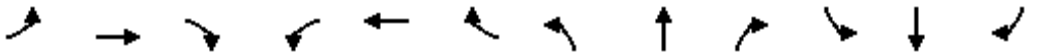
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.40	0.55		0.41	0.47		0.33	0.38		0.67	0.41	
Control Delay	37.5	6.2		61.4	15.9		50.5	18.2		70.3	17.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	37.5	6.2		61.4	15.9		50.5	18.2		70.3	17.2	
LOS	D	A		E	B		D	B		E	B	
Approach Delay		8.0			18.4			29.3			41.9	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	14.7	36.6		12.1	63.6		11.5	4.6		21.8	4.2	
Queue Length 95th (m)	27.2	45.3		24.4	92.8		22.5	19.3		37.5	19.3	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	203	2131		163	1947		270	389		239	392	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.35	0.55		0.33	0.47		0.20	0.26		0.40	0.28	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 30 (25%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 15.9 Intersection LOS: B
Intersection Capacity Utilization 69.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





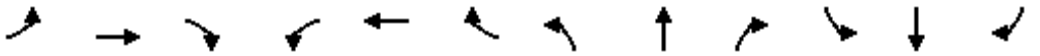
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	182	388	80	132	13	468	197	101	11	193	30
Future Volume (vph)	32	182	388	80	132	13	468	197	101	11	193	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96			0.98	0.99		0.98	0.96			0.99	
Frt			0.850		0.987			0.949			0.983	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1729	1802	1517	1695	1785	0	1712	1619	0	0	1677	0
Flt Permitted	0.665			0.584			0.512				0.981	
Satd. Flow (perm)	1161	1802	1517	1023	1785	0	907	1619	0	0	1643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			388		7			53			11	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	30		14	14		30	16		56	56		16
Confl. Bikes (#/hr)			27									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	2%	0%	0%	1%	3%	0%	0%	7%	0%
Adj. Flow (vph)	32	182	388	80	132	13	468	197	101	11	193	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	182	388	80	145	0	468	298	0	0	234	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	12.9	12.9	14.6	12.9	12.9		51.2	51.2			30.6	
Actuated g/C Ratio	0.17	0.17	0.19	0.17	0.17		0.67	0.67			0.40	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.16	0.59	0.64	0.46	0.47		0.61	0.27			0.35	
Control Delay	27.0	36.5	8.7	36.0	31.1		10.2	5.3			18.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	27.0	36.5	8.7	36.0	31.1		10.2	5.3			18.4	
LOS	C	D	A	D	C		B	A			B	
Approach Delay		18.1			32.8			8.3			18.4	
Approach LOS		B			C			A			B	
Queue Length 50th (m)	4.0	24.3	0.0	10.5	18.0		25.4	11.4			22.9	
Queue Length 95th (m)	10.2	39.9	22.2	21.4	31.4		51.3	26.1			42.1	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	351	546	605	310	545		766	1109			669	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.09	0.33	0.64	0.26	0.27		0.61	0.27			0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75.9			
Actuated Cycle Length: 75.9			
Offset: 19 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 15.8		Intersection LOS: B	
Intersection Capacity Utilization 82.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	989	336	317	898	196	274	303	305	121	205	49
Future Volume (vph)	47	989	336	317	898	196	274	303	305	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	1679	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.240			0.116			0.257			0.385		
Satd. Flow (perm)	427	3325	1444	204	3293	1328	458	1820	1469	697	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			153			136			266		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	989	336	317	898	196	274	303	305	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	989	336	317	898	196	274	303	305	121	254	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	51.9	45.1	45.1	61.6	53.6	53.6	43.3	26.9	26.9	32.8	21.5	
Actuated g/C Ratio	0.43	0.38	0.38	0.51	0.45	0.45	0.36	0.22	0.22	0.27	0.18	

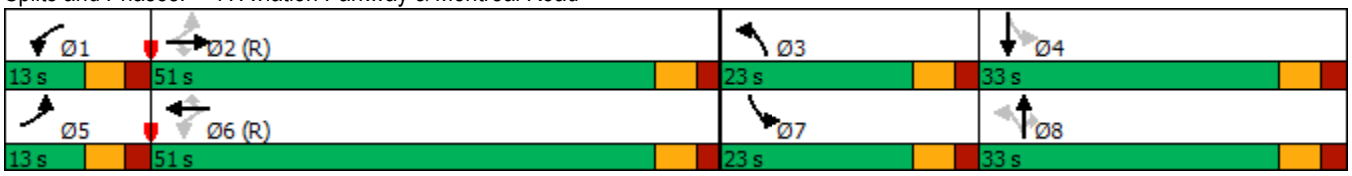
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.79	0.53	1.20	0.61	0.29	0.81	0.74	0.57	0.42	0.79	
Control Delay	17.4	38.9	18.6	143.2	27.0	9.2	47.5	54.8	11.6	29.7	62.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.4	38.9	18.6	143.2	27.0	9.2	47.5	54.8	11.6	29.7	62.6	
LOS	B	D	B	F	C	A	D	D	B	C	E	
Approach Delay		33.2			50.6			37.6			52.0	
Approach LOS		C			D			D			D	
Queue Length 50th (m)	5.2	107.8	32.2	~73.3	94.5	16.1	47.3	66.0	7.3	18.9	55.5	
Queue Length 95th (m)	12.3	133.7	60.2	#146.9	123.3	32.5	#70.5	95.7	32.8	30.2	80.6	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	264	1249	638	264	1470	668	344	427	548	372	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.79	0.53	1.20	0.61	0.29	0.80	0.71	0.56	0.33	0.64	

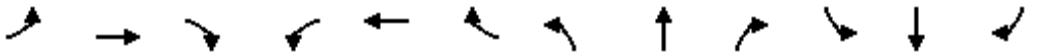
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 42.0 Intersection LOS: D
Intersection Capacity Utilization 100.7% ICU Level of Service G
Analysis Period (min) 15

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

Splits and Phases: 7: Aviation Parkway & Montreal Road





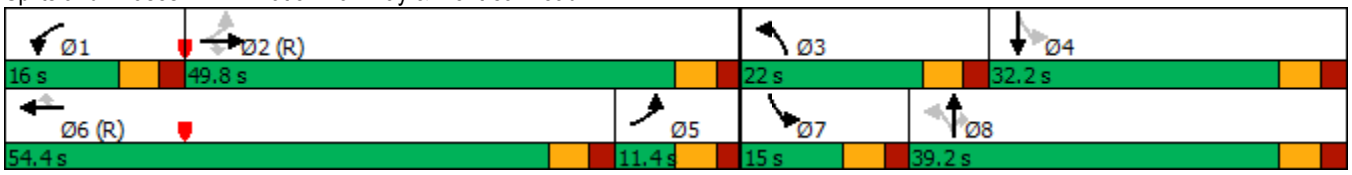
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	992	336	319	900	196	274	303	307	121	205	49
Future Volume (vph)	47	992	336	319	900	196	274	303	307	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.316			0.950			0.250			0.431		
Satd. Flow (perm)	556	3325	1444	3223	3293	1328	446	1820	1471	779	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			190			190			278		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	992	336	319	900	196	274	303	307	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	992	336	319	900	196	274	303	307	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	11.4	49.8	49.8	16.0	54.4	54.4	22.0	39.2	39.2	15.0	32.2	
Total Split (%)	9.5%	41.5%	41.5%	13.3%	45.3%	45.3%	18.3%	32.7%	32.7%	12.5%	26.8%	
Maximum Green (s)	5.5	43.9	43.9	10.1	48.5	48.5	16.1	33.0	33.0	9.1	26.0	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	43.9	43.9	43.9	15.2	55.8	55.8	43.2	28.2	28.2	30.4	21.3	
Actuated g/C Ratio	0.37	0.37	0.37	0.13	0.46	0.46	0.36	0.24	0.24	0.25	0.18	

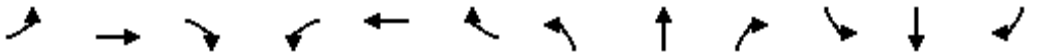
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.82	0.52	0.78	0.59	0.27	0.84	0.71	0.55	0.45	0.80	
Control Delay	29.2	41.0	15.5	65.0	18.6	1.5	51.8	51.2	9.9	31.8	63.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	29.2	41.0	15.5	65.0	18.6	1.5	51.8	51.2	9.9	31.8	63.7	
LOS	C	D	B	E	B	A	D	D	A	C	E	
Approach Delay		34.3			26.7			37.0			53.4	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	7.2	110.1	25.1	32.9	89.0	1.1	48.0	65.2	5.3	19.2	55.5	
Queue Length 95th (m)	15.4	136.6	52.7	#74.6	51.5	1.5	#70.9	91.7	28.9	31.0	81.3	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	257	1216	648	411	1532	719	330	500	606	270	387	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.82	0.52	0.78	0.59	0.27	0.83	0.61	0.51	0.45	0.66	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104 (87%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 34.0 Intersection LOS: C
Intersection Capacity Utilization 91.9% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





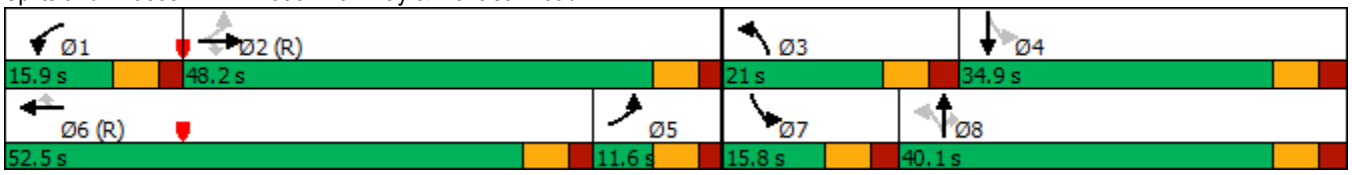
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	992	336	319	900	196	274	303	307	121	205	49
Future Volume (vph)	47	992	336	319	900	196	274	303	307	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.95	0.99		0.87	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1758	0
Flt Permitted	0.316			0.950			0.271			0.401		
Satd. Flow (perm)	558	3325	1449	3226	3293	1346	484	1820	1473	726	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			151			151			280		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	992	336	319	900	196	274	303	307	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	992	336	319	900	196	274	303	307	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.2	37.2	11.3	37.2	37.2	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.6	48.2	48.2	15.9	52.5	52.5	21.0	40.1	40.1	15.8	34.9	
Total Split (%)	9.7%	40.2%	40.2%	13.3%	43.8%	43.8%	17.5%	33.4%	33.4%	13.2%	29.1%	
Maximum Green (s)	5.4	42.0	42.0	9.7	46.3	46.3	14.3	33.4	33.4	9.1	28.2	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	42.0	42.0	42.0	16.2	55.1	55.1	41.5	27.2	27.2	30.5	21.7	
Actuated g/C Ratio	0.35	0.35	0.35	0.14	0.46	0.46	0.35	0.23	0.23	0.25	0.18	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.85	0.56	0.73	0.60	0.28	0.88	0.74	0.56	0.47	0.78	
Control Delay	30.7	44.6	20.6	58.9	18.7	2.4	58.1	53.7	10.0	32.5	61.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.7	44.6	20.6	58.9	18.7	2.4	58.1	53.7	10.0	32.5	61.4	
LOS	C	D	C	E	B	A	E	D	A	C	E	
Approach Delay		38.3			25.5			39.9			52.1	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	7.4	113.1	34.1	33.0	89.1	3.8	48.9	66.6	5.0	19.5	55.5	
Queue Length 95th (m)	15.8	140.3	63.4	#75.3	66.7	4.2	#69.7	91.1	28.2	30.6	79.3	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	247	1163	605	439	1512	699	313	506	612	262	420	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.85	0.56	0.73	0.60	0.28	0.88	0.60	0.50	0.46	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 100 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 35.4 Intersection LOS: D
Intersection Capacity Utilization 94.7% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



Future (2032) Total Traffic

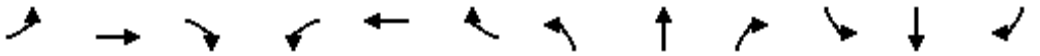
Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	186	145	0	114	50
Future Vol, veh/h	0	186	145	0	114	50
Conflicting Peds, #/hr	0	0	0	0	1	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	186	145	0	114	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	332	153
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	187	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	667	898
Stage 1	0	-	-	0	887	-
Stage 2	0	-	-	0	850	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	667	891
Mov Cap-2 Maneuver	-	-	-	-	667	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	850	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	722
HCM Lane V/C Ratio	-	-	0.227
HCM Control Delay (s)	-	-	11.4
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	763	45	34	1057	101	36	12	28	135	10	273
Future Volume (vph)	196	763	45	34	1057	101	36	12	28	135	10	273
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.99		0.99	0.98	
Frt		0.992			0.987			0.895			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3186	0	1679	3104	0	1729	1476	0	1662	1481	0
Flt Permitted	0.159			0.347			0.241			0.731		
Satd. Flow (perm)	278	3186	0	606	3104	0	436	1476	0	1269	1481	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			13			28			178	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	196	763	45	34	1057	101	36	12	28	135	10	273
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	808	0	34	1158	0	36	40	0	135	283	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	13.0	70.0		57.0	57.0		35.0	35.0		35.0	35.0	
Total Split (%)	12.4%	66.7%		54.3%	54.3%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	7.0	63.1		50.1	50.1		29.4	29.4		29.4	29.4	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	76.8	75.9		59.0	59.0		16.6	16.6		16.6	16.6	
Actuated g/C Ratio	0.73	0.72		0.56	0.56		0.16	0.16		0.16	0.16	

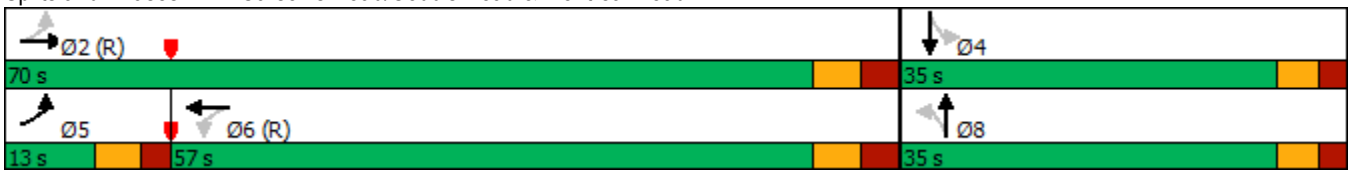
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.56	0.35		0.10	0.66		0.53	0.16		0.68	0.74	
Control Delay	24.0	4.1		14.4	19.6		65.5	18.1		57.3	27.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.0	4.1		14.4	19.6		65.5	18.1		57.3	27.2	
LOS	C	A		B	B		E	B		E	C	
Approach Delay		8.0			19.4			40.5			36.9	
Approach LOS		A			B			D			D	
Queue Length 50th (m)	17.2	19.0		3.1	81.3		6.8	2.1		26.3	19.8	
Queue Length 95th (m)	m37.8	30.1		9.7	126.3		16.7	10.4		42.5	45.3	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	347	2306		340	1750		122	433		355	542	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.56	0.35		0.10	0.66		0.30	0.09		0.38	0.52	

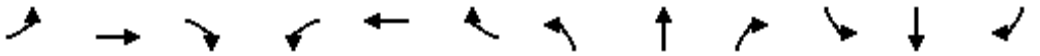
Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 44 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 18.5 Intersection LOS: B
Intersection Capacity Utilization 90.5% ICU Level of Service E
Analysis Period (min) 15

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

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





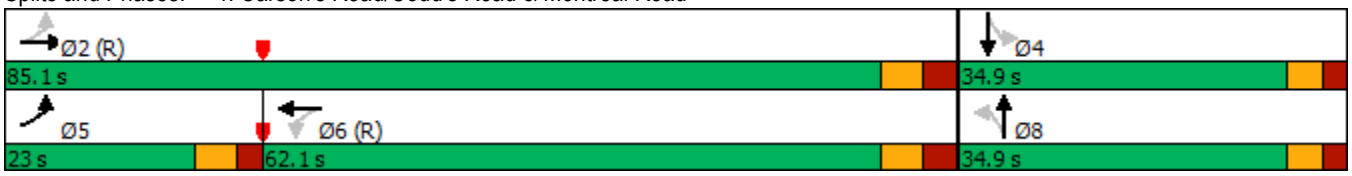
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	763	49	37	1057	103	39	12	31	137	10	283
Future Volume (vph)	201	763	49	37	1057	103	39	12	31	137	10	283
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.98		0.99	0.98	
Frt		0.991			0.987			0.892			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3180	0	1679	3101	0	1729	1473	0	1662	1479	0
Flt Permitted	0.170			0.345			0.219			0.729		
Satd. Flow (perm)	298	3180	0	601	3101	0	396	1473	0	1264	1479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			11			31			283	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	201	763	49	37	1057	103	39	12	31	137	10	283
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	812	0	37	1160	0	39	43	0	137	293	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	23.0	85.1		62.1	62.1		34.9	34.9		34.9	34.9	
Total Split (%)	19.2%	70.9%		51.8%	51.8%		29.1%	29.1%		29.1%	29.1%	
Maximum Green (s)	17.0	78.2		55.2	55.2		29.3	29.3		29.3	29.3	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	90.1	89.2		71.9	71.9		18.3	18.3		18.3	18.3	
Actuated g/C Ratio	0.75	0.74		0.60	0.60		0.15	0.15		0.15	0.15	

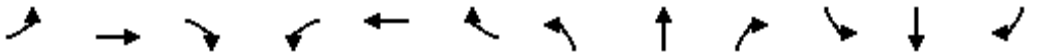
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.57	0.34		0.10	0.62		0.65	0.17		0.71	0.63	
Control Delay	10.2	5.1		3.4	5.5		91.7	20.0		67.5	12.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.2	5.1		3.4	5.5		91.7	20.0		67.5	12.0	
LOS	B	A		A	A		F	B		E	B	
Approach Delay		6.1			5.5			54.1			29.7	
Approach LOS		A			A			D			C	
Queue Length 50th (m)	3.7	13.7		0.8	13.0		8.8	2.5		31.0	2.0	
Queue Length 95th (m)	19.7	56.5		m1.6	57.2		#20.6	11.9		49.1	25.5	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	420	2367		360	1862		96	383		308	575	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.48	0.34		0.10	0.62		0.41	0.11		0.44	0.51	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 91.3% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





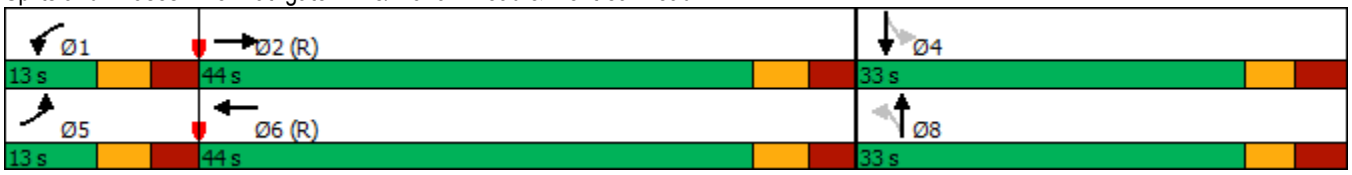
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	807	39	53	1082	95	38	18	85	91	20	73
Future Volume (vph)	80	807	39	53	1082	95	38	18	85	91	20	73
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.98		0.99	0.98	
Frt		0.993			0.988			0.876			0.882	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3232	0	1662	3169	0	1679	1512	0	1530	1476	0
Flt Permitted	0.950			0.950			0.697			0.690		
Satd. Flow (perm)	1451	3232	0	1660	3169	0	1223	1512	0	1098	1476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			12			85			73	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	80	807	39	53	1082	95	38	18	85	91	20	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	846	0	53	1177	0	38	103	0	91	93	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	44.0		13.0	44.0		33.0	33.0		33.0	33.0	
Total Split (%)	14.4%	48.9%		14.4%	48.9%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	6.1	37.1		6.1	37.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	11.0	57.5		8.3	48.2		12.6	12.6		12.8	12.8	
Actuated g/C Ratio	0.12	0.64		0.09	0.54		0.14	0.14		0.14	0.14	

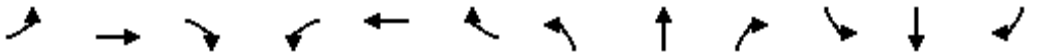
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.45	0.41		0.35	0.69		0.22	0.36		0.58	0.34	
Control Delay	44.4	13.0		43.8	21.0		35.1	13.8		50.0	14.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.4	13.0		43.8	21.0		35.1	13.8		50.0	14.8	
LOS	D	B		D	C		D	B		D	B	
Approach Delay		15.7			22.0			19.5			32.2	
Approach LOS		B			C			B			C	
Queue Length 50th (m)	12.9	45.0		8.8	80.4		5.9	2.7		14.9	3.1	
Queue Length 95th (m)	26.1	75.4		19.2	#138.1		13.7	15.2		27.8	14.9	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	178	2069		155	1702		354	498		318	479	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.45	0.41		0.34	0.69		0.11	0.21		0.29	0.19	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 30 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 20.3 Intersection LOS: C
Intersection Capacity Utilization 69.6% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





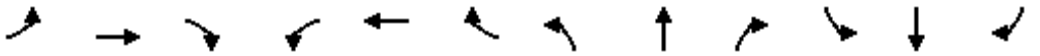
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	807	43	58	1082	98	41	19	93	95	21	77
Future Volume (vph)	81	807	43	58	1082	98	41	19	93	95	21	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.98		0.98	0.98	
Frt		0.992			0.988			0.875			0.882	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3228	0	1662	3167	0	1679	1505	0	1530	1473	0
Flt Permitted	0.950			0.950			0.694			0.683		
Satd. Flow (perm)	1450	3228	0	1659	3167	0	1215	1505	0	1083	1473	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			12			93			77	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	81	807	43	58	1082	98	41	19	93	95	21	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	81	850	0	58	1180	0	41	112	0	95	98	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	22.2	73.6		17.4	68.8		29.0	29.0		29.0	29.0	
Total Split (%)	18.5%	61.3%		14.5%	57.3%		24.2%	24.2%		24.2%	24.2%	
Maximum Green (s)	15.3	66.7		10.5	61.9		22.1	22.1		22.1	22.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	12.9	77.4		8.9	73.6		15.5	15.5		15.5	15.5	
Actuated g/C Ratio	0.11	0.64		0.07	0.61		0.13	0.13		0.13	0.13	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.52	0.41		0.48	0.61		0.26	0.41		0.68	0.38	
Control Delay	54.3	3.4		65.7	18.2		48.9	16.9		72.3	18.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	54.3	3.4		65.7	18.2		48.9	16.9		72.3	18.6	
LOS	D	A		E	B		D	B		E	B	
Approach Delay		7.8			20.4			25.5			45.0	
Approach LOS		A			C			C			D	
Queue Length 50th (m)	20.0	17.4		13.3	92.4		8.8	4.0		21.6	4.4	
Queue Length 95th (m)	36.7	20.8		26.8	133.2		18.6	19.3		37.7	18.8	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	185	2085		145	1947		223	353		199	334	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.44	0.41		0.40	0.61		0.18	0.32		0.48	0.29	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 17 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 18.0		Intersection LOS: B	
Intersection Capacity Utilization 69.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	142	419	91	190	6	365	143	63	11	222	30
Future Volume (vph)	17	142	419	91	190	6	365	143	63	11	222	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95			0.99	1.00		0.98	0.96			0.99	
Frt			0.850		0.995			0.954			0.985	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1631	1784	1517	1631	1772	0	1679	1549	0	0	1695	0
Flt Permitted	0.555			0.666			0.497				0.986	
Satd. Flow (perm)	908	1784	1517	1134	1772	0	856	1549	0	0	1669	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			419		2			46			9	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	38		6	6		38	26		56	56		26
Confl. Bikes (#/hr)												9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	2%	2%	6%	2%	0%	3%	11%	0%	9%	5%	0%
Adj. Flow (vph)	17	142	419	91	190	6	365	143	63	11	222	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	142	419	91	196	0	365	206	0	0	263	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	13.6	13.6	12.1	13.6	13.6		50.5	50.5			32.5	
Actuated g/C Ratio	0.18	0.18	0.16	0.18	0.18		0.67	0.67			0.43	

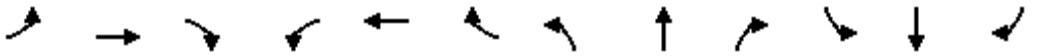
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.10	0.45	0.71	0.45	0.62		0.52	0.20			0.37	
Control Delay	25.3	31.2	10.5	33.8	36.3		9.1	5.0			18.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	25.3	31.2	10.5	33.8	36.3		9.1	5.0			18.0	
LOS	C	C	B	C	D		A	A			B	
Approach Delay		16.0			35.5			7.6			18.0	
Approach LOS		B			D			A			B	
Queue Length 50th (m)	2.1	18.3	0.0	11.8	25.9		19.2	7.3			24.0	
Queue Length 95th (m)	6.7	31.2	23.9	23.0	41.9		39.5	18.2			47.7	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	275	540	597	343	538		703	1046			719	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.06	0.26	0.70	0.27	0.36		0.52	0.20			0.37	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 29 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 16.8 Intersection LOS: B
Intersection Capacity Utilization 77.9% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	787	293	363	939	162	174	160	292	192	248	43
Future Volume (vph)	36	787	293	363	939	162	174	160	292	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.99		0.90	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	1662	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.262			0.153			0.318			0.586		
Satd. Flow (perm)	470	3232	1431	266	3262	1385	571	1820	1521	1062	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			183			156			258		8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	787	293	363	939	162	174	160	292	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	787	293	363	939	162	174	160	292	192	291	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	42.0	42.0	13.0	42.0	42.0	17.0	33.0	33.0	17.0	33.0	
Total Split (%)	12.4%	40.0%	40.0%	12.4%	40.0%	40.0%	16.2%	31.4%	31.4%	16.2%	31.4%	
Maximum Green (s)	7.1	36.1	36.1	7.1	36.1	36.1	11.1	26.8	26.8	11.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	38.8	32.4	32.4	52.8	47.2	47.2	32.1	21.2	21.2	32.7	21.5	
Actuated g/C Ratio	0.37	0.31	0.31	0.50	0.45	0.45	0.31	0.20	0.20	0.31	0.20	

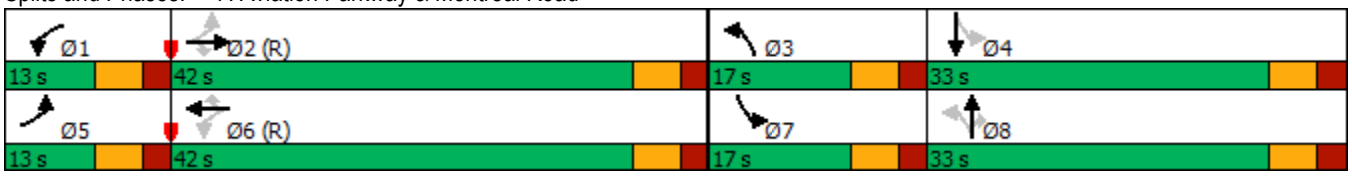
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.79	0.52	1.03	0.64	0.23	0.60	0.44	0.57	0.48	0.79	
Control Delay	16.0	39.3	13.8	76.1	24.4	8.2	31.9	39.4	11.0	27.4	53.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.0	39.3	13.8	76.1	24.4	8.2	31.9	39.4	11.0	27.4	53.9	
LOS	B	D	B	E	C	A	C	D	B	C	D	
Approach Delay		31.8			35.5			24.1			43.3	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	3.5	72.7	15.8	~70.0	95.2	9.7	24.4	28.5	5.7	27.3	54.9	
Queue Length 95th (m)	9.4	94.2	39.5	#145.7	119.6	m23.1	37.3	45.0	27.5	40.9	79.7	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	262	1111	612	354	1466	708	297	464	580	405	457	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.71	0.48	1.03	0.64	0.23	0.59	0.34	0.50	0.47	0.64	

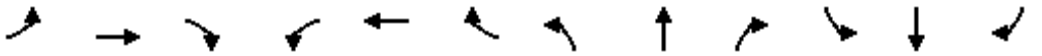
Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 17 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 33.5 Intersection LOS: C
Intersection Capacity Utilization 91.9% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Aviation Parkway & Montreal Road





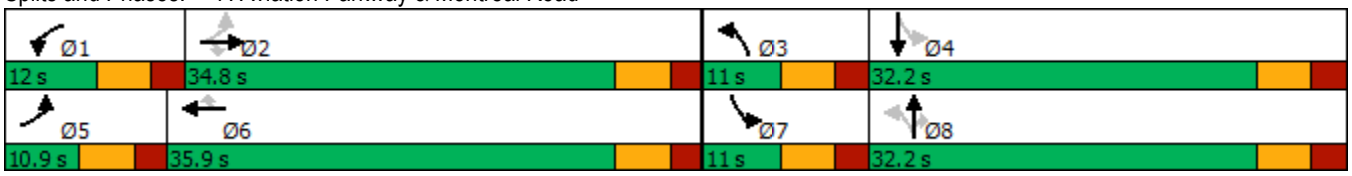
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	786	293	363	940	162	174	160	292	192	248	43
Future Volume (vph)	36	786	293	363	940	162	174	160	292	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99		0.91	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1771	0
Flt Permitted	0.201			0.950			0.384			0.656		
Satd. Flow (perm)	361	3232	1435	3202	3262	1404	690	1820	1522	1190	1771	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			206			182			219		10	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	786	293	363	940	162	174	160	292	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	786	293	363	940	162	174	160	292	192	291	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	10.9	34.8	34.8	12.0	35.9	35.9	11.0	32.2	32.2	11.0	32.2	
Total Split (%)	12.1%	38.7%	38.7%	13.3%	39.9%	39.9%	12.2%	35.8%	35.8%	12.2%	35.8%	
Maximum Green (s)	5.0	28.9	28.9	6.1	30.0	30.0	5.1	26.0	26.0	5.1	26.0	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	30.4	25.3	25.3	6.2	31.5	31.5	23.2	17.8	17.8	23.2	17.8	
Actuated g/C Ratio	0.39	0.32	0.32	0.08	0.40	0.40	0.29	0.23	0.23	0.29	0.23	

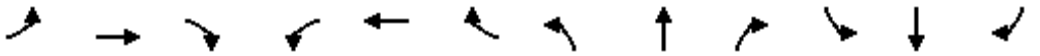
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.16	0.76	0.49	1.43	0.72	0.24	0.64	0.39	0.57	0.50	0.71	
Control Delay	14.3	29.9	10.4	247.1	26.3	3.6	31.9	29.1	12.5	24.7	38.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	14.3	29.9	10.4	247.1	26.3	3.6	31.9	29.1	12.5	24.7	38.0	
LOS	B	C	B	F	C	A	C	C	B	C	D	
Approach Delay		24.3			78.5			22.2			32.7	
Approach LOS		C			E			C			C	
Queue Length 50th (m)	2.7	54.4	9.2	~41.3	67.6	0.0	19.1	21.5	9.4	21.3	41.0	
Queue Length 95th (m)	8.5	85.0	32.3	#74.1	#112.6	10.1	33.0	37.7	30.8	36.1	65.8	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	227	1206	664	253	1306	671	270	611	656	386	601	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.65	0.44	1.43	0.72	0.24	0.64	0.26	0.45	0.50	0.48	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 78.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.43
Intersection Signal Delay: 46.6 Intersection LOS: D
Intersection Capacity Utilization 81.4% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





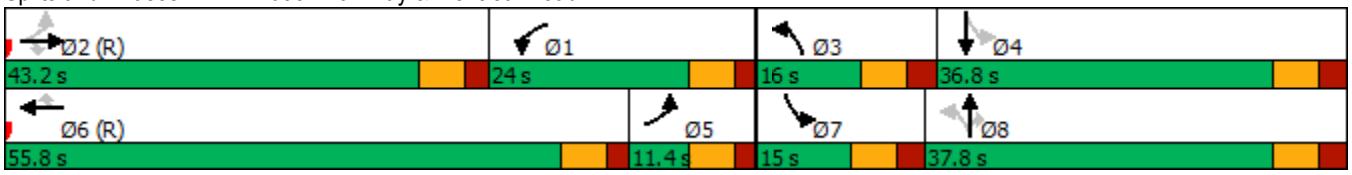
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	786	293	363	940	162	174	160	292	192	248	43
Future Volume (vph)	36	786	293	363	940	162	174	160	292	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.89	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.175			0.950			0.287			0.604		
Satd. Flow (perm)	313	3232	1428	3198	3262	1381	516	1820	1521	1095	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			207			151			292		7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	786	293	363	940	162	174	160	292	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	786	293	363	940	162	174	160	292	192	291	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.3	37.3	11.3	37.3	37.3	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.4	43.2	43.2	24.0	55.8	55.8	16.0	37.8	37.8	15.0	36.8	
Total Split (%)	9.5%	36.0%	36.0%	20.0%	46.5%	46.5%	13.3%	31.5%	31.5%	12.5%	30.7%	
Maximum Green (s)	5.2	37.0	37.0	17.8	49.6	49.6	9.3	31.1	31.1	8.3	30.1	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	48.9	43.7	43.7	16.8	59.9	59.9	34.3	24.7	24.7	33.0	24.0	
Actuated g/C Ratio	0.41	0.36	0.36	0.14	0.50	0.50	0.29	0.21	0.21	0.28	0.20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.67	0.45	0.80	0.58	0.21	0.72	0.43	0.54	0.55	0.81	
Control Delay	20.2	36.7	12.1	56.3	14.4	1.5	47.1	43.9	8.0	37.3	61.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	20.2	36.7	12.1	56.3	14.4	1.5	47.1	43.9	8.0	37.3	61.8	
LOS	C	D	B	E	B	A	D	D	A	D	E	
Approach Delay		29.7			23.4			28.0			52.1	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.7	82.4	13.8	45.6	89.9	2.8	30.0	32.8	0.0	33.6	64.1	
Queue Length 95th (m)	9.5	112.5	40.5	#61.4	75.0	0.9	44.7	50.0	20.9	49.0	90.2	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	189	1177	651	478	1628	765	243	471	610	348	449	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.67	0.45	0.76	0.58	0.21	0.72	0.34	0.48	0.55	0.65	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 29.8 Intersection LOS: C
Intersection Capacity Utilization 86.1% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



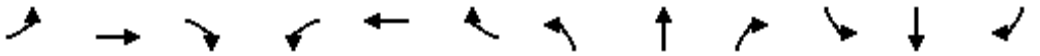
Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	238	139	0	113	50
Future Vol, veh/h	0	238	139	0	113	50
Conflicting Peds, #/hr	2	0	0	2	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	238	139	0	113	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	377	144
Stage 1	-	-	-	-	139	-
Stage 2	-	-	-	-	238	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	629	909
Stage 1	0	-	-	0	893	-
Stage 2	0	-	-	0	806	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	629	904
Mov Cap-2 Maneuver	-	-	-	-	629	-
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	806	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	694
HCM Lane V/C Ratio	-	-	0.235
HCM Control Delay (s)	-	-	11.8
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.9



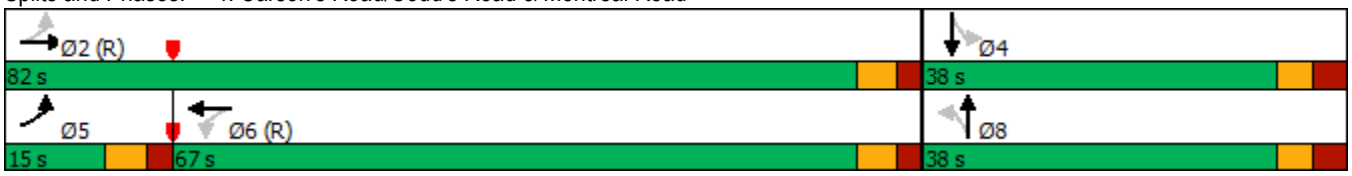
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	1048	65	30	832	129	64	8	26	172	11	305
Future Volume (vph)	268	1048	65	30	832	129	64	8	26	172	11	305
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99	0.97		0.98	0.98	
Frt		0.991			0.980			0.885			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3312	0	1729	3184	0	1695	1568	0	1517	1475	0
Flt Permitted	0.212			0.256			0.219			0.735		
Satd. Flow (perm)	367	3312	0	462	3184	0	388	1568	0	1149	1475	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			21			26			231	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	268	1048	65	30	832	129	64	8	26	172	11	305
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	1113	0	30	961	0	64	34	0	172	316	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	35.0		35.0	35.0		29.5	29.5		29.5	29.5	
Total Split (s)	15.0	82.0		67.0	67.0		38.0	38.0		38.0	38.0	
Total Split (%)	12.5%	68.3%		55.8%	55.8%		31.7%	31.7%		31.7%	31.7%	
Maximum Green (s)	9.0	76.0		61.0	61.0		31.5	31.5		31.5	31.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0		22.0	22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	84.5	84.5		66.7	66.7		23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.70	0.70		0.56	0.56		0.19	0.19		0.19	0.19	

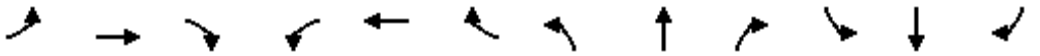
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.69	0.48		0.12	0.54		0.86	0.11		0.79	0.67	
Control Delay	29.1	3.3		7.3	9.3		118.8	16.9		69.0	19.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.1	3.3		7.3	9.3		118.8	16.9		69.0	19.4	
LOS	C	A		A	A		F	B		E	B	
Approach Delay		8.3			9.2			83.5			36.9	
Approach LOS		A			A			F			D	
Queue Length 50th (m)	20.8	15.7		0.9	80.0		14.7	1.5		38.8	17.3	
Queue Length 95th (m)	m#41.9	26.7		m2.4	66.1		#34.8	9.4		58.9	44.3	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	386	2336		256	1778		101	430		301	557	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.69	0.48		0.12	0.54		0.63	0.08		0.57	0.57	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 15.8 Intersection LOS: B
Intersection Capacity Utilization 91.1% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





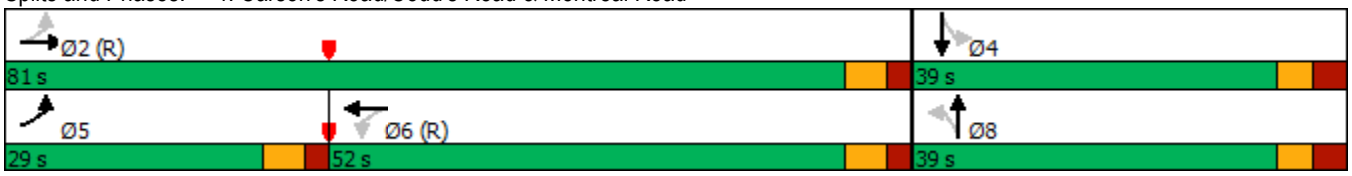
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	1051	67	31	834	128	66	8	27	170	11	308
Future Volume (vph)	268	1051	67	31	834	128	66	8	27	170	11	308
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.98		0.99	0.98		0.98	0.98	
Frt		0.991			0.980			0.884			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3309	0	1729	3176	0	1695	1572	0	1517	1479	0
Flt Permitted	0.203			0.255			0.212			0.734		
Satd. Flow (perm)	355	3309	0	459	3176	0	376	1572	0	1152	1479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			16			27			308	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	268	1051	67	31	834	128	66	8	27	170	11	308
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	1118	0	31	962	0	66	35	0	170	319	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	29.0		29.0	29.0		35.5	35.5		35.5	35.5	
Total Split (s)	29.0	81.0		52.0	52.0		39.0	39.0		39.0	39.0	
Total Split (%)	24.2%	67.5%		43.3%	43.3%		32.5%	32.5%		32.5%	32.5%	
Maximum Green (s)	23.0	75.0		46.0	46.0		32.5	32.5		32.5	32.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	84.5	84.5		63.6	63.6		23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.70	0.70		0.53	0.53		0.19	0.19		0.19	0.19	

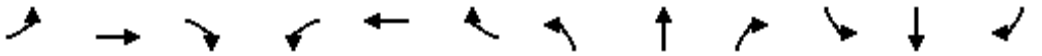
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.65	0.48		0.13	0.57		0.92	0.11		0.77	0.60	
Control Delay	21.5	2.6		8.8	11.1		133.2	16.5		67.4	9.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.5	2.6		8.8	11.1		133.2	16.5		67.4	9.8	
LOS	C	A		A	B		F	B		E	A	
Approach Delay		6.3			11.0			92.8			29.8	
Approach LOS		A			B			F			C	
Queue Length 50th (m)	22.5	10.6		1.2	20.4		15.4	1.5		38.3	2.1	
Queue Length 95th (m)	m16.2	20.0		m5.4	131.6		#36.3	9.3		57.2	24.7	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	500	2333		243	1692		101	445		312	625	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.54	0.48		0.13	0.57		0.65	0.08		0.54	0.51	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 14.7 Intersection LOS: B
Intersection Capacity Utilization 92.0% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





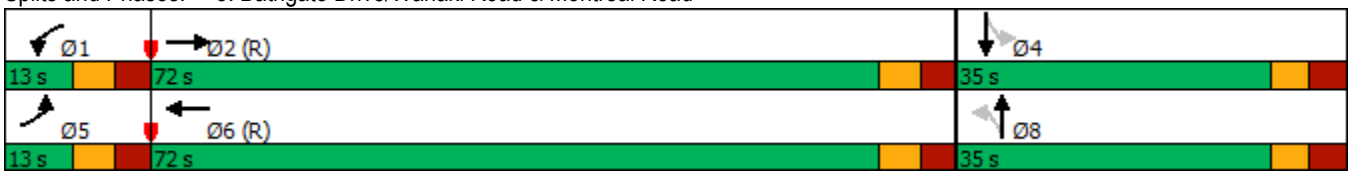
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1098	71	51	829	93	51	22	78	107	21	110
Future Volume (vph)	77	1098	71	51	829	93	51	22	78	107	21	110
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00	0.96		0.96	0.99	
Frt		0.991			0.985			0.883			0.874	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3197	0	1729	1505	0	1572	1471	0
Flt Permitted	0.950			0.950			0.626			0.692		
Satd. Flow (perm)	1603	3314	0	1728	3197	0	1136	1505	0	1104	1471	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			16			78			110	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	77	1098	71	51	829	93	51	22	78	107	21	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	1169	0	51	922	0	51	100	0	107	131	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	72.0		13.0	72.0		35.0	35.0		35.0	35.0	
Total Split (%)	10.8%	60.0%		10.8%	60.0%		29.2%	29.2%		29.2%	29.2%	
Maximum Green (s)	6.1	65.1		6.1	65.1		28.1	28.1		28.1	28.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	11.6	76.4		8.5	70.8		16.9	16.9		16.9	16.9	
Actuated g/C Ratio	0.10	0.64		0.07	0.59		0.14	0.14		0.14	0.14	

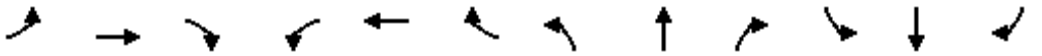
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.50	0.55		0.42	0.49		0.32	0.36		0.69	0.44	
Control Delay	51.9	23.6		63.2	15.8		49.4	17.4		70.1	15.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.9	23.6		63.2	15.8		49.4	17.4		70.1	15.8	
LOS	D	C		E	B		D	B		E	B	
Approach Delay		25.4			18.3			28.2			40.2	
Approach LOS		C			B			C			D	
Queue Length 50th (m)	18.3	95.4		11.6	62.8		11.0	4.6		24.3	4.4	
Queue Length 95th (m)	m#37.6	121.2		24.4	86.7		21.6	18.7		40.6	20.6	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	155	2113		123	1893		266	412		258	428	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.50	0.55		0.41	0.49		0.19	0.24		0.41	0.31	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 24.2 Intersection LOS: C
Intersection Capacity Utilization 80.5% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





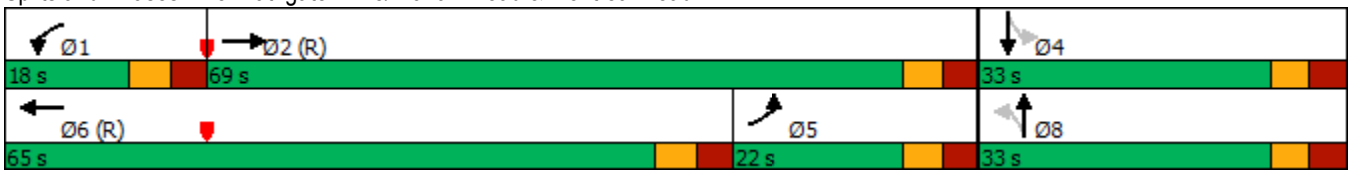
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1098	73	53	831	93	53	22	80	108	22	109
Future Volume (vph)	79	1098	73	53	831	93	53	22	80	108	22	109
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00	0.96		0.96	0.99	
Frt		0.991			0.985			0.882			0.875	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3197	0	1729	1503	0	1572	1474	0
Flt Permitted	0.950			0.950			0.626			0.691		
Satd. Flow (perm)	1603	3314	0	1728	3197	0	1136	1503	0	1102	1474	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			14			80			109	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	79	1098	73	53	831	93	53	22	80	108	22	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	1171	0	53	924	0	53	102	0	108	131	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	22.0	69.0		18.0	65.0		33.0	33.0		33.0	33.0	
Total Split (%)	18.3%	57.5%		15.0%	54.2%		27.5%	27.5%		27.5%	27.5%	
Maximum Green (s)	15.1	62.1		11.1	58.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	13.4	75.8		9.0	71.6		17.0	17.0		17.0	17.0	
Actuated g/C Ratio	0.11	0.63		0.08	0.60		0.14	0.14		0.14	0.14	

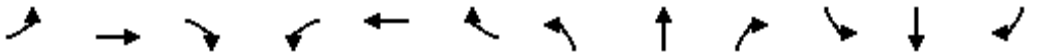
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.44	0.56		0.41	0.48		0.33	0.36		0.70	0.44	
Control Delay	38.5	6.6		61.4	16.8		49.7	17.2		70.5	16.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.5	6.6		61.4	16.8		49.7	17.2		70.5	16.0	
LOS	D	A		E	B		D	B		E	B	
Approach Delay		8.6			19.2			28.3			40.6	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	16.1	39.4		12.1	66.4		11.4	4.6		24.5	4.6	
Queue Length 95th (m)	29.3	45.7		24.4	97.1		22.3	18.9		41.1	20.8	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	203	2095		163	1913		247	389		239	405	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.39	0.56		0.33	0.48		0.21	0.26		0.45	0.32	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 30 (25%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 16.6 Intersection LOS: B
Intersection Capacity Utilization 80.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	188	390	87	143	13	474	204	104	11	199	30
Future Volume (vph)	33	188	390	87	143	13	474	204	104	11	199	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96			0.98	0.99		0.98	0.96			0.99	
Frt			0.850		0.987			0.949			0.983	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1729	1802	1517	1695	1786	0	1712	1619	0	0	1677	0
Flt Permitted	0.656			0.571			0.502				0.981	
Satd. Flow (perm)	1146	1802	1517	1001	1786	0	890	1619	0	0	1643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			390		6			53			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	30		14	14		30	16		56	56		16
Confl. Bikes (#/hr)			27									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	2%	0%	0%	1%	3%	0%	0%	7%	0%
Adj. Flow (vph)	33	188	390	87	143	13	474	204	104	11	199	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	188	390	87	156	0	474	308	0	0	240	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	13.2	13.2	14.9	13.2	13.2		50.9	50.9			30.1	
Actuated g/C Ratio	0.17	0.17	0.20	0.17	0.17		0.67	0.67			0.40	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.17	0.60	0.64	0.50	0.50		0.63	0.28			0.36	
Control Delay	26.8	36.4	8.6	37.4	31.8		10.8	5.5			19.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	26.8	36.4	8.6	37.4	31.8		10.8	5.5			19.0	
LOS	C	D	A	D	C		B	A			B	
Approach Delay		18.2			33.8			8.7			19.0	
Approach LOS		B			C			A			B	
Queue Length 50th (m)	4.1	25.1	0.0	11.4	19.6		26.3	12.1			24.3	
Queue Length 95th (m)	10.4	40.8	22.6	23.0	33.6		53.1	27.5			43.4	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	347	546	610	303	545		757	1103			658	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.10	0.34	0.64	0.29	0.29		0.63	0.28			0.36	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 19 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 16.4 Intersection LOS: B
Intersection Capacity Utilization 82.8% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	1002	338	330	921	196	276	303	312	121	205	49
Future Volume (vph)	47	1002	338	330	921	196	276	303	312	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	1679	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.239			0.097			0.254			0.394		
Satd. Flow (perm)	426	3325	1444	170	3293	1328	453	1820	1469	713	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			153			136			266		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	1002	338	330	921	196	276	303	312	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1002	338	330	921	196	276	303	312	121	254	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	49.4	42.6	42.6	61.2	53.3	53.3	43.7	27.3	27.3	32.8	21.5	
Actuated g/C Ratio	0.41	0.36	0.36	0.51	0.44	0.44	0.36	0.23	0.23	0.27	0.18	

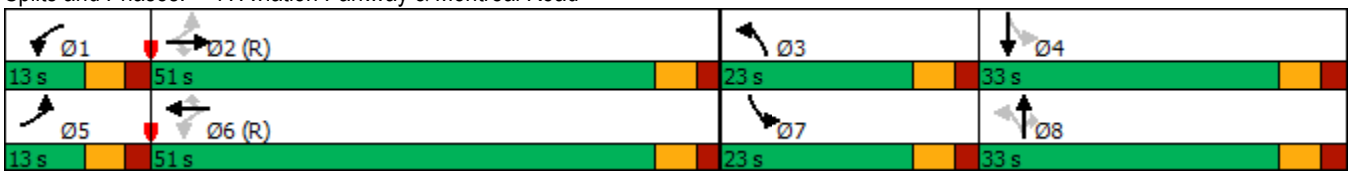
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.85	0.55	1.20	0.63	0.30	0.81	0.73	0.58	0.42	0.79	
Control Delay	17.6	43.4	19.6	141.7	26.7	8.8	47.0	53.9	12.2	29.5	62.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.6	43.4	19.6	141.7	26.7	8.8	47.0	53.9	12.2	29.5	62.6	
LOS	B	D	B	F	C	A	D	D	B	C	E	
Approach Delay		36.7			50.5			37.2			52.0	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	5.2	109.8	32.7	~86.9	97.0	16.2	47.8	66.0	8.6	18.9	55.5	
Queue Length 95th (m)	12.3	136.0	61.1	#161.8	127.0	32.7	#72.0	95.7	34.9	30.2	80.6	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	255	1249	638	276	1461	664	346	429	549	375	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.80	0.53	1.20	0.63	0.30	0.80	0.71	0.57	0.32	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 43.1 Intersection LOS: D
Intersection Capacity Utilization 102.0% ICU Level of Service G
Analysis Period (min) 15

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

Splits and Phases: 7: Aviation Parkway & Montreal Road



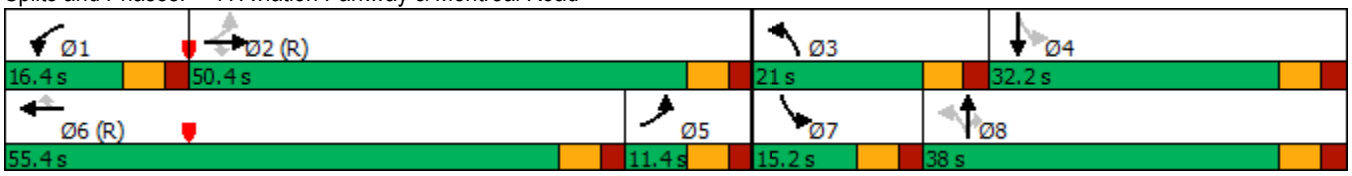
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	1003	338	330	921	196	276	303	312	121	205	49
Future Volume (vph)	47	1003	338	330	921	196	276	303	312	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.310			0.950			0.250			0.401		
Satd. Flow (perm)	546	3325	1444	3223	3293	1328	446	1820	1471	725	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			151			136			280		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	1003	338	330	921	196	276	303	312	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1003	338	330	921	196	276	303	312	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	11.4	50.4	50.4	16.4	55.4	55.4	21.0	38.0	38.0	15.2	32.2	
Total Split (%)	9.5%	42.0%	42.0%	13.7%	46.2%	46.2%	17.5%	31.7%	31.7%	12.7%	26.8%	
Maximum Green (s)	5.5	44.5	44.5	10.5	49.5	49.5	15.1	31.8	31.8	9.3	26.0	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	44.5	44.5	44.5	15.3	56.6	56.6	42.4	27.3	27.3	30.5	21.3	
Actuated g/C Ratio	0.37	0.37	0.37	0.13	0.47	0.47	0.35	0.23	0.23	0.25	0.18	

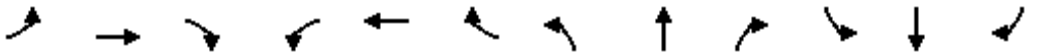
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.81	0.54	0.80	0.59	0.28	0.87	0.73	0.57	0.47	0.80	
Control Delay	28.9	40.4	19.3	66.8	17.8	2.8	57.6	53.5	10.5	32.7	63.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	28.9	40.4	19.3	66.8	17.8	2.8	57.6	53.5	10.5	32.7	63.7	
LOS	C	D	B	E	B	A	E	D	B	C	E	
Approach Delay		34.9			27.0			39.7			53.7	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	7.1	110.9	33.4	34.3	90.7	0.0	49.2	66.2	6.0	19.4	55.5	
Queue Length 95th (m)	15.2	137.3	62.2	#76.5	51.2	m6.3	#75.5	93.0	30.2	31.5	81.3	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	256	1233	630	414	1552	697	317	482	595	263	387	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.81	0.54	0.80	0.59	0.28	0.87	0.63	0.52	0.46	0.66	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 34.9 Intersection LOS: C
Intersection Capacity Utilization 92.6% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Aviation Parkway & Montreal Road





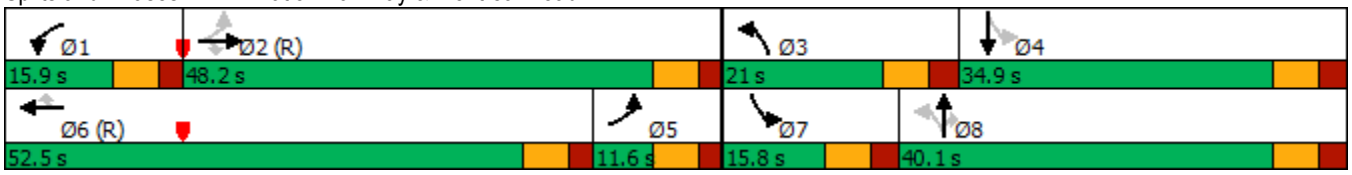
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	1003	338	330	921	196	276	303	312	121	205	49
Future Volume (vph)	47	1003	338	330	921	196	276	303	312	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.95	0.99		0.87	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1758	0
Flt Permitted	0.310			0.950			0.271			0.401		
Satd. Flow (perm)	548	3325	1449	3227	3293	1346	484	1820	1473	726	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			151			151			279		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	1003	338	330	921	196	276	303	312	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1003	338	330	921	196	276	303	312	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.2	37.2	11.3	37.2	37.2	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.6	48.2	48.2	15.9	52.5	52.5	21.0	40.1	40.1	15.8	34.9	
Total Split (%)	9.7%	40.2%	40.2%	13.3%	43.8%	43.8%	17.5%	33.4%	33.4%	13.2%	29.1%	
Maximum Green (s)	5.4	42.0	42.0	9.7	46.3	46.3	14.3	33.4	33.4	9.1	28.2	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	42.0	42.0	42.0	16.2	55.1	55.1	41.5	27.2	27.2	30.5	21.7	
Actuated g/C Ratio	0.35	0.35	0.35	0.14	0.46	0.46	0.35	0.23	0.23	0.25	0.18	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.86	0.56	0.75	0.61	0.28	0.88	0.74	0.57	0.47	0.78	
Control Delay	30.9	45.3	20.8	60.3	18.5	2.2	59.1	53.7	10.6	32.5	61.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.9	45.3	20.8	60.3	18.5	2.2	59.1	53.7	10.6	32.5	61.4	
LOS	C	D	C	E	B	A	E	D	B	C	E	
Approach Delay		38.8			25.8			40.3			52.1	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	7.4	114.8	34.6	32.8	92.0	2.4	49.4	66.6	6.2	19.5	55.5	
Queue Length 95th (m)	15.8	142.3	64.3	#78.5	69.4	4.1	#70.7	91.1	29.7	30.6	79.3	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	244	1163	605	439	1512	699	313	506	611	262	420	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.86	0.56	0.75	0.61	0.28	0.88	0.60	0.51	0.46	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 100 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 35.8 Intersection LOS: D
Intersection Capacity Utilization 95.4% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



Future (2037) Total Traffic

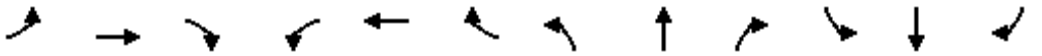
Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	186	145	0	114	50
Future Vol, veh/h	0	186	145	0	114	50
Conflicting Peds, #/hr	0	0	0	0	1	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	186	145	0	114	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	332	153
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	187	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	667	898
Stage 1	0	-	-	0	887	-
Stage 2	0	-	-	0	850	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	667	891
Mov Cap-2 Maneuver	-	-	-	-	667	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	850	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	722
HCM Lane V/C Ratio	-	-	0.227
HCM Control Delay (s)	-	-	11.4
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	775	45	34	1061	101	36	12	28	135	10	273
Future Volume (vph)	196	775	45	34	1061	101	36	12	28	135	10	273
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.99		0.99	0.98	
Frt		0.992			0.987			0.895			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3186	0	1679	3104	0	1729	1476	0	1662	1481	0
Flt Permitted	0.158			0.343			0.241			0.731		
Satd. Flow (perm)	276	3186	0	599	3104	0	436	1476	0	1269	1481	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			13			28			177	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	196	775	45	34	1061	101	36	12	28	135	10	273
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	820	0	34	1162	0	36	40	0	135	283	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	13.0	70.0		57.0	57.0		35.0	35.0		35.0	35.0	
Total Split (%)	12.4%	66.7%		54.3%	54.3%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	7.0	63.1		50.1	50.1		29.4	29.4		29.4	29.4	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	76.8	75.9		59.0	59.0		16.6	16.6		16.6	16.6	
Actuated g/C Ratio	0.73	0.72		0.56	0.56		0.16	0.16		0.16	0.16	

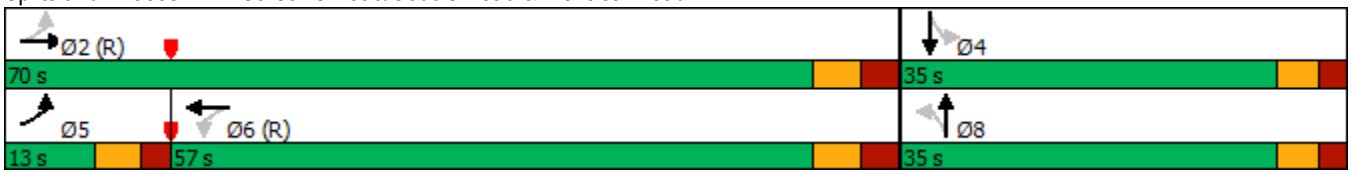
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.57	0.36		0.10	0.66		0.53	0.16		0.68	0.74	
Control Delay	24.1	4.1		14.4	19.7		65.5	18.1		57.3	27.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.1	4.1		14.4	19.7		65.5	18.1		57.3	27.4	
LOS	C	A		B	B		E	B		E	C	
Approach Delay		8.0			19.5			40.5			37.1	
Approach LOS		A			B			D			D	
Queue Length 50th (m)	17.3	19.1		3.1	82.0		6.8	2.1		26.3	20.1	
Queue Length 95th (m)	m37.8	30.2		9.7	127.0		16.7	10.4		42.5	45.5	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	346	2306		336	1748		122	433		355	542	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.57	0.36		0.10	0.66		0.30	0.09		0.38	0.52	

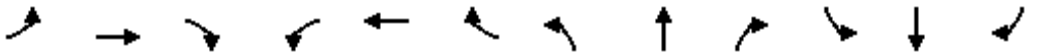
Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 44 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 18.5 Intersection LOS: B
Intersection Capacity Utilization 90.6% ICU Level of Service E
Analysis Period (min) 15

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

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





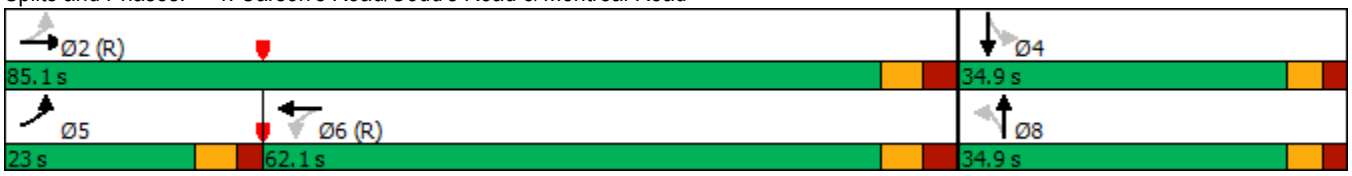
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	775	49	37	1060	103	39	12	31	137	10	283
Future Volume (vph)	201	775	49	37	1060	103	39	12	31	137	10	283
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.99		0.99	0.98		0.99	0.98	
Frt		0.991			0.987			0.892			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3180	0	1679	3102	0	1729	1473	0	1662	1479	0
Flt Permitted	0.169			0.341			0.219			0.729		
Satd. Flow (perm)	296	3180	0	595	3102	0	396	1473	0	1264	1479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			11			31			283	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			12.6			8.7	
Confl. Peds. (#/hr)	20		16	16		20	8		8	8		8
Confl. Bikes (#/hr)			3			3						1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	7%	13%	3%	8%	23%	0%	20%	4%	4%	0%	3%
Adj. Flow (vph)	201	775	49	37	1060	103	39	12	31	137	10	283
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	824	0	37	1163	0	39	43	0	137	293	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	4.9	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.9	29.9		29.9	29.9		34.6	34.6		34.6	34.6	
Total Split (s)	23.0	85.1		62.1	62.1		34.9	34.9		34.9	34.9	
Total Split (%)	19.2%	70.9%		51.8%	51.8%		29.1%	29.1%		29.1%	29.1%	
Maximum Green (s)	17.0	78.2		55.2	55.2		29.3	29.3		29.3	29.3	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	3.2		3.2	3.2		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.9		6.9	6.9		5.6	5.6		5.6	5.6	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	90.1	89.2		71.8	71.8		18.3	18.3		18.3	18.3	
Actuated g/C Ratio	0.75	0.74		0.60	0.60		0.15	0.15		0.15	0.15	

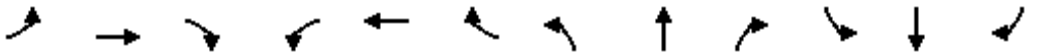
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.57	0.35		0.10	0.62		0.65	0.17		0.71	0.63	
Control Delay	10.2	5.1		3.4	5.6		91.7	20.0		67.5	12.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.2	5.1		3.4	5.6		91.7	20.0		67.5	12.0	
LOS	B	A		A	A		F	B		E	B	
Approach Delay		6.1			5.5			54.1			29.7	
Approach LOS		A			A			D			C	
Queue Length 50th (m)	3.6	13.7		0.8	13.0		8.8	2.5		31.0	2.0	
Queue Length 95th (m)	19.4	57.6		m1.7	59.3		#20.6	11.9		49.1	25.5	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	419	2367		356	1861		96	383		308	575	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.48	0.35		0.10	0.62		0.41	0.11		0.44	0.51	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 91.4% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





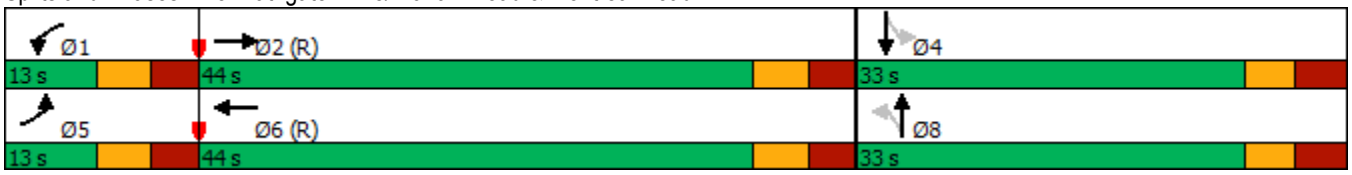
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	819	39	53	1085	95	38	18	85	91	20	73
Future Volume (vph)	80	819	39	53	1085	95	38	18	85	91	20	73
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.98		0.99	0.98	
Frt		0.993			0.988			0.876			0.882	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3232	0	1662	3169	0	1679	1512	0	1530	1476	0
Flt Permitted	0.950			0.950			0.697			0.690		
Satd. Flow (perm)	1451	3232	0	1660	3169	0	1223	1512	0	1098	1476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			12			85			73	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	80	819	39	53	1085	95	38	18	85	91	20	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	858	0	53	1180	0	38	103	0	91	93	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	44.0		13.0	44.0		33.0	33.0		33.0	33.0	
Total Split (%)	14.4%	48.9%		14.4%	48.9%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	6.1	37.1		6.1	37.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	11.0	57.5		8.3	48.2		12.6	12.6		12.8	12.8	
Actuated g/C Ratio	0.12	0.64		0.09	0.54		0.14	0.14		0.14	0.14	

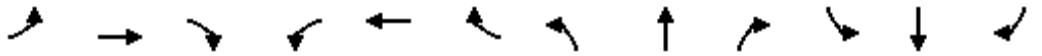
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.45	0.41		0.35	0.69		0.22	0.36		0.58	0.34	
Control Delay	44.4	13.1		43.8	21.1		35.1	13.8		50.0	14.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.4	13.1		43.8	21.1		35.1	13.8		50.0	14.8	
LOS	D	B		D	C		D	B		D	B	
Approach Delay		15.8			22.1			19.5			32.2	
Approach LOS		B			C			B			C	
Queue Length 50th (m)	12.9	46.0		8.8	80.7		5.9	2.7		14.9	3.1	
Queue Length 95th (m)	26.1	76.9		19.2	#138.4		13.7	15.2		27.8	14.9	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	178	2068		155	1702		354	498		318	479	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.45	0.41		0.34	0.69		0.11	0.21		0.29	0.19	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 30 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 20.3 Intersection LOS: C
Intersection Capacity Utilization 69.6% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	818	43	58	1085	98	41	19	93	95	21	77
Future Volume (vph)	81	818	43	58	1085	98	41	19	93	95	21	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		0.99	0.98		0.98	0.98	
Frt		0.993			0.988			0.875			0.882	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1453	3232	0	1662	3168	0	1679	1505	0	1530	1473	0
Flt Permitted	0.950			0.950			0.694			0.683		
Satd. Flow (perm)	1450	3232	0	1659	3168	0	1215	1505	0	1083	1473	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			12			93			77	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	3		2	2		3	6		10	10		6
Confl. Bikes (#/hr)			5			4						
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	19%	6%	8%	4%	6%	25%	3%	9%	2%	13%	0%	9%
Adj. Flow (vph)	81	818	43	58	1085	98	41	19	93	95	21	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	81	861	0	58	1183	0	41	112	0	95	98	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	22.2	73.6		17.4	68.8		29.0	29.0		29.0	29.0	
Total Split (%)	18.5%	61.3%		14.5%	57.3%		24.2%	24.2%		24.2%	24.2%	
Maximum Green (s)	15.3	66.7		10.5	61.9		22.1	22.1		22.1	22.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	12.9	77.4		8.9	73.6		15.5	15.5		15.5	15.5	
Actuated g/C Ratio	0.11	0.64		0.07	0.61		0.13	0.13		0.13	0.13	

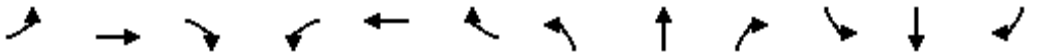
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.52	0.41		0.48	0.61		0.26	0.41		0.68	0.38	
Control Delay	54.0	3.4		65.7	18.3		48.9	16.9		72.3	18.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	54.0	3.4		65.7	18.3		48.9	16.9		72.3	18.6	
LOS	D	A		E	B		D	B		E	B	
Approach Delay		7.8			20.5			25.5			45.0	
Approach LOS		A			C			C			D	
Queue Length 50th (m)	20.1	17.5		13.3	92.8		8.8	4.0		21.6	4.4	
Queue Length 95th (m)	36.6	20.9		26.8	133.8		18.6	19.3		37.7	18.8	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	185	2088		145	1947		223	353		199	334	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.44	0.41		0.40	0.61		0.18	0.32		0.48	0.29	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 17 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 17.9 Intersection LOS: B
Intersection Capacity Utilization 70.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	142	428	91	190	6	370	150	63	11	251	33
Future Volume (vph)	18	142	428	91	190	6	370	150	63	11	251	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95			0.99	1.00		0.98	0.96			0.99	
Frt			0.850		0.995			0.956			0.985	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1631	1784	1517	1631	1772	0	1679	1553	0	0	1695	0
Flt Permitted	0.555			0.666			0.468				0.988	
Satd. Flow (perm)	908	1784	1517	1134	1772	0	808	1553	0	0	1673	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			428		2			43			9	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	38		6	6		38	26		56	56		26
Confl. Bikes (#/hr)												9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	6%	2%	2%	6%	2%	0%	3%	11%	0%	9%	5%	0%
Adj. Flow (vph)	18	142	428	91	190	6	370	150	63	11	251	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	142	428	91	196	0	370	213	0	0	295	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	13.6	13.6	12.5	13.6	13.6		50.5	50.5			32.1	
Actuated g/C Ratio	0.18	0.18	0.16	0.18	0.18		0.67	0.67			0.42	

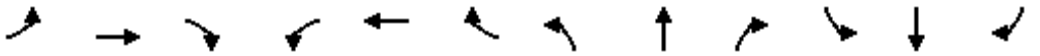
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.11	0.45	0.71	0.45	0.62		0.54	0.20			0.41	
Control Delay	25.4	31.2	10.3	33.8	36.3		9.5	5.1			18.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	25.4	31.2	10.3	33.8	36.3		9.5	5.1			18.9	
LOS	C	C	B	C	D		A	A			B	
Approach Delay		15.8			35.5			7.9			18.9	
Approach LOS		B			D			A			B	
Queue Length 50th (m)	2.2	18.3	0.0	11.8	25.9		19.4	7.9			28.0	
Queue Length 95th (m)	6.8	31.2	24.2	23.0	41.9		40.2	19.1			54.1	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	275	540	608	343	538		682	1048			713	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.07	0.26	0.70	0.27	0.36		0.54	0.20			0.41	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 29 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 16.9 Intersection LOS: B
Intersection Capacity Utilization 79.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	798	300	363	943	162	177	160	292	192	248	43
Future Volume (vph)	36	798	300	363	943	162	177	160	292	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.99		0.90	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	1662	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.258			0.950			0.317			0.590		
Satd. Flow (perm)	463	3232	1431	1649	3262	1385	570	1820	1521	1070	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			185			156			257		8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	798	300	363	943	162	177	160	292	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	798	300	363	943	162	177	160	292	192	291	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	42.0	42.0	13.0	42.0	42.0	17.0	33.0	33.0	17.0	33.0	
Total Split (%)	12.4%	40.0%	40.0%	12.4%	40.0%	40.0%	16.2%	31.4%	31.4%	16.2%	31.4%	
Maximum Green (s)	7.1	36.1	36.1	7.1	36.1	36.1	11.1	26.8	26.8	11.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	39.0	32.5	32.5	16.4	47.2	47.2	32.2	21.2	21.2	32.7	21.5	
Actuated g/C Ratio	0.37	0.31	0.31	0.16	0.45	0.45	0.31	0.20	0.20	0.31	0.20	

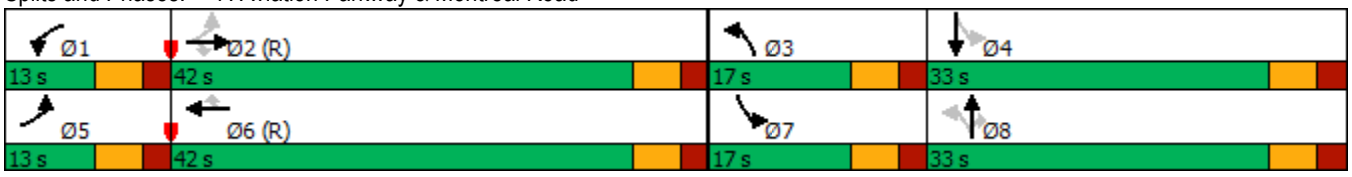
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.14	0.80	0.53	1.40	0.64	0.23	0.61	0.44	0.57	0.48	0.79	
Control Delay	16.0	39.5	14.1	229.6	24.5	8.2	32.2	39.4	11.1	27.3	53.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.0	39.5	14.1	229.6	24.5	8.2	32.2	39.4	11.1	27.3	53.9	
LOS	B	D	B	F	C	A	C	D	B	C	D	
Approach Delay		32.0			73.4			24.2			43.3	
Approach LOS		C			E			C			D	
Queue Length 50th (m)	3.5	74.1	16.6	~116.4	95.5	9.7	24.9	28.5	5.8	27.3	54.9	
Queue Length 95th (m)	9.4	95.9	40.9	#186.7	120.3	m22.6	38.0	45.0	27.7	40.9	79.7	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	260	1111	613	260	1465	708	297	464	579	407	457	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.72	0.49	1.40	0.64	0.23	0.60	0.34	0.50	0.47	0.64	

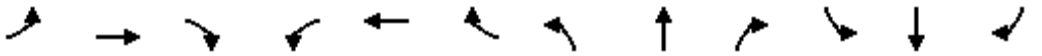
Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 17 (16%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.40
Intersection Signal Delay: 48.5 Intersection LOS: D
Intersection Capacity Utilization 92.1% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Aviation Parkway & Montreal Road





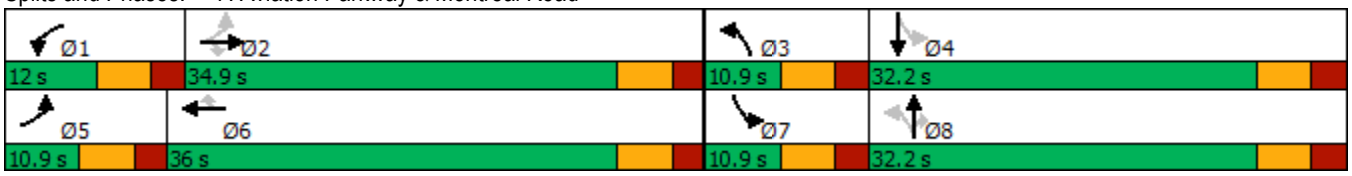
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	798	300	363	943	162	177	160	292	192	248	43
Future Volume (vph)	36	798	300	363	943	162	177	160	292	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99		0.91	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1771	0
Flt Permitted	0.201			0.950			0.384			0.656		
Satd. Flow (perm)	361	3232	1435	3203	3262	1404	690	1820	1522	1190	1771	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209			182			217		10	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	798	300	363	943	162	177	160	292	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	798	300	363	943	162	177	160	292	192	291	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	10.9	34.9	34.9	12.0	36.0	36.0	10.9	32.2	32.2	10.9	32.2	
Total Split (%)	12.1%	38.8%	38.8%	13.3%	40.0%	40.0%	12.1%	35.8%	35.8%	12.1%	35.8%	
Maximum Green (s)	5.0	29.0	29.0	6.1	30.1	30.1	5.0	26.0	26.0	5.0	26.0	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	30.5	25.4	25.4	6.2	31.6	31.6	23.1	17.7	17.7	23.1	17.7	
Actuated g/C Ratio	0.39	0.32	0.32	0.08	0.40	0.40	0.29	0.22	0.22	0.29	0.22	

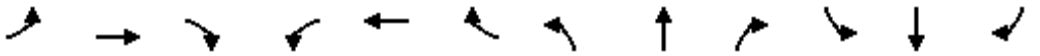
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.16	0.76	0.50	1.43	0.72	0.24	0.66	0.39	0.57	0.50	0.72	
Control Delay	14.2	30.1	10.5	247.6	26.2	3.6	33.2	29.2	12.7	24.9	38.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	14.2	30.1	10.5	247.6	26.2	3.6	33.2	29.2	12.7	24.9	38.0	
LOS	B	C	B	F	C	A	C	C	B	C	D	
Approach Delay		24.4			78.5			22.7			32.8	
Approach LOS		C			E			C			C	
Queue Length 50th (m)	2.7	55.5	9.7	~41.3	67.8	0.0	19.5	21.5	9.7	21.4	41.0	
Queue Length 95th (m)	8.4	86.3	33.3	#74.1	#112.9	10.0	33.7	37.7	31.1	36.2	65.8	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	228	1209	667	253	1311	673	268	610	655	384	600	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.66	0.45	1.43	0.72	0.24	0.66	0.26	0.45	0.50	0.48	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 78.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.43
Intersection Signal Delay: 46.6 Intersection LOS: D
Intersection Capacity Utilization 81.7% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road





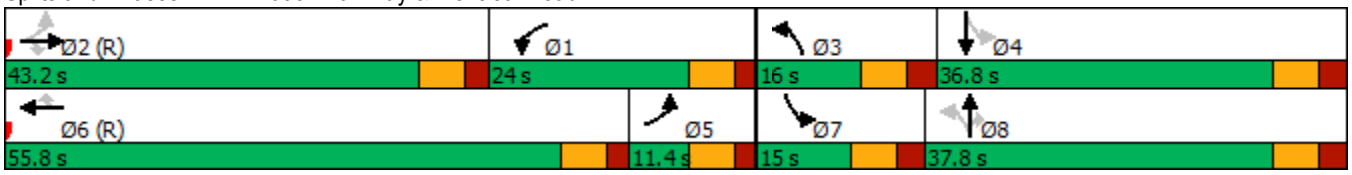
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	798	300	363	943	162	177	160	292	192	248	43
Future Volume (vph)	36	798	300	363	943	162	177	160	292	192	248	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.99		0.89	1.00		0.98	1.00	1.00	
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3232	1502	3225	3262	1547	1712	1820	1547	1729	1770	0
Flt Permitted	0.173			0.950			0.286			0.607		
Satd. Flow (perm)	310	3232	1428	3198	3262	1381	514	1820	1521	1101	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			207			151			292		7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	46		22	22		46	4		4	4		4
Confl. Bikes (#/hr)			18									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	7%	3%	4%	6%	0%	1%	0%	0%	0%	0%	2%
Adj. Flow (vph)	36	798	300	363	943	162	177	160	292	192	248	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	798	300	363	943	162	177	160	292	192	291	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.3	37.3	11.3	37.3	37.3	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.4	43.2	43.2	24.0	55.8	55.8	16.0	37.8	37.8	15.0	36.8	
Total Split (%)	9.5%	36.0%	36.0%	20.0%	46.5%	46.5%	13.3%	31.5%	31.5%	12.5%	30.7%	
Maximum Green (s)	5.2	37.0	37.0	17.8	49.6	49.6	9.3	31.1	31.1	8.3	30.1	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	48.9	43.7	43.7	16.8	59.9	59.9	34.4	24.7	24.7	33.0	24.0	
Actuated g/C Ratio	0.41	0.36	0.36	0.14	0.50	0.50	0.29	0.21	0.21	0.28	0.20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.68	0.46	0.80	0.58	0.21	0.73	0.43	0.54	0.55	0.81	
Control Delay	20.2	37.0	12.6	56.3	14.4	1.5	48.0	43.9	8.0	37.2	61.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	20.2	37.0	12.6	56.3	14.4	1.5	48.0	43.9	8.0	37.2	61.8	
LOS	C	D	B	E	B	A	D	D	A	D	E	
Approach Delay		30.0			23.3			28.4			52.0	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	3.7	84.1	15.0	45.6	90.1	2.8	30.6	32.8	0.0	33.6	64.1	
Queue Length 95th (m)	9.5	114.7	42.6	#61.5	75.3	0.9	#45.7	50.0	20.9	49.0	90.2	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	187	1176	651	478	1627	764	243	471	610	349	449	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.68	0.46	0.76	0.58	0.21	0.73	0.34	0.48	0.55	0.65	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 30.0 Intersection LOS: C
Intersection Capacity Utilization 86.3% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	76	187	29	48	5	152	53	30	10	63	55
Future Vol, veh/h	48	76	187	29	48	5	152	53	30	10	63	55
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	100	0	25	0	0	0	12	11	50	0	33	0
Mvmt Flow	48	76	187	29	48	5	152	53	30	10	63	55
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17.3	9.4	11.9	9.6
HCM LOS	C	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	65%	15%	35%	8%
Vol Thru, %	23%	24%	59%	49%
Vol Right, %	13%	60%	6%	43%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	235	311	82	128
LT Vol	152	48	29	10
Through Vol	53	76	48	63
RT Vol	30	187	5	55
Lane Flow Rate	235	311	82	128
Geometry Grp	1	1	1	1
Degree of Util (X)	0.368	0.557	0.127	0.19
Departure Headway (Hd)	5.645	6.448	5.578	5.348
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	637	560	642	671
Service Time	3.68	4.476	3.617	3.387
HCM Lane V/C Ratio	0.369	0.555	0.128	0.191
HCM Control Delay	11.9	17.3	9.4	9.6
HCM Lane LOS	B	C	A	A
HCM 95th-tile Q	1.7	3.4	0.4	0.7

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	67	51	34	108	30	10
Future Vol, veh/h	67	51	34	108	30	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	6	15	33	0	67
Mvmt Flow	67	51	34	108	30	10
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.8	8.5	7.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	24%	57%	0%
Vol Thru, %	76%	0%	75%
Vol Right, %	0%	43%	25%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	142	118	40
LT Vol	34	67	0
Through Vol	108	0	30
RT Vol	0	51	10
Lane Flow Rate	142	118	40
Geometry Grp	1	1	1
Degree of Util (X)	0.175	0.137	0.046
Departure Headway (Hd)	4.442	4.178	4.175
Convergence, Y/N	Yes	Yes	Yes
Cap	799	863	863
Service Time	2.515	2.18	2.175
HCM Lane V/C Ratio	0.178	0.137	0.046
HCM Control Delay	8.5	7.8	7.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0.5	0.1

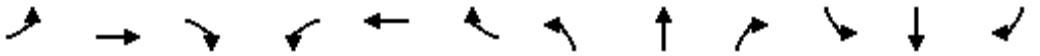
Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	238	139	0	113	50
Future Vol, veh/h	0	238	139	0	113	50
Conflicting Peds, #/hr	2	0	0	2	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	238	139	0	113	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	377	144
Stage 1	-	-	-	-	139	-
Stage 2	-	-	-	-	238	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	629	909
Stage 1	0	-	-	0	893	-
Stage 2	0	-	-	0	806	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	629	904
Mov Cap-2 Maneuver	-	-	-	-	629	-
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	806	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	694
HCM Lane V/C Ratio	-	-	0.235
HCM Control Delay (s)	-	-	11.8
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.9



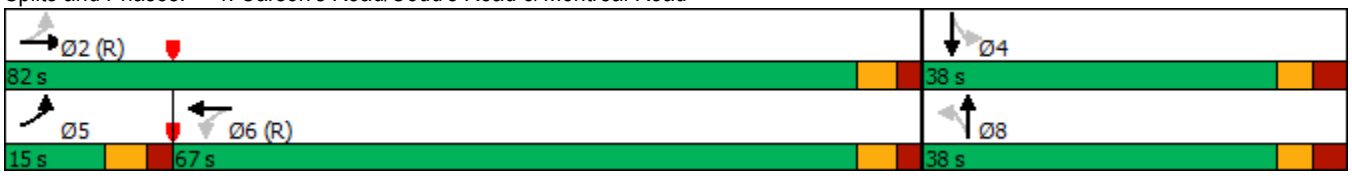
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	1054	65	30	842	129	64	8	26	172	11	305
Future Volume (vph)	268	1054	65	30	842	129	64	8	26	172	11	305
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99	0.97		0.98	0.98	
Frt		0.991			0.980			0.885			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3312	0	1729	3185	0	1695	1568	0	1517	1475	0
Flt Permitted	0.209			0.255			0.219			0.735		
Satd. Flow (perm)	362	3312	0	460	3185	0	388	1568	0	1149	1475	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			21			26			228	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	268	1054	65	30	842	129	64	8	26	172	11	305
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	1119	0	30	971	0	64	34	0	172	316	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	35.0		35.0	35.0		29.5	29.5		29.5	29.5	
Total Split (s)	15.0	82.0		67.0	67.0		38.0	38.0		38.0	38.0	
Total Split (%)	12.5%	68.3%		55.8%	55.8%		31.7%	31.7%		31.7%	31.7%	
Maximum Green (s)	9.0	76.0		61.0	61.0		31.5	31.5		31.5	31.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		22.0		22.0	22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	84.5	84.5		66.6	66.6		23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.70	0.70		0.56	0.56		0.19	0.19		0.19	0.19	

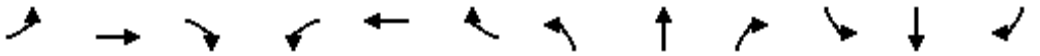
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.70	0.48		0.12	0.55		0.86	0.11		0.79	0.68	
Control Delay	29.7	3.3		7.2	9.3		118.8	16.9		69.0	19.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.7	3.3		7.2	9.3		118.8	16.9		69.0	19.9	
LOS	C	A		A	A		F	B		E	B	
Approach Delay		8.4			9.2			83.5			37.2	
Approach LOS		A			A			F			D	
Queue Length 50th (m)	21.2	15.7		0.9	81.2		14.7	1.5		38.8	18.0	
Queue Length 95th (m)	m#41.9	26.7		m2.4	66.2		#34.8	9.4		58.9	45.1	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	384	2336		255	1777		101	430		301	555	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.70	0.48		0.12	0.55		0.63	0.08		0.57	0.57	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 15.9 Intersection LOS: B
Intersection Capacity Utilization 91.4% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





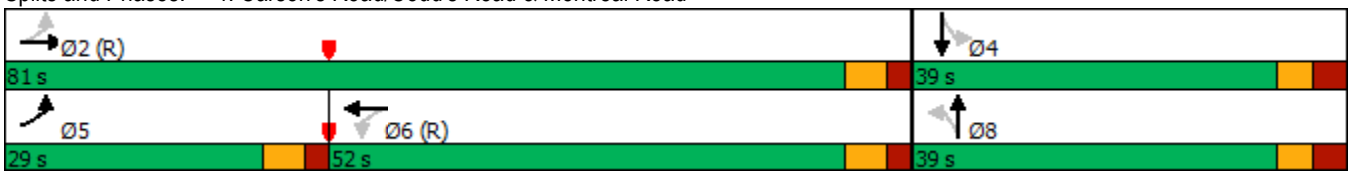
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	1057	67	31	843	128	66	8	27	170	11	308
Future Volume (vph)	268	1057	67	31	843	128	66	8	27	170	11	308
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	65.0		0.0	30.0		0.0	40.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99	0.98		0.99	0.98		0.98	0.98	
Frt		0.991			0.980			0.884			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3309	0	1729	3177	0	1695	1572	0	1517	1479	0
Flt Permitted	0.200			0.253			0.212			0.734		
Satd. Flow (perm)	350	3309	0	456	3177	0	376	1572	0	1152	1479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			16			27			308	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		687.3			477.8			139.7			121.5	
Travel Time (s)		41.2			28.7			10.1			10.9	
Confl. Peds. (#/hr)	35		19	19		35	9		14	14		9
Confl. Bikes (#/hr)			4			7			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	0%	4%	12%	2%	0%	0%	14%	0%	3%
Adj. Flow (vph)	268	1057	67	31	843	128	66	8	27	170	11	308
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	1124	0	31	971	0	66	35	0	170	319	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	29.0		29.0	29.0		35.5	35.5		35.5	35.5	
Total Split (s)	29.0	81.0		52.0	52.0		39.0	39.0		39.0	39.0	
Total Split (%)	24.2%	67.5%		43.3%	43.3%		32.5%	32.5%		32.5%	32.5%	
Maximum Green (s)	23.0	75.0		46.0	46.0		32.5	32.5		32.5	32.5	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	84.5	84.5		63.5	63.5		23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.70	0.70		0.53	0.53		0.19	0.19		0.19	0.19	

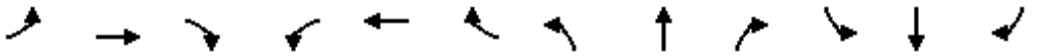
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.65	0.48		0.13	0.57		0.92	0.11		0.77	0.60	
Control Delay	21.9	2.6		8.9	11.2		133.2	16.5		67.4	9.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.9	2.6		8.9	11.2		133.2	16.5		67.4	9.8	
LOS	C	A		A	B		F	B		E	A	
Approach Delay		6.3			11.1			92.8			29.8	
Approach LOS		A			B			F			C	
Queue Length 50th (m)	22.7	10.6		1.3	20.4		15.4	1.5		38.3	2.1	
Queue Length 95th (m)	m16.5	20.0		m5.2	133.3		#36.3	9.3		57.2	24.7	
Internal Link Dist (m)		663.3			453.8			115.7			97.5	
Turn Bay Length (m)	75.0			65.0			30.0			40.0		
Base Capacity (vph)	497	2333		241	1689		101	445		312	625	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.54	0.48		0.13	0.57		0.65	0.08		0.54	0.51	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 14.7 Intersection LOS: B
Intersection Capacity Utilization 92.3% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Carson's Road/Codd's Road & Montreal Road





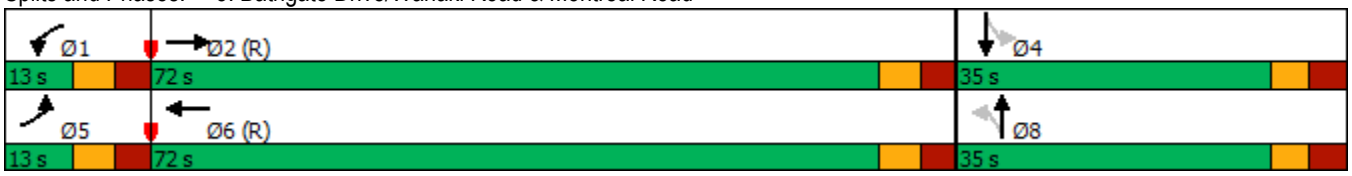
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1104	71	51	839	93	51	22	78	107	21	110
Future Volume (vph)	77	1104	71	51	839	93	51	22	78	107	21	110
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00	0.96		0.96	0.99	
Frt		0.991			0.985			0.883			0.874	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3315	0	1729	3197	0	1729	1505	0	1572	1471	0
Flt Permitted	0.950			0.950			0.626			0.692		
Satd. Flow (perm)	1603	3315	0	1728	3197	0	1136	1505	0	1104	1471	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			15			78			110	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	77	1104	71	51	839	93	51	22	78	107	21	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	1175	0	51	932	0	51	100	0	107	131	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	13.0	72.0		13.0	72.0		35.0	35.0		35.0	35.0	
Total Split (%)	10.8%	60.0%		10.8%	60.0%		29.2%	29.2%		29.2%	29.2%	
Maximum Green (s)	6.1	65.1		6.1	65.1		28.1	28.1		28.1	28.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	11.6	76.4		8.5	70.8		16.9	16.9		16.9	16.9	
Actuated g/C Ratio	0.10	0.64		0.07	0.59		0.14	0.14		0.14	0.14	

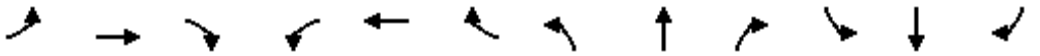
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.50	0.56		0.42	0.49		0.32	0.36		0.69	0.44	
Control Delay	51.6	23.7		63.2	15.9		49.4	17.4		70.1	15.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.6	23.7		63.2	15.9		49.4	17.4		70.1	15.8	
LOS	D	C		E	B		D	B		E	B	
Approach Delay		25.4			18.4			28.2			40.2	
Approach LOS		C			B			C			D	
Queue Length 50th (m)	18.3	96.4		11.6	63.9		11.0	4.6		24.3	4.4	
Queue Length 95th (m)	m#37.8	122.4		24.4	87.9		21.6	18.7		40.6	20.6	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	155	2113		123	1892		266	412		258	428	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.50	0.56		0.41	0.49		0.19	0.24		0.41	0.31	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 24.3 Intersection LOS: C
Intersection Capacity Utilization 80.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





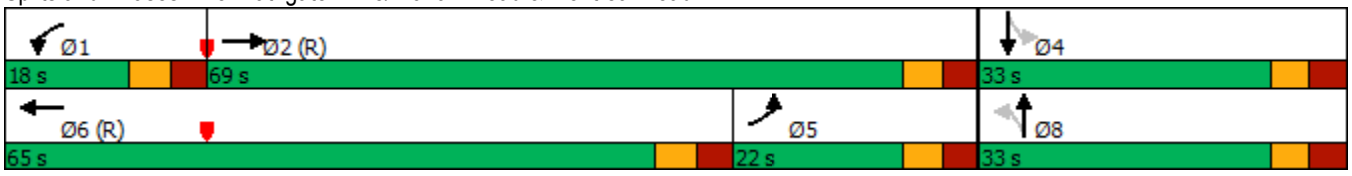
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1104	73	53	841	93	53	22	80	108	22	109
Future Volume (vph)	79	1104	73	53	841	93	53	22	80	108	22	109
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	130.0		0.0	50.0		0.0	60.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00	0.96		0.96	0.99	
Frt		0.991			0.985			0.882			0.875	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1616	3314	0	1729	3197	0	1729	1503	0	1572	1474	0
Flt Permitted	0.950			0.950			0.626			0.691		
Satd. Flow (perm)	1603	3314	0	1728	3197	0	1136	1503	0	1102	1474	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			14			80			109	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		477.8			133.2			122.2			120.6	
Travel Time (s)		28.7			8.0			8.8			8.7	
Confl. Peds. (#/hr)	9		1	1		9	2		23	23		2
Confl. Bikes (#/hr)			1			4			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	3%	7%	0%	6%	6%	0%	0%	3%	10%	0%	8%
Adj. Flow (vph)	79	1104	73	53	841	93	53	22	80	108	22	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	1177	0	53	934	0	53	102	0	108	131	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.9	25.9		11.9	25.9		26.9	26.9		26.9	26.9	
Total Split (s)	22.0	69.0		18.0	65.0		33.0	33.0		33.0	33.0	
Total Split (%)	18.3%	57.5%		15.0%	54.2%		27.5%	27.5%		27.5%	27.5%	
Maximum Green (s)	15.1	62.1		11.1	58.1		26.1	26.1		26.1	26.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.6	3.6		3.6	3.6	
Lost Time Adjust (s)	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	6.9		6.9	6.9		6.9	6.9	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		12.0			12.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	13.4	75.8		9.0	71.6		17.0	17.0		17.0	17.0	
Actuated g/C Ratio	0.11	0.63		0.08	0.60		0.14	0.14		0.14	0.14	

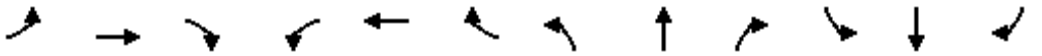
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.44	0.56		0.41	0.49		0.33	0.36		0.70	0.44	
Control Delay	38.4	6.6		61.4	16.9		49.7	17.2		70.5	16.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.4	6.6		61.4	16.9		49.7	17.2		70.5	16.0	
LOS	D	A		E	B		D	B		E	B	
Approach Delay		8.6			19.3			28.3			40.6	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	16.1	39.4		12.1	67.5		11.4	4.6		24.5	4.6	
Queue Length 95th (m)	29.3	45.6		24.4	98.4		22.3	18.9		41.1	20.8	
Internal Link Dist (m)		453.8			109.2			98.2			96.6	
Turn Bay Length (m)	130.0			50.0			60.0			35.0		
Base Capacity (vph)	203	2095		163	1913		247	389		239	405	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.39	0.56		0.33	0.49		0.21	0.26		0.45	0.32	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 30 (25%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 16.6 Intersection LOS: B
Intersection Capacity Utilization 80.9% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 5: Bathgate Drive/Wanaki Road & Montreal Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	188	395	87	143	13	488	223	104	11	215	32
Future Volume (vph)	36	188	395	87	143	13	488	223	104	11	215	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		50.0	25.0		0.0	135.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96			0.98	0.99		0.98	0.96			0.99	
Frt			0.850		0.987			0.952			0.983	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1729	1802	1517	1695	1786	0	1712	1628	0	0	1676	0
Flt Permitted	0.656			0.571			0.480				0.981	
Satd. Flow (perm)	1146	1802	1517	1001	1786	0	851	1628	0	0	1643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			395		6			48			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		171.8			174.5			225.8			177.0	
Travel Time (s)		12.4			12.6			16.3			12.7	
Confl. Peds. (#/hr)	30		14	14		30	16		56	56		16
Confl. Bikes (#/hr)			27									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	2%	2%	0%	0%	1%	3%	0%	0%	7%	0%
Adj. Flow (vph)	36	188	395	87	143	13	488	223	104	11	215	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	188	395	87	156	0	488	327	0	0	258	0
Turn Type	Perm	NA	Over	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4	5	8	8		5	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	
Minimum Split (s)	28.9	28.9	10.9	28.9	28.9		10.9	24.9		24.9	24.9	
Total Split (s)	28.9	28.9	15.0	28.9	28.9		15.0	47.0		32.0	32.0	
Total Split (%)	38.1%	38.1%	19.8%	38.1%	38.1%		19.8%	61.9%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	9.1	23.0	23.0		9.1	41.1		26.1	26.1	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9		5.9	5.9			5.9	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0		16.0	16.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	13.2	13.2	15.6	13.2	13.2		50.9	50.9			29.4	
Actuated g/C Ratio	0.17	0.17	0.21	0.17	0.17		0.67	0.67			0.39	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.60	0.63	0.50	0.50		0.65	0.30			0.40	
Control Delay	27.1	36.4	8.4	37.4	31.8		11.8	5.8			19.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	27.1	36.4	8.4	37.4	31.8		11.8	5.8			19.9	
LOS	C	D	A	D	C		B	A			B	
Approach Delay		18.0			33.8			9.3			19.9	
Approach LOS		B			C			A			B	
Queue Length 50th (m)	4.5	25.1	0.0	11.4	19.6		27.4	13.5			27.1	
Queue Length 95th (m)	11.2	40.8	22.6	23.0	33.6		55.0	30.2			46.9	
Internal Link Dist (m)		147.8			150.5			201.8			153.0	
Turn Bay Length (m)	25.0		50.0	25.0			135.0					
Base Capacity (vph)	347	546	625	303	545		747	1107			642	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.10	0.34	0.63	0.29	0.29		0.65	0.30			0.40	

Intersection Summary

Area Type: Other
Cycle Length: 75.9
Actuated Cycle Length: 75.9
Offset: 19 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 16.6 Intersection LOS: B
Intersection Capacity Utilization 83.6% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: St. Laurent Boulevard & Hemlock Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	1008	342	330	931	196	283	303	312	121	205	49
Future Volume (vph)	47	1008	342	330	931	196	283	303	312	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	1679	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.232			0.096			0.253			0.401		
Satd. Flow (perm)	414	3325	1444	169	3293	1328	451	1820	1469	726	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			153			136			266		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	1008	342	330	931	196	283	303	312	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1008	342	330	931	196	283	303	312	121	254	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	13.0	51.0	51.0	13.0	51.0	51.0	23.0	33.0	33.0	23.0	33.0	
Total Split (%)	10.8%	42.5%	42.5%	10.8%	42.5%	42.5%	19.2%	27.5%	27.5%	19.2%	27.5%	
Maximum Green (s)	7.1	45.1	45.1	7.1	45.1	45.1	17.1	26.8	26.8	17.1	26.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	49.6	42.8	42.8	61.1	53.1	53.1	43.8	27.5	27.5	32.8	21.5	
Actuated g/C Ratio	0.41	0.36	0.36	0.51	0.44	0.44	0.36	0.23	0.23	0.27	0.18	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.85	0.56	1.22	0.64	0.30	0.83	0.73	0.58	0.42	0.79	
Control Delay	17.6	43.3	19.8	150.9	26.9	8.8	48.7	53.6	12.2	29.4	62.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.6	43.3	19.8	150.9	26.9	8.8	48.7	53.6	12.2	29.4	62.6	
LOS	B	D	B	F	C	A	D	D	B	C	E	
Approach Delay		36.7			52.6			37.6			51.9	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	5.2	110.7	33.5	~87.3	98.2	16.4	49.1	66.0	8.6	18.9	55.5	
Queue Length 95th (m)	12.3	137.2	62.1	#161.4	128.2	33.1	#76.6	95.7	34.9	30.2	80.6	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	252	1249	638	271	1457	663	347	430	550	378	399	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.81	0.54	1.22	0.64	0.30	0.82	0.70	0.57	0.32	0.64	

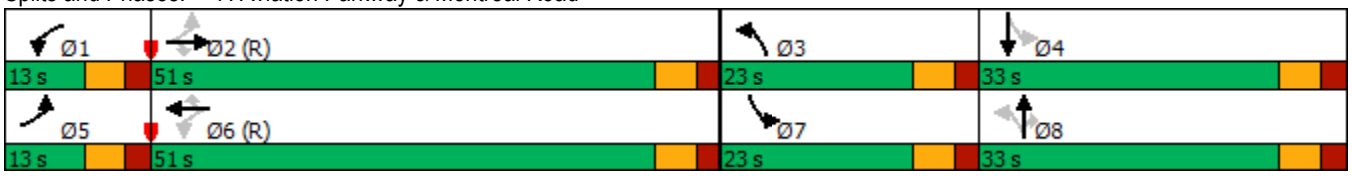
Intersection Summary

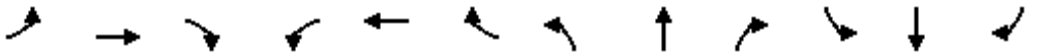
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 43.9 Intersection LOS: D
Intersection Capacity Utilization 102.5% ICU Level of Service G
Analysis Period (min) 15

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

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

Splits and Phases: 7: Aviation Parkway & Montreal Road





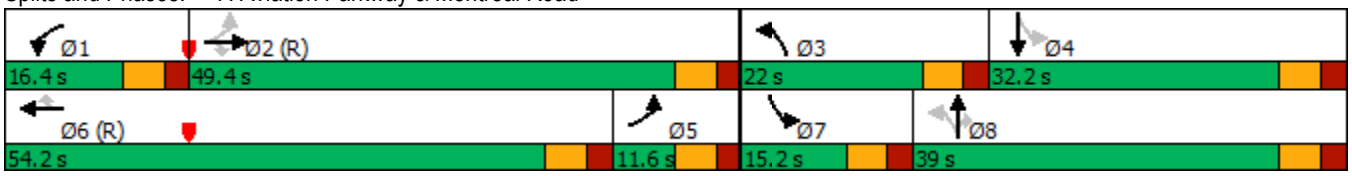
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	1009	342	330	931	196	283	303	312	121	205	49
Future Volume (vph)	47	1009	342	330	931	196	283	303	312	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.94	0.99		0.86	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1757	0
Flt Permitted	0.307			0.950			0.250			0.427		
Satd. Flow (perm)	541	3325	1444	3224	3293	1328	446	1820	1471	772	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			190			190			285		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	1009	342	330	931	196	283	303	312	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1009	342	330	931	196	283	303	312	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	10.9	33.9	33.9	10.9	33.9	33.9	10.9	32.2	32.2	10.9	32.2	
Total Split (s)	11.6	49.4	49.4	16.4	54.2	54.2	22.0	39.0	39.0	15.2	32.2	
Total Split (%)	9.7%	41.2%	41.2%	13.7%	45.2%	45.2%	18.3%	32.5%	32.5%	12.7%	26.8%	
Maximum Green (s)	5.7	43.5	43.5	10.5	48.3	48.3	16.1	32.8	32.8	9.3	26.0	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.2	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.2	6.2	5.9	6.2	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		12.0	12.0		12.0	12.0		19.0	19.0		19.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	43.5	43.5	43.5	15.4	55.6	55.6	43.4	28.2	28.2	30.5	21.3	
Actuated g/C Ratio	0.36	0.36	0.36	0.13	0.46	0.46	0.36	0.24	0.24	0.25	0.18	

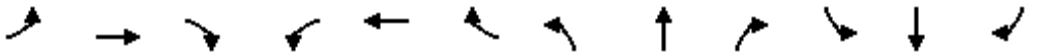
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.84	0.53	0.79	0.61	0.27	0.86	0.71	0.55	0.45	0.80	
Control Delay	29.7	42.5	16.1	65.1	18.5	1.4	54.7	51.4	9.8	31.6	63.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	29.7	42.5	16.1	65.1	18.5	1.4	54.7	51.4	9.8	31.6	63.7	
LOS	C	D	B	E	B	A	D	D	A	C	E	
Approach Delay		35.6			26.7			38.0			53.3	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	7.2	113.5	26.5	34.3	93.4	1.1	49.9	65.4	5.0	19.2	55.5	
Queue Length 95th (m)	15.4	140.7	54.9	#75.2	60.0	m1.5	#76.2	91.8	28.4	31.0	81.3	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	252	1205	644	418	1524	716	330	497	609	272	387	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.84	0.53	0.79	0.61	0.27	0.86	0.61	0.51	0.44	0.66	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 34.6 Intersection LOS: C
Intersection Capacity Utilization 93.2% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Aviation Parkway & Montreal Road





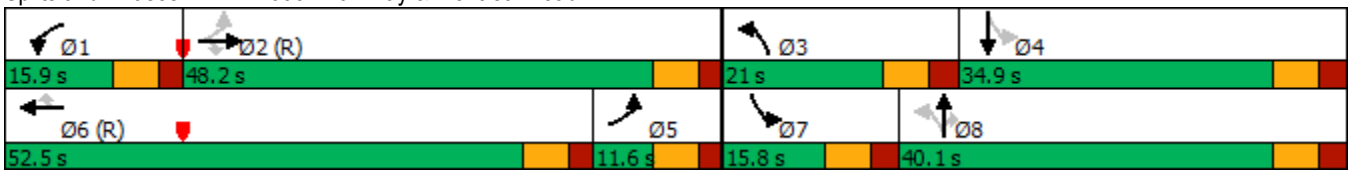
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	1009	342	330	931	196	283	303	312	121	205	49
Future Volume (vph)	47	1009	342	330	931	196	283	303	312	121	205	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		30.0	55.0		20.0	0.0		60.0	65.0		0.0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.95	0.99		0.87	0.99		0.97	0.99	0.99	
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	3325	1532	3257	3293	1547	1712	1820	1517	1729	1758	0
Flt Permitted	0.307			0.950			0.271			0.401		
Satd. Flow (perm)	543	3325	1449	3227	3293	1346	484	1820	1473	726	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			151			151			279		9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		150.7			687.3			388.7			332.0	
Travel Time (s)		9.0			41.2			23.3			19.9	
Confl. Peds. (#/hr)	58		32	32		58	14		8	8		14
Confl. Bikes (#/hr)			9						9			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	1%	3%	5%	0%	1%	0%	2%	0%	0%	0%
Adj. Flow (vph)	47	1009	342	330	931	196	283	303	312	121	205	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1009	342	330	931	196	283	303	312	121	254	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
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	5.0	
Minimum Split (s)	11.3	37.2	37.2	11.3	37.2	37.2	11.7	36.7	36.7	11.7	36.7	
Total Split (s)	11.6	48.2	48.2	15.9	52.5	52.5	21.0	40.1	40.1	15.8	34.9	
Total Split (%)	9.7%	40.2%	40.2%	13.3%	43.8%	43.8%	17.5%	33.4%	33.4%	13.2%	29.1%	
Maximum Green (s)	5.4	42.0	42.0	9.7	46.3	46.3	14.3	33.4	33.4	9.1	28.2	
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		16.0	16.0		16.0	16.0		7.0	7.0		7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0		23.0	23.0		23.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	42.0	42.0	42.0	16.2	55.1	55.1	41.5	27.2	27.2	30.5	21.7	
Actuated g/C Ratio	0.35	0.35	0.35	0.14	0.46	0.46	0.35	0.23	0.23	0.25	0.18	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.87	0.57	0.75	0.62	0.28	0.90	0.74	0.57	0.47	0.78	
Control Delay	30.9	45.7	21.1	60.5	18.6	2.2	62.8	53.7	10.6	32.5	61.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.9	45.7	21.1	60.5	18.6	2.2	62.8	53.7	10.6	32.5	61.4	
LOS	C	D	C	E	B	A	E	D	B	C	E	
Approach Delay		39.2			25.9			41.6			52.1	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	7.4	115.8	35.5	32.8	93.2	2.2	50.9	66.6	6.2	19.5	55.5	
Queue Length 95th (m)	15.8	#144.1	65.4	#77.9	71.6	4.2	#75.0	91.1	29.7	30.6	79.3	
Internal Link Dist (m)		126.7			663.3			364.7			308.0	
Turn Bay Length (m)	40.0		30.0	55.0		20.0			60.0	65.0		
Base Capacity (vph)	243	1163	605	439	1512	699	313	506	611	262	420	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.87	0.57	0.75	0.62	0.28	0.90	0.60	0.51	0.46	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 100 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 36.2 Intersection LOS: D
Intersection Capacity Utilization 96.0% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Aviation Parkway & Montreal Road



Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	55	172	31	73	5	158	71	28	5	70	54
Future Vol, veh/h	50	55	172	31	73	5	158	71	28	5	70	54
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	100	0	0	0	0	0	0	12	0	0	12	25
Mvmt Flow	50	55	172	31	73	5	158	71	28	5	70	54
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16	9.7	11.8	9.6
HCM LOS	C	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	61%	18%	28%	4%
Vol Thru, %	28%	20%	67%	54%
Vol Right, %	11%	62%	5%	42%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	257	277	109	129
LT Vol	158	50	31	5
Through Vol	71	55	73	70
RT Vol	28	172	5	54
Lane Flow Rate	257	277	109	129
Geometry Grp	1	1	1	1
Degree of Util (X)	0.386	0.502	0.168	0.191
Departure Headway (Hd)	5.407	6.523	5.55	5.331
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	666	554	645	672
Service Time	3.444	4.554	3.59	3.373
HCM Lane V/C Ratio	0.386	0.5	0.169	0.192
HCM Control Delay	11.8	16	9.7	9.6
HCM Lane LOS	B	C	A	A
HCM 95th-tile Q	1.8	2.8	0.6	0.7

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	47	56	41	106	60
Future Vol, veh/h	10	47	56	41	106	60
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	5	0	0	0	0
Mvmt Flow	10	47	56	41	106	60
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.3	7.8	7.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	58%	18%	0%
Vol Thru, %	42%	0%	64%
Vol Right, %	0%	82%	36%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	97	57	166
LT Vol	56	10	0
Through Vol	41	0	106
RT Vol	0	47	60
Lane Flow Rate	97	57	166
Geometry Grp	1	1	1
Degree of Util (X)	0.114	0.063	0.178
Departure Headway (Hd)	4.243	3.995	3.857
Convergence, Y/N	Yes	Yes	Yes
Cap	840	902	925
Service Time	2.293	1.995	1.905
HCM Lane V/C Ratio	0.115	0.063	0.179
HCM Control Delay	7.8	7.3	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.2	0.6

SimTraffic Reports

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:00	7:00	7:00	7:00	7:00	7:00
End Time	8:15	8:15	8:15	8:15	8:15	8:15
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	7941	7869	7743	7625	7777	7792
Vehs Exited	7919	7824	7748	7640	7786	7786
Starting Vehs	196	176	182	216	205	189
Ending Vehs	218	221	177	201	196	200
Travel Distance (km)	5690	5606	5546	5506	5562	5582
Travel Time (hr)	282.5	363.7	310.7	319.1	328.9	321.0
Total Delay (hr)	181.4	264.1	212.3	221.3	230.2	221.9
Total Stops	7674	7647	7380	7482	7414	7517
Fuel Used (l)	666.6	731.9	679.1	681.5	695.3	690.9

Interval #0 Information Seeding

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:15
End Time	8:15
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	7941	7869	7743	7625	7777	7792
Vehs Exited	7919	7824	7748	7640	7786	7786
Starting Vehs	196	176	182	216	205	189
Ending Vehs	218	221	177	201	196	200
Travel Distance (km)	5690	5606	5546	5506	5562	5582
Travel Time (hr)	282.5	363.7	310.7	319.1	328.9	321.0
Total Delay (hr)	181.4	264.1	212.3	221.3	230.2	221.9
Total Stops	7674	7647	7380	7482	7414	7517
Fuel Used (l)	666.6	731.9	679.1	681.5	695.3	690.9

Intersection: 2: Hemlock Road & Airport Parkway NB On Ramp

Movement	EB
Directions Served	LT
Maximum Queue (m)	11.8
Average Queue (m)	3.3
95th Queue (m)	10.8
Link Distance (m)	116.4
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:00	7:00	7:00	7:00	7:00	7:00
End Time	8:15	8:15	8:15	8:15	8:15	8:15
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	8326	8349	8376	8421	8458	8386
Vehs Exited	8328	8252	8304	8327	8350	8314
Starting Vehs	311	226	262	221	240	244
Ending Vehs	309	323	334	315	348	322
Travel Distance (km)	5930	5834	6004	5960	5902	5926
Travel Time (hr)	483.2	386.9	426.4	340.5	342.9	396.0
Total Delay (hr)	376.5	282.2	318.9	233.5	237.0	289.6
Total Stops	9311	8843	9521	9107	8865	9133
Fuel Used (l)	857.8	766.0	815.7	737.6	733.2	782.1

Interval #0 Information Seeding

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:15
End Time	8:15
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	8326	8349	8376	8421	8458	8386
Vehs Exited	8328	8252	8304	8327	8350	8314
Starting Vehs	311	226	262	221	240	244
Ending Vehs	309	323	334	315	348	322
Travel Distance (km)	5930	5834	6004	5960	5902	5926
Travel Time (hr)	483.2	386.9	426.4	340.5	342.9	396.0
Total Delay (hr)	376.5	282.2	318.9	233.5	237.0	289.6
Total Stops	9311	8843	9521	9107	8865	9133
Fuel Used (l)	857.8	766.0	815.7	737.6	733.2	782.1

Intersection: 2: Hemlock Road & Airport Parkway NB On Ramp

Movement	EB
Directions Served	LT
Maximum Queue (m)	17.2
Average Queue (m)	6.8
95th Queue (m)	15.8
Link Distance (m)	116.4
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Appendix F – Trip Generation Data

3.2 Recommended Residential Trip Generation Rates

A blended trip rate was developed from the three data sources through application of a rank-sum weighting process, considering the strengths and weaknesses of each dataset for the dwelling type in question. The recommended blended **residential person-trip rates** are presented in **Table 3**. All rates represent person-trips per dwelling unit and are to be applied to the **AM or PM peak period.**

Table 3: Recommended Residential Person-trip Rates

ITE Land Use Code	Dwelling Unit Type	Period	Person-Trip Rate
210	Single-detached	AM	2.05
		PM	2.48
220	Multi-Unit (Low-Rise)	AM	1.35
		PM	1.58
221 & 222	Multi-Unit (High-Rise)	AM	0.80
		PM	0.90

3.3 Adjustment Factors – Peak Period to Peak Hour

The various trip generation data sources require some adjustment to standardize the data for developing robust blended trip rates. The peak period conversion factor in **Table 4** may be used where applicable to develop trip generation rate estimates in the desired format.

Table 4: Adjustment Factors for Residential Trip Generation Rates

Factor	Application	Apply To	Period	Value
Peak Period Conversion Factor	**Peak period to peak hour conversion.** Because the 2020 TRANS Trip Generation Study reports trip generation rates by peak period, factors must be applied if the practitioner requires peak hour rates. In practice, the conversion to peak hour trip rates should occur **after** the application of modal shares.	Person-trip rates per peak period	AM	0.50
			PM	0.44
		Vehicle trip rates per peak period	AM	0.48
			PM	0.44
		Transit trip rates per peak period	AM	0.55
			PM	0.47
		Cycling trip rates per peak period	AM	0.58
			PM	0.48
		Walking trip rates per peak period	AM	0.58
			PM	0.52

Table 7: Residential Mode Share for Low-Rise Multifamily Housing

District	Period	Mode				
		Auto Driver	Auto Pass.	Transit	Cycling	Walking
Ottawa Centre	AM	27%	9%	25%	9%	30%
	PM	31%	10%	20%	9%	30%
Ottawa Inner Area	AM	27%	8%	26%	9%	30%
	PM	31%	9%	20%	9%	31%
Île de Hull	AM	27%	9%	25%	9%	30%
	PM	34%	22%	16%	5%	22%
Ottawa East	AM	36%	11%	38%	7%	8%
	PM	39%	16%	29%	5%	11%
Beacon Hill	AM	45%	9%	35%	1%	10%
	PM	48%	16%	24%	1%	11%
Alta Vista	AM	38%	15%	35%	1%	10%
	PM	38%	19%	31%	2%	10%
Hunt Club	AM	44%	11%	38%	1%	6%
	PM	47%	15%	29%	1%	8%
Merivale	AM	44%	11%	32%	6%	7%
	PM	44%	12%	29%	4%	11%
Ottawa West	AM	36%	12%	24%	10%	19%
	PM	35%	12%	16%	10%	27%
Bayshore/Cedarview	AM	43%	11%	31%	1%	13%
	PM	44%	14%	25%	1%	15%
Hull Périphérie	AM	46%	22%	22%	4%	6%
	PM	46%	17%	22%	3%	11%
Orleans	AM	47%	15%	29%	1%	9%
	PM	51%	19%	24%	1%	6%
South Gloucester / Leitrim	AM	59%	20%	16%	1%	4%
	PM	62%	18%	17%	1%	3%
South Nepean	AM	49%	13%	26%	2%	9%
	PM	49%	13%	24%	2%	12%
Kanata - Stittsville	AM	52%	14%	22%	0%	11%
	PM	58%	17%	17%	0%	8%
Plateau	AM	44%	18%	28%	4%	6%
	PM	47%	17%	26%	2%	8%
Aylmer	AM	52%	18%	23%	0%	7%
	PM	52%	16%	20%	1%	12%
Pointe Gatineau	AM	46%	17%	23%	0%	14%
	PM	52%	16%	19%	1%	12%
Gatineau Est	AM	54%	17%	20%	1%	8%
	PM	56%	21%	16%	0%	7%
Masson-Angers	AM	60%	15%	21%	4%	1%
	PM	63%	15%	17%	3%	1%
Other Rural Districts	AM	66%	13%	21%	1%	0%
	PM	62%	19%	16%	3%	0%

Table 8: Residential Mode Share for High-Rise Multifamily Housing

District	Period	Mode				
		Auto Driver	Auto Pass.	Transit	Cycling	Walking
Ottawa Centre	AM	18%	2%	26%	1%	52%
	PM	17%	9%	21%	1%	52%
Ottawa Inner Area	AM	26%	6%	28%	5%	34%
	PM	25%	8%	21%	6%	39%
Île de Hull	AM	27%	3%	37%	12%	21%
	PM	26%	8%	27%	11%	28%
Ottawa East	AM	39%	7%	38%	2%	13%
	PM	40%	14%	28%	3%	15%
Beacon Hill	AM	48%	9%	30%	3%	10%
	PM	52%	16%	28%	0%	4%
Alta Vista	AM	38%	12%	42%	2%	7%
	PM	45%	16%	28%	2%	9%
Hunt Club	AM	39%	6%	44%	1%	9%
	PM	44%	11%	35%	2%	9%
Merivale	AM	41%	6%	42%	2%	8%
	PM	41%	11%	33%	2%	13%
Ottawa West	AM	28%	11%	41%	3%	16%
	PM	33%	11%	26%	7%	23%
Bayshore/Cedarview	AM	40%	12%	38%	2%	8%
	PM	40%	15%	33%	1%	11%
Hull Périphérie	AM	48%	11%	30%	1%	10%
	PM	47%	15%	23%	3%	13%
Orleans	AM	54%	7%	29%	0%	10%
	PM	61%	13%	21%	0%	6%
South Gloucester / Leitrim	AM	50%	15%	25%	1%	9%
	PM	53%	17%	21%	1%	9%
South Nepean	AM	58%	6%	30%	2%	4%
	PM	54%	15%	25%	0%	7%
Kanata - Stittsville	AM	43%	26%	28%	0%	4%
	PM	55%	19%	21%	0%	5%
Plateau	AM	53%	9%	35%	3%	1%
	PM	65%	7%	25%	2%	1%
Aylmer	AM	45%	17%	25%	0%	13%
	PM	31%	21%	23%	4%	20%
Pointe Gatineau	AM	44%	15%	24%	3%	14%
	PM	52%	15%	20%	2%	11%
Gatineau Est	AM	53%	10%	25%	0%	12%
	PM	61%	10%	25%	0%	4%
Masson-Angers	AM	63%	15%	19%	0%	3%
	PM	64%	18%	16%	0%	1%
Other Rural Districts	AM	63%	15%	19%	0%	3%
	PM	64%	18%	16%	0%	1%

5 RESIDENTIAL DIRECTIONAL SPLITS

After calculating the total person trips generated by the development and applying the appropriate modal shares, directional factors can be applied to estimate the number of inbound and outbound trips by vehicle. The vehicle trip directional splits were developed for both the AM and PM peak periods[2]. The vehicle trip directional splits, as shown in **Table 9**, have been developed for the NCR based on a review of the local trip generator surveys as well as the latest published data in the ITE *Trip Generation Manual* (10th Edition).

Table 9: Recommended Vehicle Trip Directional Splits (Peak Period)

ITE Land Use Code	Dwelling Unit Type	Period	Inbound	Outbound
210	Single-detached	AM	30%	70%
		PM	62%	38%
220	Multi-Unit (Low-Rise)	AM	30%	70%
		PM	56%	44%
221 & 222	Multi-Unit (High-Rise)	AM	31%	69%
		PM	58%	42%

6 NON-RESIDENTIAL MODE SHARE

Mode shares were developed for three types of non-residential development: schools (elementary and high school); employment generators; and commercial (retail) generators. These mode shares were developed through data provided by the Ville de Gatineau from local school surveys as well as the TRANS Origin-Destination Survey. The non-residential mode shares presented below are limited and do not capture all development types. For data on the travel characteristics associated with colleges and universities, transportation terminals, and sports and entertainment venues in the National Capital Region, practitioners should refer to the various reports for the TRANS *Special Generators Survey* (2013), which are posted on the TRANS website. For other development types, practitioners may need to carry out their own local generator data collection where necessary.

[2] A directional split for active transportation was calculated based on the local generator surveys for low-rise and mid-rise land uses. The splits are mostly in-line with the vehicle directional splits, which could be used as a rough assumption for areas with lower vehicle mode share.

6.2 Employment Generators

Mode shares for trips to employment generators were developed from the 2011 TRANS Origin-Destination Survey by isolating the 'travel to work' trips. However, with the way the data is collected, employment related trips departing the workplace could not be isolated to identify mode share. As a result, peak direction mode shares could only be calculated for the AM peak period. **Table 12** provides the mode share by district during the AM peak period for employment trips in the peak inbound direction. These trips represent trips to the workplace and do not include work-related trips (e.g. for business meetings) or trips classified as working on the road (e.g. delivery trips). Multi-modal trips for employment generators were classified by the mode used to arrive at the workplace (e.g. a park-and-ride trip would be classified as a transit trip since the person arrived at the workplace on transit). Considering the strong likelihood of employees using the same mode of transportation when leaving wok, it is fair to equivocate the PM peak period employment generator mode with the AM peak period.

Table 12: Employment Generator Mode Share by District (AM Peak Period)

District	Mode				
	Auto Driver	Auto Pass.	Transit	Cycling	Walking
Ottawa Centre	24%	7%	54%	4%	11%
Ottawa Inner Area	45%	7%	29%	8%	11%
Île de Hull	40%	9%	40%	5%	6%
Ottawa East	66%	7%	20%	2%	5%
Beacon Hill	73%	6%	16%	2%	3%
Alta Vista	69%	7%	18%	3%	3%
Hunt Club	83%	5%	10%	1%	1%
Merivale	70%	7%	16%	3%	4%
Ottawa West	54%	8%	28%	5%	5%
Bayshore/Cedarview	77%	6%	10%	3%	4%
Hull Périphérie	75%	7%	12%	3%	3%
Orleans	71%	7%	13%	1%	8%
South Gloucester / Leitrim	89%	7%	2%	1%	1%
South Nepean	80%	10%	5%	1%	4%
Kanata - Stittsville	84%	4%	8%	1%	3%
Plateau	82%	6%	7%	1%	4%
Aylmer	83%	3%	5%	4%	5%
Pointe Gatineau	80%	9%	4%	2%	5%
Gatineau Est	88%	6%	4%	0%	2%

District	Mode				
	Auto Driver	Auto Pass.	Transit	Cycling	Walking
Masson-Angers	89%	3%	2%	1%	6%
Rural Districts	85%	5%	9%	1%	1%

6.3 Commercial Generators

All trips classified as "shopping, household maintenance" from the 2011 TRANS Origin-Destination Survey were analyzed to define the mode share for trips to commercial establishments. **Table 13** provides the mode share by district during the AM and PM peak periods for commercial generator trips. These mode shares do not include restaurant or recreation trips. Although the mode shares were calculated for trips to the generator, for most commercial developments, a similar mode share would apply for trips from the generator. In general, the sample size for shopping trips during the AM peak period tends to be low, and the results should be used with caution, particularly for districts with lower retail activity. Where the sample size for a district was less than the pre-defined cut-off, the mode share for the wider area has been applied.

Table 13: Commercial Generator Mode Share by District

District	Period	Mode				
		Auto Driver	Auto Pass.	Transit	Cycling	Walking
Ottawa Centre	AM	28%	3%	48%	1%	20%
	PM	19%	12%	30%	2%	37%
Ottawa Inner Area	AM	39%	2%	16%	3%	40%
	PM	22%	4%	12%	4%	58%
Île de Hull	AM	34%	2%	30%	2%	32%
	PM	22%	7%	18%	3%	50%
Ottawa East	AM	57%	10%	15%	1%	17%
	PM	55%	18%	11%	1%	15%
Beacon Hill	AM	67%	12%	8%	0%	14%
	PM	59%	18%	7%	1%	13%
Alta Vista	AM	64%	9%	12%	1%	14%
	PM	60%	20%	9%	0%	11%
Hunt Club	AM	70%	6%	7%	0%	17%
	PM	65%	19%	8%	1%	7%
Merivale	AM	71%	19%	1%	0%	9%
	PM	61%	16%	8%	1%	14%
Ottawa West	AM	55%	11%	11%	0%	23%
	PM	50%	16%	11%	5%	18%
Bayshore/Cedarview	AM	64%	15%	4%	0%	17%
	PM	62%	20%	6%	1%	11%
Hull Périphérie	AM	77%	8%	5%	0%	10%
	PM	60%	12%	9%	5%	14%

Strip Retail Plaza (<40k)
(822)

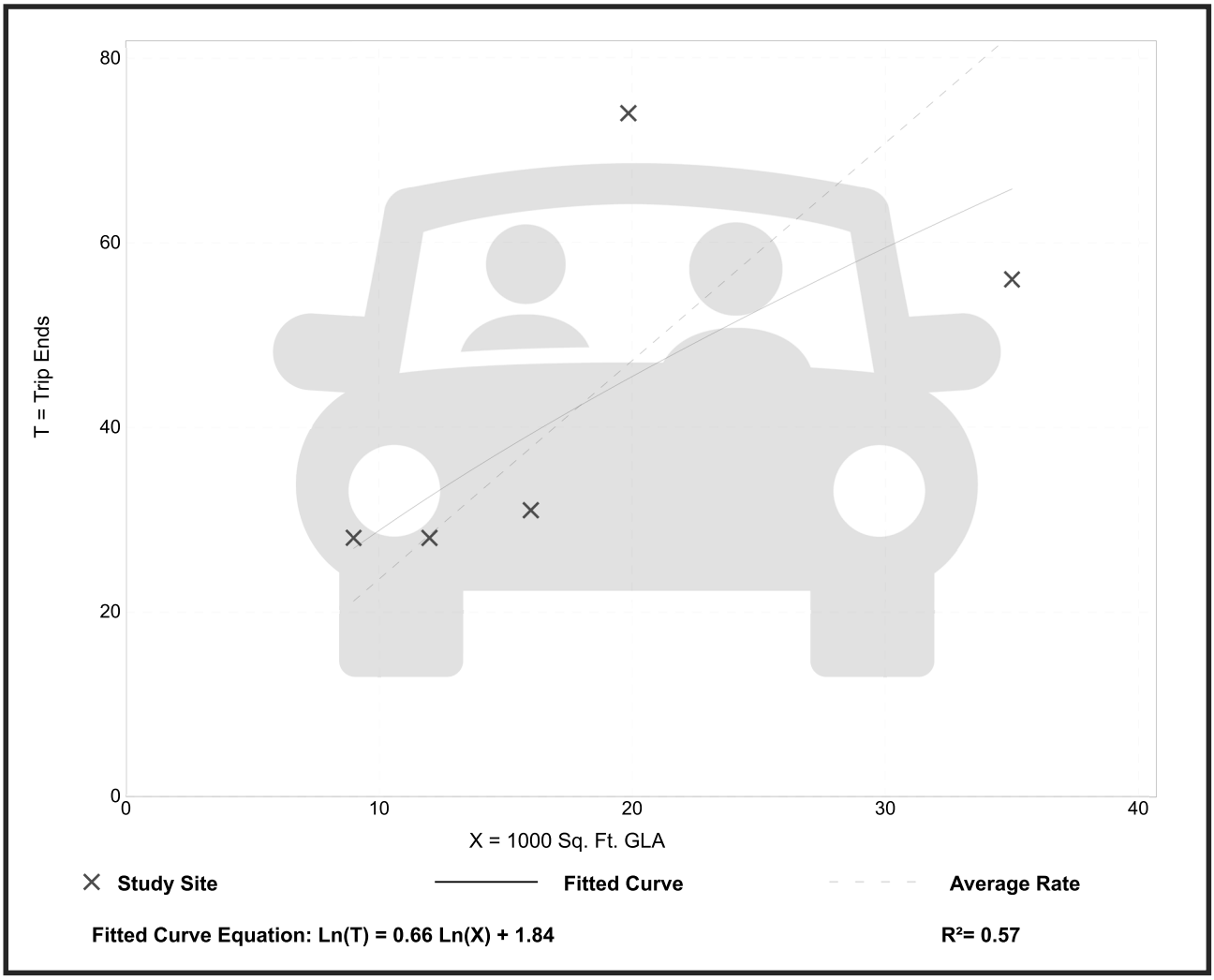
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. 1000 Sq. Ft. GLA: 18
Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

Data Plot and Equation

Caution – Small Sample Size



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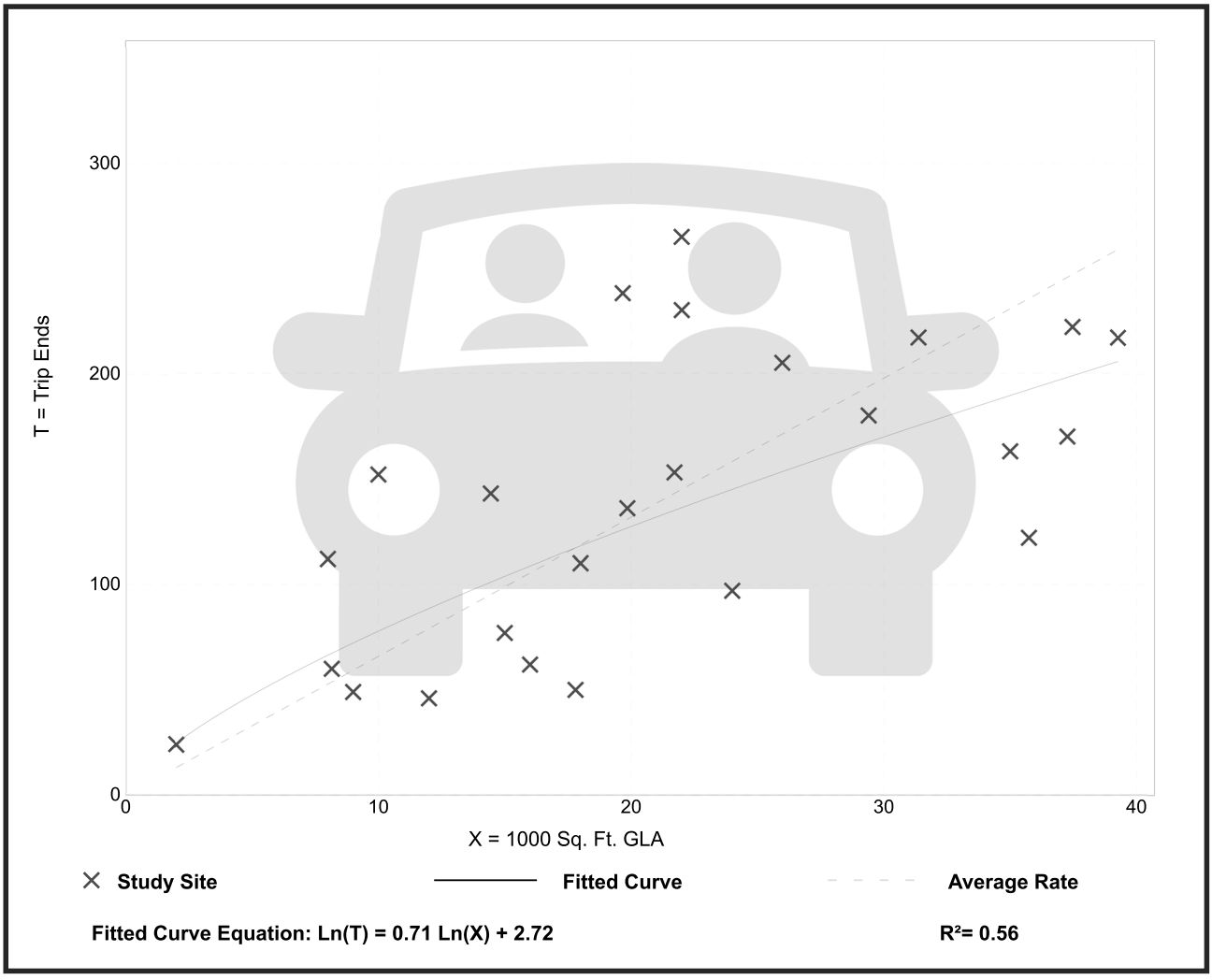
Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 25
Avg. 1000 Sq. Ft. GLA: 21
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

Data Plot and Equation



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Beacon Hill

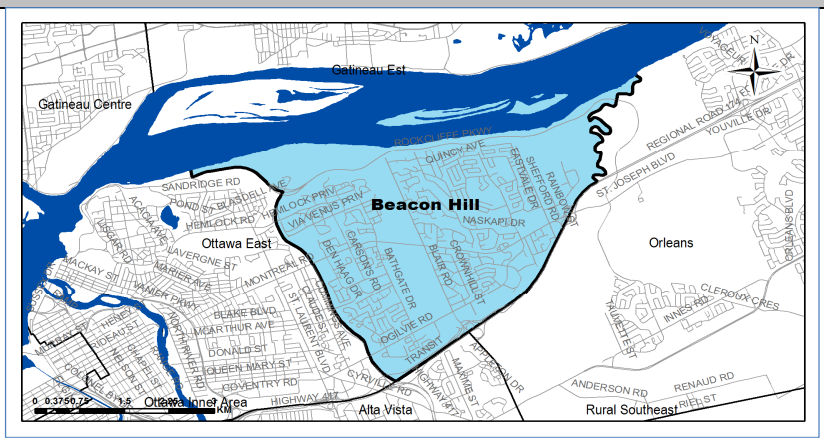
Demographic Characteristics

Population	31,270	Actively Travelled	24,100
Employed Population	13,740	Number of Vehicles	18,210
Households	14,030	Area (km^2)	21.5

Occupation Status (age 5+)	Male	Female	Total
Full Time Employed	6,480	5,850	12,330
Part Time Employed	520	890	1,410
Student	3,190	3,200	6,390
Retiree	3,140	4,640	7,780
Unemployed	260	330	590
Homemaker	10	710	730
Other	260	350	610
Total:	13,870	15,960	29,840

Traveller Characteristics	Male	Female	Total
Transit Pass Holders	2,890	3,340	6,220
Licensed Drivers	10,470	11,270	21,740
Telecommuters	50	70	120
Trips made by residents	35,950	41,850	77,800

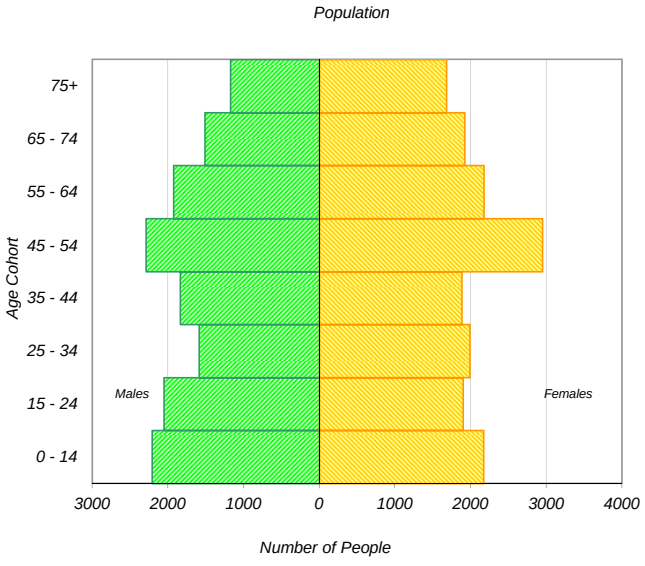
Selected Indicators	
Daily Trips per Person (age 5+)	2.61
Vehicles per Person	0.58
Number of Persons per Household	2.23
Daily Trips per Household	5.55
Vehicles per Household	1.30
Workers per Household	0.98
Population Density (Pop/km2)	1450

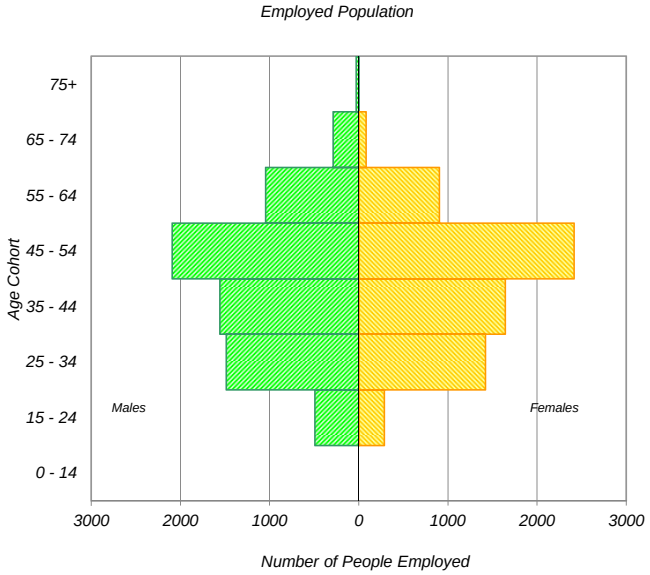


Household Size		
1 person	3,850	27%
2 persons	5,290	38%
3 persons	2,140	15%
4 persons	1,750	12%
5+ persons	1,000	7%
Total:	14,030	100%

Households by Vehicle Availability		
0 vehicles	1,600	11%
1 vehicle	7,550	54%
2 vehicles	4,230	30%
3 vehicles	470	3%
4+ vehicles	180	1%
Total:	14,030	100%

Households by Dwelling Type		
Single-detached	5,110	36%
Semi-detached	1,610	11%
Townhouse	3,800	27%
Apartment/Condo	3,510	25%
Total:	14,030	100%



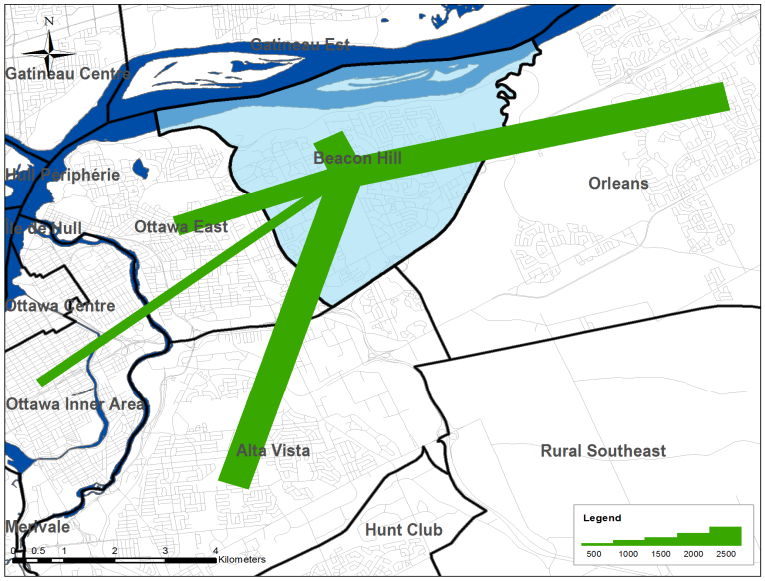


* In 2005 data was only collected for household members aged 11+ therefore these results cannot be compared to the 2011 data.

Travel Patterns

Top Five Origins of Trips to Beacon Hill

AM Peak Period



Summary of Trips to and from Beacon Hill

AM Peak Period (6:30 - 8:59) Districts	Destinations of Trips From District	% Total	Origins of Trips To District	% Total
Ottawa Centre	1,880	12%	190	1%
Ottawa Inner Area	1,380	9%	1,450	7%
Ottawa East	1,750	11%	2,110	10%
Beacon Hill	5,170	33%	5,170	25%
Alta Vista	1,850	12%	2,690	13%
Hunt Club	170	1%	380	2%
Merivale	540	3%	580	3%
Ottawa West	610	4%	150	1%
Bayshore / Cedarview	240	2%	550	3%
Orléans	760	5%	4,180	20%
Rural East	60	0%	350	2%
Rural Southeast	10	0%	480	2%
South Gloucester / Leitrim	30	0%	240	1%
South Nepean	50	0%	370	2%
Rural Southwest	0	0%	90	0%
Kanata / Stittsvile	170	1%	280	1%
Rural West	40	0%	70	0%
Île de Hull	440	3%	50	0%
Hull Périphérie	240	2%	310	1%
Plateau	10	0%	130	1%
Aylmer	0	0%	250	1%
Rural Northwest	30	0%	90	0%
Pointe Gatineau	70	0%	560	3%
Gatineau Est	40	0%	250	1%
Rural Northeast	90	1%	80	0%
Buckingham / Masson-Angers	0	0%	50	0%
Ontario Sub-Total:	14,710	94%	19,330	92%
Québec Sub-Total:	920	6%	1,770	8%
Total:	15,630	100%	21,100	100%

Trips by Trip Purpose

24 Hours	From District		To District		Within District	
Work or related	10,440	19%	12,360	22%	2,750	9%
School	2,230	4%	6,640	12%	3,100	11%
Shopping	5,550	10%	5,310	10%	4,960	17%
Leisure	5,440	10%	4,840	9%	2,720	9%
Medical	1,410	3%	1,250	2%	360	1%
Pick-up / drive passenger	3,780	7%	3,930	7%	2,440	8%
Return Home	24,470	44%	19,210	35%	11,910	41%
Other	1,810	3%	1,680	3%	870	3%
Total:	55,130	100%	55,220	100%	29,110	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Work or related	6,900	66%	8,100	51%	1,230	24%
School	1,380	13%	5,220	33%	2,520	49%
Shopping	190	2%	130	1%	150	3%
Leisure	310	3%	180	1%	310	6%
Medical	230	2%	320	2%	10	0%
Pick-up / drive passenger	660	6%	1,230	8%	580	11%
Return Home	490	5%	350	2%	230	4%
Other	280	3%	400	3%	140	3%
Total:	10,440	100%	15,930	100%	5,170	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Work or related	450	3%	420	4%	110	2%
School	80	1%	180	2%	40	1%
Shopping	1,380	9%	1,380	12%	840	13%
Leisure	1,230	8%	1,080	9%	490	8%
Medical	70	0%	120	1%	140	2%
Pick-up / drive passenger	1,470	10%	760	7%	860	13%
Return Home	9,610	66%	7,240	63%	3,800	58%
Other	360	2%	320	3%	220	3%
Total:	14,650	100%	11,500	100%	6,500	100%

Peak Period (%)	Total:	% of 24 Hours	Within District (%)
24 Hours	139,460		21%
AM Peak Period	31,540	23%	16%
PM Peak Period	32,650	23%	20%

Trips by Primary Travel Mode

24 Hours	From District		To District		Within District	
Auto Driver	33,590	61%	33,580	61%	13,320	46%
Auto Passenger	7,800	14%	8,280	15%	5,370	18%
Transit	10,220	19%	10,180	18%	1,370	5%
Bicycle	560	1%	590	1%	340	1%
Walk	820	1%	640	1%	6,730	23%
Other	2,140	4%	1,970	4%	1,960	7%
Total:	55,130	100%	55,240	100%	29,090	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Auto Driver	6,100	59%	8,970	56%	1,640	32%
Auto Passenger	970	9%	1,860	12%	670	13%
Transit	2,680	26%	3,500	22%	270	5%
Bicycle	170	2%	150	1%	80	2%
Walk	20	0%	240	2%	1,450	28%
Other	480	5%	1,200	8%	1,060	21%
Total:	10,420	100%	15,920	100%	5,170	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Auto Driver	9,280	63%	6,640	58%	3,320	51%
Auto Passenger	1,810	12%	1,590	14%	1,640	25%
Transit	2,760	19%	2,750	24%	340	5%
Bicycle	110	1%	210	2%	50	1%
Walk	330	2%	20	0%	1,080	17%
Other	350	2%	300	3%	70	1%
Total:	14,640	100%	11,510	100%	6,500	100%

Avg Vehicle Occupancy	From District	To District	Within District
24 Hours	1.23	1.25	1.40
AM Peak Period	1.16	1.21	1.41
PM Peak Period	1.20	1.24	1.49

Transit Modal Split	From District	To District	Within District
24 Hours	20%	20%	7%
AM Peak Period	27%	24%	10%
PM Peak Period	20%	25%	6%

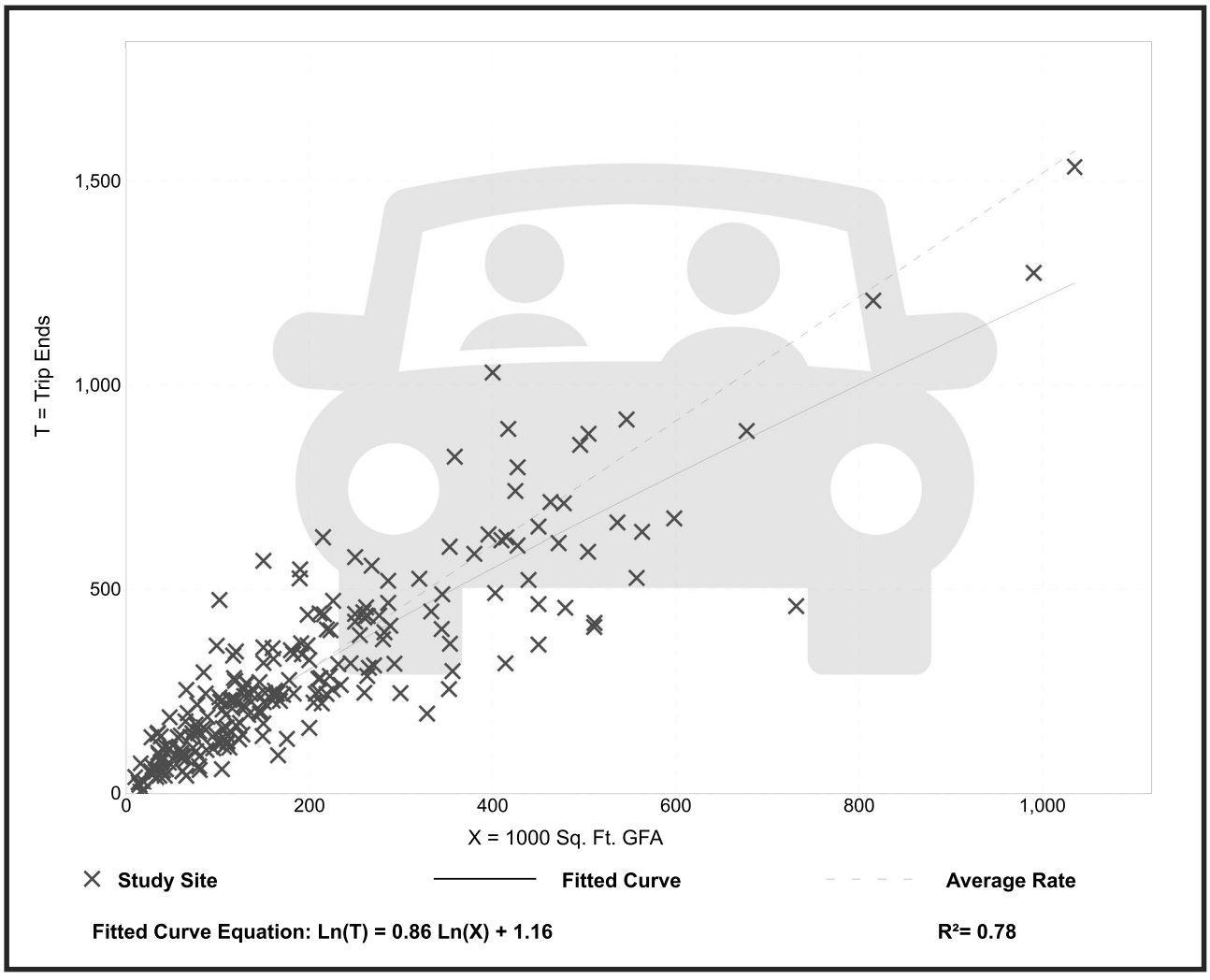
General Office Building
(710)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 221
Avg. 1000 Sq. Ft. GFA: 201
Directional Distribution: 88% entering, 12% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.52	0.32 - 4.93	0.58

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

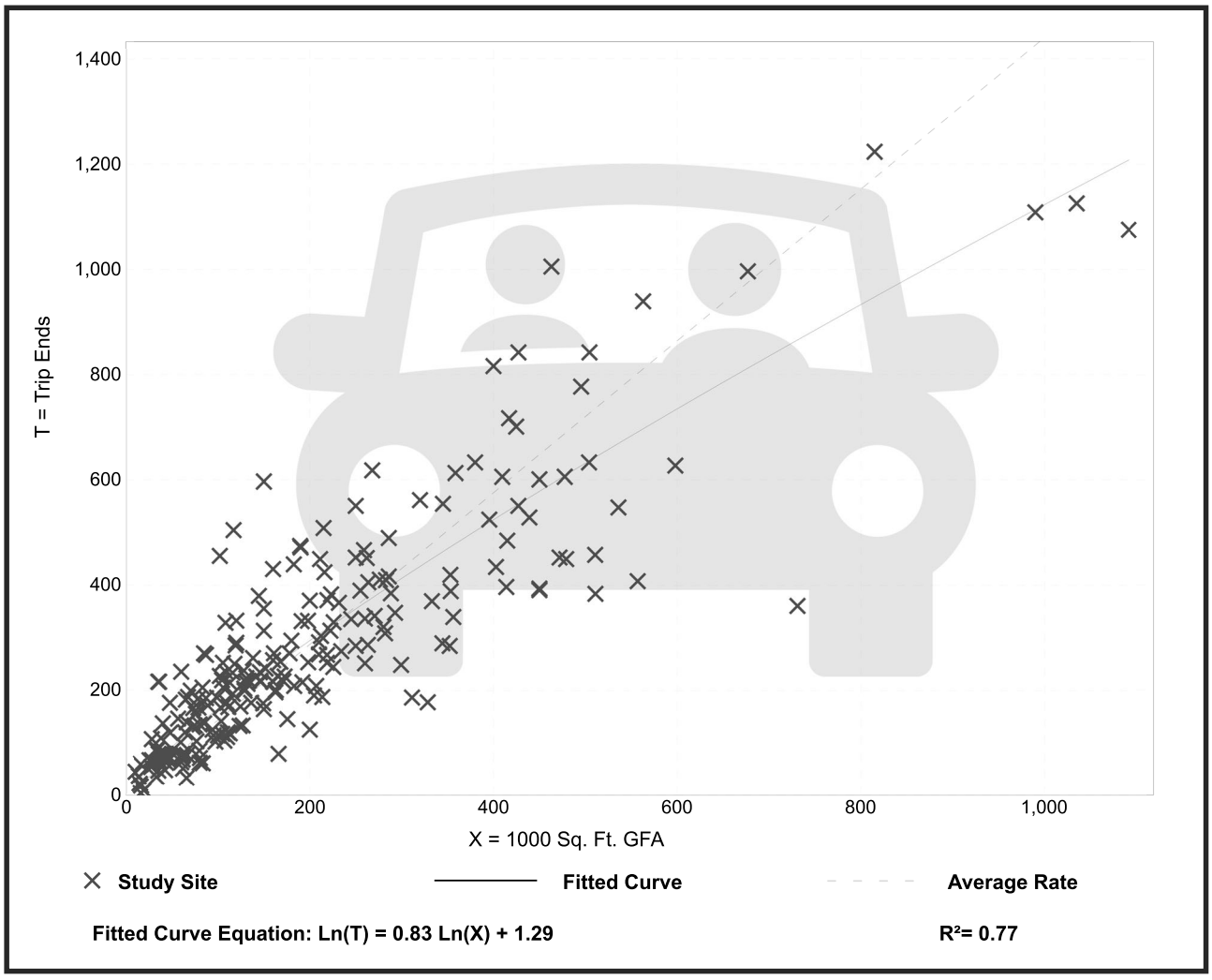
General Office Building
(710)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 232
Avg. 1000 Sq. Ft. GFA: 199
Directional Distribution: 17% entering, 83% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.44	0.26 - 6.20	0.60

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Vehicle Pass-By Rates by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	821
Land Use	Shopping Plaza (40 - 150k)
Setting	General Urban/Suburban
Time Period	Weekday PM Peak Period
# Data Sites	15
Average Pass-By Rate	40%

Pass-By Characteristics for Individual Sites

GLA (000)	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
					Primary (%)	Diverted (%)	Total (%)		
45	Florida	1992	844	56	24	20	44	—	30
50	Florida	1992	555	41	41	18	59	—	30
52	Florida	1995	665	42	33	25	58	—	30
53	Florida	1993	162	59	—	—	41	—	30
57.23	Kentucky	1993	247	31	53	16	69	2659	34
60	Florida	1995	1583	40	38	22	60	—	30
69.4	Kentucky	1993	109	25	42	33	75	1559	34
77	Florida	1992	365	46	—	—	54	—	30
78	Florida	1991	702	55	23	22	45	—	30
82	Florida	1992	336	34	—	—	66	—	30
92.857	Kentucky	1993	133	22	50	28	78	3555	34
100.888	Kentucky	1993	281	28	50	22	72	2111	34
121.54	Kentucky	1993	210	53	30	17	47	2636	34
144	New Jersey	1990	176	32	44	24	68	—	24
146.8	Kentucky	1993	—	36	39	25	64	—	34

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Wateridge Phase 6	**Organization:**	Arcadis IBI
Project Location:	Wateridge Village	**Performed By:**	Ben Pascolo-Neveu
Scenario Description:	Future (2025) Total Traffic	**Date:**	2024-12-09
Analysis Year:	2025	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				83	73	10
Retail						
Restaurant						
Cinema/Entertainment						
Residential				29	9	20
Hotel						
All Other Land Uses[2]						
Total				112	82	30

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail						
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	112	82	30
Internal Capture Percentage	0%	0%	0%
External Vehicle-Trips[3]	112	82	30
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	0%	0%
Retail	N/A	N/A
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	0%	0%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Wateridge Phase 6
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	73	73	1.00	10	10
Retail	1.00	0	0	1.00	0	0
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	9	9	1.00	20	20
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	6	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	4	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	3		0	0	0	0
Restaurant	10	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	0	0	0		0
Hotel	2	0	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	73	73	73	0	0
Retail	0	0	0	0	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	9	9	9	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	10	10	10	0	0
Retail	0	0	0	0	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	20	20	20	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Wateridge Phase 6	**Organization:**	Arcadis IBI
Project Location:	Wateridge Village	**Performed By:**	Ben Pascolo-Neveu
Scenario Description:	Future (2025) Total Traffic	**Date:**	2024-12-09
Analysis Year:	2025	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				78	13	65
Retail				0		
Restaurant				0		
Cinema/Entertainment				0		
Residential				27	16	11
Hotel				0		
All Other Land Uses[2]				0		
Total				105	29	76

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail						
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office					1041	
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	1	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	105	29	76
Internal Capture Percentage	2%	3%	1%
External Vehicle-Trips[3]	103	28	75
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	0%	2%
Retail	N/A	N/A
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	6%	0%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Wateridge Phase 6
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	13	13	1.00	65	65
Retail	1.00	0	0	1.00	0	0
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	16	16	1.00	11	11
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		13	3	0	1	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	5	2	0		0
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	1	0
Retail	4		0	0	7	0
Restaurant	4	0		0	3	0
Cinema/Entertainment	1	0	0		1	0
Residential	7	0	0	0		0
Hotel	0	0	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	13	13	13	0	0
Retail	0	0	0	0	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	15	16	15	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	1	64	65	64	0	0
Retail	0	0	0	0	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	11	11	11	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Wateridge Phases 6 & 7	**Organization:**	Arcadis IBI
Project Location:	Wateridge Village	**Performed By:**	Ben Pascolo-Neveu
Scenario Description:	Future (2028) Total Traffic	**Date:**	2024-12-09
Analysis Year:	2028	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				331	291	40
Retail				90	54	36
Restaurant				0		
Cinema/Entertainment				0		
Residential				470	146	324
Hotel				0		
All Other Land Uses[2]				0		
Total				891	491	400

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		11	0	0	0	0
Retail	10		0	0	3	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	6	3	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	891	491	400
Internal Capture Percentage	7%	7%	8%
External Vehicle-Trips[3]	825	458	367
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	5%	28%
Retail	26%	36%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	3%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Wateridge Phases 6 & 7
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	291	291	1.00	40	40
Retail	1.00	54	54	1.00	36	36
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	146	146	1.00	324	324
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		11	25	0	0	0
Retail	10		5	0	5	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	6	3	65	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		17	0	0	0	0
Retail	12		0	0	3	0
Restaurant	41	4		0	7	0
Cinema/Entertainment	0	0	0		0	0
Residential	9	9	0	0		0
Hotel	9	2	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	16	275	291	275	0	0
Retail	14	40	54	40	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	143	146	143	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	11	29	40	29	0	0
Retail	13	23	36	23	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	9	315	324	315	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Wateridge Phases 6 & 7	**Organization:**	Arcadis IBI
Project Location:	Wateridge Village	**Performed By:**	Ben Pascolo-Neveu
Scenario Description:	Future (2028) Total Traffic	**Date:**	2024-12-09
Analysis Year:	2028	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				314	54	260
Retail				254	127	127
Restaurant				0		
Cinema/Entertainment				0		
Residential				464	269	195
Hotel				0		
All Other Land Uses[2]				0		
Total				1032	450	582

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2030			2120	
Retail					480	
Restaurant						
Cinema/Entertainment						
Residential		480				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	3	0
Retail	3		0	0	33	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	8	12	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,032	450	582
Internal Capture Percentage	12%	14%	11%
External Vehicle-Trips[3]	908	388	520
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	20%	2%
Retail	12%	28%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	13%	10%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Wateridge Phases 6 & 7
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	54	54	1.00	260	260
Retail	1.00	127	127	1.00	127	127
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	269	269	1.00	195	195
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		16	10	0	3	0
Retail	3		37	5	33	6
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	8	75	41	0		6
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	11	0
Retail	17		0	0	124	0
Restaurant	16	64		0	43	0
Cinema/Entertainment	3	5	0		11	0
Residential	31	12	0	0		0
Hotel	0	3	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	11	43	54	43	0	0
Retail	15	112	127	112	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	36	233	269	233	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	6	254	260	254	0	0
Retail	36	91	127	91	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	20	175	195	175	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Wateridge Phases 6, 7 & 8	**Organization:**	Arcadis IBI
Project Location:	Wateridge Village	**Performed By:**	Ben Pascolo-Neveu
Scenario Description:	Future (2030) Total Traffic	**Date:**	2024-12-09
Analysis Year:	2030	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				494	435	59
Retail				90	54	36
Restaurant				0		
Cinema/Entertainment				0		
Residential				597	185	412
Hotel				0		
All Other Land Uses[2]				0		
Total				1181	674	507

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		17	0	0	0	0
Retail	10		0	0	4	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	8	4	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,181	674	507
Internal Capture Percentage	7%	6%	8%
External Vehicle-Trips[3]	1,095	631	464
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	4%	29%
Retail	39%	39%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	3%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Wateridge Phases 6, 7 & 8
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	435	435	1.00	59	59
Retail	1.00	54	54	1.00	36	36
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	185	185	1.00	412	412
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		17	37	0	1	0
Retail	10		5	0	5	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	8	4	82	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		17	0	0	0	0
Retail	17		0	0	4	0
Restaurant	61	4		0	9	0
Cinema/Entertainment	0	0	0		0	0
Residential	13	9	0	0		0
Hotel	13	2	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	18	417	435	417	0	0
Retail	21	33	54	33	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	4	181	185	181	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	17	42	59	42	0	0
Retail	14	22	36	22	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	400	412	400	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Wateridge Phases 6, 7 & 8	**Organization:**	Arcadis IBI
Project Location:	Wateridge Village	**Performed By:**	Ben Pascolo-Neveu
Scenario Description:	Future (2030) Total Traffic	**Date:**	2024-12-09
Analysis Year:	2030	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				468	79	389
Retail				254	127	127
Restaurant				0		
Cinema/Entertainment				0		
Residential				590	342	248
Hotel				0		
All Other Land Uses[2]				0		
Total				1312	548	764

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2030			2120	
Retail					480	
Restaurant						
Cinema/Entertainment						
Residential		480				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	5	0
Retail	3		0	0	33	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	10	12	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,312	548	764
Internal Capture Percentage	10%	12%	9%
External Vehicle-Trips[3]	1,180	482	698
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	16%	2%
Retail	12%	28%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	11%	9%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Wateridge Phases 6, 7 & 8
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	79	79	1.00	389	389
Retail	1.00	127	127	1.00	127	127
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	342	342	1.00	248	248
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		23	16	0	5	0
Retail	3		37	5	33	6
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	10	95	52	0		7
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	14	0
Retail	24		0	0	157	0
Restaurant	24	64		0	55	0
Cinema/Entertainment	5	5	0		14	0
Residential	45	12	0	0		0
Hotel	0	3	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	13	66	79	66	0	0
Retail	15	112	127	112	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	38	304	342	304	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	8	381	389	381	0	0
Retail	36	91	127	91	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	22	226	248	226	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

COVID Factors (Applied to sidestreet traffic volumes collected during June 2022)

Intersection	Year	AM	PM
Laurier at Nicholas	2022	93%	90%
Riverside at Heron	2022	81%	98%
Airport Parkway at Hunt Club	2022	91%	95%
Prince of Wales at Hunt Club	2022	101%	105%
Eagleson at Hazeldean	2022	88%	92%
Strandherd at Woodroffe	2022	96%	104%
	Avg	92%	97%
	Factor	109%	103%
		1.09	**1.03**

Based on COVID-19 Traffic Volume Monitoring at Intersections from Open Data Ottawa.

Appendix G – Phases 6, 7 & 8 Monitoring Plan Memorandum & Phase 2A/2B Monitoring Program

ARCADIS IBI GROUP
500–333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
arcadis.com

Memorandum

To/Attention	Wally Dubyk, CET Transportation Project Manager City of Ottawa	**Date**	December 12, 2024
From	Ben Pascolo-Neveu, P.Eng.	**Project No**	139653
cc	Mary Jarvis, Senior Director, CLC		
Subject	Wateridge Phases 6, 7 & 8 - Monitoring Plan		

Dear Mr. Dubyk:

Introduction

To satisfy Draft Conditions #42 and #52 of the Subdivision Agreement for Wateridge Phases 6, 7 & 8, a Monitoring Plan has been prepared as part of the Transportation Impact Assessment (TIA) Step 4 submission. This program will supplement the Wateridge Phase 2A/2B (now Phases 2 & 4) Monitoring Program which was published by Dillon Consulting in 2019 to track site-generated traffic impacts, the achievability of mode share targets and the potential for cut-through traffic in adjacent residential communities south of Montreal Road.

The Phase 2A/2B Monitoring Program was developed to facilitate the assessment of broader transportation network impacts on Montreal Road, while the Phases 6, 7 & 8 Monitoring Plan will focus on site-generated travel demands at key locations along its property limits following substantial build-out/occupancy.

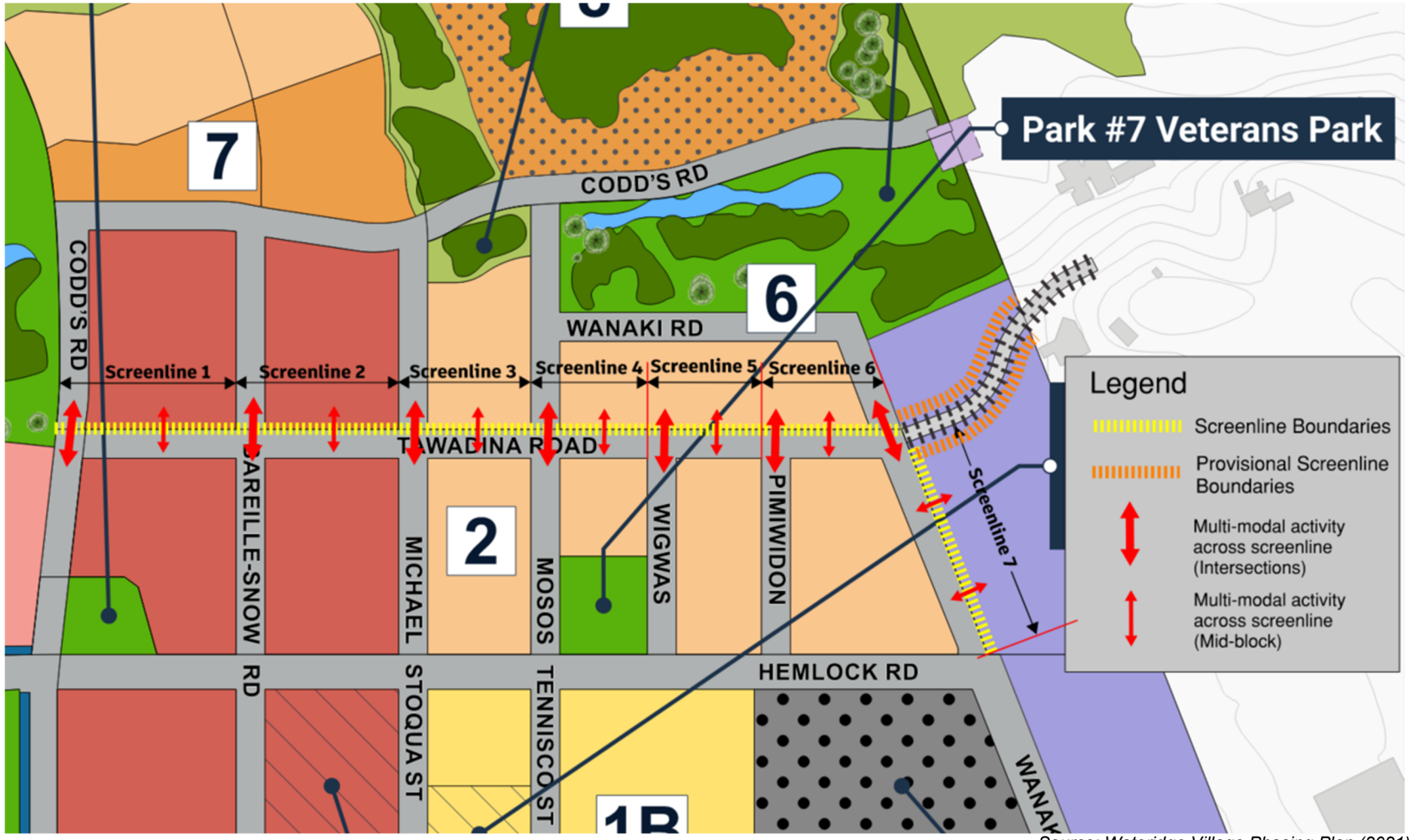
This monitoring plan will identify the requirements for monitoring conditions one year after 80% average occupancy has been achieved for each of the three final phases of Wateridge Village, unless the build-out timelines of the phases are determined to be substantially overlapping in which case a more consolidated evaluation may be considered. It is important to note as well, consistent with the Phase 2A/2B Monitoring Program, the scope of work does not include the execution of this plan (i.e. data collection, survey, or analysis).

Monitoring Plan Study Area

Seven screenlines have been established at key multi-modal connection points along the southern and eastern limits of the subject lands with previous phases of Wateridge Village to facilitate the tracking of auto and non-auto trips crossing these boundaries, as illustrated in **Figure 1** below. It should be noted as well that ‘provisional screenlines’ are shown adjacent to the future NRC active and transit connection to capture any trips directly between the employment blocks to the north and south, in the event that this link is in place at the time of the Monitoring Plan surveys.

The subject lands are situated at the northernmost limits of the entire Wateridge Village subdivision and, as a result, are relatively isolated from the previous phases which is expected to facilitate the separation of site-generated travel demands.

Figure 1 – Monitoring Plan Study Area



Source: Wateridge Village Phasing Plan (2021)

Survey Procedure

Screenline Data Collection

The following outlines the general survey procedure which is proposed to collect multi-modal transportation data that best represents site-generated travel demands once one or more of the three phases are at least 80% built out:

- Surveyors will be located at the seven screenlines identified on **Figure 1** above during the City's standard weekday morning (7:00-10:00am) and weekday afternoon (3:00pm to 6:00pm) peak periods. Each surveyor will be strategically positioned to allow for unobstructed views of their respective screenline limits to capture mid-block and intersection crossing activity to the fullest extent possible.
- All transportation-related activity crossing Screenlines 1 to 7, including pedestrians, cyclists and vehicles will be tallied. Further, each trip direction will be qualified as being either 'inbound' or 'outbound.' Vehicle occupancy will be recorded whenever feasible, recognizing that this may not be possible for vehicles with tinted windows.
- A review of the field observations will be undertaken to derive the weekday morning and afternoon peak hour periods across all seven screenlines from the overall, 3-hour peak period data.

A total of two (2) traffic count surveys at each location will be undertaken on the core weekdays (i.e. Tuesday, Wednesday or Thursday) over a period of two months to capture variability in weekday travel patterns or seasonal travel patterns, among others.It is recognized that there will be additional pathway connections where person-trip activity may occur during the weekday peak periods that might not be captured by the proposed screenline locations, however this proportion of trips is expected to be minimal relative to the overall site-generated traffic contributions.

Turning Movement Data Collection

In addition to the screenline analysis described above, turning movement counts will also be conducted at the following intersections during the weekday morning (7:00-10:00am) and weekday afternoon (3:00-6:00pm) peak periods on the core weekdays (i.e. Tuesday, Wednesday, Thursday) over a period of two months following 80% build-out of one or more phases to monitor cut-through traffic infiltration within the Carsons' Grove neighbourhood to the south relative to counts conducted following the substantial completion of Phase 2A/2B and traffic operations/queuing associated with select movements:

- Montreal & Codd's/Carson's – north-south cut-through traffic and observations of traffic operations/queuing associated with northbound and southbound left-turning movements
- Montreal & Wanaki/Bathgate – north-south cut-through traffic

Additional turning movement counts will be conducted within the same two-month period as Montreal Road intersections noted above at Hemlock Road & Aviation Parkway Northbound On-Ramp. The purpose of these counts will be to observe any traffic operational/queueing issues at this junction and verify through SimTraffic analysis with the observed volumes whether an eastbound auxiliary left-turn lane is justified at this location, based on eastbound approach queue lengths.

Monitoring Plan Components

Consistent with Phase 2A/2B, this Monitoring Plan will consider three main components for review and analysis:

- Site-Generated Traffic Impacts
- Mode Share Target Review
- Potential for Cut-through Traffic

Site-Generated Traffic Impacts

Based on the survey results observed across all seven screenline, the overall number of person- and auto-driver trips observed will be calculated separately for the weekday morning and afternoon peak hour periods to determine if the trip generation results developed as part of the TIA generally align with or provide a robust approximation of actual site-generated demands.

Consideration will also be given to the overall directional splits of the trip generation results developed as part of the TIA exercise, as these travel characteristics will have a bearing on the transportation network constraints within the TIA study area as well.

It is anticipated that the overall trip generation methodology employed in this TIA, which was developed before the widespread adoption of the hybrid work model, will provide a conservative estimate of site-generated traffic impacts during the weekday morning and afternoon peak hour periods when compared against the travel demand observations collected as part of this monitoring exercise.

Mode Share Target Review

Based on the survey results counted across the seven screenline locations, the overall auto/non-auto proportions will be calculated to determine if these align with the assumed 35%/65% targets which were applied through the TIA's trip generation process.

It will not be practical or necessary to further subdivide the non-auto mode share further, as it can be assumed that most individuals crossing the site limits using sustainable modes will generally continue to their final destination using some form of sustainable mode (i.e. walking, cycling, transit) without contributing to the 'auto driver' mode share. Further, it is not expected that there will be any transit service within Phases 6, 7 or 8, therefore transit riders will most likely cross the screenlines as pedestrians which would mean that these active users would be over-represented in the survey results.

Potential for Cut-through Traffic

It is understood that there are longstanding concerns regarding the potential for the infiltration of site-generated traffic into the existing Carson's Grove community, particularly to the south of Montreal Road, accessed via Codd's Road/Carson's Road or Wanaki Road/Bathgate Drive. These concerns are not unique to Phases 6, 7 & 8 and are applicable to the entirety of the Wateridge Village subdivision.

Phases 6, 7 and 8 are planned for completion at least five years after Phase 2A/2B build-out. Cut-through traffic may increase as Wateridge Village is developed and traffic volumes increase in the area. The phases of development that are currently under review are estimated to generate over 400 two-way vehicle trips during each weekday peak hour, which may be of sufficient magnitude to influence traffic patterns like cut-through traffic.

As such, an evaluation of north-south traffic volumes at the intersections of Montreal Road with Codd's/Carson's and Wanaki/Bathgate, the preliminary recommendation is that 80% occupancy of Phases 6, 7 and 8 to ensure that cut-through traffic from Wateridge Village does not increase over time, however, if cut-through traffic is addressed during the Phase 2A/2B monitoring program, the need for this additional monitoring may be revisited.

Mitigation Strategies

Site-Generated Traffic Impacts or Mode Share Targets

In the event that either the site-generated traffic demands are higher than anticipated or the non-auto mode share target of 65% is determined to be unachievable through these field surveys, strategies to shift the overall modal share to more sustainable modes should focus on improvements to the transit service quality and reliability and could involve collaborating with the local transit agency (i.e. OC Transpo) to advance key transit projects, if not implemented by this time, including:

- **Hemlock Road Transit** – Proposed realignment of transit service from Mikinak Road to Hemlock Road to better serve Phases 6, 7 & 8 and restoring all-day transit service, 7 days a week through the Wateridge Village development.
- **Montreal-Blair Transit Priority Corridor Environmental Assessment (EA)** - Curbside bus lanes on Montreal Road which would significantly improve transit service quality, reliability and, by extension, the costumer experience.

The Wateridge Village subdivision has generally been designed as a compact, mixed-use development with a grid-pattern and pathway connections to promote the use of active transportation modes over primate automobile usage. As such, the mode share targets of 14% for walking and 3% for cycling are generally in line with the active transportation infrastructure proposed within Wateridge Village.

Encouraging office workers to either work remotely or shift hours to avoid travelling during the weekday peak hour periods could also be considered as long-term strategies to help reduce site-generated travel impact coinciding with peak travel demand constraints, if the observations are substantially higher than the TIA trip generation estimates.

The successful implementation of any required mitigation strategies would be expected to provide relief to long-standing existing transportation network constraints verified through the analysis conducted in this TIA associated with the westbound left-turn at the Montreal & Aviation Parkway intersection, as well future potential constraints such as the northbound and southbound left-turns at Montreal & Codd's.

Turning movement counts and traffic operational/queuing observations will also help inform whether these potential constraints identified through the TIA analysis are present following 80% build-out of one of more phases of the proposed development.

Cut-Through Traffic

In the event that cut-through traffic impacts are determined to be significant, as per the Phase 2A/2B Monitoring Program, potential solutions could involve the introduction of north-south vehicular movement restrictions into the Carson's Grove neighbourhoods through physical measures or prohibitions to regulate these movements at specific times. Any recommended measures should consider the continued need to maintain permeability of active modes between Carson's Grove and Wateridge Village.

North-south vehicle movements recorded from turning movements counts at the intersections of Montreal Road with Codd's/Carsons' and Wanaki/Bathgate will help inform whether the subject development is a significant contributor to cut-through traffic, following 80% build-out of each phase.

Conclusion

An overall Monitoring Program Memorandum will be prepared to document the analysis, results and findings of the surveys conducted as part of Monitoring Plan and will be circulated to the City staff for review.

Mitigation measures or strategies will be recommended, as required, based on the outcomes of the monitoring surveys.

Prepared By:



Ben Pascolo-Neveu, P.Eng.
Transportation Engineer

DILLON CONSULTING

CANADA LANDS COMPANY

Wateridge Village Phase 2A & 2B

Monitoring Program

April 2019 – 18-8319

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1.0 Introduction

A transportation monitoring program has been developed for Wateridge Village Phase 2A and 2B to better understand travel behaviors for each phase of development. The monitoring program addresses three items as follows:

- Monitoring of cut through traffic from Wateridge Village
- Monitoring of transit shares for Wateridge Village
- Monitoring of constrained network intersections

The objectives, and approach for conducting the monitoring program to satisfy the conditions for Subdivision Registration are described herein.

1.1 Conditions of Subdivision Approval

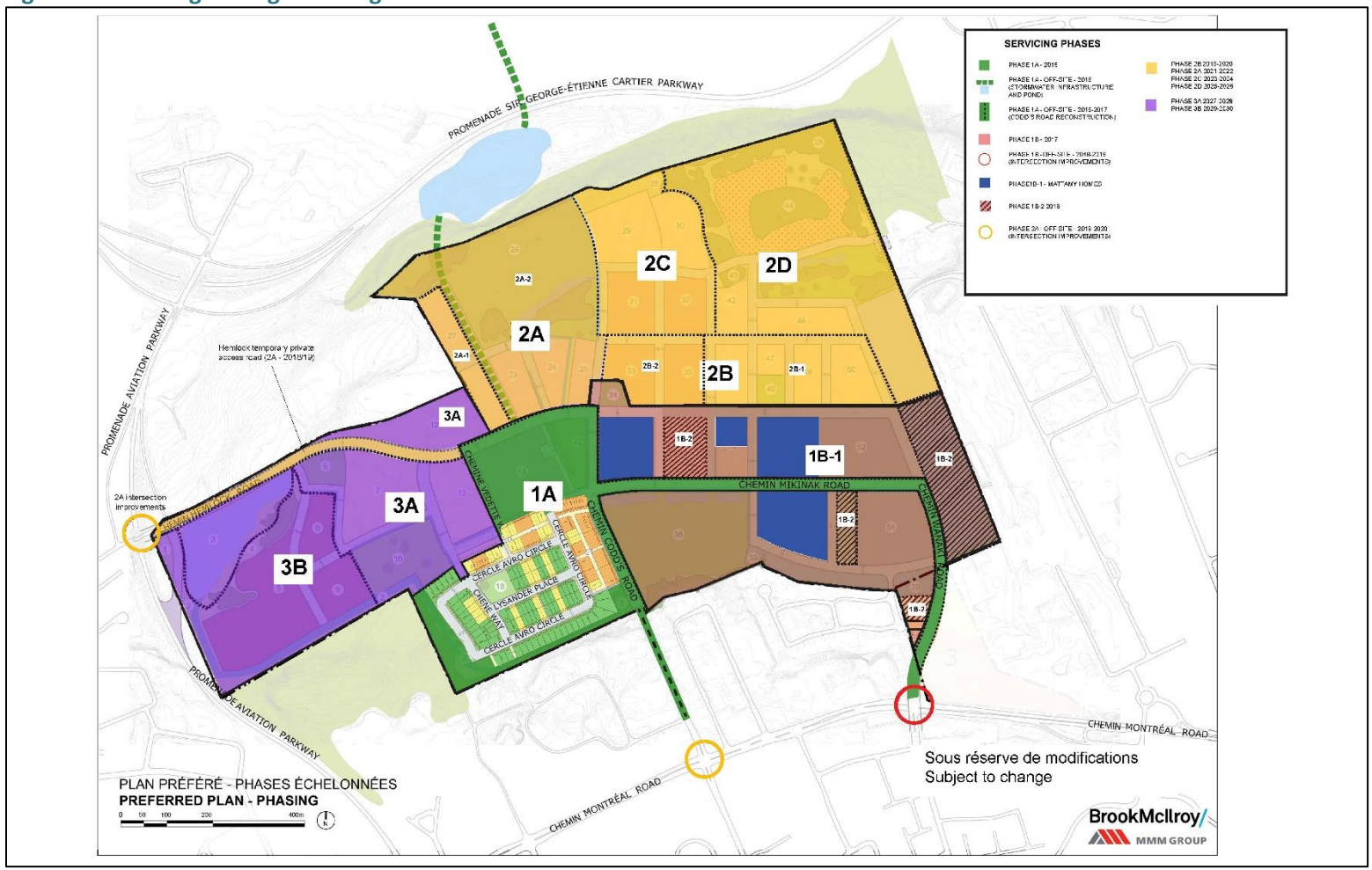
Subdivision Agreement – Schedule E, (Part C) Conditions of Plan Approval

Condition #	Details
13a - Highways/ Roads	The owner acknowledges and agrees to retain a Professional Engineer with expertise in the field of transportation planning and/or traffic operations to prepare a Transportation Impact Study and any subsequent Transportation studies as required prior to the registration of the Plan, to the satisfaction of the General Manager, Planning and Growth Management. The study shall comply with the City of Ottawa's Transportation Impact Assessment Guidelines. The Owner further agrees to revise the draft plan in accordance with the recommendations of the study to the satisfaction of the General Manager, Planning and Growth Management.
17 - Traffic	The owner acknowledges and agrees to conduct, at their expense a **traffic study** (including monitoring traffic over a two month period) signed by a consultant on the TIA pre-approved consultant list to assess the traffic movements to and from the subject site in the surrounding area (bound by Sir George-Etienne Cartier Parkway, St Laurent Boulevard, Montreal Road and Blair Road). As well the study should evaluate the effect of the traffic from the subject site on the neighbouring local street network, in particular to the community to the south, at the owners sole expense and to the satisfaction of the General Manager, Planning and Growth Management.

Condition #	Details
	The study shall commence one (1) year after 80% occupancy of each phase of the proposed plan of subdivision. The owner shall be responsible for implementation of the study recommendations at its sole expense, and to the satisfaction f the General Manager, Planning and Growth Management.
19 - Public Transit	The Owner acknowledges and agrees that prior to registration, a **monitoring program** will be developed to evaluate the success of targeted modal shares to the satisfaction of the General Manager, Planning and Growth Management.

A TIA has been developed for the Wateridge Village Phase 2A and 2B addressing conditions 13a under a separate cover. The monitoring program described herein, is presented alongside the TIA to satisfy the remaining identified conditions.

Figure 1: Wateridge Village Phasing Plan



Site plan provided October 25, 2018.

2.0 Monitoring Program

The monitoring program includes three components:

1. Monitoring of neighbourhood cut through traffic;
2. Monitoring of transit shares;
3. Monitoring of constrained network intersections.

Each component of the monitoring program addressed the following:

- Objective — Purpose of the study
- Context — Background information
- Approach — How the study will be undertaken
- Frequency and duration, — Time of day, length of study, number of samples
- Metrics — What quantifiable metrics will be used
- Deliverable

The monitoring program has been designed such that each component can be executed independently. The plan can be adapted in the future by adding and/or modifying a component to address additional unforeseen concerns.

2.1 Monitoring of neighbourhood cut through traffic

2.1.1 Objective

To determine how many vehicle are travelling through adjacent residential neighbourhood with the increase in vehicles due to Phase 2A and 2B of Wateridge Village.

2.1.2 Context

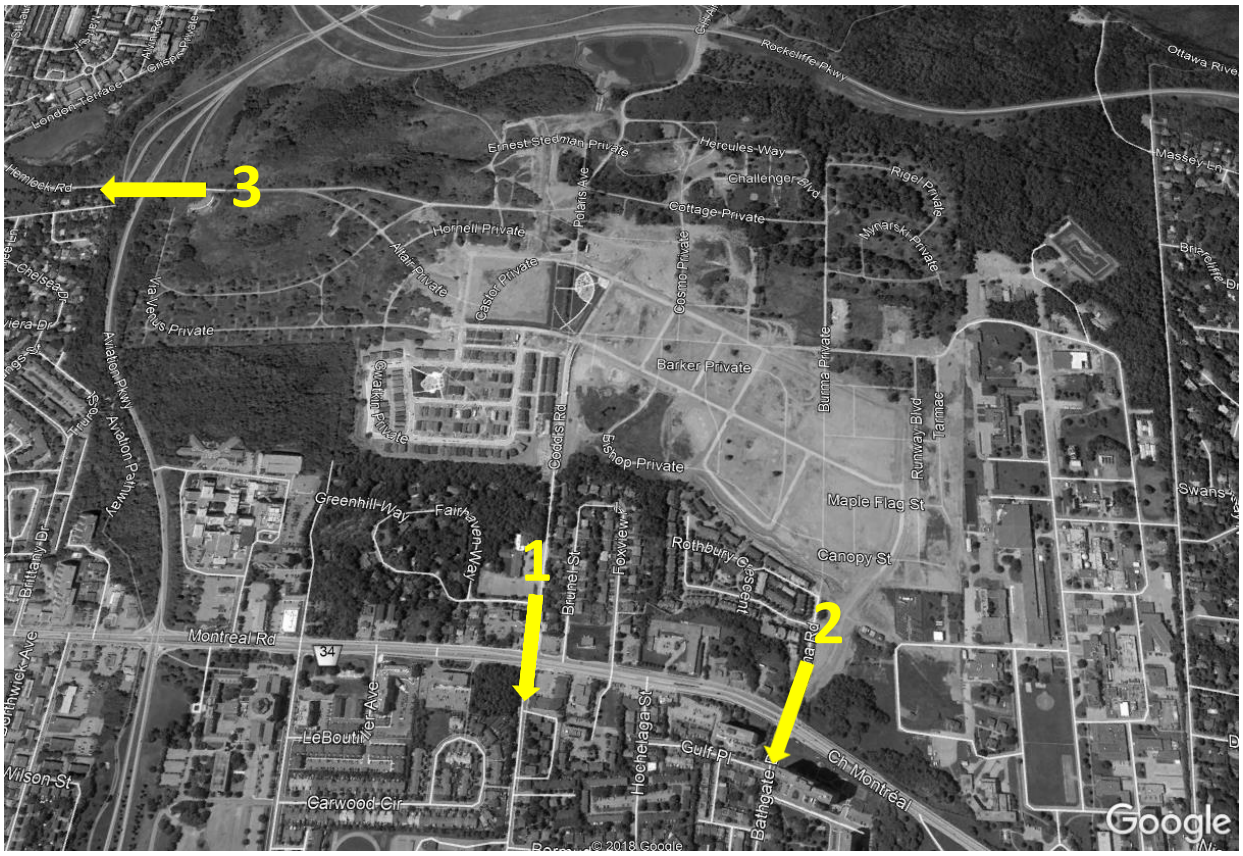
Phase 2a and 2B of Wateridge village includes 3 vehicle accesses (**Figure 2**):

1. Montreal Road intersection at Codd's Road / Carson's Road,
2. Montreal Road intersection at Burma Road (Wanaki Road) / Bathgate Drive, and
3. Hemlock Road at Aviation Parkway (NB on-ramp)

Codd's Road and Burma Road (Wanaki Road) north of Montreal Road are aligned with Bathgate Drive and Carson's Road south of Montreal Road, respectively. There is potential for vehicles to/from Wateridge Village to use Bathgate Drive and Carson's Road south of Montreal Road which could increase vehicle volumes in the adjacent residential development and College La Cité.

The introduction of a new Wateridge Village access at Hemlock Road will also likely result in an increase in vehicles on Hemlock Road between the Aviation Parkway and St Laurent Boulevard. While it is anticipated that many of the Wateridge Village vehicles that use the Hemlock Road access would be to/from the Aviation Parkway, monitoring is required to ensure that vehicles volumes on Hemlock Road west of the parkway are manageable.

Figure 2: Wateridge Site Access



2.1.3 Approach

Several traffic counts will be conducted at the three access intersections. The data will identify:

- The share of site generated vehicles that travel eastbound and westbound on Montreal Road versus the vehicles that travel through the neighbourhood to the south;
- Potential growth in vehicle volumes through the neighbourhood to the south (comparison with existing November 2018 vehicle volumes);
- The share of total generated vehicles at the Hemlock Road access that are to/from the Aviation Parkway versus Hemlock Road west of the Aviation Parkway.

The traffic counts will be scheduled to occur one year following 80% occupancy of Phase 2A and 2B of Wateridge Village, once area travel patterns have been better established. (Estimated to be in 2023)

Phase	Estimated Completion Year
Phase 2A and 2B	2022 / 2023

2.1.4 Frequency and duration

Initial traffic counts were completed in November 2018 at the existing access intersections. These counts will serve as a baseline for comparing how vehicle volumes have changed pre and post Phase 2A and 2B development.

The monitoring program is to include 2 counts at each access intersection (6 counts total). Traffic counts are to be completed during the months of May and September.

Each traffic count will include 8 hours per day (7-10 AM, 11:30AM - 1:30PM, and 3 - 6PM,on a Wednesday or Thursday) in order to align with typical City of Ottawa traffic reports.

2.1.5 Metrics

The traffic data collected through the monitoring program will help determine the proportion of vehicles from the development that use Montreal Road verses Codd's Road / Carson's Road or Burma Road (Wanaki) / Bathgate Drive.

The November 2018 data identified the following daily and peak period distributions for vehicle trips from Wateridge Village travelling through the community to the South versus those travelling westbound and eastbound along Montreal Road. The percentages have been included in **Table 1** below. For instance, the existing daily percentages, at Codd's/ Carson's Road are as follows: approximately 3% of *daily* vehicles from Wateridge Village travel through the community to the south versus the 63% that are westbound for Montreal Road and 34% for eastbound Montreal Road.

The Phase 2A & 2B TIA assumed a 0% site generated distribution from the Wateridge community to the South as all southbound traffic was assumed to be via Aviation Parkway and St. Laurent Boulevard. The traffic distribution aligns with the Former Rockcliffe Redevelopment Community Transportation Study (CTS) and the Phase 1A Transportation brief prepared by Parsons.

The analysis will address both inbound and outbound trips. Daily, AM and PM peak period distributions will be identified from the traffic data and will be included in the assessment. The table also identifies proposed triggers that are to be used for identifying whether to implement traffic calming measures. Measures to divert traffic potentially include installing speed humps or a speed display board.

Table 1: Share of Vehicle Trips Travelling South versus eastbound or westbound on Montreal Road

	Codd's / Carson's			Burma (Wanaki) / Bathgate		
Condition	Daily (in & out)	Peak Period (peak dir)		Daily (in & out)	Peak Period (peak dir)	
		AM	PM		AM	PM
Existing Distribution	3% / 3%	5.3%	6.7%	19% / 15%	30%	30%
Proposed Future Distribution from TIA	N/A	3.6%	2.1%	N/A	10.9%	7.8%
Threshold for Considering Traffic Calming Measures	**10%**	**10%**	**10%**	**30%**	**30%**	**30%**

While the proportion of vehicles is an interesting metric for monitoring, the hourly volume of vehicles will also be identified and assessed to determine the average growth in potential cut-through traffic through the community to the south. Continued growth in vehicle volumes may require traffic calming measures, or other approaches to maintain acceptable speeds and volumes on area roadways. The collected data will be compared to the November 2018 data as well as the data obtained from other future monitoring to identify potential trends.

Table 2 presents the existing and proposed roadway volume as well as the proposed thresholds for considering traffic calming measures. The trigger for traffic calming was identified based on the volume requirements to change the designation of a roadway. The noted roads south of Montreal Road are Collector roadways with a proposed capacity for peak hour volumes up to 600 vehicles / hour.

Table 2: Volume of Vehicle Trips to/through Quarries and Carson Grove Neighbourhoods

Condition	Codd's / Carson's		Burma (Wanaki) / Bathgate	
	Peak Period (peak dir)		Peak Period (peak dir)	
	AM	PM	AM	PM
Existing Volume	225	140	285	260
Proposed Future Volume from TIA	225	140	300	270
Proposed Threshold for Considering Traffic Calming Measures	**600**	**600**	**600**	**600**

The collected data at the Hemlock Road access will identify the volume of Wateridge Village Site traffic that uses the Aviation Parkway versus Hemlock Road west of the parkway. Daily, AM peak period, and PM peak period distributions will be identified. The focus of the analysis will be on outbound trips from the Wateridge Village (inbound trips would require an additional count at the Aviation Parkway off-ramp).

The TIA that was completed for Phase 2A and 2B indicated that 29% outbound site generated trips via Hemlock would be destined westbound toward St Laurent Boulevard and Beechwood Avenue, representing 60 vehicles in the AM peak hour. This, in addition to existing traffic, represents a total outbound volume of 295 vehicles travelling westbound via Hemlock in the AM peak hour, equivalent to 59% of total traffic at this access. As identified above, if more than 600 vehicles per hour are observed using Hemlock Road in the peak direction, traffic calming measures should be investigated.

2.1.6 Deliverable

A memo will be prepared documenting the results of the monitoring program.

2.2 Monitoring of Transit Shares for Wateridge Village

2.2.1 Objective

To determine the share of Wateridge Village site trips that are accommodated by transit.

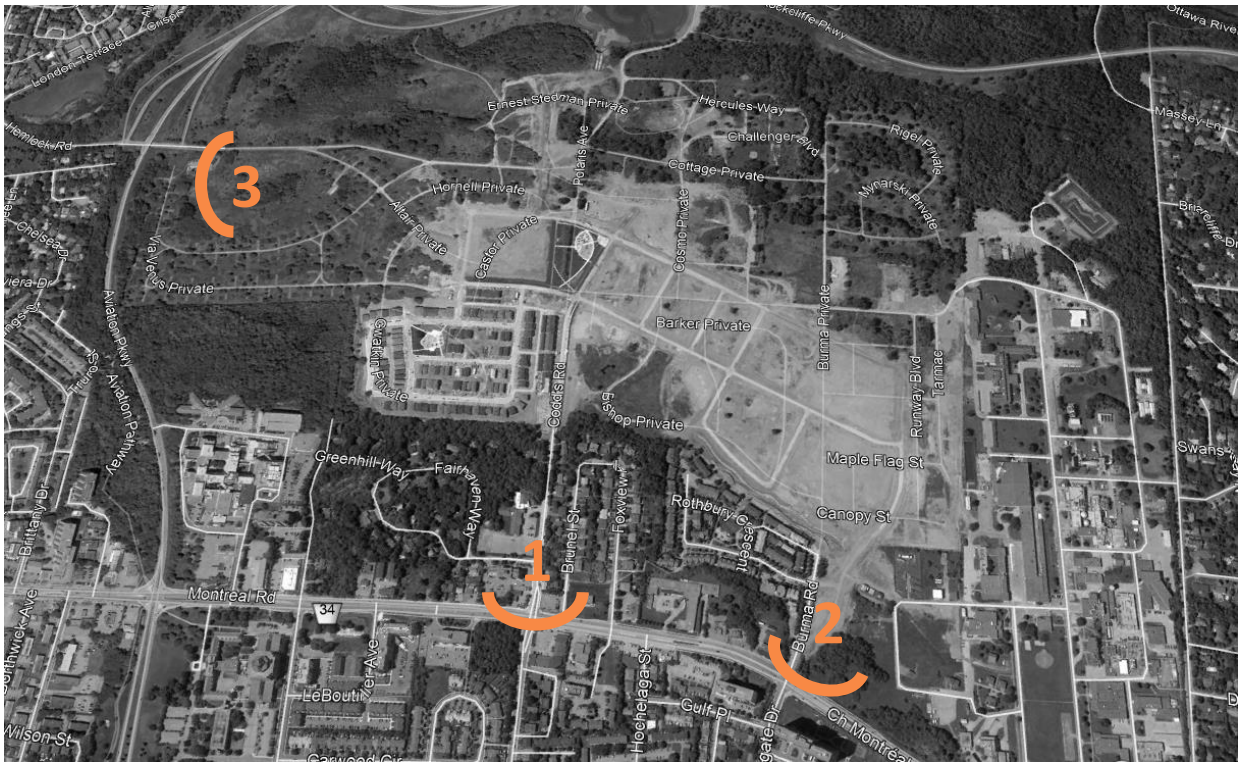
2.2.2 Context

The CTP, CDP, and TIAs for Wateridge Village is based on achieving a 35% transit mode share, particularly during the peak periods when the roadway network is at capacity. The development is provided with transit service, however the development it in its early stages, with no onsite employment and is yet to include the planned community core. Most site generated trips are therefore external to the area. While the community will be more transit focused as it develops, the current limited service frequency and hours of operation may hinder the attractiveness of transit.

2.2.3 Approach

A vehicle classification and occupancy study will be undertaken following completion of Phase 2A and 2B of Wateridge Village. Any available OC Transpo data will be utilized in addition to this occupancy study to help establish transit mode shares. The focus will be on passenger boardings during the AM peak period. Identifying PM mode share may be challenging due to a lack of Automated Passenger Count (APC) alighting data. Field staff will be situated at the three site accesses (**Figure 3**) tabulating the number of inbound and outbound vehicles with an estimate for the number of passengers per vehicle.

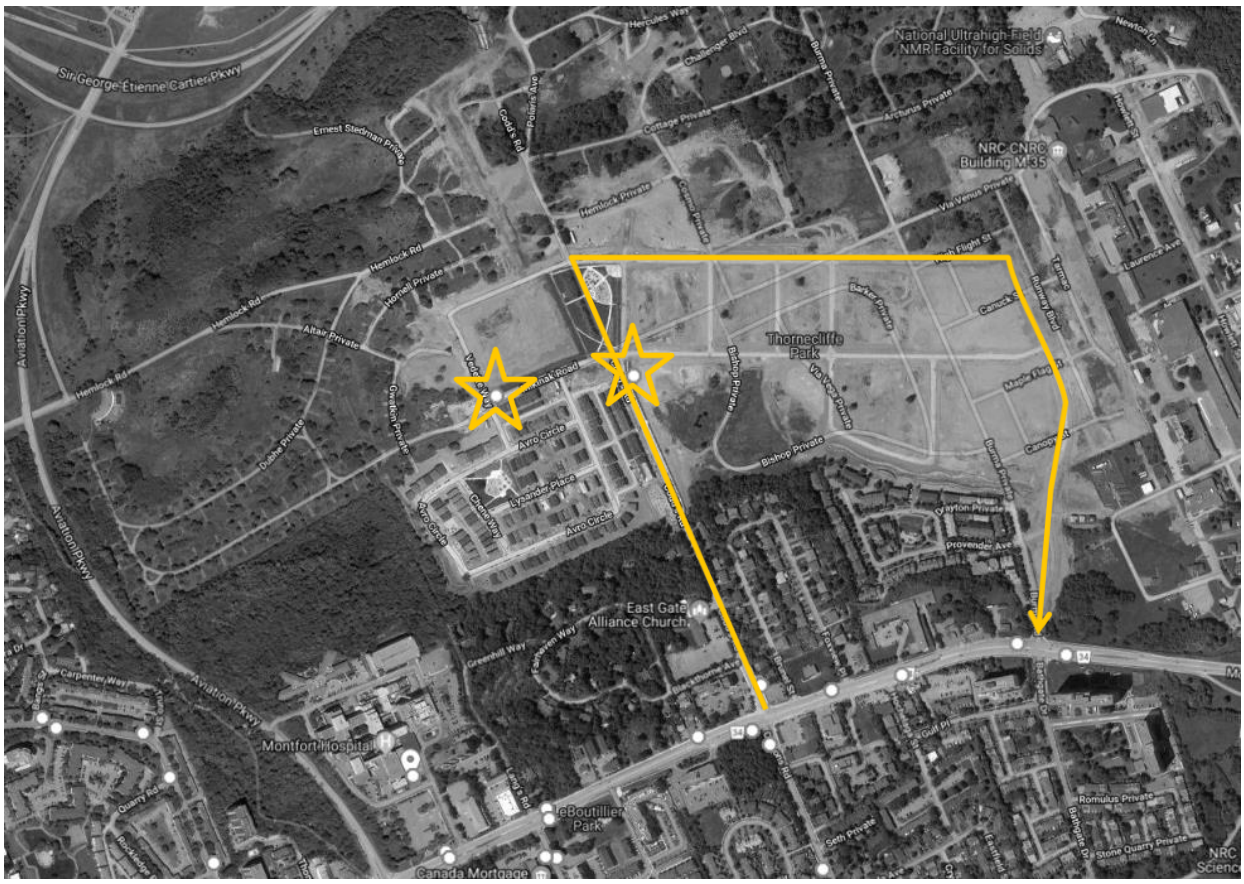
Figure 3: C&O Data Collection Locations



All modes will be included in the study including buses, bicycles, and pedestrians.

Once Phase 2A and 2B have been developed, the transit routes that serve the site will be modified with additional stops along the route. The existing Wateridge Transit Stops, and a proposed transit routing for Phase 2A and 2B is presented in **Figure 4**. It is noted that the identified transit routing may change, particularly with the potential for connections to Hemlock Road. Obtaining APC data from OC Transpo for all stops within the study area allows for a clear understanding of passenger boardings within the Village regardless of transit routing. Stop level boarding data from OC Transpo will be used to confirm the number of transit passenger boardings during the AM peak period (since a visual inspection of on-board passengers can be difficult for buses). Over 10% of OC Transpo buses are equipped with APC devices and the buses are rotated among all bus routes. There is therefore a reasonably significant sample of data for each service booking that can be used to determine peak transit boardings for stops in Wateridge Village.

Figure 4: OC Transpo Transit Stops (Existing Stops and Planned Phase 2A and 2B route)



It is recognized that while pedestrian and cyclists will be included in the C&O counts at the 3 vehicle site accesses, there is potential that active transportation trips use other pathways that are not being collected, potentially underestimating total active transportation usage. The collected data however will provide a meaningful breakdown of auto drivers, auto passengers, and transit passengers.

2.2.4 Frequency and duration

The study will be undertaken over a single day (on a Wednesday or Thursday) for a 3 hour AM peak period to align with typical OC Transpo reporting periods.

2.2.5 Metrics

The following metrics will be used to identify AM peak period transit mode shares for Wateridge Village:

- Number of outbound vehicle and person trips
- Total peak period on-site transit boardings.

The data will be compiled into a single database representing all modes of travel and mode shares will be determined. The identified mode shares will be compared with the 35% peak transit mode share target, to determine if TDM tools should be used to further encourage transit use. There will be a limited ability to implement exclusive transit priority roadway infrastructure to encourage transit use due to the constrained ROW; however several potential options have been identified. For additional detail please refer to the TDM checklist included in Appendix C of the Phase 2A and 2B TIA.The following are a few measures hat can be adopted to increase the transit mode share:

- Install transit amenities such as shelters in advance of when warrants may be met;
- Minimize use of bus bays;
- Provide transit information;
- Consider transit fare incentives;
- Investigate if there are opportunities to increase the profile of transit through the community with signage, branding, and potential transit priority measures at site accesses (Codd's/Montreal Road, Wanaki/Montreal, Hemlock/Aviation Parkway) and internal to the development.

These measures will shift the priority to transit users and encourage a higher mode share.

2.2.6 Deliverable

A memo will be prepared documenting the results of the monitoring program. The data collected as part of the study along with relevant OC Transpo data will provided to CLC.

2.3 Monitoring of constrained network intersections

2.3.1 Objective

To assess operations (V/Cs, delays, and queues) through identified constrained network intersections with the increase in vehicles from Phase 2A and 2B of Wateridge Village.

2.3.2 Context

The TIA that was undertaken for Phase 2A and 2B of Wateridge Village suggests that the following two intersections are already operating close to capacity in the peak hours.

1. Montreal Road and St. Laurent Boulevard, and
2. Montreal Road and Aviation Parkway

Table 3: Existing LOS and Critical Movements

Intersection	Date	AM Peak Hour	PM Peak Hour
Montreal Road and St. Laurent Boulevard	January 2016	LOS E (SBL)	LOS E (EBT,WBL,NBT,SBL)
Montreal Road and Aviation Parkway.	January 2018	LOS E (EBT, SBL)	LOS E (EBT, WBT, NBL, NBT)

The addition of Phase 2A and 2B site generated traffic puts additional pressure on these already constrained network intersections. It is understood that in the future additional network connections will be provided between Wateridge Village and the Aviation Parkway which will modify travel patterns in the area. As well, an Environmental Assessment is currently underway for Montreal Road from St. Laurent Boulevard Blair Road assessing the ability to accommodate transit priority measures which may result in changes to the roadway configuration. The TIA therefore suggested that these already constrained intersections be monitored to ensure they do not result in unmanageable vehicle congestion.

2.3.3 Approach

Traffic counts will be conducted at the two network intersections. The data will be used to identify if vehicle volumes are being maintained or have grown since occupancy of Wateridge Village Phase 2A and 2B.

The traffic counts will be scheduled to occur one year following 80% occupancy of Phase 2A and 2B of Wateridge Village, once area travel patterns have been better established. (Estimated to be in 2023)

2.3.4 Frequency and duration

The monitoring program is to include 2 counts at each access intersection (4 counts total). Traffic counts are to be completed during the months of May and September.

Each traffic count will be undertaken over a single day (7-10 AM, 11:30AM - 1:30PM, and 3 - 6PM, on a Wednesday or Thursday) in order to align with typical City of Ottawa traffic reports.

2.3.5 Metrics

The traffic data collected through the monitoring program will help determine the theoretical volume to capacity ratios and intersection delays associated with the increase in vehicles due to Phase 2A and 2B of Wateridge Village. The analysis will also assess if vehicle queues are continuously growing, and/or if they extend back to impact adjacent intersections.

- Analysis of weekday AM and PM peak hours
- V/C Ratio
- Movement Delay

Daily, AM and PM peak period vehicle volume distributions will also be identified to determine how long the intersections are at capacity. It is recognized that operations may be constrained for a short duration. Continued network intersection failure may require measures to satisfy the vehicle demand in advance of the future Aviation Parkway connection to Hemlock Road, and other potential modifications being identified through the Montreal Road Transit Priority EA.

Specific metrics to trigger change are as follows.

- Queues reaching adjacent intersections;
- Average V/C ratio over the peak period > 1.0 for all critical approaches;
- Movement Delay for all critical movements > 110 seconds (typical signal cycle length).

Remediation steps include: advancing the provision of access from Aviation Parkway to Hemlock Road, and prioritizing critical transit movements at the affected intersection. It is noted that the intersections along Montreal Road are being reconfigured through the Montreal-Blair Road Transit Priority Corridor Study.

2.3.6 Deliverable

A memo will be prepared documenting the results of the monitoring program with recommendations. This memo will be shared with the Traffic Engineering group.

Appendix H – Transportation Demand Management (TDM) Checklists

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

Legend

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

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

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

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

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

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

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

Legend

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

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

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

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

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

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

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

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

Legend

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

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

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

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

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

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

Legend

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

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

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

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

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

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

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

Legend

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

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

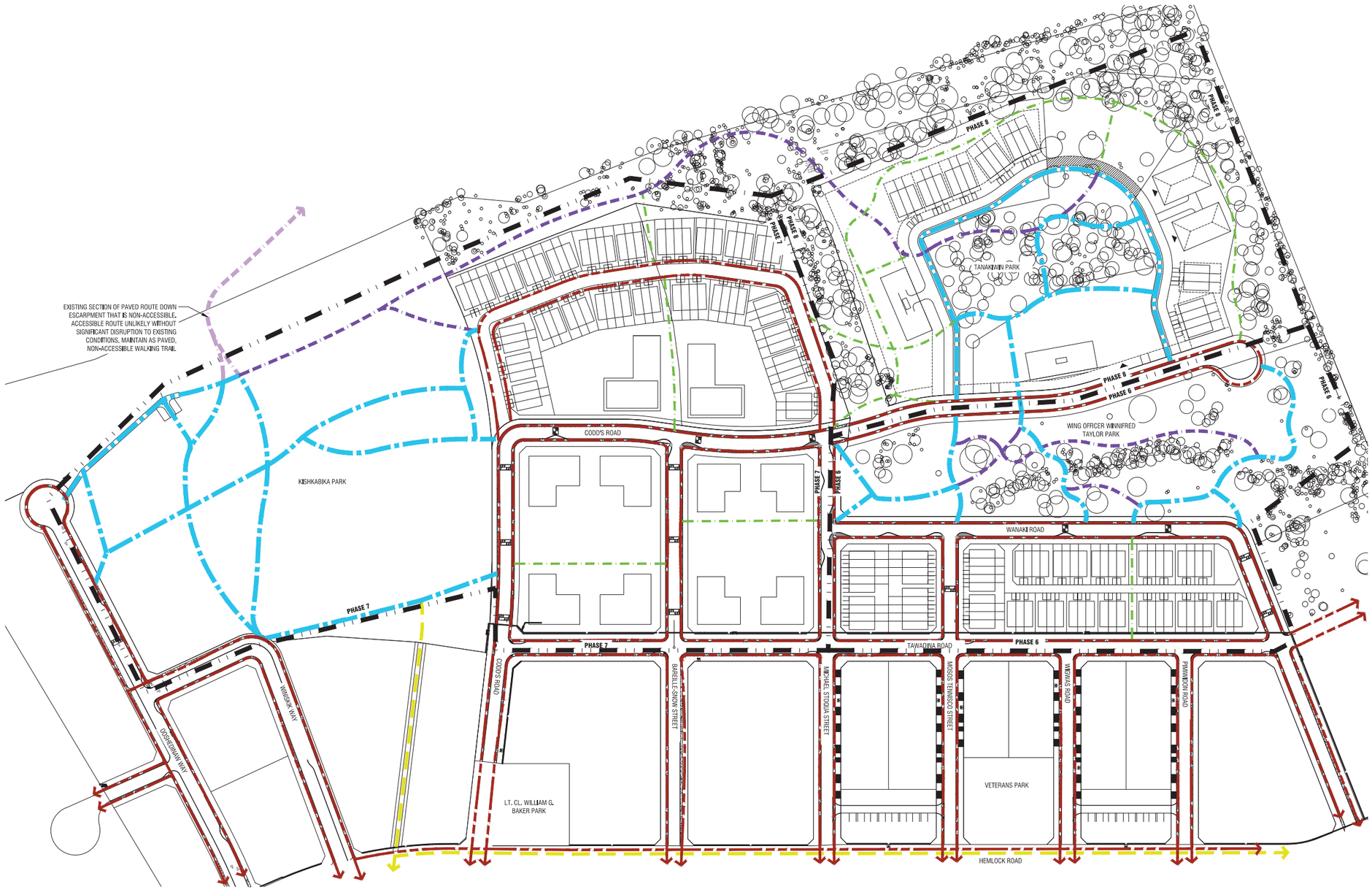
★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

		TDM measures: *Residential developments*	Check if proposed & add descriptions
	1.	**TDM PROGRAM MANAGEMENT**	
	1.1	**Program coordinator**	
BASIC ★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☐ Not Applicable to Subdivisions
	1.2	**Travel surveys**	
BETTER	1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
	2.	**WALKING AND CYCLING**	
	2.1	**Information on walking/cycling routes & destinations**	
BASIC	2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances *(multi-family, condominium)*	☐ Not Applicable to Subdivisions
	2.2	**Bicycle skills training**	
BETTER	2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	☐

			TDM measures: *Residential developments*	Check if proposed & add descriptions
		3.	**TRANSIT**	
		3.1	**Transit information**	
BASIC		3.1.1	Display relevant transit schedules and route maps at entrances *(multi-family, condominium)*	☐ Not Applicable to Subdivisions
BETTER		3.1.2	Provide real-time arrival information display at entrances *(multi-family, condominium)*	☐ Not Applicable to Subdivisions
		3.2	**Transit fare incentives**	
BASIC	★	3.2.1	Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	☐ under consideration
BETTER		3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in	☐ under consideration
		3.3	**Enhanced public transit service**	
BETTER	★	3.3.1	Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels *(subdivision)*	☐
		3.4	**Private transit service**	
BETTER		3.4.1	Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	☐ Not Applicable to Subdivisions
		4.	**CARSHARING & BIKESHARING**	
		4.1	**Bikeshare stations & memberships**	
BETTER		4.1.1	Contract with provider to install on-site bikeshare station (*multi-family)*	☐ Not Applicable to Subdivisions
BETTER		4.1.2	Provide residents with bikeshare memberships, either free or subsidized *(multi-family)*	☐ Not Applicable to Subdivisions
		4.2	**Carshare vehicles & memberships**	
BETTER		4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	☐ Not Applicable to Subdivisions
BETTER		4.2.2	Provide residents with carshare memberships, either free or subsidized	☐ Not Applicable to Subdivisions
		5.	**PARKING**	
		5.1	**Priced parking**	
BASIC	★	5.1.1	Unbundle parking cost from purchase price *(condominium)*	☐ Not Applicable to Subdivisions
BASIC	★	5.1.2	Unbundle parking cost from monthly rent *(multi-family)*	☐ Not Applicable to Subdivisions

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

Appendix I – Geometric Roadway Design Drawing (GRDD) & Active Transportation Plan



1 ACTIVE TRANSPORTATION PLAN
L1 1:1500

NOTES:
THIS PLAN REPRESENTS THE GENERAL, INTENDED PEDESTRIAN AND CYCLING CONNECTIONS WITHIN PHASES 6, 7 & 8 OF WATERIDGE VILLAGE. CONNECTIONS SHOWN THROUGH PUBLIC PARK BLOCKS AND PRIVATE DEVELOPMENT BLOCKS MAY BE SHOWN AS CONCEPTUAL AND SHOULD BE CONFIRMED AS THEIR RESPECTIVE PLANS DEVELOP.

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Client / Client

WATERIDGE VILLAGE
VILLAGE DES RIVERAINS

key plan / plan repère

PRELIMINARY
NOT FOR CONSTRUCTION

legend / légende

PHASE LINES

SIDEWALKS
- MIN. 1.8M WIDE
- CONCRETE SURFACE
- MEETS ACCESSIBILITY STANDARDS
- WINTER MAINTAINED

ACCESSIBLE ASPHALT PATHWAY
- MIN. 2.0M WIDE
- ASPHALT SURFACE
- MEETS ACCESSIBILITY STANDARDS
- PORTIONS MAY BE WINTER MAINTAINED

WALKING TRAILS
- MIN. 1.5M WIDE
- LIMESTONE SCREENINGS OR WOOD CHIP SURFACE (SOME PORTIONS MAY BE ASPHALT)
- VARIABLE RUNNING SLOPE
- ENTIRE LENGTH NOT UNIVERSALLY ACCESSIBLE
- VEGETATION AT EDGES TO BE SEASONALLY MAINTAINED TO PRESERVE SIGHTLINES
- NOT WINTER MAINTAINED

CYCLE PATH
- 2.0M WIDE MINIMUM
- ASPHALT SURFACE
- MEETS ACCESSIBILITY STANDARDS
- PORTIONS MAY BE WINTER MAINTAINED

POTENTIAL PEDESTRIAN CONNECTIONS (SUBJECT TO FUTURE SITE PLANS)
- PORTIONS MAY BE WINTER MAINTAINED

rev'n	description / la description	yyyy/mm/dd
02	issue for City review	2024/12/09
01	issue for review	2024/08/13
00	issue for review	2024/07/16

FOTENN Planning + Design
396 Cooper Street, Suite 300
Ottawa, ON, CANADA K2P 2H7
613.730.5709
fotenn.com

north / le nord

stamp / le cachet

project / projet

WATERIDGE VILLAGE
STAGE 6, 7, & 8

drawing / dessin

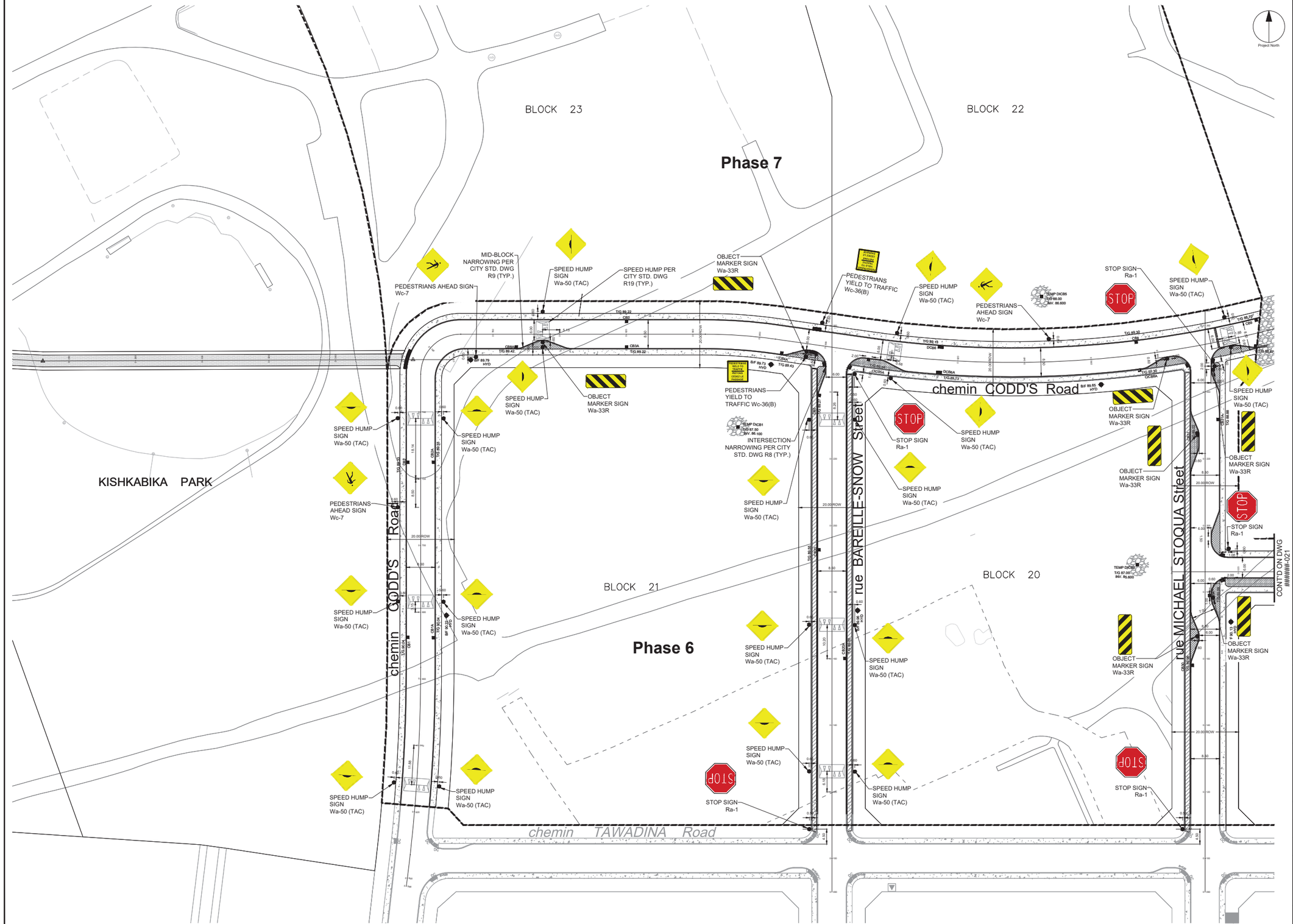
ACTIVE TRANSPORTATION PLAN

designed / conçu	drawn / dessiné	reviewed / examiné
DF / BM	MH	DF / BM
date	project number / No. du projet	
2023	X ##-##	

drawing number / No. du dessin

1 of 1

PLOT INFORMATION, DWG NAME: P:\PROJECTS\##-Waterridge Village - Stages 6-8\4-0 CONCEPTS\1 PLANS\Rev02 - Waterridge Village Stage 6-8 - Active Transportation Plan.dwg PLOT DATE: 2024-12-09 11:03:34 AM SHEET SIZE: 610.0x914.0mm (ARCH E1) (24.00 x 36.00 IN) PLOTTED BY: Brianna Mitchell LAST SAVED BY: brmitchell



CLIENT

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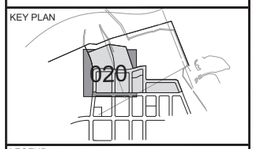
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ISSUES

No.	DESCRIPTION	DATE
1	SUBMISSION #1 FOR CITY REVIEW	2023-10-05
2	SUBMISSION #2 FOR CITY REVIEW	2024-07-18
3	SUBMISSION #3 FOR CITY REVIEW	2024-11-15
4	SUBMISSION #4 FOR CITY REVIEW	2025-02-24
5	SUBMISSION #5 FOR CITY REVIEW	2025-06-24

KEY PLAN



LEGEND

- DEPRESSED CURB
- TWSI (PER SC7.3)
- CATCH BASIN
- REAR YARD CATCH BASIN IN ROAD
- TRANSFORMER
- FIRE HYDRANT
- MOUNTABLE CURB
- BARRIER CURB
- PHASING BOUNDARY

SEAL

PRIME CONSULTANT

ARCADIS

333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT

WATERIDGE VILLAGE
PHASE 6 & 7

H 1:500 0 5 15 25m
V 1:50 0 0.5 # 1.5 2.5m

PROJECT NO:
#######

DRAWN BY:	CHECKED BY:
I.L.	D.H.
PROJECT MGR:	APPROVED BY:
S.L.	D.H.

SHEET TITLE

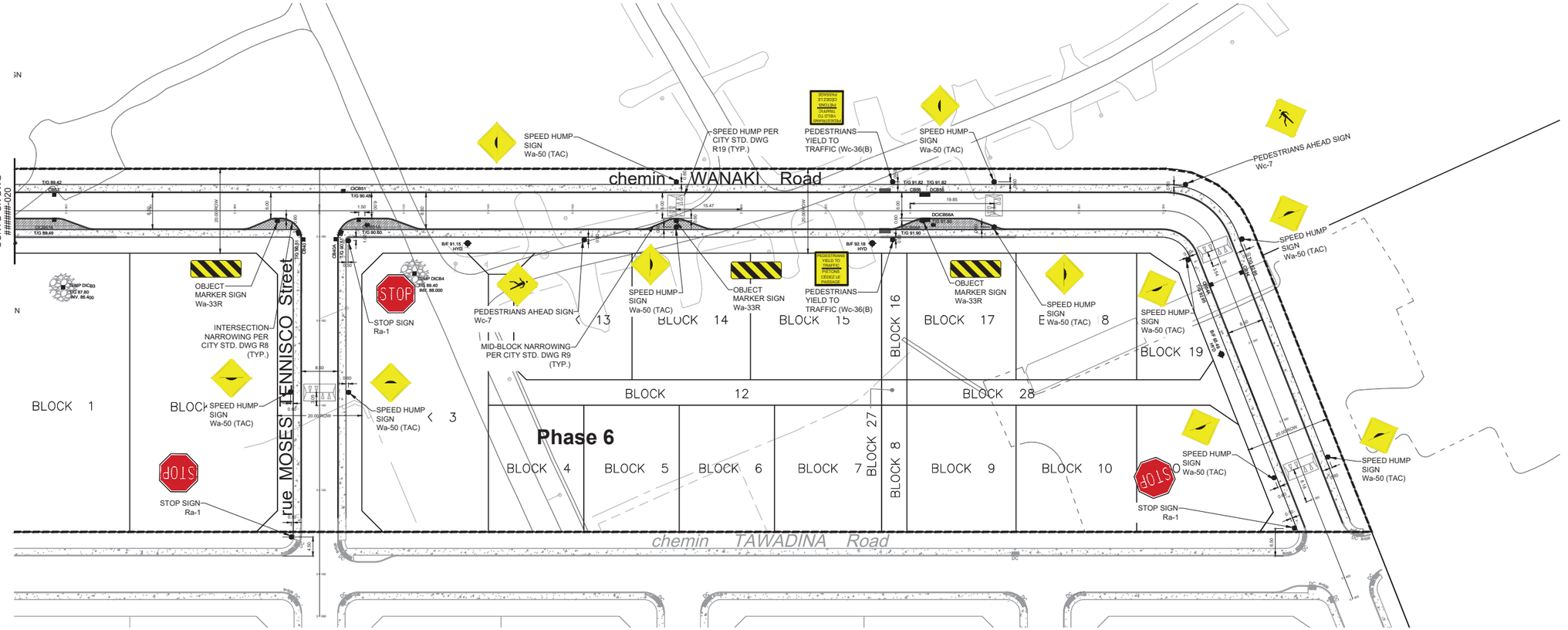
GEOMETRIC ROADWAY DESIGN DRAWING I

SHEET NUMBER 020

ISSUE

SCALE CHECK 10cm 1m

File Location: J:\139853_600\9418_WY\3_Production\7.03_Design\3_Traffic\Sheets\020 GRDD.dwg Last Saved: June 25, 2025 by chowhan Printed: Thursday, June 26, 2025 15:04:46 by Chowhan, Dinesh



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4	SUBMISSION #4 FOR CITY REVIEW	2025-02-24
5	SUBMISSION #5 FOR CITY REVIEW	2025-06-24

KEY PLAN



CONFIRM **CONSULTANTS** BOX

- DEPRESSED CURB
- TWSI (PER SC7.3)
- CATCH BASIN
- REAR YARD CATCH BASIN IN ROAD
- TRANSFORMER
- FIRE HYDRANT
- MOUNTABLE CURB
- BARRIER CURB
- PHASING BOUNDARY

SEAL

PRIME CONSULTANT

ARCADIS

333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT

WATERIDGE VILLAGE
PHASE 6 & 7

H 1:500 0 5 15 25m
V 1:50 0 0.5 # 1.5 2.5m

PROJECT NO:
#######

DRAWN BY:	CHECKED BY:
I.L.	D.H.
PROJECT MGR:	APPROVED BY:
S.L.	D.H.

SHEET TITLE

GEOMETRIC ROADWAY
DESIGN DRAWING II

SHEET NUMBER
021

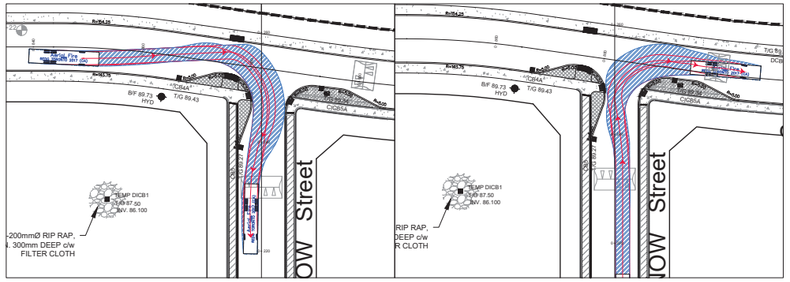
ISSUE

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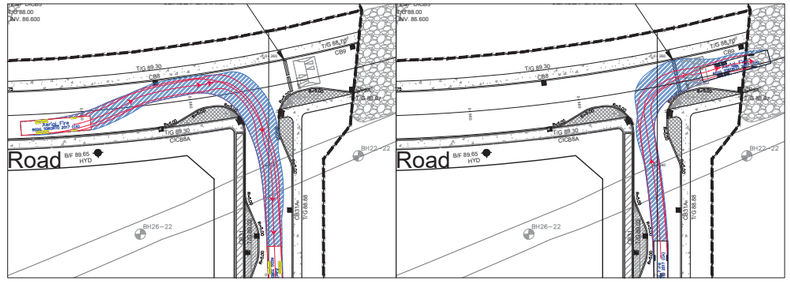
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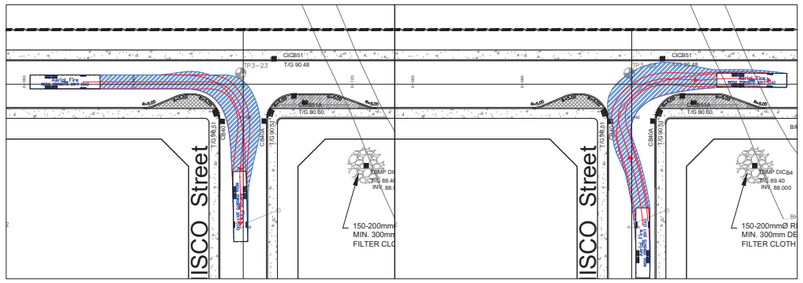
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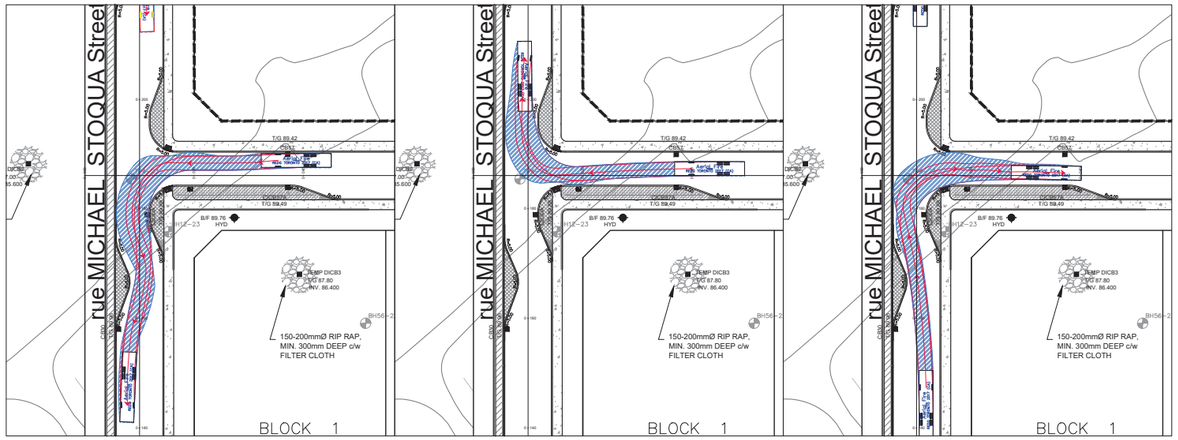
CODD'S & BARREILLE SNOW



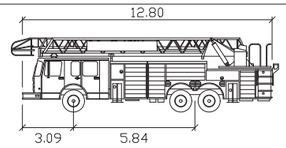
CODD'S & MICHAEL STOQUA



WANAKI & MOSES TENNISCO



WANAKI & MICHAEL STOQUA



Aerial Fire

	meters
Width	: 2.54
Track	: 2.54
Lock to Lock Time	: 6.0
Steering Angle	: 37.0

Project North

CLIENT

NOT FOR CONSTRUCTION

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Arcadis Professional Services (Canada) Inc.
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ISSUES

No.	DESCRIPTION	DATE
1	SUBMISSION #1 FOR CITY REVIEW	2023-10-05
2	SUBMISSION #2 FOR CITY REVIEW	2024-07-18
3	SUBMISSION #3 FOR CITY REVIEW	2024-11-15
4	SUBMISSION #4 FOR CITY REVIEW	2025-06-24

KEY PLAN



CONFIRM **CONSULTANTS** BOX

- DEPRESSED CURB
- TWSI (PER SC7.3)
- CATCH BASIN
- REAR YARD CATCH BASIN IN ROAD
- TRANSFORMER
- FIRE HYDRANT
- MOUNTABLE CURB
- BARRIER CURB
- PHASING BOUNDARY

SEAL

CONFIRM PRIME CONSULTANT

ARCADIS
333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT
WATERIDGE VILLAGE
PHASE 6 & 7

H 1:500 0 5 15 25m
V 1:50 0 0.5 1.5 2.5m

PROJECT NO: 139653

DRAWN BY:	CHECKED BY:
I.L.	D.H.
PROJECT MGR:	APPROVED BY:
S.L.	D.H.

SHEET TITLE
GEOMETRIC ROADWAY DESIGN DRAWING III

SHEET NUMBER	ISSUE
022	

SCALE CHECK 10mm 1 in

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Appendix J – MMLOS Analyses

Multi-Modal Level of Service - Segments Form

Consultant	**ARCADIS**	**Project**	**139653**
Scenario	**Future Conditions**	**Date**	**Aug-23**
Comments			

SEGMENTS		Hemlock Road	Core Street	Major Collector	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 11	Section 12
Pedestrian	Sidewalk Width Boulevard Width	B	≥ 2 m 0.5 - 2 m	1.8 m > 2 m										
	Avg Daily Curb Lane Traffic Volume		≤ 3000	≤ 3000										
	Operating Speed On-Street Parking		> 30 to 50 km/h yes	> 30 to 50 km/h yes										
	Exposure to Traffic PLoS		**A**	**A**	-	-	-	-	-	-	-	-	-	-
	Effective Sidewalk Width		2.0 m	1.5 m										
	Pedestrian Volume		250 ped/hr	250 ped/hr										
	Crowding PLoS		**B**	**B**	-	-	-	-	-	-	-	-	-	-
	Level of Service		**B**	**B**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Bicycle	Type of Cycling Facility	A	Physically Separated	Physically Separated										
	Number of Travel Lanes													
	Operating Speed													
	# of Lanes & Operating Speed LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Bike Lane (+ Parking Lane) Width													
	Bike Lane Width LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Bike Lane Blockages													
	Blockage LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Median Refuge Width (no median = < 1.8 m)													
	No. of Lanes at Unsignalized Crossing													
	Sidestreet Operating Speed													
	Unsignalized Crossing - Lowest LoS		**A**	**A**	-	-	-	-	-	-	-	-	-	-
	Level of Service		**A**	**A**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Transit	Facility Type	E	Mixed Traffic	Mixed Traffic										
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≤ 0.6	Vt/Vp ≤ 0.6										
	Level of Service		**E**	**E**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Truck	Truck Lane Width	C	≤ 3.5 m	≤ 3.5 m										
	Travel Lanes per Direction		1	1										
	Level of Service		**C**	**C**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Auto	**Level of Service**	**Not Applicable**												

Multi-Modal Level of Service - Segments Form

Consultant	**ARCADIS**	**Project**	**139653**
Scenario	**Future Conditions**	**Date**	**Aug-23**
Comments			

SEGMENTS		Aviation Parkway	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 11	Section 12
Pedestrian	Sidewalk Width Boulevard Width	D	1.8 m > 2 m											
	Avg Daily Curb Lane Traffic Volume		> 3000											
	Operating Speed On-Street Parking		> 50 to 60 km/h no											
	Exposure to Traffic PLoS		**D**	-	-	-	-	-	-	-	-	-	-	-
	Effective Sidewalk Width		2.0 m											
	Pedestrian Volume		500 ped /hr											
	Crowding PLoS		**B**	-	-	-	-	-	-	-	-	-	-	-
	Level of Service		**D**	-	-	-	-	-	-	-	-	-	-	-
Bicycle	Type of Cycling Facility	A	Physically Separated											
	Number of Travel Lanes													
	Operating Speed													
	# of Lanes & Operating Speed LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Bike Lane (+ Parking Lane) Width													
	Bike Lane Width LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Bike Lane Blockages													
	Blockage LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Median Refuge Width (no median = < 1.8 m)													
	No. of Lanes at Unsignalized Crossing													
	Sidestreet Operating Speed													
	Unsignalized Crossing - Lowest LoS		A	-	-	-	-	-	-	-	-	-	-	-
	Level of Service		**A**	-	-	-	-	-	-	-	-	-	-	-
Transit	Facility Type	D	Mixed Traffic											
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≥ 0.8											
	Level of Service		**D**	-	-	-	-	-	-	-	-	-	-	-
Truck	Truck Lane Width	B	> 3.7 m											
	Travel Lanes per Direction		1											
	Level of Service		**B**	-	-	-	-	-	-	-	-	-	-	-
Auto	**Level of Service**	**Not Applicable**												

Multi-Modal Level of Service - Segments Form

Consultant	**ARCADIS**	**Project**	**139653**
Scenario	**Future Conditions**	**Date**	**Aug-23**
Comments			

SEGMENTS		Montreal Road	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 11	Section 12
Pedestrian	Sidewalk Width Boulevard Width	C	≥ 2 m > 2 m											
	Avg Daily Curb Lane Traffic Volume		> 3000											
	Operating Speed On-Street Parking		> 50 to 60 km/h no											
	Exposure to Traffic PLoS		**C**	-	-	-	-	-	-	-	-	-	-	-
	Effective Sidewalk Width		2.5 m											
	Pedestrian Volume		500 ped /hr											
	Crowding PLoS		**B**	-	-	-	-	-	-	-	-	-	-	-
	Level of Service		**C**	-	-	-	-	-	-	-	-	-	-	-
Bicycle	Type of Cycling Facility	A	Physically Separated											
	Number of Travel Lanes													
	Operating Speed													
	# of Lanes & Operating Speed LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Bike Lane (+ Parking Lane) Width													
	Bike Lane Width LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Bike Lane Blockages													
	Blockage LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Median Refuge Width (no median = < 1.8 m)													
	No. of Lanes at Unsignalized Crossing													
	Sidestreet Operating Speed													
	Unsignalized Crossing - Lowest LoS		A	-	-	-	-	-	-	-	-	-	-	-
	Level of Service		**A**	-	-	-	-	-	-	-	-	-	-	-
Transit	Facility Type	B	Bus lane											
	Friction or Ratio Transit:Posted Speed		Cf ≤ 60											
	Level of Service		**B**	-	-	-	-	-	-	-	-	-	-	-
Truck	Truck Lane Width	C	≤ 3.3 m											
	Travel Lanes per Direction		> 1											
	Level of Service		**C**	-	-	-	-	-	-	-	-	-	-	-
Auto	**Level of Service**	**Not Applicable**												

Multi-Modal Level of Service - Segments Form

Consultant	**ARCADIS**	**Project**	**139653**
Scenario	**Future Conditions**	**Date**	**Aug-23**
Comments			

SEGMENTS		Codd's Road	Collector Road	Local Road	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 11	Section 12
Pedestrian	Sidewalk Width Boulevard Width	**B**	1.8 m 0.5 - 2 m	1.8 m < 0.5 m										
	Avg Daily Curb Lane Traffic Volume		≤ 3000	≤ 3000										
	Operating Speed On-Street Parking		> 50 to 60 km/h yes	> 30 to 50 km/h no										
	Exposure to Traffic PLoS		**B**	**B**	-	-	-	-	-	-	-	-	-	-
	Effective Sidewalk Width		1.5 m	1.5 m										
	Pedestrian Volume		250 ped/hr	250 ped/hr										
	Crowding PLoS		**B**	**B**	-	-	-	-	-	-	-	-	-	-
	Level of Service		**B**	**B**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Bicycle	Type of Cycling Facility	**A**	Physically Separated	Mixed Traffic										
	Number of Travel Lanes			≤ 2 (no centreline)										
	Operating Speed			≤ 40 km/h										
	# of Lanes & Operating Speed LoS		**-**	**A**	-	-	-	-	-	-	-	-	-	-
	Bike Lane (+ Parking Lane) Width													
	Bike Lane Width LoS		**-**	**-**	-	-	-	-	-	-	-	-	-	-
	Bike Lane Blockages													
	Blockage LoS		**-**	**-**	-	-	-	-	-	-	-	-	-	-
	Median Refuge Width (no median = < 1.8 m)			< 1.8 m refuge										
	No. of Lanes at Unsignalized Crossing			≤ 3 lanes										
	Sidestreet Operating Speed			≤ 40 km/h										
	Unsignalized Crossing - Lowest LoS		**A**	**A**	-	-	-	-	-	-	-	-	-	-
	Level of Service		**A**	**A**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Transit	Facility Type	**E**	Mixed Traffic	Mixed Traffic										
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≤ 0.6	Vt/Vp ≤ 0.6										
	Level of Service		**E**	**E**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Truck	Truck Lane Width	**C**	≤ 3.5 m	> 3.7 m										
	Travel Lanes per Direction		1	1										
	Level of Service		**C**	**B**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Auto	**Level of Service**	**Not Applicable**												

Multi-Modal Level of Service - Segments Form

Consultant	**ARCADIS**	**Project**	**139653**
Scenario	**Future Conditions**	**Date**	**Aug-23**
Comments			

SEGMENTS		Mikinak Road	Major Collector	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 11	Section 12
Pedestrian	Sidewalk Width Boulevard Width	B	1.8 m > 2 m											
	Avg Daily Curb Lane Traffic Volume		≤ 3000											
	Operating Speed On-Street Parking		> 30 to 50 km/h yes											
	Exposure to Traffic PLoS		**A**	-	-	-	-	-	-	-	-	-	-	-
	Effective Sidewalk Width		1.5 m											
	Pedestrian Volume		250 ped/hr											
	Crowding PLoS		**B**	-	-	-	-	-	-	-	-	-	-	-
	Level of Service		**B**	-	-	-	-	-	-	-	-	-	-	-
Bicycle	Type of Cycling Facility	A	Physically Separated											
	Number of Travel Lanes													
	Operating Speed													
	# of Lanes & Operating Speed LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Bike Lane (+ Parking Lane) Width													
	Bike Lane Width LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Bike Lane Blockages													
	Blockage LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Median Refuge Width (no median = < 1.8 m)													
	No. of Lanes at Unsignalized Crossing													
	Sidestreet Operating Speed													
	Unsignalized Crossing - Lowest LoS		**A**	-	-	-	-	-	-	-	-	-	-	-
	Level of Service		**A**	-	-	-	-	-	-	-	-	-	-	-
Transit	Facility Type	E	Mixed Traffic											
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≤ 0.6											
	Level of Service		**E**	-	-	-	-	-	-	-	-	-	-	-
Truck	Truck Lane Width	C	≤ 3.5 m											
	Travel Lanes per Direction		1											
	Level of Service		**C**	-	-	-	-	-	-	-	-	-	-	-
Auto	**Level of Service**	**Not Applicable**												

Multi-Modal Level of Service - Segments Form

Consultant	**ARCADIS**	**Project**	**139653**
Scenario	**Future Conditions**	**Date**	**Aug-23**
Comments			

SEGMENTS		Tawadina Road	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 11	Section 12
Pedestrian	Sidewalk Width Boulevard Width	B	1.8 m < 0.5 m											
	Avg Daily Curb Lane Traffic Volume		≤ 3000											
	Operating Speed On-Street Parking		> 30 to 50 km/h no											
	Exposure to Traffic PLoS		**B**	-	-	-	-	-	-	-	-	-	-	-
	Effective Sidewalk Width		1.5 m											
	Pedestrian Volume		250 ped/hr											
	Crowding PLoS		**B**	-	-	-	-	-	-	-	-	-	-	-
	Level of Service		**B**	-	-	-	-	-	-	-	-	-	-	-
Bicycle	Type of Cycling Facility	A	Mixed Traffic											
	Number of Travel Lanes		≤ 2 (no centreline)											
	Operating Speed		≤ 40 km/h											
	# of Lanes & Operating Speed LoS		**A**	-	-	-	-	-	-	-	-	-	-	-
	Bike Lane (+ Parking Lane) Width													
	Bike Lane Width LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Bike Lane Blockages													
	Blockage LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Median Refuge Width (no median = < 1.8 m)		< 1.8 m refuge											
	No. of Lanes at Unsignalized Crossing		≤ 3 lanes											
	Sidestreet Operating Speed		≤ 40 km/h											
	Unsignalized Crossing - Lowest LoS		**A**	-	-	-	-	-	-	-	-	-	-	-
	Level of Service		**A**	-	-	-	-	-	-	-	-	-	-	-
Transit	Facility Type	E	Mixed Traffic											
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≤ 0.6											
	Level of Service		**E**	-	-	-	-	-	-	-	-	-	-	-
Truck	Truck Lane Width	B	> 3.7 m											
	Travel Lanes per Direction		1											
	Level of Service		**B**	-	-	-	-	-	-	-	-	-	-	-
Auto	**Level of Service**	**Not Applicable**												

Multi-Modal Level of Service - Segments Form

Consultant	**ARCADIS**	**Project**	**139653**
Scenario	**Future Conditions**	**Date**	**Aug-23**
Comments			

SEGMENTS		Wanaki Road	Major	Local	Section	Section	Section	Section	Section	Section	Section	Section	Section	Section
			Collector	Road	3	4	5	6	7	8	9	10	11	12
Pedestrian	Sidewalk Width Boulevard Width	**B**	1.8 m > 2 m	1.8 m < 0.5 m										
	Avg Daily Curb Lane Traffic Volume		≤ 3000	≤ 3000										
	Operating Speed On-Street Parking		> 30 to 50 km/h yes	> 30 to 50 km/h no										
	Exposure to Traffic PLoS		**A**	**B**	-	-	-	-	-	-	-	-	-	-
	Effective Sidewalk Width		1.5 m	1.5 m										
	Pedestrian Volume		250 ped/hr	250 ped/hr										
	Crowding PLoS		**B**	**B**	-	-	-	-	-	-	-	-	-	-
	Level of Service		**B**	**B**	-	-	-	-	-	-	-	-	-	-
Bicycle	Type of Cycling Facility	**A**	Physically Separated	Mixed Traffic										
	Number of Travel Lanes			≤ 2 (no centreline)										
	Operating Speed			≤ 40 km/h										
	# of Lanes & Operating Speed LoS		-	**A**	-	-	-	-	-	-	-	-	-	-
	Bike Lane (+ Parking Lane) Width													
	Bike Lane Width LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Bike Lane Blockages													
	Blockage LoS		-	-	-	-	-	-	-	-	-	-	-	-
	Median Refuge Width (no median = < 1.8 m)			< 1.8 m refuge										
	No. of Lanes at Unsignalized Crossing			≤ 3 lanes										
	Sidestreet Operating Speed			≤ 40 km/h										
	Unsignalized Crossing - Lowest LoS		**A**	**A**	-	-	-	-	-	-	-	-	-	-
	Level of Service		**A**	**A**	-	-	-	-	-	-	-	-	-	-
Transit	Facility Type	**E**	Mixed Traffic	Mixed Traffic										
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≤ 0.6	Vt/Vp ≤ 0.6										
	Level of Service		**E**	**E**	-	-	-	-	-	-	-	-	-	-
Truck	Truck Lane Width	**C**	≤ 3.5 m	> 3.7 m										
	Travel Lanes per Direction		1	1										
	Level of Service		**C**	**B**	-	-	-	-	-	-	-	-	-	-
Auto	**Level of Service**	**Not Applicable**												

Multi-Modal Level of Service - Intersections Form

Consultant	Arcadis	**Project**	139653
Scenario	Existing Conditions	**Date**	2023-08-08
Comments			

To add intersections
Select columns LMNO, right-click and *Copy;*
Then select column P, right-click and *Insert Copied Cells*

To add intersections
Select columns LMNO, right-click and *Copy;*
Then select column P, right-click and *Insert Copied Cells*

INTERSECTIONS		Montreal & Codd's/Carson's				Montreal & Wanaki				Montreal & Airport Parkway				Hemlock & St. Laurent			
Crossing Side		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pedestrian	Lanes	6	6	8	8	4	5	5	5	8	8	10+	10+	5	5	6	5
	Median	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m
	Conflicting Left Turns	Protected/ Permissive	Permissive	Permissive	Permissive	Protected	Protected	Permissive	Permissive	Protected/ Permissive	Protected/ Permissive	Protected/ Permissive	Protected/ Permissive	Permissive	Permissive	Protected/ Permissive	Permissive
	Conflicting Right Turns	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control
	Right Turns on Red (RTOR) ?	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed
	Ped Signal Leading Interval?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Right Turn Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	Conventional with Receiving Lane	Conventional with Receiving Lane	Conventional with Receiving Lane	Conventional with Receiving Lane	No Channel	No Channel	No Channel	No Channel
	Corner Radius	5-10m	5-10m	5-10m	5-10m	10-15m	5-10m	10-15m	10-15m	15-25m	15-25m	15-25m	10-15m	5-10m	5-10m	5-10m	5-10m
	Crosswalk Type	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Std transverse markings
	PETSI Score	**21**	**21**	**-11**	**-11**	**64**	**49**	**40**	**40**	**-13**	**-13**	**-46**	**-44**	**41**	**41**	**24**	**38**
	Ped. Exposure to Traffic LoS	**F**	**F**	**F**	**F**	**C**	**D**	**E**	**E**	**F**	**F**	**#N/A**	**#N/A**	**E**	**E**	**F**	**E**
	Cycle Length	120	120	120	120	120	120	120	120	120	120	120	120	75	75	75	75
	Effective Walk Time	45	60	10	10	52	52	16	16	33	33	8	8	10	10	10	25
	Average Pedestrian Delay	**23**	**15**	**50**	**50**	**19**	**19**	**45**	**45**	**32**	**32**	**52**	**52**	**28**	**28**	**28**	**17**
	Pedestrian Delay LoS	**C**	**B**	**E**	**E**	**B**	**B**	**E**	**E**	**D**	**D**	**E**	**E**	**C**	**C**	**C**	**B**
	Level of Service	**F**	**F**	**F**	**F**	**C**	**D**	**E**	**E**	**F**	**F**	**#N/A**	**#N/A**	**E**	**E**	**F**	**E**
		F				**E**				**#N/A**				**F**			
Approach From		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Bicycle	Bicycle Lane Arrangement on Approach	Mixed Traffic	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Mixed Traffic	Mixed Traffic	Pocket Bike Lane	Pocket Bike Lane	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Mixed Traffic	Pocket Bike Lane
	IF Dedicated Right Turn Lane, THEN Right Turn Configuration, ELSE <blank>										≤ 50 m	≤ 50 m Introduced right turn lane	≤ 50 m Introduced right turn lane		Not Applicable		≤ 50 m Introduced right turn lane
	Dedicated Right Turning Speed	≤ 25 km/h	≤ 25 km/h	Not Applicable	Not Applicable	Not Applicable	≤ 25 km/h	Not Applicable	Not Applicable	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	Not Applicable	≤ 25 km/h	≤ 25 km/h
	Cyclist Through Movement			**Not Applicable**	**Not Applicable**	**Not Applicable**		**Not Applicable**	**Not Applicable**		**D**	**B**	**B**		**Not Applicable**		**B**
	Separated or Mixed Traffic	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**	**Separated**	**Mixed Traffic**	**Separated**	**Separated**	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**	**Mixed Traffic**	**Separated**	**Mixed Traffic**	**Separated**
	Left Turn Approach	One lane crossed	One lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	One lane crossed	One lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	No lane crossed	2-stage, LT box	One lane crossed	2-stage, LT box
	Operating Speed	> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h	≥ 60 km/h	≥ 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h
	Left Turning Cyclist	**D**	**D**	**F**	**F**	**C**	**C**	**C**	**C**	**F**	**F**	**F**	**F**	**C**	**A**	**E**	**A**
	Level of Service	**D**	**D**	**F**	**F**	**C**	**C**	**C**	**C**	**F**	**F**	**F**	**F**	**C**	**A**	**E**	**B**
		F				**C**				**F**				**E**			
Transit	Average Signal Delay	≤ 40 sec	> 40 sec	≤ 20 sec	≤ 20 sec	> 40 sec	≤ 30 sec	≤ 20 sec	≤ 20 sec	> 40 sec	≤ 40 sec	≤ 30 sec	≤ 40 sec	≤ 20 sec	≤ 10 sec	≤ 40 sec	≤ 20 sec
	Level of Service	**E**	**F**	**C**	**C**	**F**	**D**	**C**	**C**	**F**	**E**	**D**	**E**	**C**	**B**	**E**	**C**
		F				**F**				**F**				**E**			
Truck	Effective Corner Radius	< 10 m	< 10 m	10 - 15 m	10 - 15 m	10 - 15 m	10 - 15 m	10 - 15 m	10 - 15 m	> 15 m	> 15 m	> 15 m	10 - 15 m	< 10 m	< 10 m	10 - 15 m	< 10 m
	Number of Receiving Lanes on Departure from Intersection	≥ 2	≥ 2	1	1	≥ 2	≥ 2	1	1	≥ 2	≥ 2	1	1	1	1	1	1
	Level of Service	**D**	**D**	**E**	**E**	**B**	**B**	**E**	**E**	**A**	**A**	**C**	**E**	**F**	**F**	**E**	**F**
		E				**E**				**E**				**F**			
Auto	Volume to Capacity Ratio																
	Level of Service	**-**				**-**				**-**				**-**			



Figure 22: Road Classification

The following **Table 16** is a MMLOS analysis summary of existing conditions for non-auto modes (i.e. pedestrian, cycling, transit and trucks) along the road segments described above. Any LOS results highlighted in red indicate that the target MMLOS was not met for that segment. It should be noted that a MMLOS segment analysis focuses on local transit provided along boundary streets only (i.e. MMLOS worksheets are not sensitive to dedicated rapid transit facilities).

Table 16: Segment MMLOS – Existing LOS(Target LOS)

No.	Road Name	Segment Between	PLOS	BLOS	TLOS	TkLOS
1	Hemlock Road	St. Laurent – Aviation On/Off Ramps	n/a(C)	E(B)	D(D)	C(n/a)
2	Hemlock Road	Aviation On/Off Ramps – Site Driveway	n/a(C)	E(B)	D(D)	C(n/a)
3	Aviation Parkway	Montreal – Sir George	n/a(C)	A(B)	D(D)	n/a
4	Montreal Road	Aviation – Codd's	F(C)	C(C)	D(D)	A(D)
5	Codd's Road	Montreal – Mikinak	B(C)	B(D)	D(D)	C(n/a)
6	Mikinak Road	Codd's – Site Driveway	B(C)	A(D)	D(D)	C(n/a)
Notes: *'n/a' denotes insufficient input data*						

Based on the results summarized in **Table 16**, the following should be noted/considered:

Pedestrian LOS

- Road segments along Hemlock Road and Aviation Parkway do not meet PLOS targets due to lack of provided sidewalks.
- It should be noted that PLOS targets are not met on Aviation Parkway because the MMLOS summary tool does not take into account multi-use pathways (MUP), despite all design guidelines being met and a large buffer provided between a MUP and active travel lanes along the Aviation Parkway (i.e. the Aviation Parkway has an excellent pedestrian facility, which should meet or exceed PLOS targets).
- Dedicated facilities would be required on Hemlock Road to meet PLOS targets.
- PLOS targets are not met on Montreal Road due to the average daily curb lane traffic volume and the operating speed, despite sidewalks being provided on both sides of the roadway. Increasing the buffer between pedestrians and active travel lanes and/or lowering vehicle operating speeds would be required to meet PLOS targets.

Bike LOS

- All road segments meet or exceed BLOS targets except for Hemlock Road.
- BLOS targets are not met on Hemlock Road due to it being a mixed traffic facility and the operating speed. Dedicated cycling facilities would be required to meet BLOS targets.

Transit LOS

- All road segments meet TLOS targets.

Truck LOS

- All road segments meet or exceed TkLOS targets.
- It should be noted that Aviation Parkway has no target due to commercial vehicles being prohibited on this roadway.

Given the Montreal-Blair Road Transit Priority Corridor and Environmental Assessment Study are in the preliminary planning/design phases, conducting a future MMLOS analysis will require broad assumptions. Given these network improvements are not scheduled to occur prior to full build-out of the subject development, a detailed future segment MMLOS analysis has not been included as part of this assessment. However, it is anticipated that the planned network improvements will improve the LOS for all modes, within the vicinity of the subject development.

Road Safety

For the purpose of a road safety review, collision records for boundary streets were examined to determine if locations exhibit any collision trends that could be mitigated by engineering intervention. If there is a collision trend that is outside the norm of what is expected, then the potential exists to reduce the future rate of collisions by addressing the overrepresented collision trend. Whenever changes are being made to the road environment, it is an opportunity to examine whether a safety intervention could result in meaningful safety benefits. Where there are identifiable safety trends, it is worthwhile to mitigate those, such that the added traffic from a new development does not increase the risk of new collisions.

Based on a review of the most recent five (5) years of historical collision data (collected from January 1st, 2015 to December 31st, 2019), the following **Table 17** summarizes the number and